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## APPLICATION OF BEACON TECHNOLOGY IN OMNICHANNEL MARKETING: EUROPEAN EXPERIENCE, PROSPECTS FOR UKRAINE

*The article presents key results of the European experience of using beacon technology in omnichannel marketing in the field of commerce with the aim of identifying opportunities and prospects for using this experience in Ukraine. The difference between multi-channel and omni-channel marketing is defined. For the development of the main directions of digital technologies in marketing, it is necessary to update the components included in the structure of integrated marketing communications. It has been established that under the influence of modern Internet technologies, it is necessary to redefine the various points of contact with customers, which affect the attraction of consumers and profit from the use of various omnichannels.*

*Developing the practical aspects of the omnichannel retail strategy proposed by Y. Melantiou, it is important to consider that effective omnichannel marketing and strategic initiatives allow marketers to attract new customers and increase the level of brand loyalty. The essence, advantages and disadvantages of beacon technology are presented, the European experience of its use in the marketing activities of commercial enterprises is given, and the potential possibilities of using this technology in Ukraine are considered.*

*The purpose of the article is to assess the level of application of beacon technologies in omnichannel marketing by retailers in order to develop a recommendation base necessary for the further effective development of omnichannel marketing in Ukraine. A scheme of interaction of beacon technologies within the framework of an omnichannel marketing strategy is proposed. A comparative analysis of multichannel and omnichannel marketing strategies is performed. Conclusions have been drawn regarding the application of omnichannel marketing in European countries and the possibilities of integrating beacon technologies into the system of omnichannel marketing in Ukraine have been determined.*

*Keywords: beacon technologies, omnichannel marketing, marketing trends, digitization, digital marketing, Internet marketing, marketing activity, marketing strategy, marketing communications, e-commerce, consumer behavior.*

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## ЗАСТОСУВАННЯ ТЕХНОЛОГІЇ БЕАСОН В ОМНІКАНАЛЬНОМУ МАРКЕТИНГУ: ЄВРОПЕЙСЬКИЙ ДОСВІД, ПЕРСПЕКТИВИ ДЛЯ УКРАЇНИ

*У статті представлені ключові результати європейського досвіду застосування технології beason у омніканальному маркетингу у сфері комерції з метою виявлення можливостей та перспектив використання цього досвіду в Україні. Визначено відмінності між мультиканальним та омніканальним маркетингом. Для розвитку основних напрямів цифрових технологій в маркетингу потрібно актуалізувати компоненти, що входять до структури інтегрованих маркетингових комунікацій. Встановлено, що під впливом сучасних інтернет-технологій необхідно знову визначити розрізнені точки дотику з клієнтами, які впливають на залучення споживачів та отримання прибутку від використання різних омніканалів.*

*Розвиваючи практичні аспекти омніканальної роздрібною стратегії, запропонованої Ю. Мелантіу, важливо враховувати, що ефективний омніканальний маркетинг та стратегічні ініціативи дозволяють маркетологам залучати нових клієнтів та підвищувати рівень лояльності до бренду. Представлено сутність, переваги та недоліки beason-технології, наведено європейський досвід її використання у маркетинговій діяльності комерційних підприємств, а також розглянуто потенційні можливості використання цієї технології в Україні.*

*Метою статті є оцінка рівня застосування beason-технологій у омніканальному маркетингу роздрібними продавцями для розробки рекомендаційної бази, необхідної для подальшого ефективного розвитку омніканального маркетингу в Україні. Запропоновано схему взаємодії beason-технологій у рамках омніканальної маркетингової стратегії. Виконано порівняльний аналіз мультиканальної та омніканальної маркетингових стратегій. Зроблено висновки щодо застосування омніканального маркетингу в європейських країнах та визначено можливості інтеграції beason-технологій у систему омніканального маркетингу в Україні.*

*Ключові слова: beason-технології, омніканальний маркетинг, тренди маркетингу, діджиталізація цифровий маркетинг, інтернет-маркетинг, маркетингова діяльність, маркетингова стратегія, маркетингові комунікації, електронна комерція, поведінка споживача.*

In today's crisis conditions, both offline and online businesses continue to actively develop, adapting to complex economic realities. Entrepreneurs are constantly looking for new strategies and business practices that allow them to improve their competitive positions. For example, while adapting their business models, retailers are simultaneously developing ways to sell different types of goods, including through the Internet. As a result, multichannel, cross-channel and omnichannel sellers have emerged.

The main difference between these concepts is the mixing of online and offline sales channels. In multi-channel mode, both channels exist at the same time, but cannot be combined when paying for a purchase. The cross-channel concept allows customers to switch channels during a transaction, such as making a purchase online but picking up the product in a retail store. In these variants, online and offline channels have a clear technical and organizational separation, while omnichannel unites both channels on the basis of a central infrastructure, which

allows a complete study of the customer's purchase process. Customers can use their smartphones to easily switch between online and offline channels to, for example, check prices online or get more detailed information about a product before purchasing [1].

Today, more and more new technologies are appearing in the world, which can be used in various fields, in particular in marketing. Ignoring innovations is unacceptable, especially if they allow you to significantly increase the interest of buyers in your products. One of these technologies is beacon technology. This new marketing trend allows customers to be provided with a wide range of different information during their in-store experience, greatly enhancing the overall omnichannel consumer experience.

Beacon is a Bluetooth signal transmission protocol between a location beacon and any device (smartphone, tablet) compatible with Bluetooth Low Energy (Bluetooth Smart) [11]. The principle of operation is as follows: at regular intervals, the beacons send a Bluetooth signal to devices within their range. When a compatible device receives a signal, the app activates a specific action: greeting visitors, offering additional information about a product or service, sending promotional messages (promotions/discounts), providing information to simplify store navigation, telling a story, etc.

The practice of using this technology is not limited to retail; it is successfully used in shopping centers, airlines, stadiums and airports, exhibition centers, museums and other places. This technology is very popular in the USA, and is also actively implemented and/or already used by European companies and enterprises, especially in the retail segment and in the field of innovative services. [10]

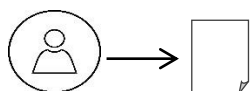
In Ukraine, beacon technology is developing very slowly. Its use is mostly related to the control of company employees, and not to the provision of services to consumers. Large services offering and implementing beacons in production are few and far between. This causes additional interest and demand for this technology among businessmen who want to stand out from the competition. In Ukraine, this technology can be used in the field of sales of both large and small businesses to provide users with information about new products, characteristics of existing products, or special offers. This will significantly improve communication with consumers through their gadgets (smartphones, tablets, smart-watches), creating an ideal environment for customers and contributing to increased sales. The user can get an instant personal discount in the store or nearby. In addition, the buyer can approach the product he is interested in and get all the necessary information about it, be it price, composition or other characteristics [11].

The article presents a detailed analysis of the results of the application of omnichannel marketing in several large European countries and evaluates the effectiveness of the use of innovative beacon technology on the example of retail omnichannel trade. The obtained data can be used by Ukrainian retail enterprises to optimize the omnichannel strategy. On the basis of the conducted research, Ukrainian entrepreneurs are offered recommendations for the development of omnichannel marketing and the introduction of beacon technology with its further integration into the updated marketing strategy.

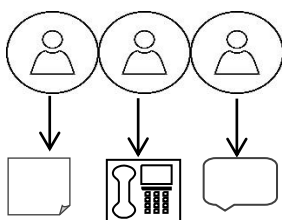
The relevance of studying trends related to the use of omnichannel marketing and beacon technology in Europe and their potential in Ukraine is due to several factors. First, the rapid change of concepts in modern marketing requires the analysis and adaptation of approaches to the management of various marketing channels in the company. Secondly, the active development of digital marketing technologies and the global digitization of business processes created a need for the development and systematization of new strategies, tools and methods that allow not only to retain existing consumers, but also to attract new ones, building mutually beneficial and long-term relationships with them. Thirdly, information technologies, which have been actively developing in the last decade, open up new opportunities in the marketing field to improve the interaction between the consumer and the producer within the framework of digital marketing [7].

Although traditional (classical) models and forms of marketing organization are still preserved in the world, technologies based on the application of modern information systems and digital methods are increasingly being implemented and spread. This allows entrepreneurs, businessmen and sellers to actively use various marketing strategies (MS): mono-channel, multichannel, cross-channel and omnichannel (Fig. 1).

Mono-channel MS

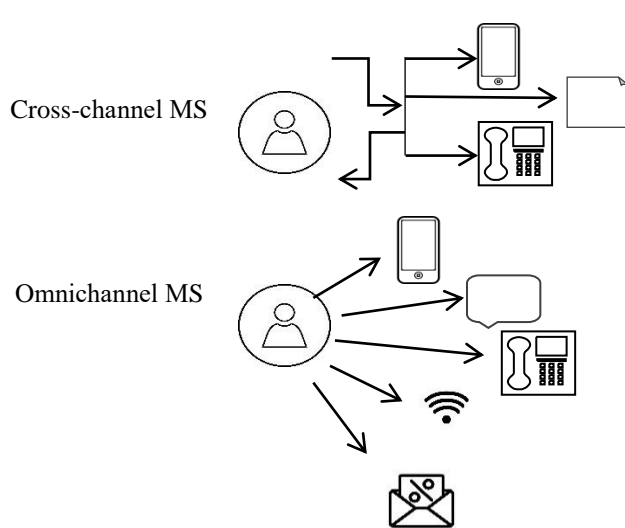


Multichannel MS



The traditional shopping model involves the use of only one channel. Buyers visit stores, discuss products and ask questions of sales consultants, and then buy the product they like. Sales consultants provide buyers with information about the brand, services and products, as well as search for the right product for the buyer.

Buyers receive information about various products and services through stores, specialized Internet sites, direct mail, including e-mail, and through various social networks. With multi-channel marketing, each channel works autonomously, without creating a synergistic effect, so the consumer's attention is focused on individual channels.



Cross-channel marketing helps the buyer move down the sales funnel, which increases their loyalty and engagement. Combining channels allows brands to collect much more information about customers, which optimizes interaction with them. Data received from various channels is used to create advertising segments and further display personalized advertising offers. Omnichannel marketing is the most effective strategy for working with individual buyers, aimed at satisfying their needs. Unlike cross-channel marketing, the level of integration in omnichannel marketing is much deeper, and the buyer does not notice the difference when switching between channels. Omnichannel gives shoppers a “seamless experience” with personalized offers. They feel the constant support of the company throughout their journey, which in turn increases their loyalty to the brand.

Compiled by the author

Fig. 1. Peculiarities of marketing strategies for trading enterprises

An omnichannel marketing strategy is a set of actions carried out by the manufacturer within the framework of marketing channels to create conditions that take into account the various interests of the parties and contribute to the construction of long-term mutually beneficial communications between the buyer and the seller. This strategy provides the possibility of prompt transition of the consumer between channels, taking into account continuous feedback [8]. The client independently chooses the most convenient way of interaction with the enterprise, receiving personalized information about the product in any type of channel (thanks to the integration of channels), full access to the entire assortment, personal delivery conditions, etc. [9]. A consumer can start the purchase process in one channel and finish it in another. The manufacturer gets the opportunity to interact with the client's personal data regardless of the chosen channel, which allows using artificial intelligence technologies to identify the buyer and compare his data in different channels, which ensures [4]:

- avoiding loss of information;
- integration of processes to improve service;
- inventory and re-planning of resources;
- personalization of information for the buyer through continuous monitoring and analysis of his behavior.

Since the buyer's journey is a zigzag movement between different channels and numerous devices (smartphones, tablets, smartwatches, desktop computers, etc.), marketers must understand the differences between multichannel and omnichannel marketing (see Table 1).

Table 1

**Comparative characteristics of multichannel and omnichannel marketing strategies**

Parameters	Multichannel marketing strategy	Omnichannel marketing strategy
Personalization	Absent or minimal. Often, mailings work on the principle of "everything and at once" with minimal segmentation. The emphasis is on audience reach rather than personalization for each customer.	High level. Historical data about customers is collected, based on which individual offers are made in those channels where it is convenient to communicate with the user. Marketing tools are adapted to the buyer.
Focus	Multichannel is a strategy that primarily sells a product or service. That is, the emphasis is on advantages and benefits.	Omnichannel communication sells to the client - that is, it tries to adapt to the needs, tastes and behavioral characteristics of a specific person.
Consistency of channels	They can be unrelated and broadcast different information. When switching between them, the history of previous activity is not saved.	It is assumed that the channels are coordinated, so they communicate information to the client depending on past actions. The messages support the steps of the same strategy and do not contradict each other.
Implementation time	Multi-channel marketing is launched quickly (unlike omnichannel) and is aimed at sales and audience reactions immediately.	Omnichannel is designed to build long-term relationships with the client and increase the level of loyalty.
Costs	Since no serious data work is required, the cost of this approach will not be as high as with omnichannel. The main costs are the payment of the mailing platforms themselves and the remuneration of the marketer.	Channel coherence requires a data collection system (platform) that needs to be configured and maintained. Therefore, implementation is more expensive due to the use of IT tools and services of highly qualified specialists.

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Therefore, it can be concluded that focusing on an omnichannel marketing strategy and building omnichannel marketing communications are key elements of a mixed marketing system that create synergistic added value through the combination of online and offline communications. The main arguments in favor of choosing an omnichannel marketing strategy are:

1. Expansion of the market share due to an increase in the number of marketing channels and the scale of coverage of the target audience.
2. Use of personalized loyalty programs thanks to a single customer database.
3. An increase in the market value of the business reputation (goodwill) of the brand due to an increase in the recognition of the organization on the market.

Innovative beacon technology as one of the tools of omnichannel marketing significantly simplifies the process of communication between the enterprise and the consumer at the points of sale. These small beacons send out unique messages. When a person with the brand's mobile application installed on their phone enters the area of the beacon, for example, passes by a store, the beacon is activated and sends push notifications about discounts, promotions, special offers, etc. Or, when a customer walks past a store, the application offers him to buy a specific product, near the rack of which he spent a certain time during a previous visit [10].

The scheme of operation of beacon technology as a tool of omnichannel marketing is presented in Figure 2.

Advantages of beacon technology:

- Cost: one beacon costs 10-40 dollars. One beacon is enough to notify the visitor at the entrance.
- Service life: beacon works from 1 to 3 years.
- Replaces traditional methods of promotion such as postcards and coupons.

Disadvantages of beacon technology:

- The need to install the program of the institution.
- Visitors' devices must have Bluetooth enabled.
- There is a risk of losing customers.



Fig. 2. Scheme of operation of beacon technology

Compiled by the author

Yes, the beacon – push notifications have the following performance indicators:

- openness;
- number of transitions;
- message delivery level;
- launching the program after a push notification;
- time spent in the application after the message;
- the number of sales (total and through the application);
- repeat appeals after delivery.

With the help of these indicators, you can analyze consumer behavior and improve communication with customers. Research by Leanplum confirms the effectiveness of personalized push notifications, as their impact on over 1.5 billion mobile messages showed that personalization can increase user engagement by 800% [12].

Many retailers in Europe use beacons to improve customer experience, increase customer engagement and drive sales. Here are some examples:

H&M: The popular fashion retailer is implementing beacons in select stores to provide customers with personalized offers, discounts and recommendations based on their location and behavior.

Topshop: The British fashion retailer uses beacons to provide personalized offers and recommendations, as well as to collect data about the behavior and preferences of its customers.

House of Fraser: This department store chain uses beacons in some of its stores to send targeted messages and promotions based on location and customer behavior.

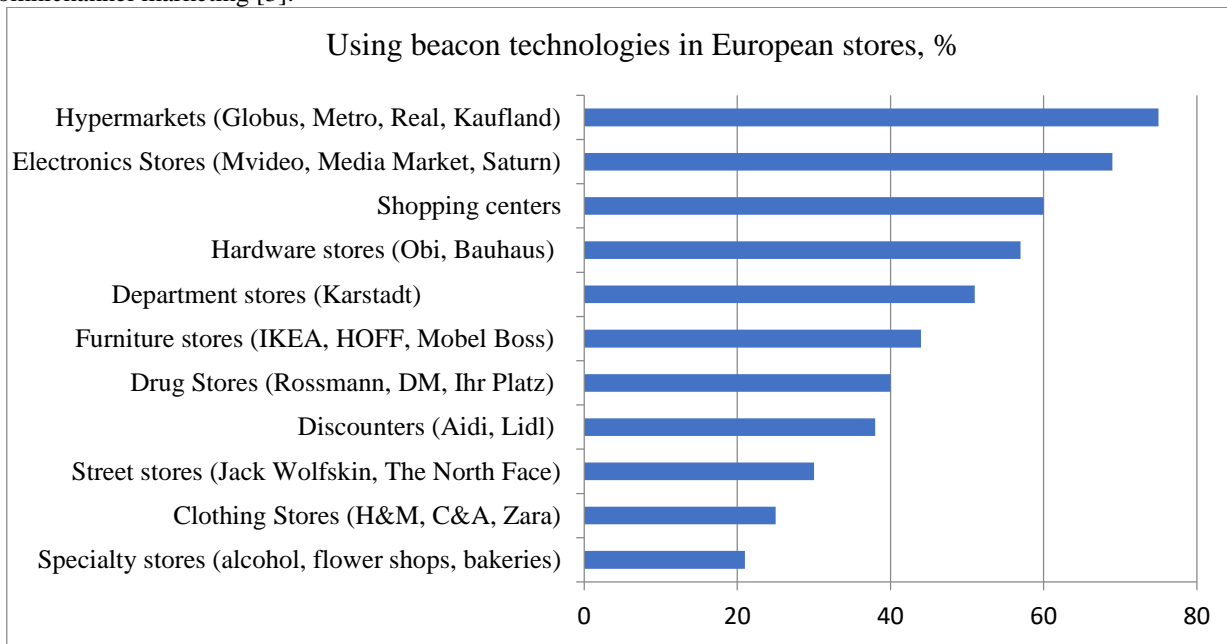
John Lewis: The British department store chain uses beacons to provide customers with personalized offers and recommendations based on browsing and purchase history.

Galleries Lafayette: The French department store chain is implementing beacons in some stores to provide customers with personalized offers, recommendations and information about products and services.

Top managers of most large European companies are confident that retail stores will continue to play an important role in omnichannel commerce, although their functions will change over time. The transformation is expected to be centered around the core sales channel, which integrates digital touch points in customer engagement processes [8]. Interactive technologies will become key to the development of stores, because they will allow attracting new customers by providing them with additional information. Artificial intelligence, beacon technologies and virtual reality stand out among the most effective tools for attracting consumers.

Today, the technological possibilities of using beacon technologies are fully available: 93% of respondents have smartphones, 58% know about Bluetooth technology and use it, and only 30% do not use it. Consider the results of commercial implementation of beacon technology [5] (Fig. 3).

European companies operating in the B2B and B2C segments and implementing omnichannel technologies, despite the existing difficulties, have been able to move beyond their traditional business strategies and focus on the formation of deep relationships with customers. Focusing on consumer needs while implementing innovative and omnichannel priorities requires companies to follow current trends. A survey conducted among company executives asked questions aimed at determining future trends in the application of beacon technology and the development of omnichannel marketing [3].



**Fig. 3. Commercial use of beacon-technology in European stores [5]**

During the research, the following information was collected:

1. Optimization of dispatch time. It was expected that after optimizing the time of sending messages, the number of program opens would increase. Practice has confirmed this hypothesis: push messages sent at the optimal moment are opened 2.5 times more often.

2. User experience. If the message relates to actions the user has recently taken, the likelihood of opening the app increases. Push messages triggered by user behavior are 9 times more likely to be opened than others.

3. Personalization of content. Non-personalized messages have only a 1.5% chance of being opened. In contrast, personalized notifications are opened 5.9% of the time. This means that push messages with individually selected content are opened 4 times more often than general messages [10].

Positive aspects of using an innovative tool — beacon technology in omnichannel marketing include:

- Increasing market coverage and growth in retail sales.
- Informing customers about ongoing discounts and promotions.
- Sending push notifications to alert customers [5].
- Thanks to the update of the mobile application, retailers received new opportunities for communication with buyers, taking into account their location. Using a network of Bluetooth beacons and a new program, stores can receive objective confirmations of visits by specific customers, with precise location and time determination. Also implemented is the "checkin contest" mechanic, which allows customers to be rewarded with increased points of loyalty programs for visiting the store, which they can accumulate and spend.

- Increased sales in stores and shopping centers due to increased conversion.
- Revenue growth due to reduced costs for printed marketing materials.

Thus, in the end, it can be noted that the Ukrainian market of geocontextual advertising and indoor navigation is just beginning to develop.

The use of platforms for omnichannel marketing in organizations increases their competitiveness. Increasing competition between companies will promote the adoption of digital technologies in the near future. The development of omnichannel marketing technologies will be determined by the growth of the number of Internet users and progress in information and innovation technologies. If the overall marketing strategy of the company is well developed, the consumer receives an individual approach, which not only increases sales, but also strengthens brand loyalty, while reducing the costs of the seller thanks to the automation of processes. Analyzing the data obtained from the beacons will help the store owner better understand consumer preferences and behavior. This will make it possible to adapt the personnel potential, determine the opening hours of the stores, the range of products and other aspects of the activity.

Although many software developers promise great benefits after implementing beacon technology as an omnichannel marketing tool, it should be remembered that this tool will not be suitable for all companies. It is more suitable for large enterprises or stores that have already gained popularity among consumers. It will be difficult for small businesses to quickly recoup this investment, so the development of this tool may be slower for them. However, the potential of using beacon technology in omnichannel marketing is significant. Due to the flexibility of settings and ease of integration with other systems, this tool can be used in a wide variety of areas.

Beacon technologies are a tool that contributes to the improvement of relations in the economy, in particular between consumers, as well as in society as a whole. Although this technology is still at the stage of mastering and development, it is already obvious that it has numerous application possibilities — from retail trade to social initiatives [10].

However, there remain a number of unresolved issues related to the use of beacon technology in omnichannel marketing. This system has not yet been widely implemented in all European countries, unlike the US market. Future research should focus on consumer acceptance of such services, for example by launching pilot projects in large retail chains. In addition, the conducted research could not clearly determine the relationship between sales using omnichannel tools, including beacon technologies, and the margin received by sellers. To identify such a relationship, it is necessary to develop certain models that can demonstrate analytical and operational advantages, and then use them as a practical basis for future research.

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