ANALYSIS OF HEALTH CARE CRM INFORMATION SYSTEMS APPLICATION TO DISTANT PATIENT CONSULTATIONS

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Abstract

Many industries face challenges associated with the course of COVID-19 disease. One such industry is health care itself. The situation in Slovakia only confirmed the need to digitize the industry to an acceptable level. It also creates opportunities in the area of creating new business ideas. GP online consultations benefit from the use of CRM systems. Several companies provide health care consulting services in Slovakia. This is basically a second medical expert opinion. This article presents an analytical view of several medical patient consultation platform-based companies. The aim is to point out the use of CRM systems in the health care industry.

Keywords: *CMR, health management, information systems, management*

1   INTRODUCTION

The information system concept was initially associated with the field of management. In a sense, the role of the IS is to provide relevant information at the right time to perform certain functions in the system. (Kimlička, 2006)

Information systems include various technologies, such as computers, databases, communication systems, mobile devices, and international networks. It is important for information systems to allow their implementation that meets various requirements. (Boell, Cecez, 2015) Today, information systems are key to business success. However, many companies do not understand what an information system is and where and when to use it. (Savojsko, 2016)

According to Hittmár, information systems are defined as a set of people, technical means, data (information), software procedures, and organizational tasks to collect, transmit, store, and manage data in order to create information presentations for users, especially members of the management. (Hittmár, 2011)

An information system is, therefore, any organized combination of people, data sources, hardware, and software that store, retrieve, and disseminate information in a business. Various physical devices, procedures, instructions, communication channels, and data sources are required for communication between information systems. A subset of IS is information technology. (Keikhosrokiani, 2020) Information systems are very important in business management and need to be addressed systematically and systemically. According to Hittmár, large organizations and their business processes cannot be managed without IS support. The reason is the ever-increasing volumes of data, the ongoing work with data, as well as their maintenance and the security of data itself. (Hittmár, 2011)

CRM (Customer Relationship Management) systems are classified as internal company systems. Their principal function is to manage customer relationships to create long-term relationships between the company and the customer. CRMs are highly configurable today, but it is necessary to understand business needs. The advantages and disadvantages of CRM used by competitors should be assessed first. If CRM already interacts with existing applications, customer understanding will increase. (Larkou, 2020) According to the customer portal, the following steps are the basis for the successful implementation of CRM (CRM, 2017):

1. CRM systems market research
2. Training of people in charge
3. Explaining and presenting the benefits of using a CRM system to employees
4. Trial project
5. Data import

The process of successful CRM implementation is the most difficult challenge for modern companies. However, best practices exist, together with implementation protocols. It is recommended for a company to create a CRM implementation team. At the basic level, the team should include a Project Manager, Application Analyst, Application Developer, Quality Testing Engineer, as well as a representative from all key departments, such as the sales team, or Sales Manager. (Haines, 2019)

The budget is a necessary part of the implementation. A company must not only account for the obvious costs, but it must also think of everything, including the reduction in productivity during the CRM implementation transitional period. It also includes items such as telephone costs, training, consulting fees, overtime, and data backup and storage. (Haines, 2019)

In order for the CRM implementation to succeed, a company needs to meet the following points (Kubina, Lendel, 2018):

- Define the reasons for implementing the information system
- Define the duration of implementation
- Set goals

- Create an implementation team
- Define the implementation protocol
- Production of all relevant data
- Execution of the implementation itself
- Creation of conditions for continuous improvement

Chat, social media, sites, marketing materials, and phone calls can be integrated into CRM. It creates a simple user interface and then helps the company to communicate and recognize the audience in a scalable manner. (Kulpa, 2017)

A CRM system is beneficial for both small and large businesses if it is properly implemented. It provides companies with strategic benefits. It allows you to understand the specific needs of customers, as well as the transactional files.

For small businesses and marketers, CRM helps to get a better idea of what is the marketing target audience. They can more easily track changes as the business evolves. It helps them send the right content to the right people. This means that they can tailor messages to specific segments, which is key in marketing. CRM also allows you to use data to find new people. (Mailchimp, 2021) It helps businesses find new people and learn about them. With CRM, a company gathers information on who its customers are and why they buy its products. Subsequently, the company can anticipate its needs. At the same time, it makes it possible to streamline the company organization and automate certain aspects of the business. CRM software also helps optimize audience interactions. (Kulpa, 2017)

Like any system, CRM brings various disadvantages associated with its implementation and application in the company. The main disadvantage is the possible loss of records. Some CRM software uses a remote Internet connection to store customer data. Therefore, the company has no control over the data if the CRM system fails and will not be able to collect the relevant data.

CRM applications provide for the process automation mentioned above. It follows that the human element is lost. An example is a voice memo at the end of a call, instead of the voice of a real person.

Training is another issue. Small businesses have fewer training issues than large ones. Training is usually different for managers and employees. These training sessions can last for several hours, even up to several days. (Infinigeek, 2019)

The article aims to analyze individual selected companies that use health care CRM systems. This is a specific area of telehealth that is gaining more and more ground even during the COVID-19 pandemic. The companies analyzed focus on the online provision of consulting services and producing medical reports. Clients can thus get an opinion from a different doctor about their health condition. General practitioners involved in the development of health assessments often engage internationally. The selection of the companies was subject to availability in the Slovak Republic. The analyzed factors included: the number of doctors, the price of the report,

the possibility of video consultation, the user interface of the website, and the GP specializations.

2 ANALYSIS OF SEVERAL HEALTH CARE COMPANIES FOCUSED ON CRM SYSTEMS

The health care companies were selected from among those that operate in Slovakia. Businesses perform online consulting services for their clients in the health care industry.

2.1 DIAGNOSE.ME

The online platform called Diagnose.me—which rather seems to originate from outside Slovakia—is in fact a successful project, which was founded in 2012 in Slovakia. Its founders are Ivan Štefunko and Lukáš Alner, who had difficult medical diagnoses, and it was challenging for them to reach leading experts in the field. (Diagnose.me, 2021)

The platform provides a sufficient amount of information on the health assessment procedure and the experts themselves. However, it lacks information on payment options, which is shown to the applicant only at the final stage of the request for a medical opinion, and at the same time, they are very limited. If an expert provides the possibility of video consultation after the assessment has been produced, this option must be selected during completing the request for a report form. Video consultation is possible for an additional fee set by the doctor. In the case under analysis, the amount for the video consultation was not added to the price of the report, and the payment was calculated only for the medical assessment.

The interface informs the customer of the fact that the number of medical documents uploaded is limited and there is a fee for any excessive documents uploaded via the system during the Report Request Procedure. If the number of documents uploaded exceeds the limit, the price will not change, and the applicant will, therefore, not be explained how and when this additional fee will be paid for, similarly as with video consultation.

The platform is available in five languages, but not all parts thereof or documents are translated. The absence of translation applies in particular to the pages 'For employers and insurance companies. Both pages are exclusively in English, together with the documents that are available to download in that section.

The analysis of the Diagnose.me platform includes an analysis of individual subpages and the user profile interface from the applicant's perspective. It is not possible to analyze other interfaces, such as the doctor profile interface, or from the perspective of an expert committee or company management. (Diagnose.me, 2021)

2.2 Druhý názor lekára s.r.o.

A company mediating professional medical opinions named Druhý názor lekára, s.r.o. (Second Doctor Opinion Ltd), is a Slovak company primarily focused on the provision of expert medical opinions. It operates a website which, however, does not contain an online system for requesting medical opinions and signup and login systems for patients and doctors alike. The website is mainly informative and discloses information on the services and the report request procedure to the potential client. The individual information pages contain brief information that is arranged fairly chaotically.

The process of submitting the request and getting the medical report takes place either by phone or e-mail, which can pose a security risk with regard to sharing sensitive medical data.

The website has a section reserved for news on the issue, but that has not been updated, and the last articles are from 2016 when the company was founded. (Druhy nazor lekara, 2021)

2.3 Virtual Second Opinion – Cleveland Clinic

The American Cleveland Clinic is a world-renowned organization in the field of health care, as evidenced by its leading position in the rankings. It employees global specialists in a number of fields, thanks to which it is able to provide its services of medical second opinions at a first-class level.

The process of creating a request for a medical second opinion is very intuitive and implemented in clear steps. It provides the client with enough information and an intuitive environment both for entering data and for uploading documents. The whole process takes place online, and it is also possible to make card payments.

The user profile environment contains clearly arranged elements and additional options for interaction with the clinic, as well as the option to update your request even after it has been submitted. (Virtual Second Opinion, 2021)

2.4 Comparison of IS—Patient Perspective
The following table shows a comparison of individual companies focused on online patient health consultations.

Table 1 Comparison of Portals

Patient Criteria	Diagnose.me	Druhý názor lekára	Cleveland Clinic
GP Selection	Yes	Partially	No
User Sign-Up & Profile	Yes	No	Yes
Languages	Yes	No	No
Prices	€100–€1500	Unknown	$2500
Report Type	2	Undefined	No
Number of GPs	105	3	Unknown
GP Profile	Yes	Yes	No
Video Consultations	Yes	No	No
Number of Specializations	36	3	Unknown
Social Networks	Yes	Yes	Yes
Feedback	Yes	No	No

Source: (Diagnose.me, 2021; Druhý názor lekára, 2021; Virtual Second Opinion, 202)

From the table above, it is possible to see differences between individual companies. The differences are mainly due to the location of the company. Some operate internationally, some are focused on the Slovak market only. An example of how consulting companies work is based on an online relationship between a patient and a doctor.

3   CONCLUSION

In the analysis of relevant business information systems, three companies were analyzed, whose primary focus is to provide medical second opinions from various health care specialists.

The first company analyzed was Diagnose.me, which was founded in Slovakia and currently headquartered in the Netherlands. It has been on the market since 2014 and provides an online platform for users to sign up and get a medical opinion from dozens of GPs with various specializations. The platform is translated into five languages and provides a convenient method for getting a medical opinion. Apart from slight technical, graphic, and translation shortcomings, the platform can be evaluated positively.

The second company analyzed was the company Druhý názor lekára, s.r.o., which operates a website on the domain druhynazorlekara.sk Compared to Diagnose.me, however, it is merely a presentation providing the necessary information to obtain a medical second opinion, but the communication with the company, payment methods, and delivery of medical documentation go through a telephone or e-mail

communication. The website has more graphic shortcomings, the content on the page is arranged chaotically, and the articles in the news section are not being updated, which creates a partially negative impression for the potential applicant.

The last analyzed platform was the Virtual Second Opinion platform from the Cleveland Clinic, which provides world-class health care services. The platform offers an intuitive, fast, and simple environment, which, however, is made only in English, and compared to other platforms analyzed, the price of these services is relatively high.

Digitization generally brings opportunities to create new business models. It was the implementation of online consultation by the GPs that create space for CRM systems in medical practice. During the COVID-19 pandemic, this created an ideal opportunity to obtain a "different" medical opinion. However, it is necessary to emphasize that the production of medical reports is a costly matter for the patient. These services are usually used by patients with more serious types of diseases to get a chance to be in touch with world experts.

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