NEW TECHNOLOGIES AIMED AT IMPROVING THE COMPETITIVENESS OF COMPANIES IN THE SERVICES SECTOR

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Abstract: Developments in technology and constant innovation in services market, impose companies to monitor trends and implementation of best practices in order to improve competitiveness and profitability. Hence this paper focuses on new technologies aimed at improving competitiveness of service companies, with an emphasis on CRM (customer relationship management in services companies), where communications systems plays an important role, especially if communication with a customer is integrated and easily accessible. The unified communications (UC), supported by up to date databases, represent a step forward in communications development, because they are concentrated on matching the specific needs of particular user. Integration of communications enhances the comfort of communication with customer to his satisfaction, since the customer does not have to be contacted by the company exclusively via the desk phone, whereas it can be done via mobile phone, e-mail, SMS, online chat or through social networks. All of these methods make communication more efficient – increasing availability and affecting the time when the customer, according to their preferences, can be contacted. The final score of customer relationship management through the optimal integration of communication is the simplification of business processes and the increase in customer satisfaction. Customer satisfaction leads to greater loyalty to the company caused by the high level of service provided, which contributes to the improvement of competitiveness.
and, consequently, the achievement of the main goal of every company - greater profits.

**Key words:** Improving of competitiveness, the integration of communications, CRM system, service companies

### INTRODUCTION AND LITERARY REVIEW

In order to be successful in a dynamic services market companies must deliver superior value to target customers who are becoming more demanding, and choose products/services rationally, analyzing relation between price and quality. Therefore, the competitiveness of companies in the service sector (especially financial) is largely based on fostering customer loyalty, integrating various communication channels, reducing operating costs and good risk management. To identify, anticipate and profitably meet the requirements of their clients, and ensure continual growth and development, the whole financial organization including all employees especially those who are constantly in contact with clients should base its activities on modern principles of marketing services (Domazet, 2012).

The most important are the following (Hanić H, Domazet I. 2011, p.4): assets of the company are not worth much without customers; the task of managing services marketing is not only to attract new, but also to retain existing customers; new customers can be attracted only by delivering superior value/supply; only satisfied customers can be loyal to a given organization; the role of marketing is to create a superior offer and ensure customer satisfaction, but also to anticipate the future needs of its clients.

Development and customer relationship management (CRM) is a concept whose adequate implementation contributes to a higher level of customer satisfaction, being a prerequisite of loyalty and, consequently, greater profitability of service companies. But the efficient development of the CRM concept implies a relatively high level of information technology, including models of modern information architecture, database and data warehouse, data protection, data management, communication between computers, modern statistical software and other IT tools (Domazet, I. Zubovic, J, 2007). Technological development based on databases contributes to extremely large increase in processing speed, the introduction of ATMs, operation and processing of various types of credit and payment cards allowing financial institutions to offer a rich assortment of quality products and services and be better positioned in the highly competitive market of financial services.
CRM database containing data on customers may also be treated as an electronically stored and easily accessible collection of information on firm’s clients. It can be created on individual or aggregate level. There are various definitions of CRM database. They begin with the list of wide range of database applications (e.g. Roberts, 1992) and continue with concise statements of technologies used to improve customer relationships (e.g. Rapp, 1989). It must be noted that none of the definitions provide practice while interpreting the tools for research purposes. The following definition comes out from the ideas given by Blankenship and Breen (1992), Shani and Chalasani (1992), Bauer and Miglautsch (1992), and DeTienne and Thompson (1996): “CRM is the process of systematically collecting, in electronic or optical form, data about past, current and/or potential customers, maintaining the integrity of the data by continually monitoring customer purchases and/or by inquiring changing status and using the data to formulate marketing strategy and foster personalized relationships with customers”. When observed from the wider marketing perspective, the definition overlaps with such concepts as direct marketing, relationship marketing and interactive marketing. In addition, Bauer and Miglautsch (1992) suggest that no definition of direct marketing is complete without a reference to the maintenance of a customer database.

The most important strengths of properly defined database marketing are in its focus on customer relationship development. There are three basic activities – collecting, maintaining and utilizing data. When combined, they set up a structure of the vital components used to create database and CRM. CRM serves for better understanding of the customers (potential and current), which then becomes a basis for formulating marketing campaigns in services organizations (Kishor, N. Ratna, and Kumba Nagamani, 2015). Namely, these organizations have information on which it is possible to properly adjust their marketing mix elements. Financial institutions can use database for the following purposes (Domazet, Zubovic, Jelöčnik, 2010, pp. 29-38): targeting market segments; harmonizing business portfolio with customers’ needs; building long-term relationships with customers; identifying potential clients; integration of direct marketing with other communication tools; reporting on utilization and efficiency of media; measuring customer reaction and evaluating marketing activities; further marketing research and different ad-hoc studies etc.

According to Hanić (2006, pp. 556) a CRM database concept has several advantages and it may be utilized for several times, while the costs of data storing, using and editing are minimal. Transparency of data is very high and data inconsistency is minimal. At the same time unauthorized access to data is not possible. The data is instantly available to authorized persons and the managers may generate a wide set of information without help of the system analysts. CRM
concept and database implementation in an organization should be carefully introduced. If database is not properly created, potential benefits of database marketing will be reduced. In that case, database could become a main cause of reduced profits, due to relatively high costs of its implementation and maintaining (Fan, Y.W., Ku, E. 2010, pp. 203-23). For that reason, prior to introduction of databases it is necessary to (Domazet, Zubovic, 2011): analyze what are the benefits and costs of database marketing creation; estimate current needs and competences; carefully plan each step in database marketing development; continuously monitor functionality, and opportunities for their further improvement. Moreover, financial managers need to play an important role in defining the structure of reports expected to be created from the database. CRM database could be used as a tool for making tactical and strategic decisions in selecting different instruments of marketing mix (Roberts and Berger, 1999, pp.3-5).

**DATABASES AS THE BASIS FOR CRM MODEL**

Application of modern technologies and database as the foundation make technological infrastructure of CRM system. Up to date, comprehensive customer database are the basis for CRM system and become an essential factor without which modern business service organizations cannot be imagined (Oshita Y Prasad J. 2000). The database is a central element of the CRM system. Sources of data outside and inside the company provide data which describe the relationship with customers. Data collection system converts incoming data in an electronic medium, if it is not already in that format. The data warehouse prepares the data for storage, stores and describes it so that it could later be retrieved. It also displays control and the management section of functions. The system of transfer of information enables the scope of data warehouse to be available to informing users in electronic form (Peppers, Rogers, 2010).

CRM architecture is created through collection of data, their storage, transformation into information and presenting information to users where the system transforms data into information. The phases of the basic CRM process are as follows:

1. Data source
2. Data collection
3. Data warehouse
4. Information transfer
5. User of information

When creating a database of their activities, service organizations encountered two obstacles. The first was an overload when accessing large amount of data, while
the second obstacle was keeping the latest additional information, and deleting them with necessary changes to the record. The problem was overcome by developing special software for managing one-entered data into the data warehouse of service organizations. The software of the stored data and their availability for further use are called the system database management systems (DBMS). Current solutions are Microsoft SQL Server DBMS, Oracle DBMS, MySQL DBMS and DB2 DBMS. Some data warehouses are managed by the DBMS while others are managed by a specially developed system for managing data warehouses.

![Model of database managing system](adapted according to Jayachandran, S. et al. 2005, pp. 177-192)

Figure 1 shows the most important elements of the DBMS. Language processor of data display allows the description of data storage. Database in the DBMS is partly managed by the software with the characteristic that for all the functions it carries out the following can be applied: identifying user queries, returning the necessary (required) data and enabling the graphic information.

Information systems of service organizations use specific database. It is important that the system develops understanding of the scheme, which is documented in the
form of a data dictionary. Since databases and data warehouses are important resources, steps were taken to guarantee protection against abuse and are always available to authorized users within each service organizations. Data protection can be achieved by using codes (passwords), biometric devices and addition of a directory of certain operations which provide access to certain users only.

Knowledge of hardware, software and the existence of human mistakes, can accidentally damage or destroy a database. The management and control components have the option of creating copies of files (backup files) and the execution of recovery operations. These options are usually elements of DBMS systems which enable the segmentation of users according to predefined criteria within each company.

**CRM ARCHITECTURE FOR SERVICE RENDERING COMPANIES**

The most common form of computer architecture for database and CRM system is the *client / server architecture*. In client/server architecture the stored data and functions exercised over them are assigned to the central server. The layers of technology are called the levels: users are lower level and one or more servers are higher level. Individual servers can be used to interface with users, to execute user applications and monitoring of data warehouse. There are three forms of data processing, as follows: control over the user interface (how information is presented on the user’s screen); location of the software that executes user functions and location of data.

When most of the application executes on the user's computer, the architecture is called fat client. When complete, or most of the applications executes on server, the architecture is called thin client. Although all controls of the user interface and functions can be transferred to the user, the whole data is never transmitted. Some of the data is still stored on the server. Organizations use multiple systems to process their various transactions with customers, suppliers, employees, etc. Together, these systems are called *transaction processing systems*. Most of the data for the charging information related to CRM comes from the system for ordering processes. These systems provide plenty of information about connections of financial organization with users.

Company systems based on computers are a rich source for data warehousing. The data are in the computer readable format and can be easily transferred to a warehouse after use. Company systems are internal data sources. Additional data can be brought into the company from external data sources - elements from the environment such as the user company, government, suppliers and competitors. If
during these processes the CRM system encounters data related to customer needs, all data used during the delivery of information are collected in the data warehouse. The problem is that users are often unable to anticipate their needs in advance, while the system is under development. In these settings, the strategy for the design of data warehouse is a collection of all pieces of data that describe the company's business and affect users both directly and indirectly, and supplement them with additional information as necessary to meet the new, unexpected user needs. The bulk of these data will be created by the interaction of the system with users.

Technologies used in CRM systems are related to the three levels - data collection, data storage and data transfer. User companies are the primary focus of data collection and the primary users of the collected data are managers of the company. The main purpose of the collection and storage of data as well as distribution of information is to enable managers of the organization to develop marketing strategies to enable the company to better anticipate customer needs and to develop a business portfolio based on it.

Figure 2: Closed marketing chain of CRM system
(adapted according to Krasnikov, A., Jayachandran, S. and Kumar, V. 2009)

Figure 2 shows how the marketing strategy encloses chain of CRM system. Feedback chain is typical for systems which control their operations and is made up of three components, as follows: data, information and strategy. CRM system transforms data into information and manages the transformation of information into a strategy. For example, CRM collects data indicating the users who have changed the purchase behavior. These changes are made in the form of reports to managers who formulate new marketing strategies that are guided by users.
After creating the technological infrastructure it is necessary to make appropriate strategic framework for the implementation of the CRM concept, because it is important for the company to specify the most important aspects of the business, as well as to determine which information should be serviced to clients, to find out about financial background of clients, as well as the effects of CRM segments (Ennew C, Nigel W. 2007). In this process structures of CRM system should be taken into consideration which consists of the following segments (Hanic, Domazet, 2010):

1. **Operational CRM** – refers to providing support to business processes from the ‘first line of company functioning’ such as marketing, sales and order management. The main characteristic of operational CRM is the existence of a unique, integrated database which contains information on every client.

2. **Analytical CRM** – represents support in data analysis on clients which involves activities of collecting, preserving, selection, processing, analyzing and interpreting data. Goals can be different: modeling customer’s behavior, design and implementation of specific campaigns (customer acquisition, retaining customers, cross-selling, up-selling, etc), analysis of service quality, assessment of clients, division in segments and design of customer’s profile, risk analysis, needs analysis, sales analysis, customer leaving analysis, etc.

3. **Collaborative CRM** – provides complete communication, coordination and cooperation with customers via phone, fax, Internet, mail, in person, etc.

The aim of introducing the concept of CRM is to optimize management of the client life cycle, the impact on the increase in profitability, as well as meeting the needs of the customer to achieve the highest degree of loyalty (Little E., E. Marandi 2003). Analyzing the information collected during each transaction or interaction (purchasing, technical support and other activities), this multidimensional vertical and horizontal analysis reveals plethora of information about the customer – the basis for future strategies oriented towards the customer. Thus, CRM cannot be observed from the aspect of technology only, as information-technology solution that gives us the opportunity to form a unique client base and develop it.

Technology influences communication and communication ultimately affects the relationships with customers. Since the target audience in this case is not only customers, but also stakeholders or groups interested in the success of business of financial organization, CRM can be observed from the aspect of contribution to the overall synergy of all marketing communications. Therefore, CRM must be seen as an integrated set of activities which enables improvement of company operations.
The best customers deserve to be treated in the best way. If best customers are treated as all others, they would soon start to behave in such a way towards our organization, which is not a good way of managing business. The aim of the marketer is to identify his best clients and keep continuous and personalized communication through CAM by which direct communication is established, nourished and developed with the most profitable clients. (Stone M., Mathias P. 2002, p.28). In order to obtain proper responses and measurable results, marketing managers have to be trained to create 'customer’s intelligence' according to dozens or hundreds of not related data collected by several sectors during the day. CRM solutions are designed to provide knowledge which is necessary for development and implementation of ‘clever’ strategies in order to maximize customer’s profitability and achieve competitive advantage by the company. Analysis which uses CRM technologies enables us to understand customers and anticipate their needs. In that way proactive approach is provided which contributes to improving competitive position of the company.

The key success factor of the company CRM concept is anticipation of the needs and expectations of the clients. Therefore, it is necessary to design a platform which enables communication with clients, as well as the analitical processing of relevant information collected from them. Within web sites specialized statistical software packages enable survailance and collection of responses to various questions, which can be kept in an appropriate database. In that way records can be kept on customer’s habits and their special interests. Strategic framework for CRM implementation represents interaction of the four mutually functionally connected business processes which refer to the following: (Hanić H, Domazet I. 2010, pp. 151-165):

1. Formulating company’s strategy (development strategy is analyzed in two aspects: business strategy and buyer);
2. Creating values/offers through perception of the buyer and awareness on the value;
3. Integrating through several channels (so called multi-chain management which involves sales force, output information, phone, direct marketing, e-commerce, mobile sales, etc);
4. Estimating how successful company by analyzing results after monitoring.
Assumptions of successful implementation of CRM concept are the following: good knowledge of the field of business and competition; good knowledge of end users and business buyers; market-oriented way of thinking; activities of the company as a whole – integrated approach to managing communication and sales channels, as well as developing database. (Payne A., Frow P. 2005, pp. 167-176). These assumptions make the basis of the conceptual framework for development of CRM strategy.

The concept of developing long-term relations with clients has to take into consideration the chain of values in managing customer relations in service rendering companies, i.e. activities which should be undertaken so as to develop profitable relations. The chain of customer relation management is based on the following: defining value of the offer, segmentation, targeting and positioning, system of business operations and delivery, measuring and feedback (Boulding, 2005).

Successful implementation of CRM concept in companies contributes to effective segmentation of the targeted groups, analytical forecasting of market trends, faster reaction to market changes, analysis of profitability of individual buyers, effective directing of offer towards highly profitable customers, improvement of the quality of the service, greater customer loyalty, higher profitability of the process of sale improvement of efficiency and flexibility of business, intensive development of competitive advantage and company’s reputation as a strong business partner, analysis of clients according to relevant characteristics, measuring of customer’s profitability, integrated information on client, time saving for various analyses and better knowledge of the market.

METHODOLOGY AND RESEARCH RESULTS

Further in this paper methodology is presented as well as the results of research conducted in the period September-November 2015, with the aim to investigate the structure of the database and the degree of implementation of the CRM system in the financial services sector in Serbia. The realization of this research was based on a combination of desk and field research, as well as the use of expert method. As part of the desk research the results of research of the market of financial services are collected, while the field research involved a larger number of surveys. Namely, this empirical research refers to the collection of data by surveying service organizations in Serbia.

The survey was conducted by delivering questionnaires via e-mail and by personal interview (which was applied in eight surveys), after the preliminarily talk and
selection of a person responsible for marketing in the financial organization. In some financial institutions it was necessary to get approval from the management for revealing data. Although the questionnaire was designed not to compromise the confidentiality of business in any case, it can be concluded that the practice of such research in Serbia is very complex. Service organizations show certain mistrust, regardless of the fact that confidentiality of data is guaranteed, so that individual data of the respondents will not be stated in any place, but only aggregated data.

The survey sample can be considered as random since the questionnaires were submitted to 42 (out of 78), financial institutions (banks, insurance companies and leasing companies) that operate in Serbia. Out of 52 organizations contacted, four refused to provide information because of disagreement of their management, while 20 did not submit any response despite the confirmation of the received questionnaire. Thus, the research included 29 financial organizations in Serbia, of which 20 banks, 5 insurance companies and 3 leasing companies. We consider this sample representative because assets of the surveyed firms make 49.3% of total assets of all organizations in population.

Research has shown that financial organizations in Serbia have comprehensive database of clients that include two segments of clients as follows: ‘population / citizens / natural persons’ and ‘legal entities and entrepreneurs’. The main features of clients in the segment ‘population / citizens / individuals’ which financial institutions recorded in the database are: name of the client; address; ID number; telephone and mail; age; marital status; interest; education; number of household members; amount of the monthly household income; services that the client is using; when he became a client of the company; employer (company in which the client is employed).

When it comes to the basic characteristics of clients in the segment of ‘legal entities and entrepreneurs’ our research shows that financial institutions recorded in the database the following characteristics: the name of the client, address, phone and mail, business, number of employees, annual turnover, annual payments, cross-sectional daily balance of the current account, the annual profit of the client, when he became a client of the bank, contact person, the average monthly income, the services that the customer uses and claims for damages arising from insurance policies (with insurance companies).

Most financial institutions, 83%, perform market segmentation to create a special marketing strategy. In 62% of the financial organizations in Serbia the system of (key) customer relationship management (CRM - Customer Relationship Management / KAM - Key Account Management). All financial institutions in Serbia which have not yet implemented a system of (key) customer relationship
management plan to introduce it in the next two years. In addition, financial institutions where the CRM / KAM system has been implemented use techniques of data mining (DM - Data Mining) in 42%, data warehouse (DW - Data Warehouse) in 58%, while the integrated software system is used by 34% of financial institutions. The combination of data warehousing and data mining technique is used by 24% of financial institutions.

The results of our research indicate that the most significant benefits of implementing CRM / KAM in financial institutions are the following: effective cross-selling (in 32% of financial institutions Serbia), creating a more efficient sales strategy (24%), quality analysis of sales (in 15%), analysis of clients according to relevant characteristics (in 14%), measuring customer profitability (in 11%), integrated client information (in 8%), saving time for various analyzes (in 7%), better knowledge of the market (in 5%).

CONCLUSION

The rapid development of information and communication technologies significantly changed the nature of the market environment of companies, which is particularly evident in the service sector. The service sector with its global mode of operation and thinking today largely creates economic and political map of the world, while technological infrastructure in companies with high quality management are becoming increasingly important success factors. Therefore the customer relationship management in the service sector has become an essential concept in companies in the service sector, both globally and in Serbia. An important aspect of intensive use of new technologies is to direct operations of these organizations to communicate directly with customers, about whom it is necessary to have as much quality, relevant and timely information as possible which is an essential prerequisite for profitable meeting of the clients' needs. The prerequisite of such approach is the optimal technological and functional infrastructure of CRM concept.

Proper implementation of CRM actually means establishing a balance between the tactical problem solving in specific areas and management of processes aimed at users and information about them. In other words, to make CRM successful on both strategic and technological level, it must be integrated. Therefore CRM business model was created consisting of the following: the way of segmentation and selection of users, differentiation of the offers, design of its resources, acting on the market and creation of values based on strategic understanding of the priorities and preferences of the user. Application of the operating model of CRM strategy, the company implements targeted actions aimed at retaining existing and
attracting new users by using information so as to shape the products and services according to the needs of different user profiles with different habits. However, by implementing CRM companies in the field of services create competitive advantage in terms of effective communication with the client and effective creation of optimal business offer according to client segmentation based on CRM.

References


