Intellectual System for Promoting Online Resources

Andriy Malytskyi, Yaroslav Kis, Iryna Zavushchak

Lviv Polytechnic National University, Lviv, Ukraine

Any marketing company in the course of its work cooperates with a large number of clients. With the proper development of the company, the number of customers grows over time, which in turn generates more customer needs. With a large number of clients, it is difficult to rely on Excel and Google Docs for managing operations, storing customer information, controlling payments and work tasks, since all this manual work takes a great deal of time, doubtful data storage reliability, and no detailed analytics capabilities. There is also a lack of resources and capabilities that the company is able to allocate to one conditional client.

Customer relationship management is based on the principles of relationship marketing, an emerging field of modern marketing. This was brought to the attention of executives in the early 1990s. All results were based on their customers' preferences and requirements. This information was used to increase customer satisfaction with the services provided and to further cooperate. In the same decade, it has been suggested that in the future, firms will not try to sell the same product or service to many clients, and they will try to sell more of their products to one customer over a long period of time. this approach paved the way for the transition from RM to CRM. The CRM approach focuses on creating unique relationships with individual clients based on managing relationships with each client specifically to ensure and manage, and most importantly, create long-term relationships.

Improved performance is closely linked to the development of management information, improved storage, processing and systematization of information. Increasing innovation activity, the ability to adequately assess the dynamics of changes in the external environment and the ability to quickly adapt to them requires information support and changes in management methods and technology, which is reflected in the introduction of information systems companies. The use of information systems increases the efficiency of management work, increases the speed of development and decision-making at all levels of company management. The creation of an information system in the company is based on the implementation of modern software products, ie IT solutions.

Global post-industrial development trends are challenging companies to make quick decisions and to adapt to change. The role of information and technological support of the management process has changed significantly. In the presence of the appropriate environment, the transition from the usual management methods to information technology, which provides high integration in the field of management decisions. Despite the recent progress in development, this sector does not yet correspond to the level of functioning of developed foreign countries. On the level of awareness of the manager, the speed of obtaining relevant information depends on the

timely adoption of effective management decisions. Development of information technologies and management systems leads to institutional transformations of enterprises and provides a transition to a new level. In this regard, it is necessary to introduce and develop comprehensive management information systems aimed at improving economic efficiency and development.

The main purpose of the research is the development of a marketing management information system for a marketing company that will help to work with clients. This will increase productivity.

To achieve this goal it is necessary to solve the following problems:

- Object of study - the processes of developing a customer management system of a marketing company.
- The subject of the study - methods and tools for the development of customer management systems marketing company. It has been proven that the marketing companies that have implemented such a system are benefiting greatly from customer collaboration.

Recommendations on using the resource promotion service as a tool for managing and improving the effectiveness of interaction with clients are developed. manage the client base through the definition of clients that are suitable for the work; control the stages of the sales process; to consider qualitative and quantitative indicators of work of client managers; to form sections of information grouped by different parameters of activity.

References

1. Services wins an innovation award from promoting online resources, https://www. promoting.ca/en/digital
2. Promoting online resources, https://eric.ed.gov/?id=EJ642004
3. Garasym, O., Chyrun, L., Chernovol, N., Gozhyj, A., Gozhyj, V., Kalinina, I., Rusyn, B., Pohreliuk, L., Korobchynskyi, M.: Network Security Analysis Based on Consolidated Threat Resources. In: Computational Linguistics and Intelligent Systems, COLINS, CEUR workshop proceedings, Vol-2604, 1004-1018. (2020).
4. Lytvyn, V., Oborska, O., Vysotska, V., Dosyn, D., Demchuk, A.: Ontology Using for Decision Making in a Competitive Environment. In: Computational Linguistics and Intelligent Systems, COLINS, 2, 17-27. (2018)
5. Rusyn, B., Vysotska, V., Pohreliuk, L.: Methods of Information Resources Processing in Virtual Library. In: Computational Linguistics and Intelligent Systems, COLINS, 2, 28-39. (2018)
6. Chyrun, L., Vysotska, V., Chyrun, L., Gozhyj, O., Kalinina, I.: SEO Technology for Web Resource Processing. In: Computational Linguistics and Intelligent Systems, COLINS, 2, 40-52. (2018)
7. Basyuk, T.: Influence of Readability on Popularization of Internet Resources. In: Computational Linguistics and Intelligent Systems, COLINS, 2, 146-156. (2018)
8. Lande, D.: Creation of subject domain models on the basis of monitoring of network information resources. In: 1st International Conference Computational Linguistics and Intelligent Systems, COLINS, http://colins.in.ua/wp-content/uploads/2017/04/Lande.pdf. (2017)

9. Lytvyn, V., Vysotska, V., Chyrun, L., Smolarz, A., Naum, O.: Intelligent system structure for Web resources processing and analysis. In: 1st International Conference Computational Linguistics and Intelligent Systems, COLINS, 56–74. (2017)

10. Lande, D., Andrushchenko, V., Balagura, I.: An index of authors' popularity for Internet encyclopedia. In: 1st International Conference Computational Linguistics and Intelligent Systems, COLINS, 47–55. (2017)

11. Hamon, T., Grabar, N.: Unsupervised acquisition of morphological resources for Ukrainian. In: 1st International Conference Computational Linguistics and Intelligent Systems, COLINS, 20–30. (2017)

12. Kanishcheva, O., Vysotska, V., Chyrun, L., Gozhyj, A.: Method of Integration and Content Management of the Information Resources Network. In: Advances in Intelligent Systems and Computing, 689, Springer, 204-216. (2018)

13. Su, J., Sachenko, A., Lytvyn, V., Vysotska, V., Dosyn, D.: Model of Touristic Information Resources Integration According to User Needs. In: Proceedings of the International Conference on Computer Sciences and Information Technologies, CSIT, 113-116. (2018)

14. Vysotska, V., Lytvyn, V., Burov, Y., Gozhyj, A., Makara, S.: The consolidated information web-resource about pharmacy networks in city. In: CEUR Workshop Proceedings, 239-255. (2018)

15. Gozhyj, A., Kalinina, I., Vysotska, V., Gozhyj, V.: The method of web-resources management under conditions of uncertainty based on fuzzy logic. In: Proceedings of the International Conference on Computer Sciences and Information Technologies, CSIT, 343-346. (2018)

16. Gozhyj, A., Vysotska, V., Yevseyeva, I., Kalinina, I., Gozhyj, V.: Web Resources Management Method Based on Intelligent Technologies. In: Advances in Intelligent Systems and Computing, 871, 206-221. (2019)

17. Su, J., Vysotska, V., Sachenko, A., Lytvyn, V., Burov, Y.: Information resources processing using linguistic analysis of textual content. In: Intelligent Data Acquisition and Advanced Computing Systems Technology and Applications, Romania, 573-578. (2017)

18. Vysotska, V.: Linguistic Analysis of Textual Commercial Content for Information Resources Processing. In: Modern Problems of Radio Engineering, Telecommunications and Computer Science, TCSET, 709–713. (2016)

19. Vysotska, V., Chyrun, L.: Analysis features of information resources processing. In: Proceedings of the International Conference on Computer Sciences and Information Technologies, CSIT, 124-128. (2015)

20. Vysotska, V., Chyrun, L., Chyrun, L.: Information Technology of Processing Information Resources in Electronic Content Commerce Systems. In: Proceedings of the International Conference on Computer Sciences and Information Technologies, CSIT, 212-222. (2016)

21. Lytvyn, V., Vysotska, V., Burov, Y., Demchuk, A.: Architectural ontology designed for intellectual analysis of e-tourism resources. In: Proceedings of the International Conference on Computer Sciences and Information Technologies, CSIT, 335-338. (2018)

22. Vysotska, V., Burov, Y., Lytvyn, V., Oleshek, O.: Automated Monitoring of Changes in Web Resources. In: Advances in Intelligent Systems and Computing, 1020, 348–363. (2020)

23. Vysotska, V., Chyrun, L.: Methods of information resources processing in electronic content commerce systems. In: Proceedings of 13th International Conference: The Experience of Designing and Application of CAD Systems in Microelectronics, CADSM 2015-February. (2015)

24. Alieksieieva, K., Berko, A., Vysotska, V.: Technology of commercial web-resource processing. In: Proceedings of 13th International Conference: The Experience of Designing and Application of CAD Systems in Microelectronics, CADSM 2015-February. (2015)

25. Antonyuk, N., Vysotsky, A., Vysotska, V., Lytvyn, V., Burov, Y., Demchuk, A., Lyudkevych, I., Chyrun, L., Chyrun, S., Bobyk, I.: Consolidated Information Web Resource for Online Tourism Based on Data Integration and Geolocation. In: Proceedings of the International Conference on Computer Sciences and Information Technologies, CSIT, 15-20. (2019)

26. Berko A. Features of information resources processing in electronic content commerce / Andriy Berko, Victoria Vysotska, Lyubomyr Chyrun // Applied Computer Science. ACS journal. – Volume 10, Number 2. – Poland, 2014. – ISSN 2353-6977 (Online), ISSN 1895-3735 (Print). – PP. 5-19 [Online]. – Режим доступу: www.acs.pollub.pl, http://www.acs.pollub.pl/index.php/-current-issue/vol-10-no-122014.html, http://www.acs.pollub.pl/pdf/v10n2/1.pdf.

27. Vysotska V. Analytical methods for commercial web content processing of information resource in electronic business systems / Victoria Vysotska, Lyubomyr Chyrun // MEST Journal. – Vol.2 No.1. – PP. 57-70 [Online]. – ISSN 2334-7058. – http://www.mest.meste.org/MEST_Najava_clanaka.html, http://mest.meste.org/MEST_Najava/IV_vysotska.pdf.

28. Vysotska V. Unified Methods of Processing Information Resources in Electronic Content Commerce Systems / Victoria Vysotska, Lyubomyr Chyrun, Liliya Chyrun // Computer Science and Information Technologies (CSIT'2012): Proc. of the VII-th Int. Conf., (Lviv, 20-24 November, 2012).– Lviv: Publishing House Vezha&Co, 2012.– P.190-194.

29. Vysotska V. Analytical methods for commercial web content processing of information resource in electronic business systems / Victoria Vysotska, Lyubomyr Chyrun // MEST Journal (Management Education Science & Society Technologie). – Vol.2 No.2. – PP. 285-300 [Online]. – ISSN 2334-7171, ISSN 2334-7058 (Online), DOI 10.12709/issn.2334-7058. This issue: DOI 10.12709/mest.02.02.02.0. – Режим доступу: http://mest.meste.org/R4.html, http://mest.meste.org/MEST_2_2014/4_29.pdf, http://www.meste.org/mest/Archive/MEST_II_2_2.pdf.

30. Vysotska V. Set-theoretic models and unified methods of information resources processing in e-business systems / Victoria Vysotska, Lyubomyr Chyrun // Applied Computer Science. ACS journal. – Volume 10, Number 3. – Poland, 2014. – ISSN 2353-6977 (Online), ISSN 1895-3735 (Print). – PP. 5-22 [Online]. – Режим доступу: www.acs.pollub.pl, www.acs.pollub.pl, http://www.acs.pollub.pl/index.php/-current-issue/vol-10-no-3-2014.html, http://www.acs.pollub.pl/pdf/v10n3/1.pdf.

31. Vysotska V. Methods and means of processing information resources in electronic content commerce systems / Victoria Vysotska, Lyubomyr Chyrun // Applied Computer Science. ACS journal. – Volume 11, Number 2. – Poland, 2015. – ISSN 2353-6977 (Online), ISSN 1895-3735 (Print) – PP. 68-85 [Online]. –www.acs.pollub.pl, http://www.acs.pollub.pl/pdf/v11n2/7.pdf, http://www.acs.pollub.pl/index.php/archival-issues/vol-11-no-2-2015.html.

32. Chyrun L. Information resources analysis in electronic content commerce systems / Lyubomyr Chyrun, Victoria Vysotska, Rostik Laba // Applied Computer Science. ACS journal. – Volume 11, Number 2. – Poland, 2016. – ISSN 2353-6977 (Online), ISSN 1895-3735 (Print) – PP. 48-66 [Online]. –www.acs.pollub.pl, http://www.acs.pollub.pl/pdf/v12n1/5.pdf, http://www.acs.pollub.pl/index.php/-current-issue/vol-12-no-1-2016.html.