

ONLINE MARKETING MANAGEMENT ACCORDING TO PROCESSING OF INTERNAL AND EXTERNAL INFORMATION

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ABSTRACT

The aim of this paper is to introduce and compare selected approaches that are useful for the management of online marketing. At first, there are presented two views of the information, based on which a marketing decision-making can be performed. There are also presented three approaches which can be used by retail companies engaged in e-commerce. It is the Customer lifetime value, Method for selecting optimal portfolio of online marketing tools, and Using of business rules to better addressing e-commerce customer. Usefulness of these approaches with respect to different companies is also discussed. On the basis of selected characteristics, these approaches are compared. Companies that would like to implement some of these approaches can choose those ones which are most suitable for them.

KEY WORDS

Online marketing management, processing of information, analysis, decision.

INTRODUCTION

In the last two decades, there is a shift of attention from marketing in the physical environment to the online marketing and its management. This shift has caused mainly positive acceptance of new information and communication technologies (ICT) at the global level of society. Virtualization of society caused that commercial companies either supplement their marketing activities in the physical environment of those taking place in the ICT-mediated environment (also online environment or cyberspace), or marketing activities in this ICT-mediated environment have become carriers for their business (i.e. Internet companies).

These changes are also related to new possibilities in the field of marketing activities because the activities in the online environment are mediated by ICT; thus, there are more recordable, representable and processable. From the perspective of companies, we can talk about the internal and external environments, where the companies and their marketing specialists acquire data and information, based on which they are able to make decisions about marketing activities. In this paper, we introduce a source of data or information that companies can process in order to improve their decision-making capabilities, which leads to more effective management of online marketing activities. We will also focus on various approaches of processing this information in terms of selected characteristics (company size, technological capabilities, know-how of employees, company turnover etc.). Three selected approaches, which can be applicable in online marketing management, will be briefly described here.

We build on our own research project, which was realized in 2014 and 2015. It focused both on creating our own artefacts, and on exploratory research on competitive environment of Czech Internet companies. This contribution is based on outcomes of the research project realized by a research team

of doctoral students in the internal grant at the University of Economics which is called *Innovative view of customer value and other factors influencing marketing management*. As a conclusion to the previous research, the paper summarizes recommendations for Czech companies based on selected characteristics of individual approaches and in terms of deployment options of selected approaches to online marketing management.

INTERNAL AND EXTERNAL INFORMATION FOR PROCESSING

For people, the information is a basis for decision-making and thus also for the management of social and socio-technical systems. Working with information is limited. "Information is like time that has always been passing away. Either it becomes a piece of knowledge in our heads or exformation that passes us." (Řezníček, 2015, p. 24) In this paper we consider information to be some data, which can be interpreted by people (e.g. Czech written commentary), and similarly, to be computer-processable data that are enriched with meaning in any form (e.g. database).

There have been already pointed out different views of companies on the external and internal environment which are a source of information for management of online marketing activities. External information may be both in a form of a proper marketing research and an automatically processed content. An example of such research could be a demographic survey, which can be used for targeted online advertising (Stříteský & Stříteský, 2014), whereas an automatically processable content can include unstructured data which have an assigned meaning (Šperková, 2014; Pavlíček & Novák, 2015). It is necessary to pre-process unstructured data prior to automated processing and in order to find meaning in them (i.e. using the NPL dictionaries and converge them to partially structured data) for further analysis, e.g. for determining opinions of service users (Petz et al., 2014). Besides the research, which is focused on support of the decision-making by a marketing specialist, there is research focused on marketing processes and management approaches. In respect of this, there are particularly descriptive and exploratory researches such as (Smutný, 2015), where the author deals with approaches of Czech small and medium-sized companies to management of their online marketing activities.

Internal information is directly acquired information from and about (potential) customers, which is collected by companies and saved into their systems and databases. It is both a customer's personal information and information about their interaction within individual services. To present an example, it can be information sent directly by a customer (e.g. when purchasing) or clickstream data about user's interaction in provided internet-based service (e.g. clicks and paths within the website of e-shop) – see (Zouharová, 2013; Wilson, 2010). Data stored this way may be further processed by methods such as data mining (Deng et al., 2011).

Processing of such information also brings ethical issues associated with economic behavior of a company and conditions of cyberspace (Sigmund, 2013), which may culminate in privacy suppression of an individual. This problem is metaphorically dealt by Constant Dullaart (2015) in his concept of Balkonism. The balcony of the apartment is considered to be a private and safe place, but in fact a given person is exposed there to the outside world, but the person does not know that he or she is pursued by other subjects. Such usability and exploitability of information (digital tracks) about people does not concern only marketing, but also other areas such as human resources (Böhmová & Malinová, 2013) and relationships in an organization.

SELECTED APPROACHES TO MANAGEMENT OF ONLINE MARKETING ACTIVITIES BASED ON INTERNAL AND EXTERNAL DATA

In a context of our research project, we examined the possibilities of using data or information about customers and their behavior to support the decision-making by marketing specialists about marketing activities. The original exploratory research (Smutný, 2015) on approach of small and medium

businesses to online marketing management was focused on the Czech Republic. It showed that majority of companies do not use any metrics, approaches, methods or frameworks to manage online marketing activities. Therefore, our objective was to suggest the approaches that could be useful for variously-oriented companies operating in this environment. In this paper, we briefly introduce three approaches to online marketing management, which we examined in relation to their applicability by companies in the Czech Republic.

CUSTOMER LIFETIME VALUE IN E-COMMERCE

Considering the long-term trend in marketing which is now supposed to focus primarily on maintaining and customer satisfaction, companies are moving away from functional or product approach to marketing. Along with the development of ICT, companies worldwide seek to use available customer data as their competitive advantage. For this reason, companies use relevant models or approaches to process these data and to use them further according to their business goals. One of the used approaches is Customer Lifetime Value (CLV) - which is frequently used for customer segmentation. The sum of all individual customers CLV (Customer Equity) is also used for financial evaluation of companies (Vraná & Jašek, 2015).

Practically, the disadvantage of this approach is a large number of different models that can be used in different types of business. In our research, we decided to compare various CLV models applicable to ecommerce (non-contractual, non-membership, always-a-share, continuous, and variable-spending environment) – see e.g. (Jašek & Vraná, 2014). Precisely, the opportunity to compare the predictive ability and quality of selected CLV models based on statistical metrics can satisfy the needs of companies that decide which model will be the best for their e-commerce.

Towards the applicability of these models, for example in the practice of e-shops in the Czech Republic, it must be noted that the application of the model itself is not technologically demanding (the majority of eshops have all necessary data already available). The difficulty of implementation of these models into practice is particularly related to the limits of employees' knowledge, because CLV are mathematical models, and there are no preformed all-in-one solutions. Our study suggests that using a properly implemented CLV model for customer segmentation could streamline spending on marketing activities, especially in medium and large e-shops. In other words, based on segmentation, the most appropriate group will be addressed; thus, this approach will lead to reduction of costs.

METHOD FOR SELECTING OPTIMAL PORTFOLIO OF ONLINE MARKETING TOOLS

We focused on the use of external information to design a method that would process an interaction of subjects (especially people) in an online environment which are relevant to individual online tools that a company would like to use at a marketing campaign. According to an explorative research (Smutný, 2015), most companies rely only on individual subjective assessment of the suitability of various online tools by marketing specialist. Our goal was to offer a method which would support decision-making of marketing specialist, and in the same time it would be based on the available subjective and objective information.

The proposed method combines basic approaches to management in a form of Deming cycle with optimization capabilities of genetic algorithm. On this basis, we selected the best portfolio of tools from the default mix of tools suitable for the marketing campaign. A conceptual proposal of this approach was introduced in the paper (Smutný & Vojíš, 2015). Using this method, or by putting it into another marketing framework, which is used for the management of online marketing, the competitiveness of the company is increased, because marketing specialists do not build their decisions only on a subjective insight.

THE USE OF BUSINESS RULES TO BETTER ADDRESSING E-SHOP CUSTOMER

The last approach presented in this paper focuses again on the use of business rules for customer segmentation for the purpose of additional addressing – e.g. emailing campaign targeted at end customers. Internal information about customers and their purchases are used for this purpose. These

data are mined to obtain association rules in order to find mutual relations between different items that are offered by an eshop. Association rules are further converted into a business rules format (Vojř, 2015). Based on these rules (e.g. if a customer bought a stroller, so it is advisable to offer him a child alarm), an e-shop can address customers who bought specific products with offers to buy other products, which are based on previous experience with other customers. Therefore, relevance of the offered range of products and emphasis on addressing individual customers are key issues.

This area is currently not satisfactorily solved, because simple algorithms based on the supply relationship of already purchased product and its accessories, or on popular categories of goods that the customer often buys are mainly used there. The proposed innovation will keep (almost personal) relationships with customers by giving them the relevant goods offers.

DISCUSSION AND CONCLUSION

All three proposed approaches are focused on retail business and management of online marketing activities. Besides these approaches, also (visual) representation of the acquired pieces of knowledge from such processed internal and external information is equally important in business – see (Čermák & Řezníček, 2014). For a marketing specialist, it is important to be able to incorporate these findings into his or her knowledge framework, and use them in his or her decision making. Now, we move our attention further to individual approaches and discuss their suitability for use in the retail business of (Internet) companies in the Czech Republic.

CLV is suitable for medium and large e-shops, ideally FMCG. On other hand, this approach may be too sophisticated for small e-shops. The disadvantage is the implementation itself, which is more difficult for expertise workers. Mainly internal structured data or customer information are used nowadays for the calculation of CLV. Appropriate involvement of pre-processed external unstructured data, which will be processed to external information (data supplied with meanings), will be a challenge for future research. The main issue, however, is the assignment of this external information to individual customers, i.e. to internal information stored in the database of a company. Enrichment of current models for this external information can bring new predictive possibilities, including new segmentation options, which could include even those ones who buy small amounts with a positive interaction – see also the article (Haenlein, Kaplan & Schoder, 2006).

Approaches	The size of the e-shop (goods turnover)	Technological demands	Demands on the know-how of workers	Evaluation of internal information	Evaluation of external information
Customer lifetime value in e-commerce	Medium and large	Low	Higher	Yes	No
Method for selecting optimal portfolio of online marketing tools	Small and medium	Low	Medium	Yes	Yes
The use of business rules for better addressing e-shop customer	Without limits	Medium or higher	Medium	Yes	No

Table 1 – Overview of appropriateness of different approaches according to selected characteristics. Source: Author

The method for selecting an optimal portfolio of online marketing tools is focused on small and medium businesses. Demands on know-how of marketing specialists are medium, because of using a genetic algorithm. The particular disadvantage is a strong dependence on a human element (initial evaluation of tools). For this purpose, the proposed method offers its own knowledge base that is useful for evaluating the interaction of environment's subjects. On the other hand, internal and external available information can be used, because the data are interpreted by people and directly used for evaluation.

The last approach is about using business rules which are related to the processing of internal information. This approach is more demanding in terms of know-how of the employees and requirements on technologies, because it uses advanced processing techniques. Although this approach is limited to business-like, on the other hand, it is universal in terms of implementation in any e-shop. It should be added that this approach and CLV approach are based on evaluation of historical data or internal information about customer behavior.

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