

Amel Kosovac, PhD

Associate Professor
University of Sarajevo
Faculty of Traffic and Communications
E-mail: amelkosovac@gmail.com
Orcid: <https://orcid.org/0000-0002-1192-4765>

Elvedin Grabovica, PhD

Assistant Professor
University of Sarajevo
School of Economics and Business
E-mail: elvedin.grabovica@efsa.unsa.ba
Orcid: <https://orcid.org/0000-0002-9835-5971>

Adisa Medić, MA

Research Teaching Assistant
University of Sarajevo
Faculty of Traffic and Communications
E-mail: s_adisa@hotmail.com
Orcid: <https://orcid.org/0000-0002-9317-8638>

Aida Kalem, MA

Research Teaching Assistant
University of Sarajevo
Faculty of Traffic and Communications
E-mail: aida.kalem@gmail.com
Orcid: <https://orcid.org/0000-0002-4266-9306>

PROPOSAL OF CRM CONCEPTUAL MODEL/Framework TO OPTIMISE RELATIONS AMONG STAKEHOLDERS OF HIGHER EDUCATION

UDC / UDK: 658.8:378

JEL classification / JEL klasifikacija: I23, M30, M31

DOI: 10.17818/EMIP/2022/2.15

Professional paper / Stručni rad

Received / Primljeno: May 20, 2022 / 20. svibnja 2022.

Accepted / Prihvaćeno: October 4, 2022 / 4. listopada 2022.

Abstract

In the present-day environment pertaining to digitalisation, increasing competition on the market and changes in industries, the CRM as a system is an essential tool for success. The issue of CRM system application in higher education institutions is insufficiently researched, especially in the parts that should indicate a clear connection between participants in higher education and CRM in higher education institutions, and factors that decision makers should pay attention to when making

decisions about CRM implementation. Therefore, the aim of the paper is to research the functionality, application and advantages of CRM in the higher education sector, and to determine the features that will facilitate effective decision-making on the implementation of CRM. As a result of the research, a proposal for a conceptual model/framework of CRM was presented. The proposal is presented for the purpose of making appropriate decisions for higher education institutions when it comes to developing their own or purchasing a ready-made CRM solution. From the scientific aspect, the paper contributes to the existing literature by providing decision makers with an insight into the structure of the CRM system, its elements, connections and functionalities, as well as a description of the model with the information they need to pay attention to when making decisions.

Keywords: *Managing relations with users—CRM, analytical CRM, implementation and applications, effects of implementation, higher education institutions, higher education, managing relations among university and students.*

1. INTRODUCTION

Together with the development of information technologies and advances in technology, changes pertaining to contemporary businesses imply that companies are adjusting to the fact that the user represents the key factor of success, and that conducting business as a whole has to be oriented towards user/customer satisfaction. In this process, the key role is played by Customer Relationship Management (in further text: CRM) which uses a combination of strategies, processes and technology (Winer, 2001) with the aim of improving relations with stakeholders/customers in the whole process.

Open questions for analysis concern research in the field of application of the CRM in the higher education sector, as well as knowledge that higher education institutions should pay attention to, when making decisions on the implementation of the CRM. Through the research, the authors encountered a lack of relevant literature that points to a clear link between participants in higher education and the CRM in higher education institutions. The authors also encountered the problem of a lack of relevant literature that points to factors that decision makers should focus on, when making decisions about the CRM implementation.

When it comes to the stakeholders of the CRM system in higher education institutions, it primarily refers to potential, current and future students, but also to academic and non-academic staff, the government, regulatory bodies, other higher education institutions, etc.

Generally speaking, the future success of higher education depends on the abilities of these institutions to communicate with students (Gholami et al., 2015).

The paper is divided into five chapters. After the introductory considerations, the second chapter provides an overview of the basic conceptual features and functionalities of CRM in general, and CRM in higher education.

The third chapter of the work includes certain examples of ready-made CRM solutions for application in higher education with clearly shown advantages provided by the application of the CRM strategy. The fourth chapter of the paper considers the proposal of a conceptual model/framework of CRM in the function of optimizing the management of relations with users of higher education institutions, while concluding considerations are given at the end of the paper.

2. THEORETICAL BACKGROUND

2.1. Definitions and key features of Customer Relationship Management (CRM) and Business Intelligence (BI)

Different modern information systems (IS) provide key support for business-related processes, gathering, analysis and presentation of business data, annual business reports pertaining to business activities, plans, processes or the whole system. Globalisation and liberalisation require new demands for business systems: a timely reaction to change and processing a great amount of data about former and current operations necessary to make correct decisions. In other words, there is a need for a desired piece of information to be delivered where and when necessary, which allows for an establishment of a new business value.

The Business Intelligence (in further text: BI) presents an array of techniques and tools which are used by the company for a transformation of raw data into meaningful and useful information necessary for business analysis. By analysing various sources, it is concluded that the BI is a lasting process during which companies define their goals, analyse their successes, gain a detailed insight into the current situation, and conduct action and measures for improvement. Such a cyclical activity, in fact, presents a process comprised of various interrelated and causal phases that are repeated depending on the dynamic of changes in internal and external environments (Kosovac, 2016).

The CRM is a part of the business intelligence system and a business concept oriented towards the long-term satisfaction of the user and benefit for the company. It is very difficult to provide a unique definition of the CRM considering a great number of references found in domain-specific literature on this topic, in journals and on the Internet. However, in essence, the CRM may be explained as follows:

- The CRM is the main business strategy integrating internal processes and functions and external networks in order to create and deliver value to customers. It is based on high-quality data that refer to customers and it is made possible by means of information technology (Buttle, 2008).
- According to available literature (Kostojohn et al., 2013), the CRM presents an integration of all business processes and technologies used for communication with existing and potential users and business partners via all communication channels available. The CRM may be observed as a

broader business strategy created with the aim of reducing costs and increasing profitability and efficiency by means of ensuring full customer loyalty.

- The CRM presents an integrated information system used for planning, scheduling and control of pre-sales and sales activities within an organisation. It encompasses all aspects of communicating with potential clients and customers, including call centres, sales departments, marketing, technical support and field service. The primary goal of the CRM is to improve long-term growth and profitability by understanding customer behaviour. The aim of the CRM is to offer more efficient feedback and enhance integration in order to better assess investment feedback in these areas (The Free Dictionary by Farlex, 2003).
- The CRM presents a collection of strategies and practices assisting companies to manage and analyse interactions with their users and in terms of meeting their requirements and establishing a user database by means of the assistance of products and services. According to (Hargreaves et al., 2018), the CRM allows decision-makers to analyse customer requirements in terms of specific products and services, in order to provide services that correspond to the requirements of their users. In addition, the CRM assists in user data maintenance by means of which organisations provide needs-based service to each user.
- The CRM is a multi-functional strategic approach that is striving to create improved values of users by developing adequate relations with key customers and segments. This usually includes identification of certain business and user strategies, acquiring and disseminating user knowledge, deciding about adequate segment granularity, management in the joint creating of customer value and developing integrated channel strategies, as well as an intelligent usage of data and technological solutions for the creation of topmost quality of user experience (Frow and Payne, 2009).

Based on the definitions given above, the term "CRM" may be understood simply as a culture of business conduct of a company involving the integration of human activity, processes, and technologies—all with the aim of establishing a symbiosis of company requirements with those of user requirements, i.e. company profitability merged with customer satisfaction.

The CRM in higher education is defined by (Wali et al., 2015) as the process of reducing the gap between the expectations and experiences of students as customers by providing exceptional services with equitable interactions at all times within the organization's value system.

2.2. Classification of CRM functionality

According to (Buttle, 2008), the following types of customer relations management have been identified:

- Strategic CRM,
- Operational CRM,
- Analytical CRM, and
- Collaborative CRM.

The Strategic CRM is focused on customer retention by means of the creation and delivery of value for the customer, which is better than the value offered by the competition. What is specific for the strategic CRM is management behaviour and allocation of resources to where they would enhance the value for the customer to the greatest degree.

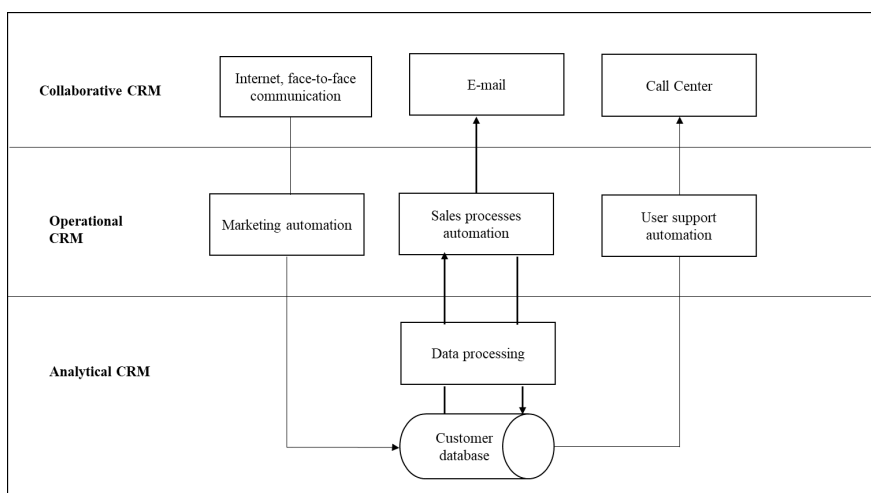


Figure 1 Relations among collaborative, operational, and strategic CRMs (SEKE, 2015)

The Analytical CRM is the most complex segment of the whole CRM system providing a detailed analysis of customer data by means of activities pertaining to extraction, storage, separation, integration, processing, interpretation, distribution, usage and data presentation with the aim of creating a better representation about each and every user and his or her needs and requirements. It is not in direct contact with clients and it encompasses a whole spectrum of data gathered from the operational and collaborative CRM, where sources of data come from, besides collaborative and operational CRM, ERP (Enterprise Resource Planning), SCM (Supply Chain Management), and so on.

The analytical CRM includes a systematic assessment of data about users by means of BI functions and applications of Data Warehousing. Results are obtained by means of modules for visualization and exploitation of data in the analytical CRM, which are the basis for generating decisions and the company's

strategies. The analytical CRM assists in the preparation, support and optimisation of decision-making processes when it comes to customers, as well as within the company and in relation to the environment (Lazarević Petrović and Lazarević, 2015).

In the context of data storage, multidimensional databases are established, where the most commonly used model for reporting about data is the OLAP (Online Analytical Processing), which allows for the collection of data in one place and contains multidimensional data. (Sirk, n.d.)

The Data Mining is a segment of artificial intelligence and represents the process of creating knowledge from data for the end user. (Schuh et al., 2019)

The Data mining in the educational environment is called educational data mining and is a developing discipline. It is a set of techniques for researching unique types of data related to participants in education, and its environment. The objective is to create knowledge from educational databases. (Bhise, Thorat and Supekar, 2013).

The above-mentioned application of intelligent data gathering seeks to answer the questions such as the following ones:

- Which customers are the most valuable?
- Which customers are the most likely inclined to opt for competition?
- Which customers are the most likely to respond to a certain offer?

From the point of view of the customer, on the one hand, the analytical CRM can deliver timely and adjusted solutions for their problems, while on the other hand, it offers the company the possibility for a more invasive sales process by means of upgrading programmes for a more efficient gain and retention of customers. (Buttle, 2008) Furthermore, efficiency is enhanced by means of transparent information exchange between departments of an organisation. A correct directing of the CRM is created on the basis of big data technologies and its efficiency is increasing by means of data accessibility from individual sources (Marr, 2017).

The collaborative CRM allows for the usage of various communication channels for establishing communication with users and information exchange:

- Managing contacts includes all the tools for managing and retaining customer contacts (e.g. addresses, contact persons). In most cases, all data about customers are recorded and stored into the central database in order for these data to be ensured for all the processes directed at the customer in the company.
- eCRM and the Internet. Owing to the integration of the Internet into the CRM processes, data about customers from online activities can be integrated directly into the central database. Therefore, numerous up-to-date CRM activities are supported (e.g. network-based accessibility checks, customer monitoring, user identification in real-time, virtual vendors). In addition, planning and implementation of online catalogues

and shops are based on internet technology, i.e. they depend on communication networks in real-time within and outside the company.

- Customer Interaction Centre is the basis and centre of customer service (Torggler, 2008).

By means of interactive usage of the media, the system sends notices, offers and so on to the customer, whereas customer responses are collected by the system via the operative CRM (Juljevic, 2003).

3. IMPLEMENTATION AND APPLICATION OF CRM STRATEGY IN HIGHER EDUCATION INSTITUTIONS

For the development of society in general, a very important factor is the sector of higher education that offers quality education and provides the society with necessary skills and competencies while ensuring their applications to the improvement and advancement of economic growth.

In this path, the higher education sector faces a number of challenges, including: reduced number of graduates and enrolled students, competition in the market in terms of increased number of new faculties and universities, insufficient state support, financial difficulties, and public opinion on inadequate staff training market. For this reason, higher education needs to be given special attention (Drozdowski, 2020).

The arguments given above are only some of the reasons why higher education institutions resort to the CRM and in order to achieve better customer satisfaction, loyalty, and customer retention (van Vugt and Knasy, 2015).

One way for colleges and universities to overcome the above challenges is to find tools that will provide more effective collaboration with donors and alumni. Through fundraising and providing education through scholarships for students who need it most, the attention and trust of future students is gained.

An example of one such tool that allows you to build personalized relationships with alumni is Salesforce Higher Education Data Architecture (HEDA). The HEDA is designed as a basic, data architecture that, in addition to the above, enables colleges and universities (and implementation partners such as Cloud for Good) to achieve the solution for advancement tailored to their unique needs and processes. The flexibility of this platform enables upgrading in accordance with the specific needs of the faculty in terms of: student management, enrolment in various programs, affiliation to individual programs and departments, etc. (McCune and Lowrey, 2017).

In addition to the Salesforce system available for colleges, (Talarico, 2021) provides examples of business systems for faculty CRM software solutions: Slate, Target X, Hubspot, Full Fabric, Anthology, Creatrix Campus, Enrollment Rx, Jenzabar, Shape and Unified.

Each of these systems provides certain advantages, and the choice itself depends on the preferences of the educational institution (customization/flexibility, price /licensing costs/terms, implementation costs/additional services). It requires special research.

The Technolutions Company has developed the Slate CRM platform that allows to manage student enrolment, retain existing and advance former students. Free Slate.org platform includes high school counsellors, independent counsellors and community organizations with colleges and universities. Target X has unique property: with UChat, it allows prospective students to communicate with employees assigned to admission.

The CRM developed by HubSpot is not primarily intended for use in higher education institutions, but it records the application of its aspects in this sector as well.

In addition to Salesforce HEDA, Slate, Target X, HubSpot CRM solutions for higher education institutions, the selection can also be made for Anthology, Creatrix Campus, Enrollment Rx, Jenzabar, Shape and Unifyed whose details also, the author mentions in (Talarico, 2021).

The effects of CRM implementation in higher education sector are discussed in 3.1.

At present, a new concept of the CRM in education called Student Relationship Management—SRM is being developed. This concept, allowing for certain changes in technology, strategy, and ways of establishing communication, opens new ways for long-term academic success (Rigo et al., 2016), (Vidalakis, Sun and Papa, 2013).

Although very much present in the corporation sector, the CRM in higher education is a new phenomenon, which lags behind in implementation and when compared to other sectors (Nair, Chan and Fang, 2007). Introducing the CRM to higher education institutions is a long, complex and cost-demanding process that requires not only a redesign of the existing business model but also an implementation of contemporary technologies and activities comprising the human factor (Renko, 2009).

In (Hrnjic, 2016), research has been conducted about the applicability of the student satisfaction model in relation to the CRM strategy at the University of Sarajevo in Bosnia and Herzegovina. The random sample comprised 504 students participating in the online survey composed of 40 questions. The results of the survey have shown that the University of Sarajevo, in terms of customer/student satisfaction, is facing inadequacies pertaining to the organisation of the university, managing the teaching process, skills and competencies of the academic staff, activities of the steering committees, institutional development and the quality of study materials used in the teaching process and when it comes to teaching methodology.

Researchers (Wali and Wright, 2016) use the CRM and service quality principles in a research study conducted at a UK university for international students. Six construct topics for measuring the CRM were proposed: customers' experience feedback, academic referral, service customization, academic performance reward, customer relations, economic status. Interview data from focus groups of 12 participants, 5 staff from international student office and 7 international students on master degrees at a university in the north of England were analyzed using thematic template analysis. The research found that a good CRM program that improves service quality can lead to positive advocacy behavior among international students.

By relating the CRM system to higher education institutions, it can be concluded that they are complex institutions with different stakeholders of the CRM system: students (potential candidates, current students- both currently studying and the alumni), academic staff, non-academic staff, the government, regulatory bodies, companies and clients (for courses, consulting or research projects), and other higher education institutions (research partners), etc. Each stakeholder has its own specific requirements the fulfilment of which is contributed by the implementation of CRM solutions (Sindakis, Depeige and Anoyrkati, 2015).

The student network is most certainly the greatest at any university or faculty, but that does not mean that the academic staff, administration and the alumni are not equally important. Therefore, for complete academic and administrative success, a great degree of visibility is required as well as well-established communication in the whole institution. An additional advantage of the CRM is that the great part of its software may be accessed by means of a smartphone or tablet, used by almost 48% of the total number of stakeholders (Khabosha, 2017).

Data about potential, current and future students, their activities, as well as information about academic staff and other faculties are stored into the database and are integrated in the system which allows reporting for the purpose of analysis and information access for every department of a higher education institution at any given moment (Seeman and O'Hara, 2006), (Adikaram, Khatibi and Yajid, 2016).

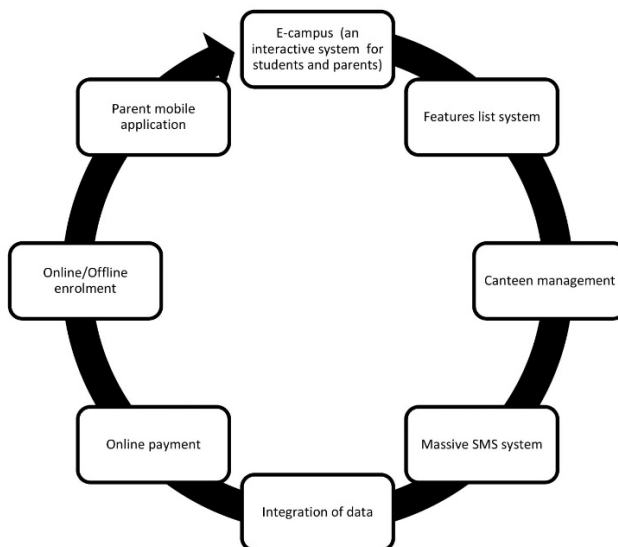


Figure 2 Different aspects of the CRM in higher education (Khabosha, 2017)

Organizing numerous events and their centralization, increasing the enrolment rate and student retention, and better communication (Tattersfield, n.d.) - are only some of the effects of the CRM implementation in the higher education sector that will be mentioned in the following section.

3.1. Effects of CRM implementation in the higher education sector

There is a wide range of advantages given in (Wilson, 2020), (Fridell, 2019) and (Soomro et al., 2017) which CRM systems offer in terms of their application in higher education institutions and higher education, such as:

3.1.1. Better insight into number of potential candidates for enrolment and improved system for attracting future students

With the aim of an adequate choice of the faculty and getting informed about it, students nowadays are using digital media channels. The CRM systems intended to be used in higher education institutions and higher education allow for tracking websites that were visited by a certain student in order to find the choice in which he or she is interested, and together with integrated tracking tools, they provide an insight into potential candidates for enrolment by means of numerous programmes, e-mail, invitations for online and offline events, etc.

The processes of collecting, storing and analysing data about potential candidates for enrolment, the process of content distribution as well as communication by means of social networks with potential candidates have been automated and allow for easier decision-making and strategies to be used by the institution's top management.

3.1.2. Tracking and managing “student life cycle” through phases of registration, enrolment and graduation

Managing student life cycle begins when the student has been enrolled in a higher education institution where the CRM systems allow for easy tracking of student details, such as personal documentation submitted, the chosen track and study programme, personal details and other procedures related to the finalization of the enrolment process.

After the enrolment phase, there follows the student retention phase in order to prevent students from withdrawing from the programmes and enrolling in other faculties, while student retention rates increase at the same time.

In that sense, it is necessary for higher education institutions to, through CRM systems, establish interaction with students by means of personalized communication channels when it comes to all the commonly shared points of student life experience and to make decisions about student retention based on the results obtained.

The administration, and by means of the CRM software, may provide students with information about additional educational activities, career fairs or university-hosted events, calls for practical /fieldwork or work during vacation, information about working hours and changes in working hours of student affairs offices, etc. In addition, by means of implementing the CRM system, a greater degree of academic success among students can be achieved by means of setting up reminders about oncoming exams, exams schedules or information sources.

3.1.3. Processing student inquiries

An improved communication process is ensured by means of tracking each student inquiry and keeping a record of each interaction with students during the advisory process provided by the CRM system for higher education.

3.1.4. Academic staff evaluation

The application of the CRM software in higher education institutions contributes to less complicated administrative procedures, reduces the amount of paper documentation, and ensures a consistent and efficient approach in terms of certifying academic staff and other career-related processes.

It also enables less complicated and faster recruitment of highly qualified academic personnel.

3.1.5. Control of payment and managing honorarium payments

Each educational institution needs an efficient tool for managing payments in order to run financial operations smoothly, where it is necessary to mention automation of the honorarium payments enabled by CRM systems.

3.1.6. Long-term connectedness with alumni and donors

By means of their tools, CRM systems allow for the centralization of data about alumni and donors and allow for managing personal contacts and networks of the alumni community.

Based on the above-stated, the administration uses data for sending automated messages that may involve updates about the success of a programme or a student, stylized infographics or reports about improvements at the university, as well as information about award programmes or advantages for contributors.

The built-in CRM analytical tools provide assistance in selecting messages and events that result in the greatest number of contributions. Considering that higher education institutions are facing the challenges related to reductions in public funding and a lack of motivation in students to enrol a faculty due to increased tuition fees, obtaining resources from donors and alumni is becoming more important.

The alumni are important also in terms of student satisfaction since they can provide potential students with assistance in terms of defining their career goals, collecting resources and online contacts for their future employment.

3.1.7. CRM assessment through various reports

Traditional ways of collecting information about internal processes at faculties and universities by writing information down onto paper or filling in tables abundant in out-of-date information are being overcome with the emergence of new technologies and introduction of the CRM system which, by means of built-in analytical and reporting tools, make access to information and decision-making less complicated and allow for improvement at different organisational levels of higher education institutions.

They provide numbers, data and graphs in real-time, where, for instance, by means of the CRM system, the number of students from abroad who are interested in a study programme may be displayed (Polona and Iztok, 2018).

The Analytical CRM provides an insight into the processes by means of reports about students, academic staff and administrative staff. In order to obtain greater reliability and trustworthiness of information in reports, the CRM system has to be integrated with other technologies, such as tools for social media, tools for marketing automation or tools for financial management.

The add-ons to CRM applications linked to social networks, social media integrated into the CRM and personalized tools are becoming a CRM trend in the world of higher education institutions and higher education (De Juan-Jordán, Guijarro-Garcia and Hernandez Gadea, 2018).

In spite of the given positive effects that occur with the implementation of the CRM system in higher education institutions, there are also discouraging data obtained by StudyPortals and iE & D Solutions in their research: 59% of surveyed higher education institutions are not using the CRM system, and the main reasons for that is a lack of knowledge and assessment about these systems (van Vugt and Knasys, 2015).

4. PROPOSAL OF CRM CONCEPTUAL MODEL/FRAMEWORK TO OPTIMISE RELATIONS AMONG STAKEHOLDERS OF HIGHER EDUCATION INSTITUTIONS

Section 3 of this paper, in addition to examples of CRM systems and the benefits they provide with their introduction, also deals with the challenges that higher education institutions face.

These challenges / problems can be largely solved by implementing the CRM system. To this end, higher education institutions face two choices. The first choice involves the purchase of an already developed CRM software solution, while the second choice refers to building your own according to your own requirements.

Both choices have their disadvantages and advantages. The disadvantage of developing your own CRM solution is that the higher education institution may face difficulties in terms of development and scope, as well as IT capabilities. The development of a CRM software solution is a long-term process, complex to build, maintain and use. The elements of the system are designed and developed separately, and then connected. The advantage is reflected in the CRM system with features and functionalities adapted to the own requirements of the higher education institution.

On the other hand, higher education institutions that decide to buy a finished product get all the functionality in one, neat software system. Components such as student enrolment, recruitment, marketing and communication systems

represent the convergent CRM. The advantage also lies in the ease of getting to know and using.

When deciding whether to develop their own CRM system or buy an existing one, higher education institutions need to find the ratio of financial resources: the cost of the IT team of the higher education institution that will design and maintain the CRM solution in relation to the cost of ownership of the finished CRM system.

In order to make an optimal decision, Figure 3 presents a proposal for a conceptual model / framework of the CRM in the function of optimizing the management of relations with stakeholders of higher education institutions.

Through the presented structure and the way of action, decision makers are provided with a simplified insight into the features of the CRM system and its functionality.

Through the description of the model, the authors list the information that emerges as an output of the CRM application, and to which decision makers should pay special attention. The CRM model / framework can be adapted to the specific environment of the higher education institution. The ideal objective is to make effective decisions and reduce financial investments.

The Collaborative and Operational CRM as the first presentation of the model / framework feature collects data that are only raw materials.

The Collaborative CRM is the first phase of the implementation of customer relationship management system and involves direct access to the user through various communication channels (face-to-face contact, e-mail, online events, high schools, etc.). The Operational CRM automates business processes aimed at users of the CRM system of the higher education institution and their support.

The data collected for higher education institutions become important only after the processing performed within the analytical CRM.

The analytical CRM conducts the transformation of data into information not only from the student perspective but also from the perspectives of academic and non-academic staff, as follows:

- Data about potential candidates to be enrolled in a higher education institution, candidates enrolled in a faculty together with data about personal documentation submitted, the selected track and programme of study, personal details, grades and success during the studies, extra-curricular activities during the study;
- Data about withdrawals and students who continued their studies at other faculties, together with reasons given for their withdrawals or choice of another faculty;
- Data obtained from students about the quality of teaching, academic staff skills, satisfaction in terms of the service provided by the student affairs

offices, legal affairs services, offices for managing finances, the library, and the Dean's Office;

- Data obtained from students about satisfaction in terms of accredited curricula and their recognition on the market;
- Data about student satisfaction in terms of support provided by the faculty for practical and volunteer work, the possibility for student exchange and academic exchange programmes;
- Data about academic staff employed in terms of their competencies and qualifications, additional further education courses and certificates, participation in certain projects, delivering guest lectures at other higher education institutions, teaching methods applied and annual academic staff evaluation;
- Data about the degree to which the faculty is equipped by adequate information-communication technology for delivering lectures and exercises within certain academic courses;
- Data about the alumni and donors.

In the lines that follow, it is proposed a conceptual model of the analytical CRM functioning to optimise relationships among stakeholders of higher education institutions, its structure and the way it operates, as illustrated in Figure 3.

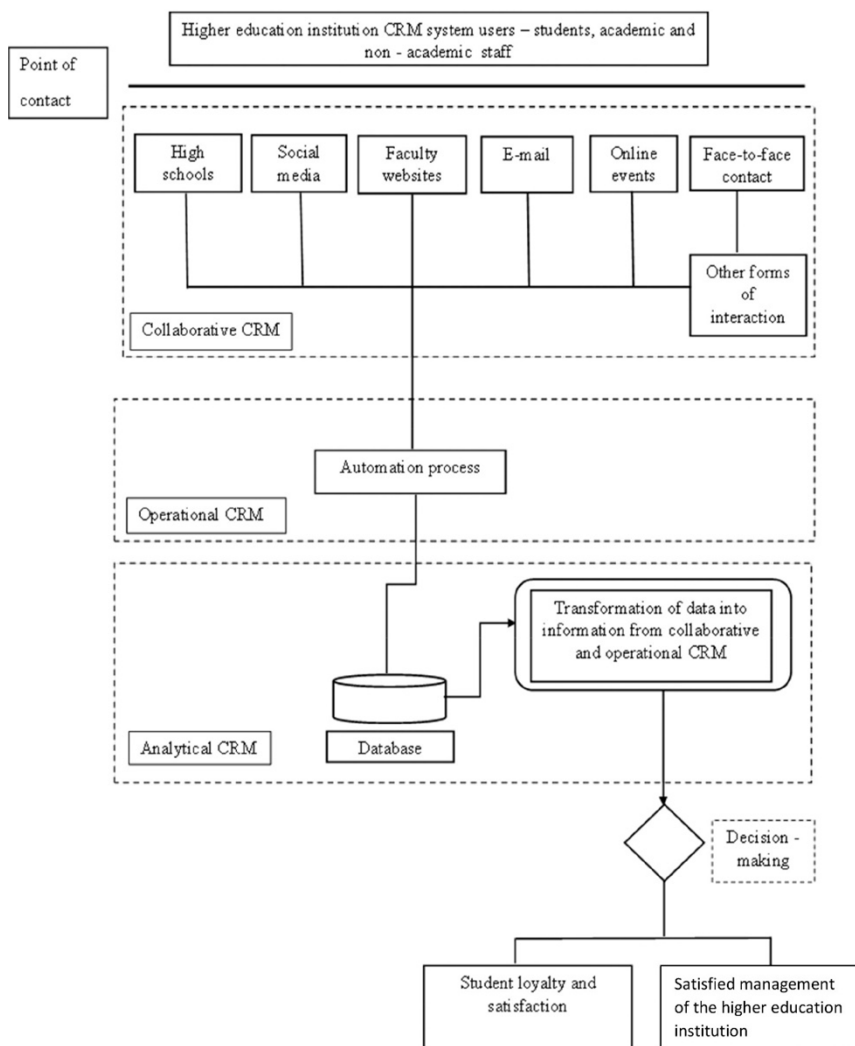


Figure 3 A proposal of the CRM conceptual model/framework to optimise relations among stakeholders of higher education institutions

By means of the data collected and by means of combining the information obtained, the analytical CRM provides top management of higher education institutions with an all-encompassing insight into the requirements and needs of stakeholders (especially students), understanding and forecasting user behaviour (Dukić, Martinović and Dukić 2017), as well as acting as a means to make correct strategic decisions focusing on user satisfaction. Finally, the end

result of the CRM system application in a higher education institution is - satisfied student and satisfied management of the higher education institution.

5. CONCLUSION

In the future period, higher education institutions should strive to make improvements in terms of their organisation, technological and information technology-related solutions and place the student at the centre, as well as other stakeholders mentioned in the present paper, their actual needs and requirements that should be met. The third section discussed the implementation and advantages of the CRM system application in higher education institutions which are observed through an increased student enrolment and retention rates, conducting strategic enrolment, tracking student progress, recognizing and assisting students at risk, coordination among academic staff and strengthening relations with the alumni. CRM systems are an efficient solution in terms of the improvement in business and increased profitability, reputation and competitiveness on the market.

The knowledge-based CRM is an inevitable part of higher education institutions in the improvement of business processes and knowledge, as well as information, and is created from the data obtained. In that sense, the CRM holds a special significance and value. By means of analysis and processing of data obtained from the collaborative and operational CRM, it gives reports and contributes to a less complicated and faster strategic decision-making with the aim of obtaining user satisfaction. In this sense, on the basis of previous researches, in the fourth section of the paper, a Proposal of the conceptual CRM model /framework to optimise relations among stakeholders of higher education institutions has been presented. It represents a scientific contribution and provides its value pertaining to maximising educational outcome. The CRM model/framework can be adapted to the specific environment of a higher education institution. It is the basis on which a concrete analytical software solution should be built, which opens up a new field of research subjects in the future. Although it contains limitations regarding the introduction of new techniques, especially the marketing concept, the proposed model complements the existing literature and makes a scientific contribution.

REFERENCES

Adikaram, C., Khatibi, A., Yajid, M. (2016). "The Relationship between Customer Relationship Management and Customer Satisfaction: A Study on Private Higher Education Institutions in Sri Lanka". *International Journal of Arts and Commerce International*, Vol. 5, No. 2, pp. 69-95. www.ijac.org.uk

Bhise, R. B., Thorat, S. S., Supekar, A. K. (2013). "Importance of data mining in higher education system". *IOSR Journal Of Humanities And Social Science (IOSR-JHSS)*, Vol. 6, No. 6, pp. 18-21. <https://doi.org/10.9790/0837-0661821>

Buttle, F. (2008). *Customer Relation Management, Concept and Technologies*. Second

Edition. Taylor & Francis. <https://doi.org/10.4324/9780080949611>

De Juan-Jordán, H., Guijarro-García, M., Hernandez Gadea, J. (2018). "Feature Analysis of the 'Customer Relationship Management' Systems for Higher Education Institutions". *Multidisciplinary Journal for Education, Social and Technological Sciences*, Vol. 5, No. 1, p. 30. <https://doi.org/10.4995/muse.2018.9232>

Drozdowski, M. J. (2020). "Higher Education in Crisis".

Fridell, S. (2019). "The Future of Higher Education: CRM for Colleges and Universities". Available at: <https://www.brainsell.com/blog/crm-for-colleges-and-universities/> [accessed: 26/4/2021]

Frow, P. E., Payne, A. F. (2009). "Customer Relationship Management: A Strategic Perspective". *Journal of Business Market Management*, Vol. 3, No. 1, pp. 7-27. <https://doi.org/10.1007/s12087-008-0035-8>

Gholami, H., Saman, M. Z. M., Sharif, S., Zakuan, N. (2015). "A CRM strategic leadership towards sustainable development in student relationship management: SD in higher education". *Procedia Manufacturing*, Vol. 2, pp. 51-60. <https://doi.org/10.1016/j.promfg.2015.07.010>

Hargreaves, I., Roth, D., Karim, M. R., Nayebi, M., Ruhe, G. (2018). "Effective customer relationship management at ATB financial: a case study on industry-academia collaboration in data analytics". In *Highlighting the importance of big data management and analysis for various applications*, pp. 45-59. Cham: Springer. https://doi.org/10.1007/978-3-319-60255-4_4

Hrnjic, A. (2016). "The transformation of higher education: evaluation of CRM concept application and its impact on student satisfaction". *Eurasian Business Review*, Vol. 6, No. 1, pp. 53-77. <https://doi.org/10.1007/s40821-015-0037-x>

Juljevic, E. (2003). "Customer Relationship Management u telekomunikacijskom prometu". Available at: <https://elvirko.tripod.com/osnldeja.htm> [accessed: 22/4/2021]

Khabosha, M. (2017). "How Can University Administrators Benefit from CRM for Higher Education?". Available at: <https://www.cetrixcloudservices.com/blog/how-can-university-administrators-benefit-from-crm-for-higher-education> [23/4/2021]

Kosovac, A. 2016. *Primjena poslovne inteligencije u logističkim procesima poštanskih operatera*. Doktorska disertacija. Sarajevo: Fakultet za saobraćaj i komunikacije Univerziteta u Sarajevu.

Kostojohn, S., Paulen, B., Pohlmann, F., Pundick, D., Renow-clark, B., Shakeshaft, D., Welsh, T. (2013). *CRM Fundamentals*.

Lazarević Petrović, S., Lazarević M. (2015). "Softverska rešenja za CRM", pp. 428-431.

Marr, B. (2017). "How Walmart Is Using Machine Learning AI, IoT And Big Data To Boost Retail Performance". Available at: <https://www.forbes.com/sites/bernardmarr/2017/08/29/how-walmart-is-using-machine-learning-ai-iot-and-big-data-to-boost-retail-performance/?sh=7f9c62646cb1> [accessed: 16/4/2021]

McCune, E., Lowrey, K. (2017). "Best Practices for Higher Ed Advancement on HEDA". Available at: <https://www.salesforce.org/blog/best-practices-higher-ed-advancement-heda/> [accessed: 22/4/2021]

Nair, C., Chan, S., Fang, X. (2007). "A Case Study of CRM Adoption in Higher Education". *Information Resources Management Association International Conference*, 2. <https://pdfs.semanticscholar.org/b312/9b7e7bfa54edb401a9b69644b93a28f297ce.pdf>

Polona, S., Iztok, P. (2018). "The concept of customer relationship management (CRM) in higher education". *Economic and Social Development: Book of Proceedings*, pp. 52-58.

Renko, N. (2009). *Strategije marketinga*. Zagreb: Naklada Ljvak d. o. o.

Rigo, G.-E., Pedron, C. D., Caldeira, M., Araújo, C. C. S. de (2016). "CRM Adoption in a Higher Education Institution". *Journal of Information Systems and Technology Management*, Vol. 13, No. 1, pp. 45-60. <https://doi.org/10.4301/s1807-17752016000100003>

- Schuh, G., Knoll, D., Horsthofer, J., Oppolzer, F., Knoll, D., Stief, P., Dantan, J., Etienne, A., Siadat, A. (2019). "Data Mining Definitions and Applications for the Management of Production Complexity". *Procedia CIRP*, Vol. 81, pp. 874-879. <https://doi.org/10.1016/j.procir.2019.03.217>
- Seeman, E. D., O'Hara, M. (2006). "Customer relationship management in higher education: Using information systems to improve the student-school relationship. *Campus-Wide Information Systems*", Vol. 23, No. 1, pp. 24-34. <https://doi.org/10.1108/10650740610639714>
- SEKE, M. M. (2015). "The Reinvention of the Constituent Relationship Management (CRM) System in Higher Education in Africa". *International Journal on Communications*, Vol. 4, p. 17. <https://doi.org/10.14355/ijc.2015.04.003>
- Sindakis, S., Depeige, A., Anoyrkati, E. (2015). "Customer-centered knowledge management: challenges and implications for knowledge-based innovation in the public transport sector". *Journal of Knowledge Management*. <https://doi.org/10.1108/JKM-02-2015-0046>
- Sirk, C. "What Is Analytical CRM? (4 CRM Analytics Tools Examples)". Available at: <https://crm.org/crmland/analytical-crm> [accessed: 20/4/2021]
- Soomro, A., Mahar, R., Dars, J., Shah Rashdi, I.-U.-A., Hisbani, F. (2017). "Effectiveness of CRM (Customer Relationship Management) in Higher Educational Institutions by Addressing Faculty Problems: The Case Study of MUET". *Noble International Journal of Social Sciences Research*, Vol. 2, No. 5, pp. 2519-9722. <http://napublisher.org/?ic=journals&id=2>
- Talarico, D. (2021). "Selecting the Best CRM for Higher Education". <https://www.oho.com/blog/best-crm-for-higher-education>
- Tattersfield, K. "CRM What do universities use CRM systems for?". Available at: <https://blog.fullfabric.com/what-do-universities-use-crm-systems-for> [accessed: 23/4/2021]
- The free dictionary by Farlex - Legal Dictionary. (2003). Available at: <https://encyclopedia2.thefreedictionary.com/CRM> [accessed: 21/4/2021]
- Torggler, M. (2008). "The Functionality and Usage of CRM Systems". *International Scholarly and Scientific Research & Innovation*, Vol. 2, No. 5, pp. 261-269.
- van Vugt, T., Knasys, M. (2015). "The importance of CRM systems in Higher Education". Available at: <https://studyportals.com/blog/the-importance-of-customer-relationship-management-crm-systems-in-higher-education/> [accessed: 23/4/2021]
- Vidalakis, C., Sun, M., Papa, A. (2013). "The quality and value of higher education facilities: A comparative study". *Facilities*, Vol. 31, No. 11-12, pp. 489-504. <https://doi.org/10.1108/F-10-2011-0087>
- Wali, A. F., Wright, T., Nwokah, G., Reynolds, L. (2015). "Customer Relationship Management and Service Quality: a qualitative study". *European Academy of Management (EURAM) Conference, 17th - 20th June, 2015. Warsaw, Poland: Kozminski University.*
- Wali, A. F., Wright, L. T. (2016). "Customer relationship management and service quality: Influences in higher education". *Journal of Customer Behaviour*, Vol. 15, No. 1, pp. 67-79. <https://doi.org/10.1362/147539216X14594362873532>
- Wilson, A. (2020). "Benefits of CRM for Higher Education Institutions". Available at: <https://www.rolustech.com/blog/benefits-crm-higher-education-institutions2> [accessed: 26/4/2021]
- Winer, R. S. (2001). "A framework for customer relationship management". *California Management Review*, Vol. 43, No. 4, pp. 89-105. <https://doi.org/10.2307/41166102>

Dr. sc. Amel Kosovac

Izvanredni profesor
Univerzitet u Sarajevu
Fakultet za saobraćaj i komunikacije
E-mail: amelkosovac@gmail.com
Orcid: <https://orcid.org/0000-0002-1192-4765>

Dr. sc. Elvedin Grabovica

Docent
Univerzitet u Sarajevu
Ekonomski fakultet
E-mail: elvedin.grabovica@efsa.unsa.ba
Orcid: <https://orcid.org/0000-0002-9835-5971>

Adisa Medić, MA

Asistentica
Univerzitet u Sarajevu
Fakultet za saobraćaj i komunikacije
E-mail: s_adisa@hotmail.com
Orcid: <https://orcid.org/0000-0002-9317-8638>

Aida Kalem, MA

Asistentica
Univerzitet u Sarajevu
Fakultet za saobraćaj i komunikacije
E-mail: aida.kalem@gmail.com
Orcid: <https://orcid.org/0000-0002-4266-9306>

PRIJEDLOG MODELA/OKVIRA ZA OPTIMIZACIJU UPRAVLJANJA ODNOSA SA KORISNICIMA VISOKOŠKOLSKIH USTANOVA

Sažetak

U današnjim uvjetima digitalizacije, povećanja konkurencije na tržištu i promjena u gospodarskoj djelatnosti posjedovanje CRM-a kao sustava neizostavan je alat za uspjeh. Problematika primjene CRM sistema u visokoškolskim ustanovama nedovoljno je istražena, posebno u dijelovima koji trebaju ukazivati na jasnu vezu između sudionika u visokom obrazovanju i CRM-a u visokoškolskim ustanovama te čimbenika na koje donositelji odluka trebaju obratiti pozornost prilikom donošenja odluka o CRM implementaciji. Stoga, cilj je rada istražiti funkcionalnosti, primjenu i prednosti CRM-a u sektoru visokog obrazovanja te utvrditi značajke koje će olakšati efektivno donošenje odluka o implementaciji CRM-a. Kao rezultat istraživanja predstavlja se prijedlog konceptualnog modela/okvira CRM-a u u svrhu donošenju odgovarajućih odluka za visokoškolske ustanove kada je u pitanju razvijanje vlastitog ili kupovina gotovog CRM rješenja. Sa znanstvenog aspekta, rad pridonosi postojećoj literaturi pružajući

donositeljima odluka uvid u strukturu CRM sustava, njegove elemente, veze i funkcionalnosti te opis modela s informacijama na koje trebaju obratiti pozornost prilikom donošenja odluka.

Ključne riječi: upravljanje odnosima s korisnicima – CRM, analitički CRM, implementacija i primjena, učinci primjene, visokoškolske ustanove, visoko obrazovanje, upravljanje odnosima sa studentima.

JEL klasifikacija: I23, M30, M31.

