

# Analysis of effectiveness of selected types of e-marketing communication

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**Abstract:** This paper aims to verify the effectiveness of selected types of e-marketing communication by means of an analysis of the utilization of two widely used types of virtual advertising campaigns, i.e. push advertising through Google Adwords and pull advertising through the social network Facebook. Analyzed formats, as well as conducted promotional campaign are placed in the environment of small and medium-sized enterprises operating in a virtual Central European market. Performed analysis and its results may significantly help the companies within the category of small and medium-sized enterprises to decide on the selection of optimal form of promotion in the hyper-competitive market as such.

**Keywords:** Internet marketing, social media marketing, social networks, google

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## 1. Introduction

"Micro, small and medium-sized enterprises (SMEs) are the driving force of the European economy. They are an essential source of job opportunities, they create entrepreneurial spirit and innovation in the EU and therefore present crucial support of the competitiveness and employment" (Verheugen, 2006). Effective use of resources in general, and in particular the allocation of resources to promotion in present largely overtechnicized and hyper-informative world is becoming the number one topic for the managers looking for optimal strategies to achieve business objectives. (Delina, 2009). In such cases, there is an effective opportunity to reach precisely targeted markets through the use of various e-marketing communication types. (Delina, Tkáč, 2010)

### 1.1. Relevance of small and medium-sized enterprises

According to (Zajko et al., 2010), the relevance and significance of small and medium-sized enterprises for domestic economy is based on three basic pillars. Their economic weight in the respective market environment, maintaining employment in the economy and their role in the process of the revitalization of market innovations. Small and medium entrepreneurs in Slovakia regularly produce more than 50 % of the national added value and account for about 70 % of employment. The potential of small and medium-sized enterprises has significantly increased with the accession of the Slovak Republic to the European Union, although the conditions of foreign market entry are often difficult due to global competition. (Pollák, 2013)

### 1.2. E-marketing

The penetration of the Internet is more extensive with each day and electronic form of communication between companies and their clients has become an integral part of the time in which we live (Pollák, 2015, 2012, Doucek, 2008). Companies have a website and business cards commonly include email addresses. The environment enables the companies to use the Internet for promotional and commercial activities (Pollák, 2013). With the expansion of the Internet, a new term is gaining significance – e-marketing. The analysis will further concentrate on two specific types of electronic promotion in the virtual world – push advertising through PPC and pull advertising through virtual social networks.

#### 1.2.1. Google Adwords advertising system

Google Adwords is the largest provider of PPC advertising today. Its benefit is the use of the most popular search engine Google for spreading advertisements. The strength of this system lies in the linking of ads with searched terms which enables accurate display of advertisements to people who are looking for products or services. In addition to displaying ads, Google enables to display ads with keywords in the articles of Google display network. In practice, this means the following. If a known online magazine decides to write about travel agencies in Slovakia, the words in the article will include direct link to the ad of the travel agency advertising on Google Adwords.

#### 1.2.2. Social network Facebook

Facebook is a community Internet system and a communication tool which the people on the Internet in common circle use to share photos, videos and thoughts. The basic and well known principles of its functioning are the options "like" and "share". Facebook is adapting to present period and constantly changing technological requirements, as evidenced by numerous changes of the way of making contributions in one's own profile. In addition to the basic principle of sharing, Facebook also allows groups to communicate with each other.

Facebook groups allow merging of any selection of people with a Facebook account and using the group to private communication with each other, sharing photos and videos. Based on the settings, the group may be changed to a one-way information channel where an individual manages a group of subordinate people. Such method has also been used to manage the working group of this study. Facebook pages are similar to working groups but the pages

acquire their own website address in the form [www.facebook.sk/name\\_site](http://www.facebook.sk/name_site). They are public and designed to capture as big community of interested persons as possible. These pages with their active content capture the attention of a Facebook user who by pressing "like" expresses his/her willingness to subscribe to news of the respective page. Facebook pages allow promoting companies, products, locations, performers and other forms of entertainment.

## 2. Methods

### 2.1. The research object

The object of this research is the electronic shop which promotes the product of EZO, s.r.o. Company. The company is based in Prešov and was established in 1992. Since then it has mainly specialized in selling natural products applied in various forms. Product range includes bath oils, fragrance lamps, dried flowers, massage oils and bath salts. Full product range is available on the website <http://ezoshop.com/>. For the purposes of this paper and its experiments, the product, natural thermo pillow, has been used. Natural thermo pillows serve as warming pillows. They contain a mixture of selected grain which is mixed with a mixture of natural fragrant oils. In this specific case, this company represents a model enterprise falling into the category of small and medium sized enterprises operating in the selected market.

### 2.2. The main purpose

The main purpose is to verify the effectiveness of selected e-marketing communication types by means of an analysis of the utilization of two widely used types of virtual advertising campaigns, i.e. push advertising through Google Adwords and pull advertising through Facebook. Analyzed formats, as well as conducted promotional campaign are placed in an environment of small and medium-sized enterprises operating in a virtual Central European market.

### 2.3. Research Methods and Procedures

On the basis of specified objective, the following research challenges have been identified:

- Is it possible to increase the number of visitors of the e-shop through the social network Facebook by sharing the advertisement between users.
- Is it possible to increase the number of visitors of the e-shop through PPC advertising in Google Adwords system.
- The effectiveness measured by the ratio of views and clicks on the advertisement is the same on Facebook as in Google Adwords system.

The hypothesis H0 of the analysis is formulated as follows: "The effectiveness of advertising campaigns as measured by the ratio of views and clicks on the advertisement on Facebook and in Google Adwords is not statistically different", while the H1 is formulated as: "The effectiveness of advertising campaigns as measured by the ratio of views and clicks on the advertisement on Facebook and in Google Adwords is statistically different".

The research sample was random in both experiments, but as to the method and the aim of the measurement of effectiveness, this fact has no significant influence on the results of the measurement. This type of experiments cannot guarantee beforehand an accurate age range of the target group and may be only estimated. Research sample is described in more detail in the results and discussion section of this type of experiment.

Internet services used for this experiment are as follows:

- Social network Facebook - to manage and spread advertising activities of the network itself

- Google Adwords advertising system – to ensure the advertisement is displayed in Google display network and in Google search.
- Analytical online software Google Analytics – to analyze visitors of the e-shop.

### 2.3.1. Description of concrete campaigns – Facebook

Promotional messages have been distributed through fanpage and subsequently shared by members of the working group of evangelists. Every day for ten days, the author of the paper as the head of the experiment added instructions on sharing new articles of Facebook page to the working group. The head of the experiment has also added and written articles. The basic idea of the experiment is to share these articles by the broadcasters on their wall/profile, where their friends could see them. Each commercial text included direct link to the e-shop.

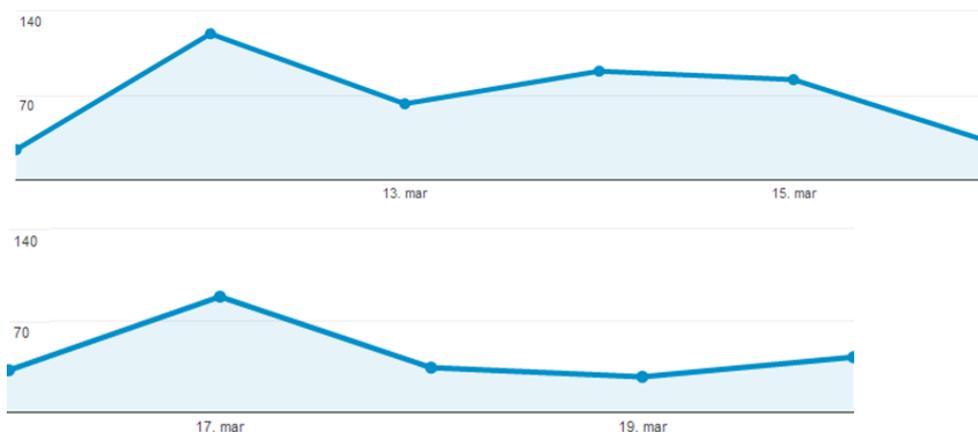
### 2.3.2. Description of concrete campaigns – Google Adwords

The campaign has been carried out for the period of one week. Basic setting for the campaign was to create an account on the website [adwords.google.com](http://adwords.google.com). The type of advertising campaign used was a combination of the network of partner websites of the company and Google search. This has ensured multiple displays of the advertisement and the possibility to reach the widest possible community. The advertisement has been displayed in search results, as well as in thematic texts on portals and blogs in Google network.

## 3. Results and Discussion

### 3.1. Advertising campaign on Facebook

The graph depicts the number of visits of the e-shop during active spreading of the advertising message through Facebook in the period 11.03.2016 - 20.3.2016.



**Figure 1: Development of the total visits from Facebook, Source: Google Analytics**

During ten days of the experiment, Facebook facilitated 605 real visits, i.e. real clicks on shared advertisement. 497 of these visitors were unique visitors and 108 returning visitors. In terms of effectiveness, the total number of people

who actually saw the advertisement, including those who clicked on it is also interesting. These data are available on Facebook statistics. The campaign conducted by us lasted 10 days while Facebook has made available detailed information about the progress of the campaign after two days of its launch, thus the information show the progress during 8 days.

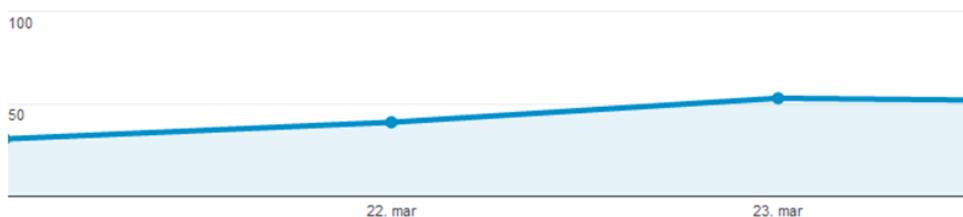
Date	Total Visitors from Facebook	Impressions of messages on Facebook
11.3.2016	25	-
12.3.2016	121	-
13.3.2016	63	1,686
14.3.2016	90	3,189
15.3.2016	83	2,496
16.3.2016	32	1,824
17.3.2016	88	1,289
18.3.2016	34	4,228
19.3.2016	27	2,664
20.3.2016	42	3,818

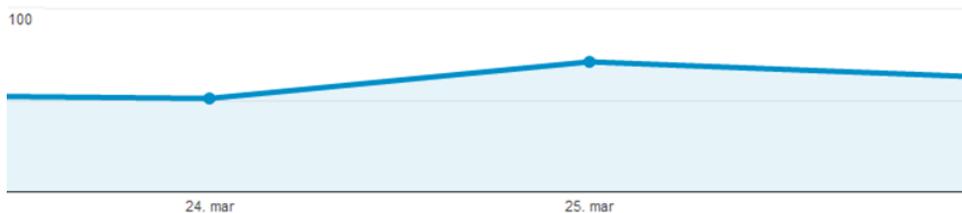
**Figure 2: Total visits/ Total impressions of messages from Facebook, Source: Google Analytics**

It can be seen from the graph and the table that the greatest interest of the shared community, which has not changed during the experiment, has been recorded on the second day; after that the effectiveness of the advertisements has had a downward trend. The total number of 21203 Facebook users has been reached by the advertising message; of them 605 people - Facebook users - actually clicked on the link of the e-shop during the experiment.

### 3.2. Advertising campaign through Google Adwords

Google Adwords campaign attracted 309 visitors in the period 21.3.2016 - 26.3.2016 out of 85,512 views in the following order.





**Figure 3: Development of the total visits from Google Adwords, Source: Google Analytics**

Constant growth in the number of clicks and views is related to the gradual increase of the advertising potential. Each keyword which leads to an ad display has a quality score assigned by Google Adwords. According to Google, higher quality score may lead to lower prices and higher position of the advertisement. It is different with each keyword and it is constantly revised based on updated information. Quality Score is calculated every time the search launches the advertisement. The calculation takes into account a number of different things associated with the account, such as:

- how often the keyword and the displayed address lead to clicking on the ad,
- account history, i.e. the total clickthrough rate of all advertisements and keywords in the account,
- landing page quality, its relevance, transparency and navigation on the site,
- relevance of the ad keyword and the search for the customer
- performance of advertisements on the sites

Keywords quality score is therefore also dependent on current demand for that product. The number of real views of the advertisement was in the second experiment of this analysis focused on PPC advertising measured by Google Analytics tool. The values are outlined in the following table:

Date	Total Visitors from Google Adwords	Impressions of messages via Google Adwords
21.3.2016	21	8,680
22.3.2016	39	6,025
23.3.2016	56	10,927
24.3.2016	53	19,040
25.3.2016	75	30,970
26.3.2016	65	9,789

**Figure 4: Total visits/ Impressions of messages via Google Adwords, Source: Google Analytics**

### 3.3. Comparison of the effectiveness of performed promotional campaigns

The clickthrough rate of both campaigns has been calculated based on the number of views and the subsequent clickthrough. The hypothesis H0 within the analysis was formulated as follows: "The effectiveness of advertising campaigns as measured by the ratio of views and clicks on the advertisement on Facebook and in Google Adwords is not statistically different", while the H1 was formulated as: "The effectiveness of advertising campaigns as measured by the ratio of views and clicks on the advertisement on Facebook and in Google Adwords is statistically different". The verification of the hypothesis was made through Wilcoxon signed rank test, also known as the Mann-Whitney U-test. It tests the hypothesis of the equality of distribution functions of both layouts.

H0:  $\Phi(x) = \Phi(y)$  or the equality of medians H0:  $x0.50 = y0.50$

against the alternative of their inequality H1:  $\Phi(x) \neq \Phi(y)$ , i.e. H1 :  $x0.50 \neq y0.50$ .

X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>	X <sub>7</sub>	X <sub>8</sub>
0.037367	0.028143	0.033253	0.017544	0.06827	0.008042	0.010135	0.011001

Figure 5: Value of clickthrough rate of Facebook campaign, Source: own processing

Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>3</sub>	Y <sub>4</sub>	Y <sub>5</sub>	Y <sub>6</sub>
0.002419	0.006473	0.005125	0.002784	0.002422	0.00664

Figure 6: Value of clickthrough rate of Google Adwords campaign, Source: own processing

X <sub>5</sub>	X <sub>1</sub>	X <sub>3</sub>	X <sub>2</sub>	X <sub>4</sub>	X <sub>8</sub>	X <sub>7</sub>	X <sub>6</sub>	Y <sub>6</sub>	Y <sub>2</sub>	Y <sub>3</sub>	Y <sub>4</sub>	Y <sub>5</sub>	Y <sub>1</sub>
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Figure 7: sorted values, Source: own processing

$$T_1(\sum X_n) = 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 = 36$$

$$T_2(\sum Y_n) = 9 + 10 + 11 + 12 + 13 + 14 = 69$$

$$m = 8, n = 6$$

$$U_1 = mn + \frac{m(m+1)}{2} \cdot T_1 = 8 \cdot 6 + \frac{8(8+1)}{2} \cdot 36 = 48$$

$$U_2 = mn + \frac{n(n+1)}{2} \cdot T_2 = 8 \cdot 6 + \frac{6(6+1)}{2} \cdot 69 = 0$$

=> Critical value for  $\alpha = 0.05$ ,  $n = 6$  and  $m = 8$  is **8**.

$\min(48,0) = 0; 0 \ngtr 8 \Rightarrow$  Hypothesis  $H_0$  is not rejected. We may conclude with a 5% risk of error that the effectiveness of both campaigns is statistically equal.

#### 4. Summary

The awareness of Slovak entrepreneurs of how to use advertising campaigns on the Internet has recently increased, mainly due to high promotion of Google services. Facebook users have the possibility to use advertising space, but as this type of advertising is relatively new in Slovakia, the companies use it to a lesser extent and on an experimental basis rather than with prepared marketing campaign. Google Adwords campaigns allow you to reach people on the basis of specified criteria immediately after the establishment of a company and the creation of its website. Reaching potential customers is possible without any necessary additional activities. Payment per click is more preferable than payment for ad display, but as pointed out in this paper, the products offered for lower prices may not necessarily be effective and convenient when promoted by Google Adwords. The effectiveness and power of Google Adwords grows with the potential gain of one customer. Social network Facebook.com is constantly innovating and extending among people, as evidenced by an increasing penetration of mobile users. In principle simple operation of the network based on sharing posts and commenting on them or clicking "like" enables with a little creativity to launch a massive viral campaign with great effect. The strength of Facebook advertising potential lies in the understanding of the mindset of its users and the subsequent use of this understanding. This type of viral effect is far more effective and, at the same time less expensive than advertisements displayed on the side of the page on the PPC platform. Both types of advertising campaigns are considered modern and efficient. While Google Adwords campaigns work on a clearly defined principle, social networks because of their functionality and idea always create space for new and innovative ideas. This in particular makes it possible to create a new style of advertising campaign and gives potential to invent new, efficient, and unprecedented campaign types. Facebook applications are only one of the possible uses of the advertising potential of the network which has not yet reached its maximum possibilities.

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