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EFFICIENCY OF DIGITAL COMMUNICATIONS IN THE LOGISTICS BUSINESS: EVALUATION INDICATORS

Valeriya Kolosok, Yulianna Lazarevska *"Efficiency of digital communications in the logistics business: evaluation indicators"*. The article presents the results of the analysis of communication management practice of modern logistics companies and describes the most popular and used tools of digital communications. The expediency of using different approaches to assess the effectiveness of digital communications in logistics business. The possibility of evaluating the effectiveness of sites, social networking pages, chatbots and mobile applications is substantiated. The advantages and limitations of each of these tools for use in certain business processes to increase the level of service and customer satisfaction of the logistics business are highlighted. The importance of communications in the logistics business for the effectiveness of the company with customers, in order to increase its competitiveness.

Keywords: digital communications, communications management, logistics, business processes, efficiency

Валерія Колосок, Юліанна Лазарєвська. «Ефективність digital комунікацій в логістичному бізнесі: показники оцінки». У статті представлено результати аналізу практики комунікаційного менеджменту сучасних логістичних компаній та схарактеризовано найбільш затребувані та використовувані інструменти digital комунікацій. Розглянуто доцільність використання різних підходів для оцінки ефективності digital комунікацій логістичного бізнесу. Для розвитку методичного підходу оцінки ефективності комунікаційного менеджменту було узагальнено інструменти digital комунікацій, систематизовано існуючі метрики оцінки комунікаційних інструментів, визначено показники KPI конкретних каналів та інструментів комунікаційного менеджменту. Обґрунтовано можливість оцінки ефективності сайтів, сторінок соціальних мереж, чат – ботів та мобільних додатків. Виокремлено переваги та обмеження кожного з цих інструментів для використання у певних бізнес процесах для підвищення рівня обслуговування та задоволеності клієнтів логістичного бізнесу. Обґрунтовано значення комунікацій у логістичному

бізнесі для ефективності роботи компанії із клієнтами, з метою зростання її конкурентоспроможності.

Ключові слова: digital комунікації, менеджмент комунікацій, логістика, бізнес – процеси, ефективність.

Валерия Колосок, Юлианна Лазаревская. «Эффективность digital коммуникаций в логистическом бизнесе: показатели оценки». В статье представлены результаты анализа практики коммуникационного менеджмента современных логистических компаний и охарактеризованы наиболее востребованные и используемые инструменты digital коммуникаций. Рассмотрена целесообразность использования различных подходов для оценки эффективности digital коммуникаций логистического бизнеса. Для развития методического подхода оценки эффективности коммуникационного менеджмента были обобщены инструменты digital коммуникаций, систематизированы существующие метрики оценки коммуникационных инструментов, определены показатели KPI конкретных каналов и инструментов коммуникационного менеджмента. Обоснована возможность оценки эффективности сайтов, страниц социальных сетей, чат - ботов и мобильных приложений. Выделены преимущества и ограничения каждого из этих инструментов для использования в определенных бизнес процессах для повышения уровня обслуживания и удовлетворенности клиентов логистического бизнеса. Обосновано значение коммуникаций в логистическом бизнесе для эффективности работы компании с клиентами, с целью увеличения ее конкурентоспособности.

Ключевые слова: digital коммуникации, менеджмент коммуникаций, логистика, бизнес - процессы, эффективность.

Introduction. Communications in the logistics business, in today's digital economy, play an important role in the efficiency of the company, both with customers and in its internal business processes. The development of Internet technologies has created new channels of communication, which are gaining more and more popularity and importance due to the simplification of access, unlimited communication and the simultaneous introduction of new digital technologies in management [3]. However, new communication channels are not only new ways and tools of interaction with various strata of the business community, but also new metrics and indicators for assessing the effectiveness of communication management.

Internet services allow the collection of data and metrics on many indicators using web analytics services, such as Google Analytics, not only in digital values and graphical representation, but also in different modes of analytics. This significantly expands the possibilities of methods for analyzing the effectiveness of business process

management and the feasibility of using digital communications [5, 22].

Today communications in the Internet environment are actively developed. Therefore this area is actively studied by many national and foreign scientists such as F. Barden, E. Van Bommel, O. Verkhovtseva, A. Voychak, O. Garafonova, O. Kayode, L. Kapustina, I. Kiriya, I. Mann, I. Mosunov, G. Ostapenko, O. Ptashchenko, B. Rebhen and others. However, the points of digital communication tools development and efficiency of their use in the logistics business are still at the initial stage and require careful research.

Goals and objectives of the study. The purpose of the presented research is to supplement the methodological approach to assessing the effectiveness of modern logistics companies' communication management. To achieve this goal, based on the analysis of the practice of logistics companies, it was possible to generalize the tools of digital communications. In addition, the existing metrics of communication tools evaluation were systematized. The expediency of their use for KPI

communication strategy was determined, too.

Presenting main material.

Communications management of modern logistics companies actively uses digital tools, because it is the key to business competitiveness in today's globalization and digitalization of the economy. In the study of the digital communications effectiveness in modern logistics business, we analyzed the digital communications experience of various scales and profiles logistics companies – both global universal logistics operators (Maersk, CMA CGM) [12, 13] and national specialized logistics operators (TIS, Nova Poshta) [14].

The analysis of communication of each company was carried out in several aspects. First, communication as a social process requires a separate special approach to defining and measuring effectiveness. Thus, the social effectiveness of communication will be defined as the ratio of the achieved result and the pre-planned goal of communication, according to the approach proposed by Vasilyk M.A. in the work "Fundamentals of communication theory". In addition, according to general approaches to evaluating the effectiveness of methods, the study considered the feasibility of using three main evaluation methods. According to the classical approach, efficiency indicators are characterized by the ability to give a result per unit cost to achieve it.

The first approach defines efficiency as the result / cost ratio. Therefore, the effectiveness of communication can be understood as the ratio of the result obtained from the communication process to the cost of obtaining it. Thus, the financial or commercial efficiency of communication is defined as the ratio of the growth of any indicator obtained as a result of communication acts to the cost of their implementation.

According to the second approach (the result – the purpose) any quantitative, but not financial indicator reached as a result of communication is defined. The third approach determines the effectiveness

through any qualitative indicator that characterizes the achievement of the goal of communication, or the degree of performance of its functions [4].

To assess the effectiveness of Internet communications in logistics in the study, it is proposed to use special KPIs (Key Performance Indicators). Thus, based on KPI data, it is possible to analyze the effectiveness of communication channels, evaluate the results of a communication tool and the degree of achievement of the goals set before the communication channel in accordance with the overall communication strategy. Similarly, the analysis of efficiency indicators makes it possible to adjust the selected plans and budget of the communication strategy of the logistics company [11, 21].

KPIs can be strategic – indicators of aggregate values; analytical, which allow you to assess trends and compare indicators over periods; operational, allowing to control indicators in real time.

The peculiarity of KPI is that for each of the tools of digital communication there is a huge number of efficiency metrics, but they should be carefully selected to assess the effectiveness of the logistics business. In the choice of KPI it is necessary to focus on the strategic goals of a particular logistics business.

For logistics business focused on work with digital communication, we highlight the main goals that affect efficiency, namely – market share, which is characterized by company recognition, audience size and participation of this audience in active business processes of the company. Also one of the main can be called the purpose of any logistics digging revenue, which is determined by conversion through potential customers and closed transactions. Among another strategic goal is customer satisfaction, which can be measured by dedication, commitment to a particular company [9, 15].

The most popular digital tools for interaction with customers among the analyzed logistics companies are sites, mobile

applications, pages in global social networks (Facebook, Twitter) [17, 18, 19] and regional social networks (Viber, Telegram), and chatbots on social or website pages.

All analyzed logistics companies have a website [12, 13, 14] which provides visitors with complete information about the company, services, work schedule and more [6]. To assess the effectiveness of the site as a tool of communication strategy, we can identify the following generalized KPIs, obtained in standard analytical packages of site maintenance:

- Total traffic – the total number of visitors to the site for a certain period of time, this indicator is quite generalized, but it is convenient to use in relation to a certain segment of the audience or source of traffic.

- Depth of view – characterizes the factor of customer behavior on the site. The average number of page views per visit estimates browsing depth. This indicator affects the position of the site when issuing search engine results, so the higher the depth of the page, the higher the position occupied by the site.

- Cost per lead (CPL) – lead is an important user in a particular or all communities who has expressed an interest in the service provided on the company's website. The cost of lead can be calculated as the ratio of the cost of marketing activity to the number of leads received. $CPL = \text{marketing costs} / \text{number of leads}$.

- Conversion Rate (CR) – this indicator shows the number of visits to the site completed by the target action (such as registration, or purchase of a service or ordering a service). The conversion rate helps you evaluate how well your chosen channel and site are working. Formula for calculating the conversion rate: $CR = (\text{number of actions} / \text{number of site visits}) * 100\%$.

- Bounce Rate (BR) – the rate shows the number of users who left the site after viewing only one page. This indicator may indicate that the site does not match the search query or has a user-friendly navigation. This indicator is calculated by the formula: $BR =$

$(\text{number of failures} / \text{number of site visits}) * 100\%$.

Let us move on to assess the effectiveness of the automated communicator – chatbot. Today, many logistics companies use chatbots to communicate with customers, it is much cheaper than creating applications for customers, in addition, fully automates the share of a particular process of communication with the customer. To qualitatively assess the effectiveness of chatbots, three categories of KPIs are used, namely data on business tasks for which a chatbot is used, metrics that reflect the demand for the bot and metrics to assess the effectiveness of dialogues in chatbots [20, 23].

The following metrics are in the category of efficiency of solving business problems of KPI:

- Reducing the load of the call center – the metric determines how successful the call center was, which is the main task of implementing chatbots in the logistics business.

- Purchase conversion – the share of visitors using the chatbot who purchased the service.

- CRM growth – helps to estimate how many chatbot users first met the company.

- Increasing the number of brand mentions.

The following metrics as KPI estimating of chatbot demanding are used:

- Number of users – shows how powerfully users use this communication channel.

- Involved users – users who at least once have contacted with the bot.

- Active users – the metric shows the usefulness of the bot, determines the number of users who have contacted with the bot.

- Repeat users – the metric shows that the user regularly uses the bot to communicate with the company.

- Number of messages read – the metric shows how interesting user content is sent through this communication channel

KPI effectiveness of dialogues can be assessed using the following metrics:

- Average session duration – depending on how fast the bot is able to respond to the client's request.

- Error rate – how correctly the robot perceives requests.

Most logistics companies, both global and regional, are actively developing their communication channels in the Internet environment have made appropriate investments in IT and not only use chatbots, but also created special mobile applications that meet the company's goals in meeting the interests and needs of customers. Let us define what KPIs are used for an estimation of mobile applications work [2, 7].

The simplest and at the same time popular metric in assessing the effectiveness of mobile applications is the number of downloads (App Installs), but this indicator is not effective enough, because downloading the program does not mean that the user will use it [1]. The next metric is the cost of the application one installation, CPI (Cost per Install), although if the program is installed but not used, this does not allow you to properly assess the effectiveness of this indicator.

One of the important financial indicators of the mobile application effectiveness is the revenue per user RPU (Revenue per User). This indicator is calculated as the ratio of total revenue from the purchase of goods or services through the application for a certain period to the total number of users. Another popular metric is the lifetime value of LTV (Lifetime Value) shows the total profit of the company, received from one client for all the time working with him or her.

Another equally important metric is the level of user retention in the application (Retention Rate), which shows customer satisfaction and how well the application develops. The Conversion Rate shows that the user of the application has become a client of the company. This is the main goal in internet marketing. Session Length of the mobile application use shows how well the application meets the needs of the user. A high session duration combined with a low

conversion rate may indicate that the program does not meet customer requirements.

Logistics companies that promote themselves in the Internet environment has increasingly begun to use social networks, creating their own pages in these cells. This allows them to increase the level of the company visibility, the level of the company's image, as well as allows one to form a community of supporters, followers and customers. The peculiarity of social networks as a communication business tool is that they offer built-in metrics for the effectiveness of the page's interaction with the audience [8]. Therefore, the metrics for assessing the effectiveness of social networks can be divided into the following categories:

- Metrics for user dynamics assessing.
- Audience feedback metrics.
- Metrics for the effectiveness of SMM management evaluating.
- Metrics for traffic and conversions estimating [16].

Metrics for assessing the dynamics of subscribers. The number of followers is not the final indicator, but the number of unfollowers shows how much business content is interesting to the user, and how well the communication strategy is chosen to promote the company on social networks. The following indicator from this category, the rate of the community audience (AGR, Audience Growth Rate) is calculated by the ratio:

$$AGR = (\text{number of new users} / \text{total number of users}) * 100\%$$

If one changes the formula and substitutes the value of the net increase in the numerator – the difference between the number of new users and the number left the group, one can assess the interest of the audience, the relevance of posts and advertising effectiveness, if it is connected. The next indicator is Reach. It shows the number of people who have been in contact with community posts at least once.

Next, we move on to the next group of metrics – the evaluation of user feedback. This

category is about metrics that reflect user response. The simplest and most popular of them are tags of interest – likes, comments, signs of loyalty – reposts / shares. The deeper metrics of this category include the following:

The Love Rate (LR) is determined by the number of likes in terms of audience size and is calculated by the Likes / Followers * ratio of 100%.

AR, Amplification Rate is synonymous with growth, is a ratio of Shares / Posts (number of posts) * 100%. If the AR is high, it means that we get free coverage on social networks, and this reduces the cost of attracting users. To summarize the number of user interest tags (likes, comments and reposts), one can use the Engagement Rate, EG indicator, defined as the sum: Likes + Comments + Shares. However, this figure can be calculated using another formula: ER = (sum of all involved / number of users) * 100%.

The reaction of users to the business content of the company is not always positive, negative reactions must also be taken into account to assess the quality of feedback from the audience. The indicator of negative reactions (NF, Negative Feedback) is used to do this.

In the category of metrics used by SMM experts the following ones are distinguished:

PR, Post Rate Generation – shows the number of posts posted in the community during the certain period.

CR, Content Rate – shows the amount of content created during the period reported.

A more informative metric for evaluating communication with the user is the metric so called the average RT, Response Time that shows the time for which the administration responds to messages from the audience. Today this is a very important indicator of the company's communication with the customer, ideally the average response time should not exceed a day, then the customer will be considered satisfied with the communication with the brand.

The metric that estimates the proportion of questions answered by users is called the RR, Response Rate and is calculated by the

formula: (number of answers / number of questions) * 100%.

The metrics used to estimate traffic and conversions on social networks are the same as those used on sites [10].

Conclusions. Evaluation of the communications effectiveness is the most important criterion for determining the quality of links and relationships built between the logistics company and the customer. The management of digital communications in the logistics business should be based on appropriate adequate, measurable and accurate performance evaluation criteria.

1. It has been proven that to communicate effectively with customers, logistics companies of all levels and scales must make extensive using of digital tools, namely websites, chatbots, mobile applications and social networks / communities.

2. The effectiveness of logistics company's communication management can be assessed on the basis of quantitative and / or qualitative indicators provided in standard packages of Internet analytics. Performance evaluation should be conducted in a strategic and operational context.

3. To assess the effectiveness of communication management in the logistics business, it is advisable to use key indicators of the effectiveness of KPI. The set of these indicators may differ for each channel, and the composition of this set depends on the strategic goals of the company.

4. It is suggested to use such main business goals of a logistics company as market share, income generation through a certain channel, customer satisfaction and customer loyalty to form generalized KPIs of communications management in the logistics business.

5. As a partial KPI, it is proposed to use such a set of indicators as the amount of total traffic, the cost of lead, the conversion rate to assess the effectiveness of the logistics company's website and its pages on social networks. When drawing conclusions about

the effectiveness of communication tools, it is necessary to keep in mind that the company's website is often an information business card, and with the help of social media pages, logistics companies have direct communication with their audience, and the ability to receive feedback.

6. To assess the communication potential of mobile applications and chatbots, it is also proposed to use a common set of KPIs namely

the duration of the customer service session, the number of completed transactions, average customer satisfaction ratings, etc.

7. It is substantiated that the most important KPIs for assessing the effectiveness of communication management are those that allow assessing the quality of the logistics company digital channels interaction with its customers, including feedback quality and customer's loyalty and consistency.

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