

**ANALYSIS OF EFFICIENCY OF USING THE WEB-SITE****Ivanov S.M., Shevchenko M.S.***Zaporizhzhia National University, Ukraine,  
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**Key words:**

web-site, conversion, attendance, conversion traffic.

The article proposes a set of techniques, the complex application, which allows us to assess the activity of the company “Comfy” as a web resource, as well as a commercial organization. The relevance of the use of websites in Ukraine and the need for their integrated assessment, calculation of the effectiveness of the website have been analyzed. The achievements of scientists in such scientific directions as trading activity in conditions of changes of mechanisms and technologies of its organization, theoretical and applied aspects of electronic retail have been considered. The issue of concrete methods for assessing the effectiveness of organizations engaged in e-commerce on the Internet is still pending. The dynamic of the target audience of the website has been analyzed based on the statistics of the site of the company “Comfy.” The geography of site visitors has been reviewed based on the data provided by Google Analytics. It has been concluded that 93% of visitors are from Ukraine and the table of distribution of geography of Ukrainian site visitors is presented. The set of statistics services has been analysed, with which one can analyse and evaluate the success of search promotion, contextual advertising and other ways of promoting the site on the Internet for the company “Comfy.” For in-depth analysis of the Comfy website, Google Analytics has been used for determining the following statistics: the total number of site visits for a particular period, the referral source; pages visited by users; the keywords by which they found the site; the time of their stay on the resource; depth of view. The purpose of the promotion of a specific site and the generated Google Analytics reports have been analysed. The conversion rate and its impact on sales, with constant attendance of the site, have been analyzed. The conclusion has been made regarding the attitude of visitors and buyers. The study of the main sequences of conversions on the Comfy website is presented. An estimate was made of the profitability of a website by calculating the profitability of costs and sales by months in 2018. The advantages and disadvantages of the website “Comfy” have been highlighted, namely: the site has satisfactory quotes and good positions in search queries. The average number of site views per day is more than a thousand, which is a sufficient level of performance. The analysis of the website “Comfy” has found out that the main page of the site does not contain a large amount of text, and, in terms of ease of use of the site, the page is easy to understand for perception, and one of the main disadvantages of the site in terms of both search engine optimization and usability is the slow loading of most of the pages on the site.

**АНАЛІЗ ЕФЕКТИВНОСТІ ВИКОРИСТАННЯ ВЕБ-САЙТУ****Іванов С.М., Шевченко М.С.***Запорізький національний університет  
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веб-сайт, конверсія, відвідуваність, трафік переходів.

Запропоновано набір методик, комплексне застосування яких дає змогу отримати оцінку діяльності підприємства «Comfy» і як веб-ресурсу, і як комерційної організації. Проаналізовано актуальність застосування веб-сайтів в Україні та необхідність їх комплексного оцінювання, розрахунку ефективності веб-сайту. Розглянуто досягнення вчених в таких наукових напрямках, як торговельна діяльність в умовах змін механізмів та технологій її організації, теоретико-прикладні аспекти електронного ритейлу. Виділено невирішене питання щодо конкретних методів оцінки ефективності діяльності організацій, що займаються електронною торгівлею в мережі Інтернет. Проаналізовано динаміку цільової аудиторії веб-сайту, на основі статистичних даних сайту компанії «Comfy». Розглянута географія відвідувачів сайту на основі даних, наданих Google Analytics. Зроблено

висновок, що 93% відвідувачів – це аудиторія з України, та наведена таблиця розподілу географії українських відвідувачів сайту. Розглянуто множину сервісів статистики, за допомогою яких можна проаналізувати і оцінити успішність пошукового просування, контекстної реклами та інших способів розкрутки сайту в Інтернеті для компанії «Comfy». Для поглибленого аналізу веб-сайту «Comfy» використано Google Analytics, за допомогою якого визначена статистична інформація: загальна кількість переходів на сайт за певний період, джерело переходів; сторінки, які відвідували користувачі; ключові слова, за якими вони знайшли сайт; час їх перебування на ресурсі; глибину перегляду. Проаналізовано цілі просування конкретного сайту і за сформованими звітами Google Analytics. Проаналізовано показник конверсії та його вплив на продажі, при незмінній відвідуваності сайту. Зроблено висновок, щодо ставлення відвідувачів та покупців. Наведено основні послідовності конверсій веб-сайту «Comfy». Проведена оцінка рентабельності веб-сайту шляхом підрахунку рентабельності витрат і продажів за 2018 рік по місяцях. Виділено переваги і недоліки сайту компанії «Comfy», а саме: сайт має задовільні показники цитованості й гарні позиції в пошукових запитах. Середня кількість переглядів сайту на день складає понад тисячу, що є достатнім рівнем показника. За аналізом веб-сайту «Comfy» виявлено, що на головній сторінці немає великої кількості тексту, і, з точки зору зручності користування сайтом, сторінка легко зрозуміла для сприйняття, а одним з головних недоліків сайту з точки зору пошукової оптимізації, а також юзабіліті є повільне завантаження більшості сторінок сайту.

### Statement of the problem

The modern world exists in the conditions of revolutionary changes in the field of information provision of life, which transforms information technologies and communication systems into strategically important vital values. The process of globalization of mass communication systems and the Internet coverage of the information space prompts us to use these achievements of civilization in all types of activities. There is no such trend in the trade sphere as well. We are witnessing the emergence of the so-called “electronic economy”, which, first of all, sets a fundamentally new dimension and strategic direction of the development of the field of commodity circulation, forming a new infrastructure of the service system.

### Analysis of recent studies and publications

The problem of trade activity in the conditions of changes in the mechanisms and technologies of its organization was carried out by such scientists as V.V. Apopiy [1], L.O. Ligonenko [3], A.I.P. Mischuk [1] and many others.

The study of theoretical and applied aspects of electronic retailing provided in scientific works by I.T. Balabanov

[2], V.A. Pavlova [5], K.V. Polevich, N.L. Savitskaya [6] and others. However, published works do not completely cover the question of specific methods for assessing the effectiveness of organizations engaged in e-commerce on the Internet. Since the success of such organizations depends on many different factors, it is necessary to evaluate not only the financial efficiency of the enterprise based on the data from the accounting reports, but also the extent to which the store site is convenient for buyers, since it is the main and only source of customers.

### Objectives of the article

The purpose of this article is the analization of the effectiveness of using a website through the Google Analytics toolkit as an example of the Comfy website.

### The main material of the research

The target audience of the Comfy website is the key indicator that should be taken into account at virtually all stages of the web site’s operation: from design and creation to the further advancement of an already functioning web resource.

As for the site audience of Comfy, its majority is made up of men aged from 25 to 34 (Figure 1) [7].

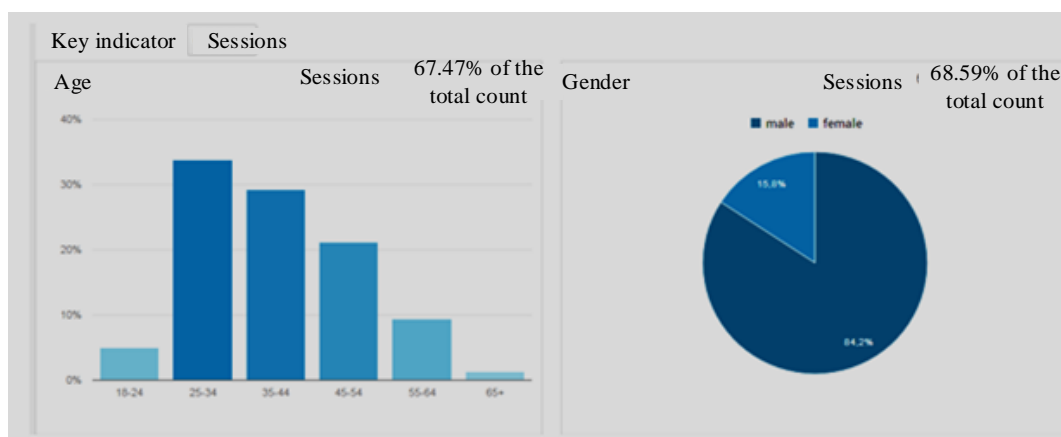


Fig. 1. The age and gender structure of the audience of Comfy’s website [8].

Many visitors are between the ages 35 and 44 and slightly less visitors aged from 45 to 54 years old. Thus, visitors aged from 25 to 54 years make up almost 94% of the entire audience of the site.

Referring to the visitors' geography, according to data provided by Google Analytics [8], we can conclude that 93% of visitors are from Ukraine. The geography of Ukrainian site visitors has been distributed as follows (Table 1) [8].

Table 1 - Geography of users of the web-site in Ukraine

Country	Visiting	Number of pages viewed per visit	Average time on site, min	New visiting %
Ivano-Frankivsk	38 457	5,6	00:04:00	32,05
Kiev	25 885	4,58	00:03:52	21,57
Lviv	6 976	4,13	00:04:03	5,81
Dnieper	5 382	3,29	00:03:28	4,48
Kharkiv	4 929	2,25	00:02:22	4,11
Odessa	4 408	3,41	00:03:57	3,67
Kherson	2 122	3,16	00:03:19	1,77
Zaporizhzhia	1 975	4,43	00:02:57	1,65
Poltava	1 760	2,25	00:05:32	1,47

Thus, the site is actively visited by users from Ivano-Frankivsk, Kiev and Lviv. They are more than half of all visitors from Ukraine. The site is actively visited by users from the Dnipro, Kharkiv, Odessa, Kherson and other regions.

There are many statistics services that can help you to analyse and evaluate the success of search engine promotion, contextual advertising and other ways to promote the website on the network for Comfy.

One of the most convenient, complete and, above all, free tools is Google Analytics. With its help, you can see not only the total number of referrals to the site for a certain period, but also the source of these conversions, pages visited by users, the key words by which they found the site, the time of their stay on the resource, depth of view and many other indicators that give comprehensive information about the progress [2, pp. 51].

Additionally, Google Analytics has a unique ability to customize the goals of moving a particular site and to receive pre-existing reports, which greatly simplifies the work of statistics and allows you to quickly adjust the promotion strategy. In essence, Google Analytics can provide all the necessary information that will allow you to evaluate the progress of the site on the Internet. Although there are other services that can also be used to collect the necessary data (Ahrefs, Semrush, Serpstat, etc.) [4, pp. 141].

One of the basic performance indicators of the Comfy website is the conversion and attendance. Conversion is a measure of the ratio of targeted users to the number of all visitors [1, p. 327]. Target action can be different. In the case of a website, this is most often the execution of an order.

Retrieving information about site visitors can be done using various web analytics services provided by search engines (Google Analytics, Yandex Metrics, etc.), or through server logs, which logs all information about user behaviour on the site. By installing its counters on the site, the data systems collect the necessary information to calculate the main statistical indicators of the web resource.

The increase of conversions leads to increased sales, even if traffic to the site remains unchanged. One can conclude that not all visitors are buyers at the first visit, even on the first day. Some of them ponder the purchase, look at the goods in other stores and much more.

The report below shows the major conversion funnels (Figure 2). Thus, the data in Figure 2 shows that the most popular way is the way that a user enters the site through a search engine, leaves the site and again returns to the site as a direct link through the address bar (or bookmark in the browser).

Channel Group	Conversion Path for Multiple Sequences	Conversion	Conversion value
1.	Free search > straight	118 (9,95 %)	79 398,00
2.	Straight x2	64 (5,40 %)	21 221,00
3.	Straight x3	52 (4,38 %)	17 448,00
4.	Free search > Straight x2	52 (4,38 %)	48 219,00
5.	Straight x4	33 (2,78 %)	25 685,00
6.	Free search > Straight x3	25 (2,11 %)	7 988,00
7.	Straight x6	22 (1,85 %)	10 527,00
8.	Email > Straight	16 (1,35 %)	6 906,00
9.	Straight x14	14 (1,18 %)	10 124,00
10.	Free search > Straight x4	14 (1,18 %)	1 320,00
11.	Email x2	13 (1,10 %)	440,00
12.	Straight x5	12 (1,01 %)	

Fig. 2. The ways of conversion

Source: Analytics from toolkit of Google Analytics [8]

There are listings and conversions from postal mail, followed by returning to the site with a direct link and making a purchase. However, transitions from other sites and through search advertising occupy distant places in this table. Probably they need to pay more attention.

Based on the data already obtained, it can be concluded that the direct channel of the visitors through the address bar has the greatest value. Below, Figure 3 shows the channel groups for multichannel sequences.

Channel group for multichannel sequences	Associated Conversions(AC)	Value of AC	Conversions by last click or direct action(ClClda)	Value of ClClda	Associated Conversions
1. Straight	897 (45,79 %)	301 691,00 (37,46 %)	1 123 (68,64 %)	464 924,00	0,80
2. Free search	487 (24,86 %)	242 109,00 (30,06 %)	278 (16,99 %)	90 765,00	1,75
3. Email	224 (11,43 %)	84 979,00 (10,55 %)	121 (7,40 %)	28 957,00	1,85
4. Transition	206 (10,52 %)	117 220,00 (14,56 %)	69 (4,22 %)	55 323,00	2,99
5. Search advertising	88 (4,49 %)	19 271,00 (2,39 %)	32 (1,96 %)	10 461,00	2,75
6. (other)	51 (2,60 %)	13 099,00 (1,63 %)	12 (0,73 %)	2 129,00	4,25
7. Social network	6 (0,31 %)	26 938,00 (3,35 %)	1 (0,06 %)	-	6,00

Fig. 3. Channel groups

Source: Analytics from toolkit of Google Analytics [8]

Consequently, the “Associated Conversions” column shows conversions where this channel is not the ending link in the chain of visits by the site’s user, but is ancillary. “Last Click Transformations” – this column stores information about those conversions in which this channel was the last before making a purchase.

The last column shows the coefficients – the closer the value to zero, the more often this channel is the last in the multichannel sequence. The larger the channel, the more often the channel plays an intermediate role. The closer to the unit, the greater the channel is in both cases.

One can conclude that the leader in the number of purchases is a direct channel, which is both final and auxiliary. Most customers first go to the site through a free search and then return to it directly. This explains the high position of the “Free Search” channel as well as its high rate. Conversions from the social network only prepare visitors for the purchase, and they rarely become extreme. It makes sense to focus more on contextual search ads.

Next, we will determine the usefulness of the visit of the user who made the transition to the company site from any other site (Figure 4).

Source	Sessions	Income	Transactions	Average order price	Transaction rate	Session value
	4 333 % of total 12,62 % (34 332)	124 824,00 % of total 19,13 % (652 258,00)	27 % of total 13,04 % (207)	4 623,11 Average 3 152,46 (46,65 %)	0,62 % Average 0,60 % (3,35 %)	28,81 Average 19,01 (51,56 %)
1. ria.com	1 (0,02 %)	1 138,00 (0,91 %)	1 (3,70 %)	1 138,00	100,00 %	1 138,00 #
2. adiso.com.ua	18 (0,42 %)	15 215,00 (12,19 %)	1 (3,70 %)	15 215,00	5,56 %	845,28 #
3. ukrainebazar.com	49 (1,13 %)	15 632,00 (12,52 %)	2 (7,41 %)	7 816,00	4,08 %	319,02 #
4. all.biz	31 (0,72 %)	4 849,00 (3,88 %)	1 (3,70 %)	4 849,00	3,23 %	156,42 #
5. obx.ua	520 (12,00 %)	31 832,00 (25,50 %)	2 (7,41 %)	15 916,00	0,38 %	61,22 #
6. skylots.org	503 (11,61 %)	15 470,00 (12,39 %)	2 (7,41 %)	7 735,00	0,40 %	30,76 #
7. OBYAVA.ua	374 (8,63 %)	10 797,00 (8,65 %)	4 (14,81 %)	2 699,25	1,07 %	28,87 #
8. prom.ua	773 (17,84 %)	21 701,00 (17,39 %)	6 (22,22 %)	3 616,83	0,78 %	28,07 #
9. place.ua	222 (5,12 %)	5 614,00 (4,50 %)	3 (11,11 %)	1 871,33	1,35 %	25,29 #
10. ukroeny.com.ua	49 (1,13 %)	606,00 (0,49 %)	1 (3,70 %)	606,00	2,04 %	12,37 #
11. bazar.ua	171 (3,95 %)	1 870,00 (1,50 %)	3 (11,11 %)	623,33	1,75 %	10,94 #

Fig. 4. Conversion Traffic

Source: Analytics from toolkit of Google Analytics [8]

Consequently, the above-mentioned Picture 4 shows the traffic of traffic, sorted by the value of the visit, which makes it possible to see the most profitable sources of traffic.

It is also worth noting that from the first source was made for all one transition that ended with the transaction, so it can be considered as an outflow in this table.

According to the data in Figure 5, only 15% of the visitors who placed the goods in the basket, have made

an order. 235 users leave the site at the stage of the purchase.

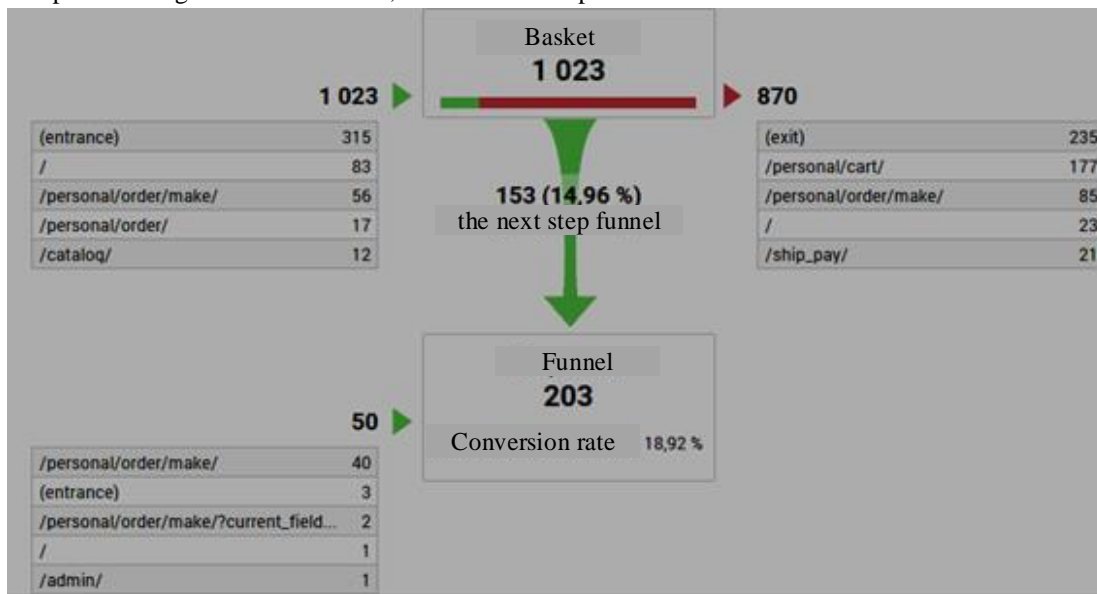


Fig. 5. Conversion funnel (per month)

Source: Analytics from toolkit of Google Analytics [8]

The reason for this may be the buyer’s desire to return to the purchase later, after some time, slow loading of the form and errors on the site, preventing the target action. 21 user goes to the shipping information page. This is one of the most common transitions. It is likely that on the ordering page it is not completely clear to a visitor, how delivery will be carried to his region. Therefore, it is desirable that, before the visitor hits a page with a basket, he has already been acquainted with the shipping information.

This can be done, for example, by placing a link to a shipping information page on any of the pages that you previously visited.

One of the key indicators of website performance is profitability. With this metric, you can evaluate the effectiveness of the site during its operation.

The profitability of sales shows the share of net profit in the organization's revenues (Formula 1). Profitability of sales is an indicator equal to the ratio of net profit from

sales to the amount of costs for production and sales, that is, to the cost [3, pp. 111]:

$$P_s = \frac{NP}{E} \times 100\%, \tag{1}$$

where NP - net profit of the company;  
E – the amount of expenses for production and sales of products.

This ratio shows the amount of profit from each hryvnia invested in the production and sale of goods.

Profitability of costs can be calculated for all products of the company, as well as for individual products and for certain types of expenses [3, p. 111]:

$$P_c = \frac{NP}{FS} \times 100\% \tag{2}$$

where SS - the full cost of goods sold.  
This ratio is used to calculate the profitability of a particular website.

The charts below represent the dynamics of sales and expense sales comfy for 2018 (Figure 6-7).

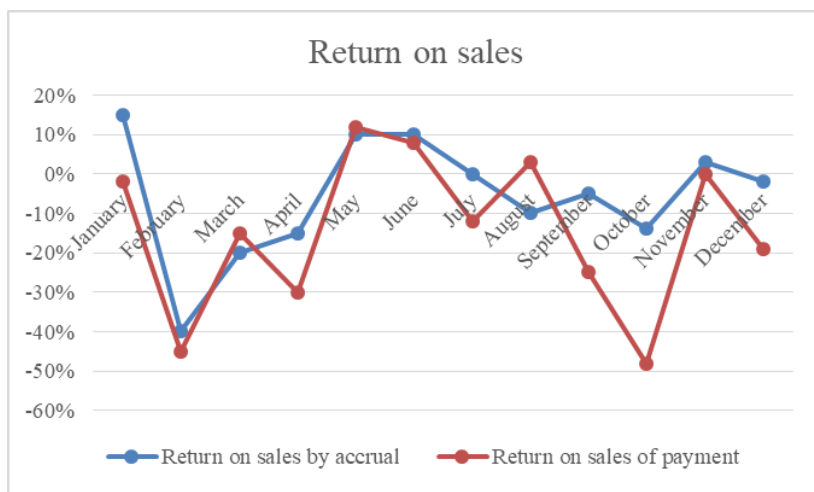


Fig. 6. Profitability of sales of Comfy

Source: Analytics from toolkit of Google Analytics [8]

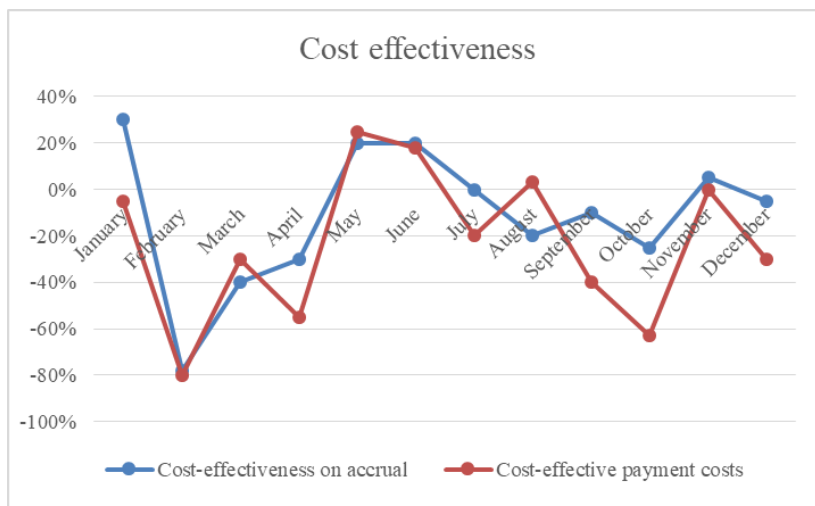


Fig. 7. Profitability of costs of Comfy company

Source: Analytics from toolkit of Google Analytics [8]

Therefore, based on the constructed charts, one can conclude that both the profitability of the costs and the profitability of sales increase in the winter and summer periods.

The evaluation of the effectiveness of an advertising campaign must be carried out both during its planning and during its implementation. By placing advertisements for their products on paid traffic sources, the company’s management is primarily interested in getting the most out of the money invested in advertising. In order to assess the effectiveness of an advertising campaign, the financial indicator ROI is used – the rate of profitability, which reflects the profit from the funds invested in the advertising campaign.

In general, the formula for determining the ROI is the following:

$$ROI = \frac{R-I}{I} \times 100\%, \tag{3}$$

$$R = p \times Q, \tag{4}$$

where R – total income;

I – advertising budget;

P – price of goods;

Q – sales volume [3, c. 114].

The analysis of the effectiveness of major Comfy advertising campaigns was based on data from Google Analytics between January 1 and December 31, 2018. By the source [3], a channel can be considered effective if the ROI > 100%. That is, the return on each hryvnia spent on the campaign was more than 1 hryvnia.

Based on the calculations (Table 2), it can be concluded that only Prom.ua channels (UAH 13 for 1 UAH of invested funds) and Obyava.ua (UAH 6.8 per hryvnia) are cost effective.

Table 2 – Indexes of advertising channels

Index	Advertising channel		
	prom.ua	obyava.ua	ria.com
Visiting	21490	7408	3783
Transactions	42	28	15
Conversion, %	0,20	0,38	0,40
Average order value, UAH	2167	3102	2712
Revenue, UAH.	90998	86863	40678
Attachments, UAH	6447	11112	44000
Cash flow, UAH	84551	75751	-3322
ROI, %	13,11	6,82	-8

It’s worth mentioning that the least effective channel (ria.com) has the highest conversion rate. This is confirmed by the fact that in the case of a website, this performance indicator is not the most important.

This method of evaluating the effectiveness of advertising campaigns is the most popular because of its simplicity. However, it has its drawbacks. So, in this method, it is assumed that the client went to the site of the advertising channel, switched from it to the link to

the company’s website and made the purchase of the product. But in reality, everything is a little more complicated. In the terminology of Google Analytics, there are such concepts as multichannel sequences. They represent the chain of channels, from which new visitors come to the site.

The multichannel sequence may look like this: a visitor logs in to the site through a free search engine search, quits the site, then sees the ad on the social network,

moves it back to the company's site, and this time executes the transaction. In this situation, the customer makes a purchase only from the second entry to the site.

This sequence is much simplified. There are also situations when a person logs on to the site and 30 times before making a purchase. It is worth noting the fact that the same traffic channel can be repeated within one sequence. For example, a user enters the transaction several times in a row through a direct link to the site by entering an address in the address bar of the browser.

Returning to the assessment of the effectiveness of advertising site, we can conclude that the above method based on the calculation of ROI does not fully reflect the effectiveness of individual campaigns. The problem is that in this method only the last channel in the multichannel sequence is taken into account.

For example, if a user came to the store from an advertising channel whose effectiveness is evaluated, and then left the site, deciding to log in later, and eventually entered the site for direct access through the browser's address bar and made a purchase, then the contribution of the estimated channel in this case would not have been taken into account.

### Conclusions

Summarizing the analysis of the website, it can be determined that the analysis of the Comfy website, with the help of Google Analytics, has been conducted according to the data provided by web analytics. Reports submitted by the Google Analytics web analytics system

have been reviewed. The analysis identified the most profitable traffic sources, popular conversion channels and conversion paths, considered the funnel conversion, goals, reasons for which the conversion rate has a specific value and the ability to increase this value.

An assessment of the site's profitability has been made by calculating the profitability of costs and sales by months in 2018. The results of the calculations have been illustrated in the graphs. Based on the received dynamics, it has been concluded that the profitability of expenses and profitability of sales increase in the winter and summer periods.

Also, we have highlighted the advantages and disadvantages of the Comfy website, namely: the site has satisfactory quotes and good positions in search queries. The average number of site views per day is over a thousand, which is a good indicator. At the moment, about 17 thousand web pages and more than a thousand domains are sent to the site, which is quite a lot. The website has some social activity. This is confirmed by the presence of an official group on the social network "Instagram", "Facebook."

On the home page of the site there is not much text, and, from the point of view of the convenience of using the site, the page is easy to understand for perception. One of the main disadvantages of the site in terms of both search engine optimization and usability is the slow loading of most of the pages on the site.

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