

The object of this study is digital marketing at an enterprise. The investigated problem is the lack of a sufficient level of systematic consideration of the task to use information communication systems and technologies in the marketing activities of enterprises. Availability of such a system would increase the company's potential in creating mutual value for the seller and the client when implementing relationship marketing technologies.

It is shown that the information and analytical support of the enterprise's marketing activity can be presented as a tool of the enterprise's activity, functioning as an element of the enterprise's management system. Among the general criteria for choosing a CRM system, it is proposed to consider convenience and ease of use, flexibility of system settings for special business needs, price, simplicity. Such consideration of CRM systems and their capabilities provide economic effects that affect the profitability of the enterprise and prevent the impact of negative factors on the development of the company.

The proposed procedure for choosing an adequate CRM system was verified on the example of a dental clinic, which made it possible to draw a conclusion about the feasibility of implementing a CRM system in the business under study. It is based on received estimates of short-term and long-term economic effects of the system's application. Calculated data are provided for support, which showed that the productivity of the administrator's work increased by 73.3 %, and the average duration of patient care by the doctor, taking into account the time of registration, decreased by 25 %. This is due to the fact that the system makes it possible to perform a quick search on the general electronic database, and the time saved at this stage can be spent on performing additional work

Keywords: digital marketing, Internet marketing, information and analytical support of relationship marketing, CRM system

DEFINING A SELECTION PROCEDURE OF CRM SYSTEMS FOR THE INFORMATION-ANALYTICAL SUPPORT TO THE MARKETING ACTIVITIES AT AN ENTERPRISE

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1. Introduction

The main problem of businesses operating in the modern market is the task to attract and retain consumers. Its solution

requires the seller's detailed knowledge of the client's characteristics, the establishment of successful long-term relationships with him/her, the formation of channels for conveying certain messages to the consumer's mind and receiving feedback.

Solving these problems takes place under the conditions of a progressive increase in the amount of information in society, changes in its structure, and rapid development of the means of obtaining, processing, storing, and transmitting information. The latest technologies and advanced IT solutions encourage companies to change their usual strategies and rebuild business processes in almost all domains of activity. Classic marketing tools for attracting customers, which were once effective and helped companies take leadership positions, have lost their effectiveness.

The urgent problem of modern marketing is the use of digital means to attract and retain consumers. In this context, it is necessary to define two components that currently occupy a priority place in the marketing activities of the enterprise: information systems (IS) and information and communication technologies (ICT). These special digital products should solve specific problems of specific enterprises, and the range of marketing problems that can be solved with the help of such systems and technologies is considered quite wide. Thus, IS and ICT can be considered not as separate components of the enterprise's digitalization but as components of a single information and analytical support for its functioning. Thanks to their systemic and adaptive properties, IS and ICT allow solving urgent problems of the enterprise's marketing activities in accordance with the state and characteristics of the enterprise and the market in which it operates.

Such a view gives reason to assert the relevance of scientific research into the adequate justification of the choice of IS and ICT in the system of information and analytical support for the marketing activity of a modern enterprise. This forms an applied component of relevant scientific research, which can ensure the provision of practical recommendations to enterprises regarding the improvement of existing marketing policy.

2. Literature review and problem statement

Modern information society is a stage of development of post-industrial society, in which information and knowledge multiply in a single information space. An integral element of the information society is the information economy – a form of existence of the post-industrial (service) economy, in which the leading economic resource is information. Depending on the definition used, the size of the digital economy ranges from 4.5 % to 15.5 % of global GDP [1]. According to the estimates of the Ukrainian Future Institute, the share of the digital economy in the GDP of the world's largest countries will reach 50–60 % in the 2030s, and in Ukraine this indicator may be even higher – 65 % of GDP [2].

Currently, the scope of relationship marketing has been significantly expanded and includes interaction with individual consumers. It is recognized as necessary to increase the role of the consumer and move from consumer manipulation to the formation of real consumer interest, which is achieved through communication and exchange of knowledge, searches for forms and ways of directly involving the buyer in interaction with the company. With this approach, the company's goal acquires long-term orientations. These orientations set the entire management of the company to interact with customers as valuable partners, which ensures thorough and detailed clarification of their needs and development of loyalty through quality service [3].

Work [4] states that relationship marketing is implemented in all actions aimed at the analysis, planning, implementation, and control of activities that affect business relations with stakeholders. These actions create, stabilize, strengthen, and restore business relationships primarily with consumers, and influence the creation of mutual value in the process of these relationships.

The above remark clearly highlights the coordinating component of relationship marketing and its focus on creating mutual value for both parties in the process of their interaction.

It should be noted that the use of modern IS and ICT in marketing has formed such phenomena as Internet marketing [5–9] and digital marketing [10–18].

Study [5] focuses on the use of digital tools in the context of Internet marketing to ensure fairness and transparency in the bidding process. It is noted that incentive mechanisms based on the auction can satisfy requirements that are heterogeneous in their content. And this can apply to both demand-side platforms (DSP) and supply-side platforms (SSP). All of this is viewed through the lens of Internet of Things (IoT) marketing. Therefore, the limitation of the results is the object of the study itself, although the obtained optimal bidding strategy for DSP is of interest.

In work [6] it is noted that intelligent data analysis (SDM) can play a particularly important role in the management of business efficiency and marketing information. The findings are limited to identifying key characteristics that influence the success of enabling marketing intelligence through SDM integration with the Cloud Internet of Thing (CIoT). Although they reflect research objectives related to the creation of an effective basis for strengthening the marketing campaign for banks, a wider range of companies' focus would be of interest.

In work [7] it is stated that the Internet and information technologies are of crucial importance for the marketing level because it facilitates global communication between suppliers, consumers, and intermediaries. However, only one type of industry – tourist industry – was considered. As noted in this study, e-tourism provides opportunities for establishing commercial links through the Internet for the supply of tourism-related goods and products. But the possibilities of spreading the results to other types of company activities remain undeveloped.

Work [8] investigated the problem related to the limitation of ideas about the integrative capabilities of the Internet with marketing capabilities in the context of promoting the growth of the international market. According to the results of this work, it is determined that firms that use Internet marketing tools will benefit due to the reduction of information uncertainty. With this circumstance, the authors associate the increase in opportunities for the development of an international network in the communications system. But the obtained results relate to the analysis of Australian firms, so the question of the possibility of using these results in other regions of the planet requires additional research.

Study [9] tested a conceptual model of the influence of Internet marketing opportunities on the growth of the export market for developing countries, using the example of Chile. It is concluded that such an impact is positive, but the scalability of the results is not indicated.

Work [10] focuses on determining the prospects for the evolution of research and practices of innovation of digital products and marketing. Innovations are considered in rela-

tion to the common good and from the standpoint of direct and indirect communications through social media platforms and multi-channel marketing. However, the results are limited to an overview of the evolution and current state of the industry, with an emphasis on certain current challenges and the trajectory of its development.

Paper [11] determined the influence of digital tools on the interaction and perception of sales and marketing. Schemes of sales and marketing interaction and perception are proposed, as well as coding for communication efficiency and information transparency. It is concluded that firms with well-functioning SMIs benefit most from the use of digital tools in terms of sales and marketing interactions. However, the study is limited to SMI only.

In work [12], the possibilities of the digital economy were investigated from the point of view of what it creates for easy and quick access to products and services. This is considered by the author as a factor in improving efficiency and productivity. In particular, there is a comparison of several technologies, including Blockchain – to create transaction transparency, prevent fraud and misuse of information. However, the proposed solutions mainly concern the tourism industry.

Study [13] shows that digital content marketing ('DCM') is a strategic priority for suppliers due to fundamental changes in business-to-business (B2B) buying behavior. Key measures for implementing customer-centric DCM are identified to address the challenges that make it difficult for firms to realize the full potential of a customer-centric marketing approach. However, the propositions regarding the key contingencies of DCM performance are empirical in nature.

Work [14] reports the results of interviews with managers to determine how managers include social media in the existing marketing communications strategy. Managers were found to classify social platforms into four categories: relationship management, news gathering, creativity, and entertainment. The results are interesting from the point of view of identifying the place of social media in communications by brand managers. But they need to be clarified, because the seven interviews from which the results and conclusions were obtained are not a sufficiently representative sample to obtain accurate data.

Study [15] built a model based on the interaction of the brand and consumers in the Indian B2B markets. In particular, data from a systematic analysis of the cost and results of digital marketing efforts of startups operating in South Asia are provided. It has been shown that sales are largely influenced by digital media. Instead, direct human interaction is more meaningful in creating a brand image that spreads across social media platforms. But everything related to certain regularities is localized at the regional level.

In [16], several structures are proposed for the analysis of digital marketing communications: business-to-consumer (B2C), business-to-business (B2B), consumer-to-consumer (C2C), and consumer-to-business (C2B). It was found that existing research on digital marketing communication is mostly at a specific national level. Proposed approaches that can be useful to managers for better formulation of digital marketing strategies not only at the local, but also at the global level. But the results obtained only on the basis of the literature review should still be tested at real enterprises, in particular, not only at the national level.

The features of digital marketing help increase sales, ensure the economic profitability of digital marketing and

its positive commercial impact on business. This conclusion follows from work [17], which presents views on some current and future trends in marketing. In particular, it has been determined that companies can benefit from digital marketing in the form of search engine optimization (SEO), search engine marketing (SEM), content marketing, influencer marketing, and more. At the same time, the increasing use of social networks creates new opportunities for digital marketers, in the context of attracting customers through digital platforms, due to the fact that everyone is connected through WhatsApp and Facebook. It remains unclear why such communication tools were chosen, because not everyone uses them. In addition, the conclusions are based mainly on the analysis of literature and Internet sources, regionally.

The authors of paper [18] claim that the degree of influence of the use of social media on marketing effectiveness depends on the mediating role of social customer relationship management (CRM). But the results are based on the processing and analysis of data obtained for Chinese agricultural firms.

From our review of the literature [5–9], it follows that the place of Internet technologies in the marketing activities of enterprises consists in providing several components: informational, communicative, and sales. However, mostly all issues are considered in the plane of individual branches or are limited to the objects of research.

From the above review of works [10–18], it follows that the results of research into digital marketing were obtained due to insufficient sampling of data or in the absence of data from real enterprises and are also often limited to certain areas of the economy.

These limitations form a view of future research, which is based on the systematic consideration of the problem of the use of information communication systems and technologies in the marketing activities of enterprises.

3. The aim and objectives of the study

The purpose of our study is to determine the possibilities of using information systems and information and communication technologies as a mechanism for information and analytical support to the enterprise's marketing activities. This will increase the effectiveness of the marketing activities of enterprises, providing economic effects from the implementation of the appropriate digital tools.

To achieve the goal, the following tasks must be solved:

- to identify differences between internet marketing and digital marketing;
- to define conceptual solutions for information and analytical support of relationship marketing;
- to determine criteria for choosing an IS that is rational for the enterprise;
- to determine possible economic effects of the implementation of IS in the company's activities;
- to verify the procedure for choosing an adequate CRM system and to evaluate the effects of its implementation on the example of an enterprise in the field of services – a dental clinic.

4. The study materials and methods

The object of this study is digital marketing at an enterprise.

The hypothesis of the study assumes that digital marketing is a form of information and analytical support for the enterprise's marketing activities. At the same time, the use of digital marketing tools and opportunities significantly increases the company's potential in creating mutual value for the seller and the client when implementing relationship marketing technologies. The justification for such a hypothesis lies in the most significant advantages that the consumer receives:

- full access to information about goods and services, which is ensured by the fact that most people can use the Internet from anywhere at any time;
- concise presentation of information about goods or services;
- possibility to compare products from different suppliers;
- possibility of round-the-clock shopping;
- open prices;
- the ability to share the characteristics of the product or service with others.

Data analysis, in particular, from the State Institution “Center for Medical Statistics at the Ministry of Health of Ukraine”, methods of mathematical statistics, in particular expert evaluations, were chosen as research methods.

Assumptions and simplifications adopted in the research process were based on the fact that the statistics obtained are relevant. The results of their treatment could be used practically in a given field, as well as scaled to other areas, at least compatible.

5. Results of investigating information and analytical support of marketing activities of the enterprise

5. 1. Differences between digital marketing and Internet marketing

It was determined that Internet technologies perform the following functions in the marketing activities of enterprises:

- informational: conducting marketing research (electronic survey of consumers using, for example, Google Forms), obtaining business information using electronic newsletters, tracking the behavior of Internet visitors using relevant servers, exchanging information between market partners;
- communicative: implementation of advertising campaigns, brand promotion, testing of new products with consumer feedback and conducting PR campaigns, customer support;
- sales and logistics functions: sales through our own online stores, online portals and marketplaces, sales through the websites of partner companies, sales through social networks, etc.

In contrast to Internet technologies in the marketing activities of enterprises, digital marketing can be considered as a comprehensive promotion of the company (its products and services) using all available digital channels. Digital one differs from Internet marketing in three ways:

- format of interaction with the target audience;
- methods of collecting and transmitting analytical data;
- promotion channels and tools.

The first and most important difference is the format of communication with the target audience. The fundamental concept of digital marketing is a client-oriented and personalized approach, constant interaction with subscribers.

The second difference of digital marketing is end-to-end analytics. The most sought-after currency today is customer knowledge. Digital channels differ from traditional ones in that they provide an opportunity to collect clear, objective,

and up-to-date analytical data with the help of advanced technologies, and in real time.

The third difference is that digital marketing uses not only online channels, it covers the entire toolkit of internet marketing. This includes SEO, contextual advertising, email, etc. But in addition, digital marketing goes beyond the online space.

5. 2. Conceptual solutions for information and analytical support of relationship marketing

The information economy demonstrates its essence in the unity of technical, managerial, organizational, and behavioral manifestations. The technical manifestation of the information economy consists in the rapid development of techniques and technologies for working with information (collection, processing, storage, transmission), in particular, due to the increase in the scale and value of the Internet.

The development of the Internet, information and communication technologies (ICT), stable communication channels, cloud technologies and digital platforms, as well as the information “explosion”, ensured the emergence of open information systems and global industrial networks that interact and go beyond the boundaries of an individual enterprise. A network type of interaction between suppliers and partners is being formed, which creates conditions for the implementation of innovative business models.

The market system improves itself following the complication of the production system. This happens evolutionarily by deepening the division of labor in the very system that governs the market, which means an increase in its complexity and the intensification and complication of information flows. The changes taking place in the organization of the market system under the conditions of the information economy consist in the fact that electronic trade networks are developing, virtual markets create the effect of real presence. The market becomes 24/7 and global, timeless, and borderless. There is a tendency to weaken the role of traditional intermediaries – wholesalers, banks, stock exchanges, since in electronic trading systems information about supply and demand is concentrated and equally available to all their participants. In essence, this is a return to direct contacts between buyers and sellers, although it does not require the physical presence of the participants in the transaction in one place.

The behavioral manifestation of the information society is that, when making a decision, an economic entity (in particular, a consumer) is forced to analyze and take into account a huge amount of data. But s/he is not able to fully perceive this volume for objective and subjective reasons, and, as a result, increasingly behaves irrationally.

Under these objective conditions, the character and direction of the marketing activities of enterprises undergo significant changes, and even the business model of some of them is being modernized. Today's world market is, for the most part, a buyer's market who is much more aware of market conditions than in the recent past. An increasing number of undifferentiated products appear on the market, and the services provided by the company to the consumer are often more important and acceptable than the product itself. The priority of the activity of a modern enterprise is not capturing an abstract consumer and manipulating him/her in the interests of short-term profit but focusing attention and efforts on what it can do for the consumer to ensure his/her satisfaction with this process. Thus, such an element of competitive strategy as relationship marketing is becoming increasingly used.

The concept of information and analytical support of managerial activity has been considered and discussed for a long time, and since marketing activity is a component of managerial activity, this discussion also applies to it. On the other hand, the information and analytical support of the enterprise's marketing activity has a systemic nature and is formed on the basis of the marketing information system.

It is known that the marketing information system as a set (unified complex) of personnel, equipment, procedures, and methods is designed to receive, process, analyze and distribute at the set time reliable information necessary for the preparation and adoption of marketing decisions. With the development of the market, marketing and interactive technologies, the evolution of marketing information systems is also taking place, in particular, in the direction of their transformation into systems of information and analytical support for the enterprise's marketing activities.

The term "information and analytical support" is considered as consisting of two interrelated elements (stages), namely:

- informational – purposeful activity of specially trained specialists engaged in searching, selecting, processing, accumulating, summarizing, and saving information units (the first stage of the process of information and analytical support in the management system of any mechanism);

- analytical – as a derivative of the second stage of the process of information and analytical support: production by specially trained specialists on the basis of available informational units and complex mental processes of new knowledge regarding the phenomenon or event being studied.

These elements are not only interconnected but are in cascading interdependence, that is, they arise in a cyclical sequence, conditioning each other. The conclusions made at the analytical stage require additional information on various issues, for example, on the issue of the conditions for the implementation of the received recommendations, prospects for the development of the process that is recognized as necessary in the current state of the enterprise, etc. On the other hand, additional information is collected and prepared for use can significantly change the new knowledge that is formed in relation to the investigated problem. Thus, it is possible to assert the presence of such attributes of the process of information and analytical support of the enterprise's marketing activity as systematicity and cascading.

The system of information and analytical support for the adoption of management decisions should be defined as a set of interconnected organizational, organizational-legal, informational, methodical, software-technological components. Their application ensures the necessary quality of management decisions due to the rational use of information resources and information technologies.

Information-analytical activity is an activity aimed at fulfilling the task of qualitatively meaningful transformation of information. In this process, the possibilities of information and analytical services are used, information products and services are actively used. In this way, information and analytical activity functionally overlaps with scientific and managerial activity. The scientific one consists in the production of new knowledge, the managerial one – in the development of decision options and scenarios.

Currently, this activity is impossible without the active use of information and communication technologies, in particular, digital marketing tools.

The main tools of digital marketing under modern conditions are considered to be:

- SEO (site optimization in search engines);
- search engine marketing (Search Engine Marketing, SEM);
- contextual advertising, SMM (social media marketing);
- Big Data technology;
- RTB (real-time bidding);
- viral marketing (Word of Mouth Marketing, WOM);
- creating an image of the enterprise on the Internet (Public Relations, PR 2.0);
- affiliate marketing (Affiliate Marketing, AM);
- retargeting.

But in relationship marketing scenarios, the most comprehensive tool providing information and analytical support is Client Relationship Management (CRM).

At the technology level, CRM is a set of applications that are connected to each other using a single business logic and integrated into the company's corporate information space, based on a single database. Special software allows automation of relevant business processes in marketing, sales, and service. The structural diagram and classification of CRM systems is shown in Fig. 1.

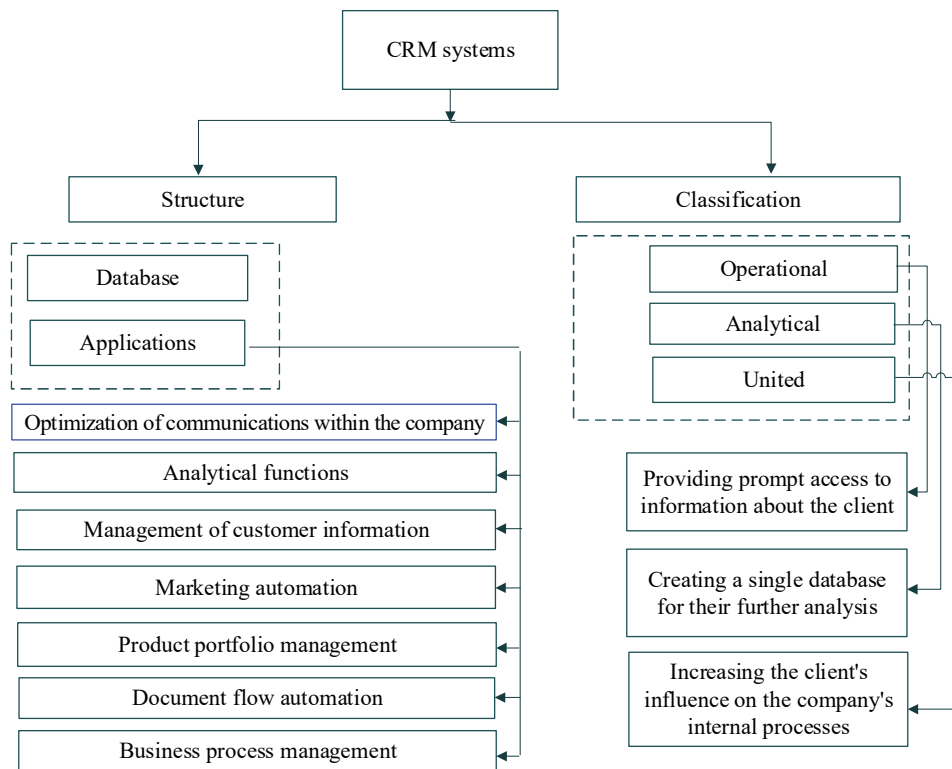


Fig. 1. Structural diagram and classification of CRM systems (devised by authors)

It is known that breakthrough technical innovations, providing new opportunities for solving business problems, are most often implemented through new organizational structures of business or individual business processes, new information or communication technologies. CRM is no exception. It is not just a technology, not just a software product, and not even a set of such products. CRM is a concept aimed at building a sustainable business and a business strategy based on a client-oriented approach.

This strategy is based on the use of the latest management and information technologies, with the help of which the company collects information about its customers at each stage of their life cycle (attraction, retention, loyalty). Further, the facts are extracted from the received information and used in accordance with the interests of a certain business, by building mutually beneficial relations with these clients.

CRM systems have become necessary in markets with a high level of competition, where the focus is on the customer. The main task of CRM systems is to increase the efficiency of business processes concentrated in the “front office” aimed at attracting and retaining customers – in marketing, sales, service and maintenance, regardless of the channel through which contact with the customer occurs.

The basic concept of CRM comes from the past. At the beginning of the development of markets, the bulk of goods were sold through an extensive network, which included a large number of small shops. Local residents bought everything they needed there, shopkeepers knew all their customers by face and name. They knew their needs, habits, tastes, financial status, facts of personal life, etc. They knew who would come, when, and for what exactly. And everyone knew them. The business was built on the loyalty of these regular customers. Nowadays, this could be called personalization.

Then came the era of consumerism. Supermarkets appeared, which were able to increase their influence on the market. The product became popular. The buyer has become massive. Everything is of sufficient quality. Everything you need can be bought on every corner. However, personalization was lost in the process. The only way to survive in such a competitive environment is to stand out among other sellers of goods and services, to offer a product to each client personally, taking into account their individual needs and characteristics.

At this stage, it turned out that at the current level of development of computer technologies, it is possible to “return to the past” and ensure personalization even in mass sales. Previously, the owner of the store remembered the characteristics of a hundred of his/her customers, and now the database can store and process information about thousands of such customers and offer everyone exactly what s/he is used to and what s/he might want.

Thus, it is possible to state a shift in emphasis in the course of the relationship between the buyer and the seller. Previously, the client received an idea about the company based on the analysis of the quality of its product. Now s/he considers it as a full-fledged partner, with whom s/he interacts using various channels – from a phone call to communication on the Internet and a personal visit. At the same time, consumer requests have become significantly more differentiated and diverse, and the forms of interaction with them have become more personalized.

5.3. Determination of criteria for the selection of IS, rational for the enterprise

The options for using CRM are quite diverse, which currently provides an opportunity for the development of CRM marketing. The main goal of CRM-marketing is to track and direct consumer behavior in a direction that corresponds to the company's strategy. This goal can be realized with the help of expert analysis, software processing of information and automation of communications. The interaction of the company with its consumers makes it possible to adjust its product to previously established, as well as potential needs of customers.

The goals of CRM marketing define the following tasks for it:

- collection of qualitative data from various sources;
- analysis of received data and formation of a consumer portrait;
- creation of analytical tools that will be able to determine exactly what the audience needs in order to motivate them without involving additional resources;
- delivery of messages in a form convenient for the client using available communication channels;
- tracking the reaction and adjusting the operation of the program depending on the need.

The most significant point in optimizing the company's work in general is that the integration of the CRM system ensures coordination between the actions of different departments, giving them a common platform through which they can interact with customers.

Each company is unique and, accordingly, has its own specificity of work and needs. One company needs automation of the sales process and work with documents, another needs the ability to analyze the market and its own competitors. That is why it is so important to rely on the internal needs of the enterprise when implementing a CRM system. In this way, each enterprise will have its own benefit from the use of such a system.

The ability of CRM systems to adapt to business tasks makes it universal for different fields and companies of different sizes.

A CRM system in a small business should be flexible in settings, inexpensive and as easy to use as possible.

The CRM system for an individual entrepreneur (individual entrepreneur) helps him/her combine several positions at once. This is marketing, sales, and administration. And even if there are not many customers, there is no need to keep all the information in your head or spend time filling out a diary. The system will present the progress of work for each client in a convenient way, remind about the meeting, simplify the creation of documents of the same type and reduce all manual work to a minimum. CRM is especially relevant for lawyers, realtors, and similar specialties.

The CRM system is indispensable in the realities of large companies when the number of employees exceeds several hundred people. To quickly assess the performance of a large team and distribute workloads, manage sales and marketing strategies, Excel spreadsheets will clearly not be enough. Powerful CRMs for large businesses help coordinate the work of various departments, significantly automate sales, and facilitate the management of voluminous business processes.

There are many variations of CRM systems, as well as areas of business. Each program seeks to take into account the peculiarities of certain areas of activity. The entire variety of

types of CRM can be divided into four groups: operational, analytical, collaborative, and combined.

Operational CRMs are primarily aimed at simplifying the operational side of work. Its functionality includes the automation of processes, organization of the client base and recording of data at all stages of sales, setting tasks and monitoring the work of employees.

In analytical CRM systems, the main emphasis is on the collection and analysis of collected data. Such systems are used when it is necessary to segment the base, determine profitability, analyze sales surges, track customer behavior at various stages. These CRMs will help in forecasting and evaluating the effectiveness of the marketing strategy.

Collaborative CRMs are a rare type of software. This is a solution for those products that are developed with the participation of consumers using various communication channels (via the Internet portal, telephony, personal contacts, and others).

Combined CRMs are the most versatile and are actively used by those companies that need both process automation and analytics.

When choosing a CRM, you need to remember that each of them has its own characteristics. However, there are points to which special attention should be paid.

The first is convenience and ease of use. It depends on this, how willingly the company's staff will adopt the innovation.

The second is the flexibility of settings, which is especially important for a growing business. Flexibility means that you can customize CRM to suit your needs, from folder names and shortcuts to the details of mass mailings and sales bursts.

The third. The availability of a mobile version, which is needed by managers working away. Managers of a developing business must keep their finger on the pulse of the project literally 24 hours a day. Without a mobile CRM, this will simply be impossible.

The price of CRM systems is determined by the size of the system's functionality and other characteristics. But this does not mean that you should try to get the widest functionality – this can make the program difficult to master. And high-priced CRM systems are often overloaded with features and require special training. Practitioners also recommend making sure that the cost of CRM already includes all the necessary functions and you do not need to pay extra for them.

In addition to the main functions and price, there is another important criterion when choosing a CRM: the degree of ease of installation and mastering of the program by the user. Ease of CRM installation and data import is of great importance.

Before implementing CRM, it is advisable to prepare and motivate staff in advance. The experience of many companies shows that it is not enough to purchase a CRM system, it is also necessary for employees to want to use it. The more attractive, simpler, and more understandable the program is for the average user, the more likely it is that the transition to CRM will not cause difficulties.

The process of implementing CRM should begin with a thorough needs analysis and employee training.

Before choosing a CRM, you need to consider the following:

- decide what business goals should be achieved with the help of the CRM system, what tasks should be solved with the help of CRM and in what way;

- set the stages of sales breakthrough in order to properly set up work in the CRM system;

- analyze the communication process within the company, find out which specialists or departments the client interacts with from the first contact to making a purchase;

- prescribe business processes in the company, think over which processes need to be automated, and which should be performed manually.

Only after the company gets a clear idea of the stages of the sales surge, forms and adjusts business processes, clearly formulates its needs, it can use the CRM system rating. At the same time, it should be borne in mind that there are currently a large number of specialized systems designed for a certain size of business or a certain type of activity.

The CRM implementation process does not end after installation but, in most cases, continues during a free trial period, which makes it possible to determine whether the chosen system is adequate for a particular business.

5. 4. Economic effects of the implementation of IS in the company's activities.

The economic effects of using CRM systems in the information and analytical support of relationship marketing should be evaluated using certain parameters, the change in values of which characterizes the degree and completeness of solving the tasks that were formulated at the beginning of this process.

The result of applying a customer relationship management strategy is to increase the company's competitiveness and increase its profit. This result is achieved because the relationship with the company's customers, based on a personal approach to each, makes it possible to more actively attract new customers, and also helps in retaining old ones.

The company's transition to functioning in accordance with the specified strategy, which is supported by the implementation of an adequate CRM system, produces a certain list of economic effects, which can be conventionally divided into three categories:

- direct economic effects;
- effects of risk reduction;
- indirect economic effects.

Direct economic effects can include short-term and long-term economic effects of direct action, which, in turn, are divided into effects of increasing income and effects of reducing costs.

Effects of increased income:

- if before the implementation of the system, a single database of customers is not maintained, and there are no opportunities for segmentation according to various indicators, then the implementation of the system will allow segmentation of customers. In the short term, this will lead to increased sales due to focusing on profitable customers, and in the long term, to an increase in the company's income due to the identification of the most attractive segments and offering them better consumer value;

- if the promotion of products is initially carried out without analyzing the efficiency of interactions along the chain, then the implementation of the system will allow the selection of channels and the optimal chain of promotion. In the short term, this will reduce costs in promotion channels and chains, and in the long term, it will increase the company's income due to choosing the optimal channel and increasing the satisfaction of promotion channel participants. Channel optimization is carried out according to the ratio "value for us" and "value for the client"/"cost";

– if from the beginning the functional structure of the organization does not have those responsible for relations with clients, then the implementation of the system will make it possible to optimize the organizational structure. In the short term, this will improve the quality of customer service, and in the long term, it will increase customer satisfaction and increase the company's revenues by improving the quality of service and optimizing the organizational structure;

– if before the implementation of CRM, the personnel motivation system was not aimed at the goals of the company's client strategy, then its implementation provides an opportunity to create a new personnel motivation system. In the short term, this will lead to an increase in labor productivity, and in the long term – to an increase in the company's income due to increased cross-selling, lengthening the customer's life cycle or achieving other goals, depending on the chosen strategy;

– if from the beginning the staff was not provided with informational means and was not trained to interact with clients, then the implementation of the system will ensure the proper training of the staff. And this in a short time interval will ensure an increase in the quality and speed of customer service, and in the long term – an increase in customer satisfaction and an increase in the satisfaction and loyalty of the staff;

– if customer data was not systematized before the implementation of CRM, employees did not have the opportunity to access the knowledge base, then as a result of its implementation it becomes possible and necessary to create a single database, a knowledge base. Their use in a short time interval ensures an increase in the quality and speed of customer service, improvement of information support for business processes, and in the long term – an increase in customer and staff satisfaction;

– if initially the firm did not have tools for planning and forecasting sales, then the implementation of the system will make their planning and forecasting possible. In the short term, this will ensure an increase in current sales, and in the long term, it will improve the quality of management and increase the company's income due to the possibility of more timely and high-quality management influences;

– after all, if prior to the implementation of the system, management decisions were made without taking into account indicators of work with clients, then its presence makes management based on client indicators possible. In the short term, this provides an increase in the quality and speed of customer service, and in the long term, an increase in customer satisfaction due to the targeting of processes and their results to improve work with customers.

The effects of cost reduction are the following:

– if before using CRM the business did not have tools for managing business processes, then its implementation creates opportunities for automating their management. This ensures in the short time interval an increase in the quality and speed of customer service, in the long term – an increase in the company's income due to an increase in the percentage of successful transactions;

– if the processing of contacts and applications is carried out manually, then the implementation of the system provides an opportunity to automate this process, to create a self-service system. This increases the productivity of employees. In the short term, it leads to a decrease in costs for operations, in the long term – to an increase in the compa-

ny's income due to an increase in the number of potential and current clients served;

– if at first employees and customers do not have a clear idea about the status of order fulfillment, then after the system is implemented, the process of their fulfillment is automated. This reduces the execution time and leads in the long-time interval to an increase in profits due to increased customer satisfaction and an increase in their number;

– if before the implementation of the system employees receive information from various sources and spend significant efforts to obtain it, then in the process of its operation, a single database of current and potential customers is maintained. This leads to a reduction in the time it takes to find new potential customers and information about them, and as a result – to increased revenues due to serving more customers and increasing employee satisfaction.

The effects of reducing risks include the effects of preventing the impact of negative factors on the company's development. Thus, as a result of the implementation of a CRM system, it is possible to obtain certain results that ensure a decrease in the probability of certain negative phenomena. Example:

– customer segmentation reduces the risk of losing the most profitable customers;

– the choice of channels and the optimal chain of promotion – the risk of deteriorating relations with partners, the risk of not delivering consumer value to customers;

– optimization of the organizational structure – the risk of reducing the flexibility of the organization, the risk of deteriorating relations with clients;

– creation of a new personnel motivation system – the risk of personnel activities contrary to the general goals of the company;

– staff training – the risk of decreasing staff motivation, the risk of deteriorating relations with clients;

– creation of a single database, knowledge base – risk of deterioration of relations with clients;

– sales planning and forecasting – the risk of failure to meet revenue and/or profitability plans;

– management according to client indicators – risk of loss of competitiveness;

– automation of business processes – the risk of reducing productivity, efficiency of processes, etc.

Indirect economic effects include general corporate effects that are difficult to calculate directly. They are the result of structural, organizational, technological, or other actions that provide conditions for changing the main economic indicators of the enterprise. Indirect effects include, for example, ensuring transparency of management, shortening time to market, obtaining competitive advantages in the market, increasing customer and employee loyalty, etc.

5.5. Verification of the procedure for choosing an adequate CRM system on the example of a dental clinic

According to the data from the Center for Medical Statistics at the Ministry of Health of Ukraine, as of January 1, 2021, 22,180 doctors of a dental profile provided dental care to the population of Ukraine in 6,443 institutions of various forms of ownership (1,359 state and 5,084 private) [19].

In 2020, the provision of dental specialists working in the institutions of the Ministry of Health of Ukraine was 3.04 per 10 thousand population, dentists – 2.15, dentists-orthopedics – 0.44, dentists-surgeons – 0.37, doctors-orthodontists – 0.08 [20].

There is a clear tendency to decrease the overall supply of dental doctors compared to previous years (2017 – 6.3; 2018 – 6.1; 2019 – 5.9; 2020 – 5.4 subject doctors management of all forms of ownership per 10,000 population) [20]. At the same time, the demand for the services of dentists is increasing and is quite inelastic in relation to inexpensive emergency dental services (for example: surgical tooth extraction, caries treatment). For more expensive services, such as implants or dental plastic, demand is more elastic. In the process of serving patients, medical institutions are increasingly using the concepts of “medical plan”, “treatment plan”, or “treatment program”. They are perceived by the patient as a comprehensive service, while for the medical institution it is actually a set of medical services or manipulations performed over a certain period of time. The long-term nature of the relationship between the dental clinic and the patient requires the management of the enterprise to use relationship marketing tools. The increase in the burden on one doctor and on the enterprise as a whole, which is inevitable at the same time, encourages the use of IS and ICT in the form of, first of all, CRM systems.

The option of choosing a CRM system adequate to the company’s features is discussed below using an example of the “DC” clinic operating in Kharkiv, Ukraine.

“DC” is a private dental clinic that was founded in 1998.

As of today, the staff of the clinic consists of 16 people, including: the director of the clinic, who, like other doctors, receives patients; doctors (6 specialists); physician assistants (8 people); administrators (2 persons); maid. Also involved in the work is an outsourced accountant, a technician who visits the clinic as needed, as well as four laboratories with which the clinic cooperates on a permanent basis on a contractual basis.

The vast majority of the clinic’s clients are regular patients (more than 80 %) who belong to the middle class. Prices for services are kept at the average level for the city, so the need to use non-price competitive advantages offered to customers is obvious. First of all, this is the speed of service, the possibility of the clinic taking into account the peculiarities of the client’s schedule, offering him/her a convenient and comfortable schedule of visits.

Analysis of the clinic’s activity and the information flows that provide it revealed the presence of dual responsibility (administrator and assistant) for the implementation of certain types of work. This is the formation and adjustment of doctors’ schedules, applications for work to be performed by laboratories, communication with laboratory couriers, accounting, collection and ordering of consumables necessary for work. The result of such performance of organizational functions in the clinic is a loss of time for client service and a decrease in the number of clients served per unit of time. The economic aspect of such time overspending is the lost profit of the enterprise. In addition, the clinic’s website does not contain up-to-date information, nor is it interactive, which is why it almost does not help attract new clients to the clinic’s services.

Data on the time spent by a potential client to determine the date and time of an appointment at clinics operating in

Kharkiv are given in Table 1 (obtained experimentally as timing results).

Table 1

The speed of service request processing, compared

Type of service \ Clinic	Dental Clinic «DC»	“Master Med” Dental Network	Dentistry “E-class”	“Doctor Alex” Clinic	Dental clinic “Pearls”
Response time to an application left on the site	There is no such option on the site	10–20 min	There is no such option on the site	20–30 min	15–20 min
Time it takes to make an appointment	15–50 min	5–10 min	20–30 min	5–10 min	10–20 min

Analyzing the financial results shown by the “DC” clinic (Table 2), one can see a significant increase in the annual cost of services (from UAH 3,028.4 to UAH 3,824.6 thousand), which is the result of the influence of several factors. This is an increase in the price of imported materials as a result of the increase in the exchange rates of foreign currencies (US dollars and euros), the increase in the cost of utility services, electricity, etc.

Table 2

Income statement (thousand UAH)

Item	Line code	2021	2020
Net income from the sale of products (goods, works, services)	2,000	4,982.18	4,025.38
Cost of goods sold (goods, works, services)	2,050	(3,824.6)	(3028.4)
Gross profit	2,090	1,158.53	996.93
Other operating income	2,120	0	12.92
Administrative expenses	2,130	(150.39)	(121.14)
Other operating expenses	2,180	(639.35)	(469.95)
Financial result from operating activities	2,190	368.79	418.76
Financial expenses	2,250	0	0
Other expenses	2,270	0	0
Financial result before taxation	2,290	368.79	418.76
Income tax	2,300	(66.39)	(75.38)
Net profit	2,350	302.41	343.38

Another negative result of the influence of these factors is the increase in administrative and other operating costs, which include the salary of administrative employees of the clinic, as well as costs for advertising activities and those that ensure the functioning of the clinic.

The negative results listed above outweighed even the increase in net income from the sale of the clinic’s services, which resulted in a decrease in the financial result from operating activities and, in turn, led to a decrease in the company’s net profit as well.

Thus, improvement of the clinic’s financial condition is possible if certain actions are taken in two directions. The first is an increase in income from the provision of services as a result of attracting and serving a larger number of patients. The second is the reduction of costs for organizational activities thanks to the increase in the rationality of the functioning of both administrators and assistants, saving time and optimizing information flows of the clinic.

For this purpose, the company should develop communication with customers by increasing its presence on the Internet. It also makes sense to implement CRM, which will help solve the current problems of the medical institution,

open up opportunities for further expansion, reaching a new level of customer service.

In order to speed up the administrator's work and reduce customer service time, it is necessary to remove unnecessary interruptions in the work of the clinic staff and automate some processes. For example, you can issue a patient card electronically. This will provide the clinic with a single patient database that will be accessible to all clinic staff who need it. It will also provide the possibility of keeping records of work performed and treatment for each patient, which will reduce the burden on assistants, freeing up their time, which they used to fill out paper cards.

The introduction of an electronic schedule will significantly speed up the search and coordination with doctors of patients' appointment times. This will speed up the process of registering a patient for an appointment by the administrator, provide doctors with the opportunity to clearly see their schedule for the day/week/month and change it themselves. Assistants will be given the opportunity to navigate this schedule and plan the preparation of the office and materials for each patient.

The use of a common electronic database of patients in combination with an electronic version of the price sheet for dental services will facilitate the process of communication between the doctor and the administrator. This combination will enable the doctor to enter information about the procedures performed in the database in the same electronic format. At the same time, the administrator will be able to see this list and timely and quickly generate a check for the patient with the amount of payment for the visit.

All this functionality can be provided by the CRM system, which, in addition to all the features mentioned above, will also allow timely informing of patients whose phone numbers are in the database about the time and date of scheduled appointments.

Currently, you can choose a CRM system for a medical institution from the list of specialized systems. CRM systems developed specifically for use by medical institutions have, on average, a somewhat similar interface (however, depending on the chosen CRM system, the features of the functionality may differ) and most often provide similar opportunities:

1) organization of a unified electronic database of clinic patients with the possibility of its further segmentation according to key features;

2) partial automation of the process of interaction with clients (in the segment of medical institutions, this is a reminder to the patient about an upcoming appointment, regular and timely invitations to a preventive examination, greetings with holidays, notifications about discounts and promotions of the clinic, etc.);

3) improvement of the communication process between patients and doctors;

4) optimization of the processes of collecting and processing information related to the patient, which enables the employees of the institution to save time, increasing the productivity of their work;

5) comfortable and easy appointment of patients to a specific specialist. Usually, the system has a convenient calendar that makes it possible to create a new record, clearly showing the current and planned employment of the specialist, and also offers to automatically remind the patient about the date and time of the upcoming appointment;

6) automatic calculation of the amount for the patient's treatment, creation of reports on the treatment, generation of certificates, statements, and appointments;

7) convenient tracking of the history of the patient's visits and appointments given to him/her by the doctor.

The main goal of the CRM system for a medical institution is to organize a full-fledged process of working with a client from the moment of his/her appointment to payment for medical services provided, and the general process of managing a medical institution.

Automation of business processes makes it possible to reduce resource costs for attracting new customers and keeping old ones. This is another advantage of using CRM systems because under the conditions of fierce competition, it is not enough to just provide good services. Quite often, the system itself offers a set of already available and existing tools, the use of which allows the performed work to reach a new level of competitiveness. For example, the integration of the CRM system and IP telephony can provide audio recording of calls and further analysis of the quality of interaction between clinic administrators and patients.

CRM also helps solve the following important tasks in the management of marketing processes:

1) formation of a general portrait of a potential client of the institution, based on previously collected data. This makes it possible to adjust the assortment, as well as the specifics of the services provided;

2) evaluation of the effectiveness of conducted advertising campaigns;

3) calculation of return on investment.

Such a system is a tool that, in fact, has no worthy alternative, which facilitates the work of each employee of a medical institution, namely:

– head of the institution (personnel management, financial reporting, analytics);

– doctor (daily clear and accessible work schedule, access to the results of past manipulations with the patient, laboratory tests);

– a nurse/doctor's assistant (medication record, record of performed manipulations, daily visual and accessible work schedule);

– administrator (maintenance of doctors' work schedule, appointment, facilitating the process of conducting monetary transactions);

– accountant (bookkeeping, payroll).

Keeping records in a single system makes it possible to ease the burden of paper document circulation, and practically get rid of it altogether, thanks to the fact that every employee has access to the information s/he needs in a convenient electronic format. It should also be noted that access rights to certain sections of the CRM system of the medical institution are granted to the employee in accordance with his/her competencies and duties that s/he must perform at work.

Also, such electronic systems provide a convenient update of the prices presented on the company's website and the establishment of communication within the team, between employees, which are definitely quite relevant issues in relation to the analyzed clinic.

The process of choosing a CRM system should begin with compiling a detailed list of requirements for its functionality, which are put forward by employees. Among the requirements that are relevant in this case, the following can be noted:

– availability of a visual calendar and the ability to display the work schedule of specialists;

– creation and regular updating of a single electronic database of patients with all contact information and an electronic version of their medical records;

- moderate cost of a monthly subscription to the operation of the implemented system;
- the ability to send an automatic newsletter, which, if necessary, will inform patients about the creation of new records, remind them of the future visit in the future and notify about changes in the work of the clinic;
- the possibility of automatic accounting of medical services provided to the patient and further calculation of the cost of the full visit;
- the possibility of drawing up invoices for payment of visits, certificates about the treatment carried out, extracts;
- convenience and clarity of the interface.

The choice of the CRM system for the Dental Clinic was helped by three employees of the clinic – representatives of different functional areas, who in the future will most often come across the program in their work. Among them are the director of the clinic, an accountant, and an administrator. For the director, the most important factors of choice are the cost of implementing the system and the quality of its online support. The accountant considers the ability of the system to automatically generate informative reports to be important. For the clinic administrator, it is important to have a convenient work schedule of all doctors, which is visually easy to perceive, the ability to set up automated mailings, and an intuitive and simple interface. Each of these employees assessed the importance of the listed characteristics in order to be able to further determine the weighting coefficients of each of them.

To assess the importance of system characteristics, each of the workers (experts) performed a pairwise comparison of characteristics using the Saati method. Thus, for each pair, the expert indicated how many times the significance of one

characteristic from his/her point of view is greater than the other and vice versa. After that, the price of the alternative (as the geometric mean of the obtained estimates) and its weight are determined for each characteristic according to the estimates of each expert. The results of the calculations are given in Tables 3, 4.

It is obvious that the assessments of each of the experts are sufficiently consistent, so the results of pairwise comparisons do not require additional coordination.

For the evaluations of each of the experts, a ranking was performed (the first place is the largest value of the weighting factor) and the calculation of the weighting factor of the system characteristics (Table 4).

The overall consistency of the experts' assessments is checked using the concordance coefficient (*W*). Its calculation formula takes the form (1):

$$W = \frac{m \cdot \frac{(n+1)}{2} \cdot S}{m^2 \cdot (n^3 - n)}, \tag{1}$$

where *m* is the number of experts involved in the assessment; *n* is the number of evaluated factors;

$S = \sum D_i^2$, where D_i is the average weighted coefficient of factor evaluation. To determine it, you need to convert the ratings of the significance of the characteristics into rank values and calculate the *S* and $S_{critical}$ indicators. To this end, it is necessary to carry out some preliminary calculations (Table 5). Including calculating D_i according to formula (2):

$$D_i = \text{Sum of ranks} - \frac{m \cdot (n+1)}{2}. \tag{2}$$

Table 3

Employees' assessments of the significance of system characteristics

System characteristics	Price	Automated mailing	Required reports	Technical support	Ease of perception of the schedule	Simplicity of the interface	Patient database
1. Administrator							
Price	1	2	3	0.3	2	4	0.7
Automated mailing	0.5	1	3.33	0.33	3.33	3.33	5
Required reports	0.33	0.3	1	0.2	0.25	1.67	3
Support	3.33	3	5	1	3	5	4
Convenience of perceiving the schedule	0.5	0.3	4	0.33	1	0.33	3
Simplicity of the interface	0.25	0.3	0.6	0.2	3	1	0.5
Patient database	1.43	0.2	0.33	0.25	0.33	2	1
2. Director							
Price	1	0.6	0.5	2	3	0.3	3
Automated mailing	1.67	1	0.5	2.5	0.33	2.5	3
Required reports	2	2	1	2	0.5	3.33	0.7
Support	0.5	0.4	0.2	1	0.7	3	3
Convenience of perceiving the schedule	0.33	0.3	2	1.43	1	0.5	0.6
Simplicity of the interface	3.33	0.4	0.3	0.33	2	1	2
Patient database	0.33	0.33	1.43	0.33	1.67	0.5	1
3. Accountant							
Price	1	2	0.7	5	2	3	3
Automated mailing	3.33	1	0.33	2	0.5	3.33	2
Required reports	1.43	3	1	3.33	5	5	4
Support	0.2	0.5	0.3	1	3	2	5
Convenience of perceiving the schedule	1	2	0.2	0.33	1	2	3
Simplicity of the interface	0.33	0.3	0.2	0.5	0.5	1	0.3
Patient database	0.33	0.5	0.25	0.2	0.33	3.33	1

Table 4

Ranking and calculation of the weighting coefficient of the system characteristics

System characteristics	Geometric mean	Weighting factor	Ranking
1. Administrator			
Price	1.39	0.16	3
Automated mailing	1.63	0.19	2
Required reports	0.59	0.07	5
Support	3.14	0.36	1
Convenience of perceiving the schedule	0.79	0.09	4
Simplicity of the interface	0.54	0.06	7
Patient database	0.55	0.06	6
2. Director			
Price	1.07	0.15	3
Automated mailing	1.26	0.18	2
Required reports	1.38	0.19	1
Support	0.94	0.13	4
Convenience of perceiving the schedule	0.92	0.13	5
Simplicity of the interface	0.91	0.13	6
Patient database	0.64	0.09	7
3. Accountant			
Price	2.00	0.23	2
Automated mailing	1.01	0.12	3
Required reports	2.83	0.33	1
Support	0.99	0.11	4
Convenience of perceiving the schedule	0.88	0.10	5
Simplicity of the interface	0.40	0.05	7
Patient database	0.51	0.06	6

Table 5

Intermediate calculations

System characteristics	Ranking by administrator	Ranking by Director	Ranking by an accountant	Sum of ranks	Average weighting coefficient of factor assessment	D_i^2
Price	3	3	2	8	-4	16
Automated mailing	2	2	3	7	-5	25
Required reports	5	1	1	7	-5	25
Support	1	4	4	9	-3	9
Convenience of perceiving the schedule	4	5	5	14	2	4
Simplicity of the interface	7	6	7	20	8	64
Patient database	6	7	6	19	7	49
Total						192

Table 6

Average weighting coefficients of system characteristics

No.	Characteristic	Weight
1	Price	0.18
2	Automated mailing	0.16
3	Required reports	0.2
4	Support	0.2
5	Convenience of perceiving the schedule	0.11
6	Simplicity of the interface	0.08
7	Patient database	0.07

Checking the critical value of S in the case of evaluating seven factors with the involvement of three experts at the significance level of 0.05, we get $S_{critical}=157.3$. Since S calculated is equal to 192, it is obvious that S calculated is greater than $S_{critical}$, which means that the experts' estimates are consistent.

The concordance coefficient $W=0.76$ is greater than 0.5, which indicates that there is no need to deny the correctness of the expert assessment.

According to the agreed estimates of three available experts, the average weighting factor for each characteristic was calculated (Table 6).

Each of the three selected experts conducted a preliminary evaluation of the functionality of each of the systems on a ten-point scale. After the evaluation, these evaluations were also checked for consistency.

The method of linear additive convolution was used for comparative evaluation of the selected alternatives (Table 7).

In the aggregate of all important factors, after taking into account the weighting coefficients of the importance of each of the listed characteristics, the best available alternative – DentalTap Pho – was identified through the evaluation.

Table 8 gives the results of the financial statements of “DC” before the implementation of the CRM system and the

projected structure of income and expenses, which should be formed as a result of its implementation.

The forecast of changes in the clinic's financial results after the implementation of the CRM system is based on the minimum expected increase in gross profit (UAH 392.5 thousand) and an estimated increase in expenses. Fixed costs should increase, first of all, due to the increase in utility bills of the clinic, as well as the volume of rental payments for the use of the CRM system. Variable costs will increase in proportion to the increase in the number of patients, approximately by 37.5 %. As a result, it is possible to predict an increase in the net profit of the clinic by UAH 249.6 thousand, that is, the increase in net profit can be 82.5 %.

Qualitative indicators (direct effects) can be characterized by the expansion of functionality provided by the system. Using these opportunities should also lead to an increase in the number of clients, which will increase the clinic's income and improve other financial indicators. The expected effects of the implementation of the CRM system are given in Table 9.

Therefore, the implementation and use of the CRM system at the enterprise under study makes it possible to employ most of its advantages, namely:

- optimize communications within the company;
- use the analytical capabilities of the CRM system;
- manage customer information;
- to automate document processing;
- manage business processes.

Table 7

Evaluation of alternatives by linear additive convolution

CRM systems	Price	Automated mailing	Required reports	Technical support	Ease of perception of the schedule	Simplicity of the interface	Patient database	Integrated criterion	Ranking
Bitrix 24	3.5	4.7	9	5	7	9	6.3	6.09	5
ITTel	10	5	6.7	7.3	7	9.3	5.7	7.312	2
WireCRM	9.17	8	6.7	4.7	5	6	5	6.591	3
Medesk	0	7.7	9	8	7.7	8	6	6.525	4
DentalTap Pho	4.74	9	6.3	8.7	9.3	6.3	9	7.456	1
Medmis	1.35	7	5.7	7.7	5.3	7.7	8	5.807	6
Weight	0.18	0.16	0.2	0.2	0.11	0.08	0.07	–	–

Table 8

Structure of income and expenses of the "DC" clinic

No.	Indicator	Before the implementation of a CRM system, thousand UAH	Projected value after the implementation of the CRM system, thousand UAH
1	Gross profit	1158.53	1551.0
2	Variable costs	123.4	169.67
3	Fixed costs	524.6	708.21
4	Net profit	302.41	551.96

Table 9

Effects of CRM system implementation

Status before implementation	Changes	Short-term effects of implementation	Long-term effects of implementation
Absence of those responsible for communication with patients	Optimization of the organizational structure	Improving the quality of patient care	Increasing the level of patient satisfaction Increasing the level of income of the clinic due to improving the quality of service and optimizing the organizational structure
A paper database of patients is used; patient data is not systematized; employees have difficult access to the database	Creation of a single electronic database	Improving the quality and speed of patient care	Increasing patient satisfaction Increasing staff satisfaction
Lack of management tools for the internal processes of the clinic and processes of interaction with patients	Automation of business processes	Improving the quality and speed of patient care, and the productivity of employees	Increasing the income of the clinic due to the improvement of the quality of patient care
Management decisions are made without taking into account indicators of work with patients	Management of client indicators	Improving the quality and speed of patient care	Increasing patient satisfaction due to the focus of processes and their results on improving work with patients
Contacts and applications are processed manually	Automation of processing contacts and requests	Increasing the productivity of employees	Increasing the clinic's income due to an increase in the number of patients served
Employees receive information from disparate sources, spending time to reconcile it at several levels	Maintenance of a single database of patients	Reduction of time spent searching for patient information	Increase in income due to the ability to serve more customers

6. Discussion of results of defining a procedure for choosing an adequate CRM system

As defined in the section comparing digital marketing to internet marketing, digital marketing is, in its essence, a deep understanding of the real intentions and desires, needs of a person and the creation of those products that are needed by this audience. This is justified by the fact that it is important to create a product at the request of the audience, and not the other way around, as is often done. In digital marketing, the user, his/her behavior, actions in a specific period of time are analyzed, and the consumer is provided with the content that best meets his/her needs. Advanced brands no longer sell their products “bang straight in your forehead”, they engage the audience, offer them useful content and products at the right time and in the right place.

Thanks to end-to-end analytics, which is a distinctive feature of digital marketing, it becomes possible to react as quickly, accurately, and flexibly as possible to any changes in the market, adjust marketing actions in order to increase their effectiveness, and forecast financial results. The advantages of digital marketing are also formed by the fact that all kinds of digital channels are used, which also cover the offline environment – this is digital television, gadgets, mobile applications, game consoles, interactive screens, local networks, etc.

All this allows us to assert the following advantages of digital marketing.

First, it is full access to information about goods and services, which is ensured by the fact that most people can use the Internet from anywhere at any time. With the help of digital marketing, consumers can visit a company’s website, visually perceive information about products and evaluate their characteristics, as well as make online purchases with the opportunity to leave a review.

Secondly, it is a concise presentation of information about goods or services. With the potential of digital marketing, consumers can get clear information about the products or services they are interested in when making purchasing decisions.

Thirdly, it is an opportunity to compare products from different suppliers. Consumers do not need to visit many different outlets to get product information.

Fourthly, it is an opportunity for round-the-clock shopping.

Fifth, these are open prices. Companies clearly and transparently display the prices of the offered goods.

In addition, one should note the possibility to share the characteristics of the product or service with others.

Compared to traditional methods of promotion, digital marketing has the following advantages:

- global coverage. Promotion of the site makes it possible to find new markets and trade all over the world without making large investments;

- low cost. A well-planned, targeted campaign can attract the right customers at a lower cost than traditional marketing methods;

- tracked, measurable results. Monitoring the implementation of the Internet marketing strategy with the help of web analytics and other tools makes it easier to determine the effectiveness of the campaign. An entrepreneur can easily get detailed information about how customers use the site or respond to advertising;

- personalization. If the customer database is connected to a web resource, then every time when setting up contex-

tual advertising, you can use the available information and make your appeal to the user more individualized;

- openness. By communicating with potential customers on social networks and carefully managing other channels, the business increases user loyalty, improves its reputation;

- long-term impact. Digital marketing makes it possible to create attractive campaigns using content marketing tactics. Content (images, videos, articles) can acquire social value – be passed from user to user, become viral;

- improved conversion rates. When a visitor is on the site, they are just one click away from making a purchase. Unlike other channels, digital marketing can be as effective as possible.

The above advantages are provided by the components of CRM precisely as a comprehensive tool for forming scenarios of relationship marketing. Therefore, the elaboration of this instrument both at the level of structural components and at the level of classification is important to confirm this. According to the diagram in Fig. 1, the content of the CRM classification is as follows:

- operational component: the main task is to ensure operational access to information about the client in order to organize more effective interaction with him/her;

- analytical component: the main task is to create a single database for its further analysis, collecting statistics, searching for patterns, which will ensure the determination of the company’s further development strategy, as well as provide an opportunity to redefine business processes;

- a combined component: it allows increasing the client’s influence on the company’s internal processes, such as, for example, product design development.

In this context, it can be noted that such systems are equipped with mechanisms for receiving feedback from the client. As an example, you can consider informing the client about the research samples of the product and giving him/her early access to them. As a result, the client can express his/her wishes regarding the further promotion of a new product or service to the market. And this distinguishes the perception of CRM systems as purely analytical, as they are usually positioned by most developers.

The CRM system, integrated into the company’s work, ensures the coordination of the actions of various departments, provides them with a common and publicly accessible platform for interaction with customers. Thus, it can be effectively used in a situation where separate departments operate independently of each other, and their vision of the customer’s requirements does not coincide. The purpose of the system is precisely to coordinate their actions among themselves.

From the point of view of business management, the effect of implementing CRM is that the decision-making process with the help of automation is transferred to a lower level and also unified. Due to this, the speed of business response to customer requests increases, the speed of turnover of funds increases, and costs, on the contrary, decrease.

After all, CRM implements the ideology and technologies, with the help of which the history of the relationship between the client and the company is written, which makes it possible to more clearly plan the future of the business and increase its sustainability.

Due to the mentioned advantages of CRM systems, which allow integration solutions, the implementation to ensure the automated solution of customer relationship management tasks allows for the following:

- reduced administrative costs;
- increased sales volume per manager;
- increased number of signed agreements.

However, it is obvious that the achievement of performance indicators within the framework of a separate project is impossible due to limited resources (time, financial, and other) and is not expedient since the specificity of the functionality of each enterprise determines the main indicators of its performance. Therefore, the most important component of the CRM implementation project is the stage of setting goals. The goals of the project should be written in detail and logically connected with the strategic goals of the enterprise. In particular, using a system of balanced indicators, it is possible to decompose general goals into goals of the “lower” levels – customer, operational, personnel, and technology.

The method of analyzing several key indicators before and after (as well as during) the changes can be used to evaluate the effect of CRM implementation. These are the measurements against which the company will further evaluate the effectiveness of its relations with customers. Some of these indicators can be determined by most companies even before the start of the project. Several company-specific indicators are selected, indicators are usually combined by groups of business processes or CRM subsystems.

The paradox is that for a formalized evaluation of the effectiveness of the implementation of CRM, non-financial data from the periods before the implementation of the CRM system are required. And this data is usually not at the disposal of analysts because it is the CRM system that is needed to collect it. Thus, it is possible to evaluate the “dry balance” – the growth of the company’s income in different periods of time, but at the same time there will be no unequivocal confirmation that it is caused by the introduction of the CRM system. To answer this question, you need to analyze the structure of the client base, the effectiveness of managers, the growth of customer loyalty, and much more that can be done using the CRM system itself. Therefore, in order to obtain a reasonable assessment, the selected indicators (both in natural and cost form) are monitored already during the reorganization of the relevant processes and the implementation of the components of the information system.

In the process of verification of the procedure for choosing an adequate CRM system, performed on the example of a dental clinic (Tables 1–7), certain calculations were performed. According to their results, DentalTap can be recommended as a tool to help organize the work of a medical institution specializing in dentistry. The system is designed to help maintain office occupancy schedules, maintain a customer database, and analyze the institution’s profitability. The application is available online in a browser version and does not require additional installation on a computer.

The chosen platform ensures the optimization of the activities of both private dentists and large dental clinics and holdings. Private entrepreneurs can use a free tariff while it is assumed that larger organizations will issue paid access to the system with the possibility of adaptation for different employees. This paid subscription allows employees to solve individual tasks. Assistants will be able to independently form visual schedules of employment and track payments on all created accounts, doctors will always have access to their schedule, and owners/directors of institutions will be able to control the flow of funds and the profitability of the enterprise.

DentalTap makes it possible to keep electronic records of patients, in which all their visits are recorded, it is possible to make special notes and save various information about examinations, formed treatment plans, and unpaid bills.

It is possible to create an entry in the calendar using the data of an existing client or to add data about a new participant to the system immediately during the registration process. The platform provides an opportunity to maintain a price list of all the institution’s services directly in the middle of the system.

The available analytical section can provide for the following:

- 1) plan visits:
 - the ability to review the existing calendar of scheduled appointments, plan a new one, or create a repeat visit, observe reminders about repeat visits and unscheduled treatments;
 - send reminders to patients to confirm visits;
 - make notes on visits or create discussions in the form of a joint chat among employees within the program;
 - 2) keep a convenient dental chart designed for dentists of any specialization – therapists, surgeons, orthopedists, orthodontists, etc. and displays:
 - history of treatment, diagnoses, and notes for each tooth in the form of diseases with the possibility to clarify the diagnosis;
 - statuses of treatment (carried out, requiring treatment or ongoing treatment);
 - each area of the tooth, which is displayed using different colors;
 - 3) store and analyze images and snapshots:
 - all X-ray images can be divided by regions of the oral cavity for convenient work with them;
 - all images are saved in chronological order;
 - the ability to select an area that needs attention with the help of a tool for drawing over the image;
 - 4) plan treatment:
 - formation of several variants of the same treatment, display in the mode of comparison and demonstration to the patient;
 - grouping of procedures by stages, as well as carrying out an intermediate approximate calculation of the cost of each stage;
 - changes in the dental record automatically appear if the work according to the treatment plan is performed on time;
 - 5) perform billing:
 - monitor the patient’s balance: debt and available amount for subsequent calculations for the performed procedures;
 - the possibility to split the treatment into several payments and take into account payment in parts. All transactions are stored as payment histories;
 - adding comments to the payment, accounting for discounts;
 - the ability to analyze statistics based on the results of the work of each employee individually and of the entire clinic as a whole;
 - display of reports for the selected period according to the list of indicators: cash flows, dynamics of growth and outflow of patients. Reports are displayed in the form of tables, as well as graphical charts, which are formed into PDF files for later printing.
 - 6) provide automated document flow:
 - the possibility of using both built-in and personalized tags for the flexible formation of documents;

- quick copying of existing templates of clinic documents from any editor into the application with formatting preserved;

- the possibility of formatting documents using the built-in editor;

7) create and use storage files:

- the ability to upload images and references of any format and any size to the patient card: 3D images, X-rays, documents, test results, etc.;

- saving documents in tag folders for quick search and access;

- the possibility of viewing the patient's profile with the display of all the necessary information in one place;

- providing the patient with access to all his/her files through a secure file server.

Thus, it can be concluded that the chosen “DentalTap” platform fully meets the needs of the “DS” clinic, and its use can be quite effective (Tables 8, 9).

However, it should be noted that in order to determine the effectiveness of the implementation of the CRM system, it is necessary to compare the results of its operation with the costs of all necessary types of resources. This is part of the limitations of the study from the point of view of practical implementation.

Since DentalTap is a cloud-based service, the cost of its use depends on the selected tariff and is in the form of a monthly subscription fee. It was found that the tariff of UAH 1,205 per month is most suitable for the dental clinic under consideration. Under the conditions of a subscription fee of this size, the clinic is provided with all the necessary features of the existing functionality. Thus, it can be determined that the annual costs of using the program will amount to UAH 14,460.

It should also be noted that in practical use there is a need to find out the indicators of improvement of work with clinic patients. In general, they can be divided into qualitative and quantitative. And if the qualitative ones relate directly to the service, then the quantitative ones can include an increase in the speed of creating a record and working with patient data, a decrease in the time spent by administrators and other clinic staff on work process tasks. Thus, the administrator, working without a CRM system, spends from 15 to 50 minutes to record a patient for an appointment. Due to the lack of a clear general schedule and the need to involve not only the assistant of a certain doctor but sometimes the doctor himself/herself, this process was quite long. The time to perform the same work in the presence of a CRM system is reduced due to the fact that the automated system makes it possible to perform a quick search in a common electronic database. Using the CRM system, the administrator spends an average of 8 minutes recording a patient for an appointment. Thus, the administrator's labor productivity increased by 73.3%. It can be concluded that the time saved at this stage can be spent on performing additional work.

Statistically determined average indicators of customer service time in the analyzed clinic make it possible to estimate the economic effect of saving the time of a client's appointment. So, the average duration of a patient's service by a doctor, on the basis of which the appointment schedule is planned, is approximately 40–60 minutes. Taking into account the registration time, it is 90 minutes (on average) before the implementation of the CRM system and 68 minutes after. Taking into account that the clinic works 12 hours a day, it is possible to predict an increase in the number of clients as a result of only saving time for registration from 8 to 11 a day. Taking

into account the fact that the average cost of one patient's visit is from UAH 900 to UAH 1,800, it is possible to predict additional income of UAH 2,700–5,400. per day, which will amount to UAH 675,000–1,350,000 per year.

In addition to the specified limitation regarding the practical application of the proposed systems, it is worth noting the limitations of the proposed procedure. In particular, when choosing the criteria of rationality or optimality of the system for information and analytical support of the enterprise's marketing activities, the possibility of conflicting criteria should be taken into account. This is especially important if the task is optimization, as opposed to the search for rational solutions that are more narrowly specialized. In addition, the potential influence of the specificity of the enterprise should be taken into account. In this sense, the general tendency regarding the limitation of the results, defined in works [6, 12, 18], remains. But in contrast to the results reported in [8, 9, 15], our principles of choosing a CRM system in the context of the basis of information and analytical support are invariant with respect to the location of the enterprise, so we can talk about the scalability of the results. This can determine possible areas for advancing the current research, for example, by spreading the results to enterprises related to other areas of medical services, or those operating outside of Ukraine.

A certain development of research can also be achieved in the direction of using the analytical capabilities of the CRM system. The main attention in our study was paid to the problem of system selection and evaluation of effects that have direct quantitative and qualitative manifestation. The presence of such effects was considered as a result of the use of tools for optimization of communications within the company, management of customer information, planning and control of personnel actions, automation of document flow. The disadvantage of such an approach is that the ability of the CRM system to receive statistical information and perform complex data analysis, which is necessary for making strategically important business decisions, has not been considered. In addition, the functionality of the systems includes tools for tracking KPIs (key performance indicators), the analysis of which will allow management to evaluate the performance of each employee. The development of research in the indicated direction will make it possible to consider the peculiarities of the use of CRM systems at the tactical and strategic levels of management, to take into account the synergistic effect that arises.

7. Conclusions

1. It was determined that the differences between Internet marketing and digital marketing consist in interaction with the target audience, methods of collecting and transmitting analytical data, channels, and promotion tools. While Internet technologies perform only information, communication and sales, and logistics functions in the marketing activities of enterprises, digital marketing involves the comprehensive promotion of the company's products and services using all available digital channels. This means that a client-oriented and personalized approach, constant interaction with subscribers, obtaining the necessary analytical data in real time outside the online space becomes possible.

2. Conceptual decisions regarding the information and analytical support of the enterprise's marketing activity pro-

vide for the consideration of relationship marketing as a purposeful information activity. This is the activity of searching, selecting, processing, accumulating, summarizing, and saving information units and, on this basis, producing new knowledge about the phenomenon or event being studied. That is, the information and analytical support of the enterprise's marketing activity can be represented as a tool of the enterprise's activity, functioning as an element of the enterprise's management system. This is due, in particular, to the presence of such attributes of the process of information and analytical support of the enterprise's marketing activities as systematicity and cascading.

3. Among the general criteria for choosing a CRM system, it is recommended to consider convenience and ease of use, flexibility of system settings for special business needs, price, ease of CRM installation, data import, and system mastery by employees.

4. It was determined that the main types of economic effects from the application of the CRM system at the enterprise are the effects of direct action, the effects of preventing the influence of negative factors, and general corporate effects. It is noted that the effects of direct action primarily affect the profitability of the enterprise, and the general corporate effects are difficult to directly calculate and are important primarily to the company's shareholders.

5. According to the results of the verification of the procedure for choosing an adequate CRM system on the example of a dental clinic, it was determined that the best of the available alternatives is the DentalTap Pho system. This conclusion is based on the received estimates of short-term and long-term economic effects from the use of the system with the help of qualitative and quantitative indicators of improvement of work with clinic patients, general economic in-

dicators of the clinic's work. In particular, it was determined that the productivity of the administrator's work increased by 73.3 %, and the average duration of patient service by the doctor, based on which the appointment schedule is planned, taking into account the time of registration, decreases by 25 %. This is due to the fact that the system makes it possible to perform a quick search on the general electronic database, and the time saved at this stage can be spent on performing additional work.

Conflicts of interest

The authors declare that they have no conflicts of interest in relation to the current study, including financial, personal, authorship, or any other, that could affect the study and the results reported in this paper.

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Data availability

All data are available in the main text of the manuscript.

Use of artificial intelligence

The authors confirm that they did not use artificial intelligence technologies when creating the current work.

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