

A. Protsenko, Master student
A. Morozov, PhD in Engr., As. Prof., research advisor
L. Mohelnytska, PhD in Phil., As. Prof., language advisor
Zhytomyr State Technological University

THE USAGE OF INTELLIGENT DATA ANALYSIS AND ANALYTICS IN MODERN CRM SYSTEMS

In the business world, the question about effective customer relationship management arises very often. Ultimately, these relationships are transformed into large profits by increasing the number of repeated purchases and reducing the cost to attract customers. However, there is still no unique strategy, following which would help enterprises to build good relations with their customers. In the modern world, so-called CRM systems are widely popular, and they help enterprises very much to solve a lot of issues.

Customer Relationship Management (CRM) is an information term for methodological industries, software, services, data integration, and capabilities that help enterprises organize their customer relationship management. CRM system serves as a kind of business strategy aimed at studying and understanding the needs of existing and potential customers.

CRM systems are successfully implemented in various business areas, and this, undoubtedly, further affects its management. But not all CRM systems can be effective. Of course, if you consider a CRM system that is narrowly targeted, it is hard to say about some kind of universal methods and technologies, which can make it absolutely effective. However, researching modern opportunities and technologies, most scholars are confident that the future of CRM systems is in using intelligent data analysis and analytics.

Analytics in such systems is used to describe the automated methodology of customer data processing in order to make better business decisions. Large companies, during their existence, collect quite a lot of data by tracking their clients, which, directly, becomes an important part of both sales and customer service in general. CRM analytics includes methods that analyze customer data and represent it for making the best and fastest business decisions.

Data integration is an important first step for using analytics. This is why client analytics is considered to be a type of OLAP (On-Line Analytical Processing) – category of software that provides analysis of data stored in a database. This is also an important element of the CRM system.

Companies want to learn as much as possible about the behavior of their clients, but since the number of clients and information about them is too much, this issue is complicated. There are necessary modern and new technologies and tools for managing and analyzing customer information that could help to find valuable knowledge. Data mining technologies provide significant technical support for CRM to analyze large volumes of complex customer data and determine their value.

It should be noted that traditional data analysis is also effective in certain cases. The essential difference between the intellectual and traditional data analysis is that it is

a process of studying the relationships between data, in most cases, without any assumptions and prerequisites.

It should also be highlighted that CRM gathers and accumulates a huge amount of information about the market and customers. An important key element to intelligent data analysis is to distinguish truly valuable information and to find links between large data sets. Moreover, the enterprise, thanks to the intelligent analysis of data in CRM, can receive information about business trends, forecast results and analyze needed key factors for functioning, in order to increase revenue, reduce costs and maintain a competitive position on the market.

Today, more and more companies admit that analyzing data in CRM helps improve sales performance. Let's consider some of the reasons for this phenomenon. Any CRM that includes analytics and forecasting capabilities can predict sales growth, show conversion rates, and how much time a potential customer will need to make a purchase. The use of artificial intelligence is also an extremely important advantage of the CRM system. The implemented artificial intelligence algorithms control the analysis and give reasonable recommendations to the current or potential client based on all the data about him collected by this system.

It means, that forecasting in CRM systems is a very important feature. Due to the prognostic analysis, the system is able to more accurately predict the future costs of the client based on its past behavior. Proceeding from this, the use of predictive analytics can improve the CRM system by the following factors: segmentation of clients in accordance with a certain purpose, monitoring the effectiveness of the marketing company, improving the quality of customer service through constant feedback and customer satisfaction assessment. In other words, companies and organizations, using an analyst, can create accurate profiles for those customers who are more likely to buy their products.

Predicting future trends and behaviors using intelligent data analysis can help companies make right and effective decisions based on their knowledge.

Analytical CRM – is a solid, consistent platform that provides opportunities for forecasting, scaling and optimizing customer relationships. Among the benefits of using analytics, we can distinguish the following: creating a more flexible and profitable client base; help in keeping profitable clients; satisfaction of individual needs of clients. Such systems help to determine which client is best for being invested, which should be treated at an average level, and for whom attention should not be paid at all.

Intelligent data analysis includes a large number of subject areas, most of which are strong, efficient algorithms and techniques of artificial intelligence, such as machine learning, statistics, neural networks and database techniques. As inputs for various methods of statistical analysis and machine learning, the gathered data of the CRM system is used. The most common methods of intelligent data analysis used in modern CRM systems are considered.

Detection of anomalies. This is searching of information that does not meet the expected behavior or predictive pattern. Anomalies help to get useful information because they deviate from the average in the data set.

Learning the rules of association. They represent certain relationships between elements in large data sets. By learning the association rules, you can discover hidden

patterns and use the information you get to better understand customers, learn their habits, and predict their decisions.

Clusterization. It defines similar data sets and helps to understand both the similarities and the differences between the data. Data sets that have similar characteristics can be used to increase conversion. For example, if the behavior of one group of customers is similar to the behavior of another group, they can be simultaneously oriented to similar services or products.

Classification. In the course of the data analysis, the classification is considered as an example of supervised learning, it is training where a set of correctly identified observations is available. As a result of learning, it is determined whether the datasets belong to the appropriate category. This method is used to collect information about data, which would allow these datasets to be categorized according to their respective categories. One example is the distribution of goods as popular, average sales and not popular at all.

Regression. Regression analysis is one of the advanced methods of intelligent data analysis in CRM. Its purpose is to find the relationship between the various data elements and to determine which variables are influenced by other variables. More often, regression analysis evaluates the conditional expectation of a dependent variable taking into account independent variables, it is the average value of a dependent variable when independent variables are fixed. In CRM, this method can be used to determine the level of customer satisfaction and the impact on customer loyalty.

Forecasting. The process of forecasting the future based on past and current data is most often carried out through the analysis of trends. A typical example is the evaluation of some of the variables of interest for a certain future date (holiday, birthday, etc.).

Visualization. The purpose of data visualization is the clear and efficient transmission of information using statistical graphs. Effective visualization helps you analyze data. As a result, complex data becomes more understandable and useful.

So, intelligent data analysis, together with artificial intelligence, will shape the future of CRM and companies in their quest to become more customer-oriented. The combination of CRM tools and intelligent data analysis will increase the level of knowledge and understanding of customers, products and data transactions, thereby enhancing strategic decision making and tactical marketing activities. Enterprises will receive an increase income as a result of improving the ability to respond to each individual person and reduce costs through optimal allocation of resources.

Based on the fact that the main goal of CRM systems is to help improve the quality of services provided to the client, to increase the probability that the client will return to the company, it can be concluded that the using of analytics and data mining is a necessarily part of such systems. Through this component, the system will be able to function properly and fulfill its main goals and objectives, as well as help companies grow, be competitive and get the maximizing profit.

REFERENCES

1. Pāvels Gončarovs. Data Analytics in CRM Processes: A Literature Review [Elektronний ресурс] / Pāvels Gončarovs. – 2017. – Режим доступу до ресурсу: https://www.researchgate.net/publication/322413856_Data_Analytics_in_CRM_Process

es_A_Literature_Review.

2. Safety in Numbers: Making Better Decisions with CRM Analytics [Електронний ресурс] – Режим доступу до ресурсу: <https://www.salesforce.com/hub/crm/make-better-decisions-with-crm-analytics/>.

3. Впровадження CRM-системи: роль CRM-технологій у підвищенні ефективності бізнесу [Електронний ресурс] – Режим доступу до ресурсу: <http://tqm.com.ua/ua/likbez/crm-systemy/rol-vprovadzhennia-crm>.