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DEVELOPMENT OF A MODEL FOR AUTOMATING THE SALES PROCESS OF ADVERTISING MATERIALS IN MEDIA HOLDING

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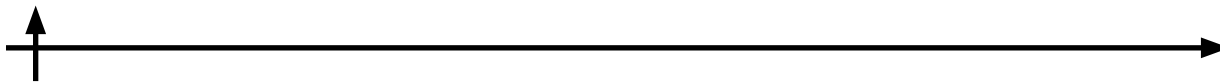
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Abstract. In the modern digital age, media holdings face challenges and opportunities related to managing the lifecycle of sales of advertising materials. Today, the media holding market has become very dynamic and competitive. Large amounts of information, constant changes in the requirements of advertisers and consumers, as well as a variety of communication channels require media holdings to quickly adapt and be flexible in managing sales processes. This study will propose an automation model as a basis for analyzing the maturity and improvement of such a process in companies. As a result of the research, a TO BE automation model was obtained, and a list of the main digital services necessary for this kind of automation was proposed. The research is based on the existing literature and a comparative example involving the company, the media holding in the Russian Federation.

Keywords: automation, digital solution, digitalization, CRM, customer experience, LTV, big data, sales process, media holding

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РАЗРАБОТКА МОДЕЛИ АВТОМАТИЗАЦИИ ПРОЦЕССА ПРОДАЖ РЕКЛАМНЫХ МАТЕРИАЛОВ В МЕДИАХОЛДИНГЕ

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Аннотация. В современную цифровую эпоху медиахолдинги сталкиваются с проблемами и возможностями, связанными с управлением жизненным циклом продаж рекламных материалов. Сегодня рынок медиахолдинга стал очень динамичным и конкурентным. Большие объемы информации, постоянные изменения требований рекламодателей и потребителей, а также разнообразие каналов коммуникации требуют от медиахолдингов быстрой адаптации и гибкости в управлении процессами продаж. В этом исследовании будет предложена модель автоматизации в качестве основы для анализа зрелости и улучшения такого процесса в компаниях. В результате исследования получена модель автоматизации ТО ВЕ и предложен перечень основных цифровых сервисов, необходимых для такого рода автоматизации. Исследование основано на существующей литературе и сравнительном примере с участием компании-медиа-холдинга в Российской Федерации.

Ключевые слова: автоматизация, цифровое решение, цифровизация, CRM, клиентский опыт, LTV, большие данные, процесс продаж, медиахолдинг

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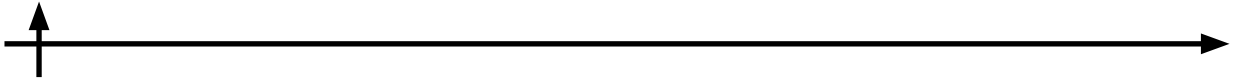
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Introduction

Today, the work of any large organization is associated with the need to automate the enterprise process. Process automation is an integrated approach that describes the use of technology and systems to perform tasks and operations without significant human intervention. As Roman Okorokov, Anna Timofeeva and Tatyana Kharlamova wrote in their article: "The current stage of human development is characterized by the intensive construction of a digital economy, the parameters of which are fundamentally different from those of the previously dominant industrial economy" (Okorokov, 2019).

The topic of process automation in general is one of the key topics of modern business in various fields. As Natalia Alekseeva, Alexander Babkin, Anna Jung, Svetlana Krechko, Hanon Barabaner write: "One of the main trends in modern life is the introduction of digital technologies into people's lives, society and business". Media holdings that actively adapt to digital technologies and apply innovative solutions in their sales processes have a significant competitive advantage. In the context of rapid changes in consumer behavior and the transition to online communication channels, media holdings are forced to rethink their strategies and implement digital tools in order to remain relevant and successful in the market.

The modern media market has undergone major transformations as a result of the rapid development of information and communication technologies. In a competitive environment, Russian advertising agencies are dynamically developing and increasingly integrating into the digital environment. In recent years, the number of creative agencies and groups that operate



using new technologies has increased significantly. These include media buyers, PR agencies, online advertising agencies, web design and others (Ketova, 2020).

One of the main trends in the modern media market is the increase in the volume and diversity of data. Media holdings have access to huge amounts of data, including information about consumers, their preferences, behavior and reactions to advertising. The use of analytics and machine learning allows media holdings to extract valuable information from this data, identify trends, predict customer behavior and make more informed decisions in the sales process.

Another significant trend is the personalization of advertising. Modern consumers expect personalized and relevant content that takes into account their interests, preferences and needs. Media holdings are faced with the task of creating personalized advertising materials and adapting them to a specific consumer. Digital tools such as BPMS, low-code and no-code platforms allow media holdings to create and customize personalized advertising campaigns with minimal effort and reduced time.

The purpose of introducing digital solutions into the life cycle of sales of advertising materials of a media holding is to increase the efficiency and effectiveness of commercial activities. Automation of sales processes allows you to reduce the time of the sales cycle, speed up order processing and improve the quality of customer service. This helps to increase sales and customer satisfaction, as well as reduce costs and improve the operational efficiency of the media holding.

To improve the quality of automation of the media holding sales process, it is necessary to solve a number of tasks, including identifying the prerequisites for implementation, analyzing technologies for automation, studying the process, as well as optimizing such a process taking into account current technologies. Automation of the process will help to reduce the time for processing orders, reduce the number of errors and manual labor. Therefore, automation of the sales process of advertising materials is of particular importance and practical importance.

The purpose of the study is to propose a model for automating the sales process of advertising materials in a media holding as a basis for analyzing the maturity and improvement of such a process in companies.

Selected tasks:

- to analyze articles on the topic of automation of the sales process;
- to analyze the technologies relevant to the automation of the sales process;
- to consider the business process of selling advertising materials in a media holding;
- to develop an optimized process model based on the results obtained during the analysis.

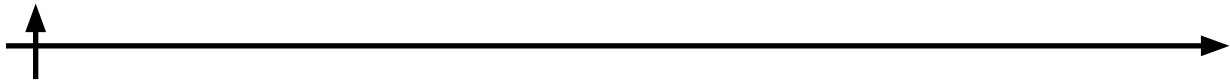
Materials and Methods

For a detailed consideration of the topic, it is necessary to analyze what automation is, its prerequisites, as well as the possibilities of modern digital technologies for automating the sales process of advertising materials.

In order to maintain their place in the market, advertising organizations need to constantly develop and adapt their activities to the trends of behavior of the audience and business entities. A.V. Chekhov notes that currently the main activity of media holdings can be divided into three groups: content production, a combination of content that occurs in the format of printed publications, Internet resources, radio distribution of media products in the form of print media, Internet resources, radio and TV (Chekhov, 2021).

The current research will mainly focus on the TV group and the sale of TV advertising materials.

One of the key tools to achieve this goal is the implementation of a customer relationship



management (CRM) system. CRM systems provide an integrated approach to managing customer data and sales processes, allowing media holdings to effectively interact with customers, improve service and increase sales. This paper will consider the prerequisites for the introduction of CRM into the sales processes of media holding in Russia in 2023, taking into account the withdrawal of their current CRM from the market.

Customer relationship management (CRM) is a specialized technology that enables firms to capture, store, access, share and analyze large quantities of customer data. The potential benefits of using CRM systems include higher customer loyalty, improved marketing effectiveness, better customer service and support and lower costs through improved efficiency.

Prerequisites for the introduction of CRM into sales processes:

Outdated CRM system: One of the main prerequisites for the introduction of a new CRM system is an outdated or poorly functioning current CRM. If a media holding is faced with problems in processing customer information, difficulties in analyzing data, or an inability to provide personalized customer service, replacing the CRM system becomes a necessity.

Expanding the customer base: Media holdings may face a growing customer base and an increase in sales. In such circumstances, a powerful and flexible CRM system is required, capable of efficiently processing large amounts of data, tracking customer interaction and providing analytical tools for making informed decisions.

The need for personalization: In the face of increasing competition and changing consumer preferences, it is important for media holdings to offer personalized content and promotional materials. The CRM system allows you to collect and analyze data about customers, their preferences and behavior, which allows you to create personalized offers and improve the customer experience.

Integration with other systems: Media holdings often use different IT systems to manage different aspects of their business, such as content management, analytics, finance, etc. The integration of the CRM system with other systems allows you to create a single information space, improve data exchange, automate processes and provide a single overview for the entire business.

Improved communication: CRM systems allow you to strengthen internal communication within the media holding and ensure more effective interaction between sales, marketing, analytics and other key functional areas. This helps to improve coordination and cooperation, which has a positive effect on the quality of customer service and sales performance.

Advantages of CRM for business:

1. Optimization of customer experience.
2. Increase the level of customer retention.
3. Increase in sales revenue.
4. Improving the efficiency of processes.
5. Improving the rationality of operations and the level of cooperation.

The main functions of CRM

1. Contact management.
2. Interaction management.
3. Managing potential customers.
4. Automation of work processes.
5. Customer analytics.
6. CRM integration.
7. Secure mobile CRM system.

According to a study by SAP, CRM includes the following functions [6].

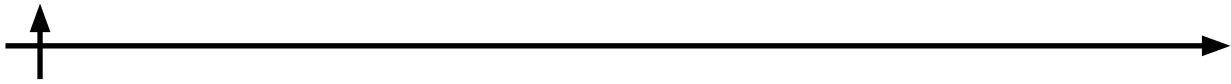


Table 1. The main functions of CRM according to SAP research

The main functions of CRM	
Main Sales	Customer Service
Contact management	Contact Center
Interaction management	Omnichannel
Managing potential clients	Email newsletters
Automation of work processes	Engagement
Customer analytics	Surveys
CRM integration	Contact Center
Secure mobility	

As Sikora Melanie Hodgkinson et al. says, the changed trends in the work of the CRM system are aimed at improving the quality of customer service (customer experience) and improving the efficiency of working with customers and interacting with them (Sykora, 2022).

Customer Experience management: One of the main trends in the CRM system is the transition from simple to complex. customer experience management (Holmlund, 2020). CRM systems are installed using software to collect and analyze data related to customer engagement with the campaign. This allows organizations to better understand the needs and preferences of customers, as well as offer personalized solutions and services that meet their expectations (Spewak, 1992).

In general, modern trends in CRM systems are aimed at improving customer interaction, increasing the level of personalization, automating processes and providing deeper data analysis. The introduction of modern CRM systems can help media holdings in Russia to increase the efficiency of sales of advertising materials, improve customer service and achieve a competitive advantage in the market.

Customer experience within the framework of the implemented CRM:

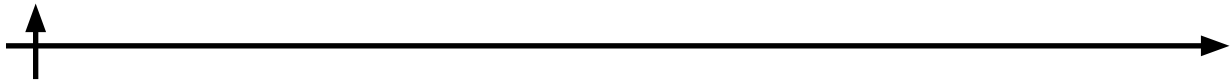
1. Collection of metrics.
2. Analysis of the customer experience situation (metrics analysis).
3. Visualization of customer experience reports.
4. Automation of work processes.
5. Adjustment of the service, products and services, taking into account customer feedback.
6. Expected result: improvement of the LTV indicator (LTV is an indicator of the profit that the business receives for all the time it works with the client).

According to Mongo's research, LTV (Lifetime Value) is the customer's lifetime value. LTV shows the profit from the relationship with the client for the entire period — from the moment when he saw the first advertisement or registered on the site, to the last purchase.

LTV is calculated by multiplying the average revenue received from a client over a certain period by the expected duration of cooperation with him. This indicator helps companies understand how much they are willing to invest in attracting and retaining customers (Okorokov, 2019).

The use of the LTV indicator in the automation of the sales process has a number of advantages:

1. Profitability forecasting: LTV calculation allows companies to predict the potential profit that can be obtained from each client. This allows you to make informed decisions about how much resources and effort should be invested in attracting and retaining customers, as well as



optimize marketing and sales strategies.

2. Determining the pricing policy: Knowing the customer's LTV, the company can determine the optimal price of a product or service. If the LTV is high, then the company can set a higher price based on the expected long-term profit. In case of low LTV, the pricing policy can be adjusted to attract and retain customers.

3. Improving Customer Experience: Understanding LTV helps companies identify which customers are most valuable and how to provide them with a higher quality of service. By focusing on customers with high LTV, the company can offer personalized services, bonus programs or additional benefits, which increases customer loyalty and prolongs their life cycle (Provost, 2013).

4. Data-based decision making: LTV calculation is based on the analysis of data on customer behavior, purchases and interaction history. This helps companies make informed decisions based on factual information rather than assumptions. Automation of the sales process using CRM and analytical tools allows you to collect and analyze data for a more accurate calculation of LTV.

5. Optimization of marketing costs: Knowing the customer's LTV, the company can determine how much it can spend on attracting a new customer. This helps to optimize marketing costs and distribute the budget between different channels for attracting customers. The company can also focus on retaining existing customers who have a high LTV, which saves resources and increases the overall profitability of the business.

The use of the LTV indicator in the automation of the sales process allows companies to more accurately analyze and predict the results of their sales, optimize marketing strategies, improve customer service and improve overall business profitability.

The introduction of CRM into the processes of such a large company also requires technology that allows you to work with large amounts of data. As Holmlund M Van Vaerenbergh YCiuchita R et al say, in today's fast-paced digital economy, big data analytics (BDA) has huge potential to enhance customer experience.

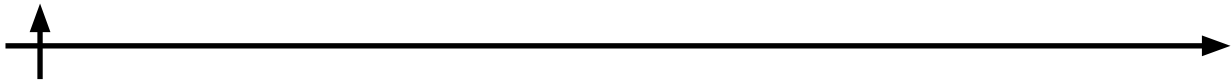
The introduction of Big Data technology into the CRM system of media holding has a number of advantages and applicability:

1. Processing and analysis of large amounts of data: Big Data technologies allow you to effectively process and analyze huge amounts of data, including information about customers, advertising campaigns, sales and other important indicators. This allows the media holding to gain a more complete understanding of its customers, their preferences and needs, as well as make more accurate forecasts and make informed decisions.

2. Personalization of offers: with the help of Big Data technology, the media holding can analyze large amounts of data about customers, their interests, preferences, purchase history and behavior. This allows you to create personalized offers and recommendations for customers, taking into account their individual needs and preferences. This approach increases the likelihood of successful sales and improves the customer experience.

3. Optimization of marketing campaigns: Big Data analysis allows the media holding to optimize its marketing campaigns. Using customer data, the behavior of their interaction with advertising materials and sales results, the media holding can determine the effectiveness of various marketing strategies and tactics, as well as optimize budget allocation based on data and insights.

4. Forecasting and analytics: Big Data technologies allow for more accurate forecasting and analytics in the field of sales of advertising materials. The analysis of historical data, customer information and external factors allows the media holding to predict demand, determine the most effective sales strategies, manage inventory and make informed decisions to achieve the



best results.

5. Improving customer retention: Through Big Data analysis, the media holding can better understand its customers, their needs and preferences. This allows us to provide a more personalized and high-quality service, which helps to increase customer satisfaction and retain them on a long-term basis.

Machine Learning Technology (ML) is a branch of artificial intelligence that allows computer systems to learn and improve based on experience and data, without explicit programming.

It is based on algorithms and models that are able to analyze large amounts of data, identify patterns, make predictions and make decisions based on this data.

The use of machine learning technology in the implementation of a CRM system in a media holding can significantly increase the effectiveness of sales of advertising materials. It allows you to predict demand, personalize offers, automate sales processes, analyze data and improve customer retention. As a result, the media holding can increase its competitiveness, improve the quality of customer service and achieve higher profit margins.

The use of machine learning technology in the implementation of a CRM system in a media holding has significant potential and can lead to improved efficiency and effectiveness of sales of advertising materials. The main applications of machine learning in this context are discussed below:

1. Demand forecasting: Machine learning allows you to analyze historical sales data and customer behavior to predict future demand for advertising materials. This allows the media holding to adapt its sales strategies, optimize inventory and manage resources more efficiently.

2. Personalization of offers: With the help of machine learning, you can analyze data about customers, their preferences, purchase history and behavior to create personalized offers. This allows the media holding to offer customers promotional materials that best meet their needs and interests, which increases the likelihood of successful sales.

3. Sales Process Automation: Machine learning can be applied to automate various stages of the sales process, such as lead qualification, customer segmentation, and determining optimal communication strategies. This allows you to reduce the time and effort spent on routine tasks and focus on the more strategic aspects of sales (Kalyatin, 2020).

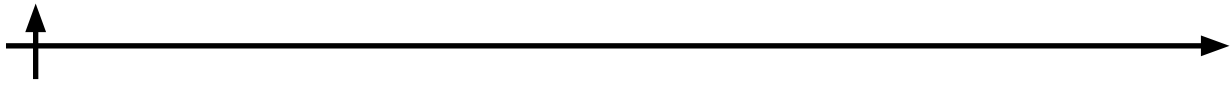
4. Data analysis and prediction of results: Machine learning can be used to analyze large amounts of data about customers, sales and marketing activities. This helps to identify hidden patterns, trends and patterns that can be useful for making decisions about sales and marketing strategies. Machine learning can also be used to predict sales results and evaluate the effectiveness of marketing campaigns.

5. Improving customer retention: Machine learning allows you to analyze data about customers and their behavior, which helps identify factors that affect customer retention. This allows the media holding to take targeted measures to retain customers, for example, to offer personalized discounts or bonus programs (Bishop, 2006).

The use of machine learning technology in the implementation of a CRM system in a media holding can significantly increase the effectiveness of sales of advertising materials. It allows you to predict demand, personalize offers, automate sales processes, analyze data and improve customer retention. As a result, the media holding can increase its competitiveness, improve the quality of customer service and achieve higher profit margins (Clements, 2010).

This study used a mixed review method combining critical review, synthesis and deduction.

A critical review of the literature in the current study contains a discussion of the prerequisites for the introduction of automation into the sales process in the studies identified in the reviewed studies. In addition, the critical review allowed us to consider and discuss the appli-



cability of technologies in such a process.

The generalization in the current study contains a combination of knowledge about the technologies used in the process, in their applicability in various fields that were considered in the study.

Deduction made it possible, by extracting hypotheses from the studies reviewed, to draw a conclusion in the current study.

The study also used the method of modeling the architecture of processes using the Archi digital solution. Archi is a freely distributed open source cross-platform tool for modeling at all levels of enterprise architecture in terms of the ArchiMate language. Archi is developed and is a registered trademark of Philip Beauvoir. The Orchid software product is based on the Eclipse Rich Client Platform (RCP) framework using the Eclipse IDE integrated development environment.

The basis of the Archi tool is ArchiMate. ArchiMate is an open source enterprise architecture modeling language standard developed by the Open Group consortium. The ArchiMate language is supported by the tools of various vendors and is actively used by consulting companies. It is fully consistent with the TOGAF enterprise architecture model, also supported by the Open Group consortium. ArchiMate supports the description, analysis and visualization of enterprise architecture.

Results and Discussion

After analyzing all the technologies, they were assembled into a single concept to automate the sales process of advertising materials in the media holding. As a result, we get the following solution concept:

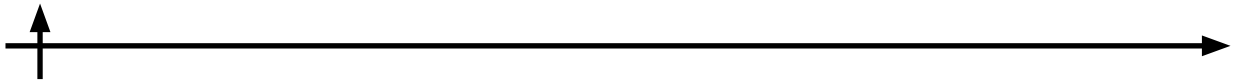
The concept of the solution describes how CRM will be integrated with the current systems used in media holding. The client's path from the entry point to processing in the company's systems is shown. In the diagram, you can see the entire client path as it looks in the system. Customer data gets into the CRM, from there via the 1C data bus for billing and contract processing, into the BI system for analytics, etc.

One of the important stages in the client's journey is the client's login to the system. This is where the client's initial contact with the media holding takes place, and information about the client begins to be collected and entered into the CRM system. This may include information about the customer, their contact information, preferences, interaction history, and other important information (Maidanova, 2022).

The next step is data processing in the company's systems. The CRM system interacts with other systems such as 1C (billing and contract processing system) and BI-system (analytics system). The data bus provides information transfer between these systems so that customer data is available and used in the right systems (Hastie, 2009).

Integration with 1C allows you to automate the billing and contract processing processes. The customer data collected in the CRM system is transferred to 1C for generating and billing customers, as well as for processing the necessary contracts. This simplifies and speeds up the process of interacting with customers and increases the accuracy and reliability of financial transactions.

Integration with the BI system allows you to analyze customer and sales data. The data collected in the CRM system is transferred to the BI system for various analytical operations. This may include analyzing the effectiveness of marketing campaigns, tracking sales and conversions, researching customer behavior, and other types of analytics. The results and insights obtained help the media holding to make informed decisions, optimize sales strategies and improve the



overall customer experience (Kalyatin, 2022).

Thus, the integration of CRM with current media holding systems allows you to create a complete system where customer and sales data is efficiently transmitted and processed between different systems. This reduces manual labor, improves data accuracy, increases process efficiency, and enriches analytical capabilities (Ketova, 2022). This integration ensures a harmonious and modern CRM implementation in the media holding, improving the work of the sales department of advertising materials and the overall customer experience.

For the analysis, a was collected and the architecture of the AS IS process was described.

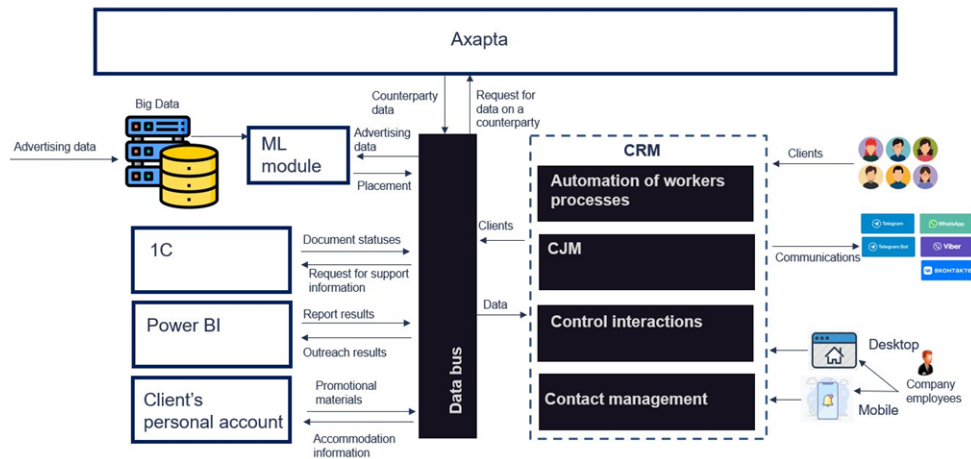


Fig. 1. Solution scheme

As a result of the analysis of the AS IS process, several key problems were found that impede the effectiveness of the advertising sales department in the media holding (Alekseeva, 2020). These problems are related to the lack of integration between the systems, the lack of maintenance processes in the current CRM and the separation of customer information in two different databases. The conclusions drawn from the analysis are presented below:

1. Lack of integration between systems: In the current situation, the sales department is forced to use the mail service to communicate with other departments, such as support. This creates inconveniences and delays in the transmission of information, as well as increases the likelihood of errors and data inconsistencies. This lack of connectivity between the systems makes it difficult to respond promptly to customer requests and reduces the overall effectiveness of the sales process.

2. Lack of maintenance processes in the current CRM: The current CRM system has functionality for pre-sale events, but there are no maintenance processes. This limits the ability to track and support customers after the transaction, which can negatively affect long-term customer relationships and repeat sales. It was decided not to finalize the current CRM system, as it is leaving the market, which requires the search for an alternative solution to ensure maintenance processes.

3. Separation of customer information in two databases: In the media holding, there are two customer databases that are located in different systems. This leads to duplication of data, makes it difficult to access up-to-date information and increases the likelihood of errors in processing client information. The sales department needs to interact with the support department to obtain reliable information about contractors, which requires additional efforts and increases the response time to customer requests.

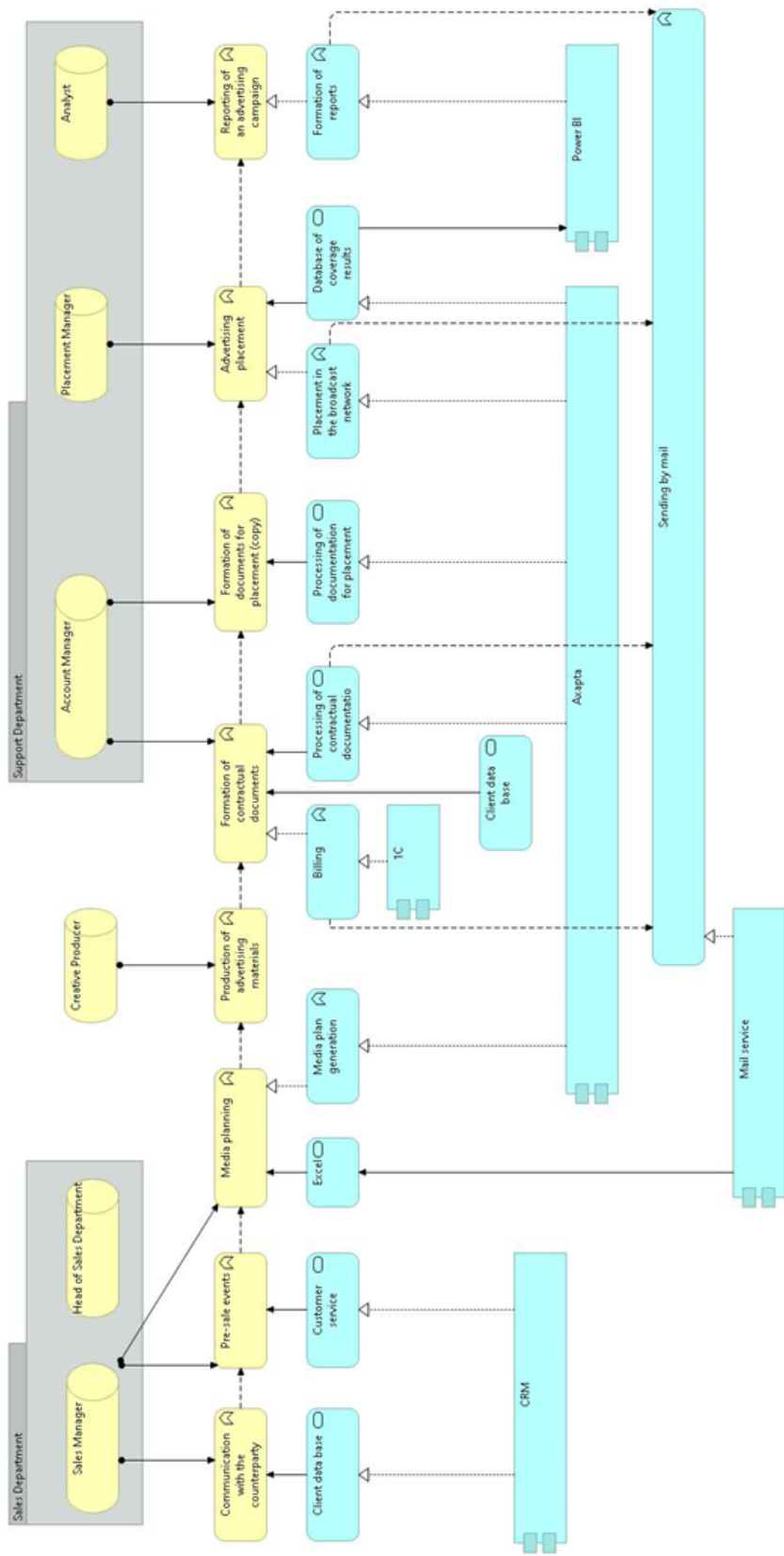
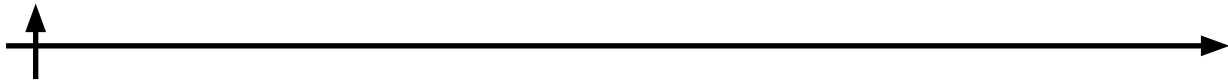
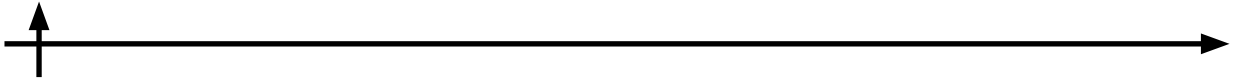


Fig. 2. AS IS scheme



To solve these problems and improve the efficiency of the sales process in the media holding, it was proposed to introduce a new CRM system. This will achieve the following goals:

1. Integration of existing systems: The new CRM system will be integrated with other media holding systems, such as the tracking system and the billing system. This will provide a single repository of customer data, reduce manual processing of information and increase data accuracy.

2. Support for customer support processes: The new CRM system will provide functionality for customer support processes after the transaction is completed. This will allow you to track customer interactions, provide support and improve the level of service, which contributes to customer satisfaction and repeat sales.

3. Centralization of customer data: The introduction of a new CRM system will allow you to combine customer data in a single database. This will simplify access to up-to-date customer information, prevent data duplication, and improve the overall accuracy and reliability of information.

Thus, the introduction of a new CRM system will solve the identified problems and increase the efficiency of the sales process of advertising materials in the media holding. It will provide integration between systems, support for maintenance processes and centralization of customer data, which will lead to improved customer service, optimization of the sales department and strengthening the position of the media holding in the market.

After the implementation of the CRM system and all other related systems described earlier, the process was optimized and brought to the following form TO BE.

After the successful implementation of the CRM system and other related systems, the sales process of advertising materials in the media holding was optimized and brought to a new improved state TO BE. The following changes have been implemented:

1. Unified system for the sales department and the support department: As a result of the implementation of the CRM system, the sales department and the support department now work in a single system. This greatly simplifies communication and information exchange between departments, since all the necessary data and artifacts are available within one system. The sales department receives up-to-date information about customers and the status of transactions, and the support department can provide proper customer support after the transaction is completed (Cao, 2020).

2. Automated media plan generation: The new system has implemented the functionality of automatic media plan generation for all types of sales. This eliminates the possibility of manual errors when generating documentation and improves the accuracy and reliability of creating media plans. Now the process of forming media plans has become more efficient and faster, which saves time and resources of the sales department.

3. Unified customer database: The introduction of a CRM system made it possible to combine customer databases into a single one. Now the sales department has access to a common database, which reflects all the clients of the media holding. This eliminates the need to communicate with the support department by mail to obtain information about the reliability of contractors. The sales department can promptly receive information about customers and make decisions based on up-to-date data, which improves the quality of customer service and increases the efficiency of the department.

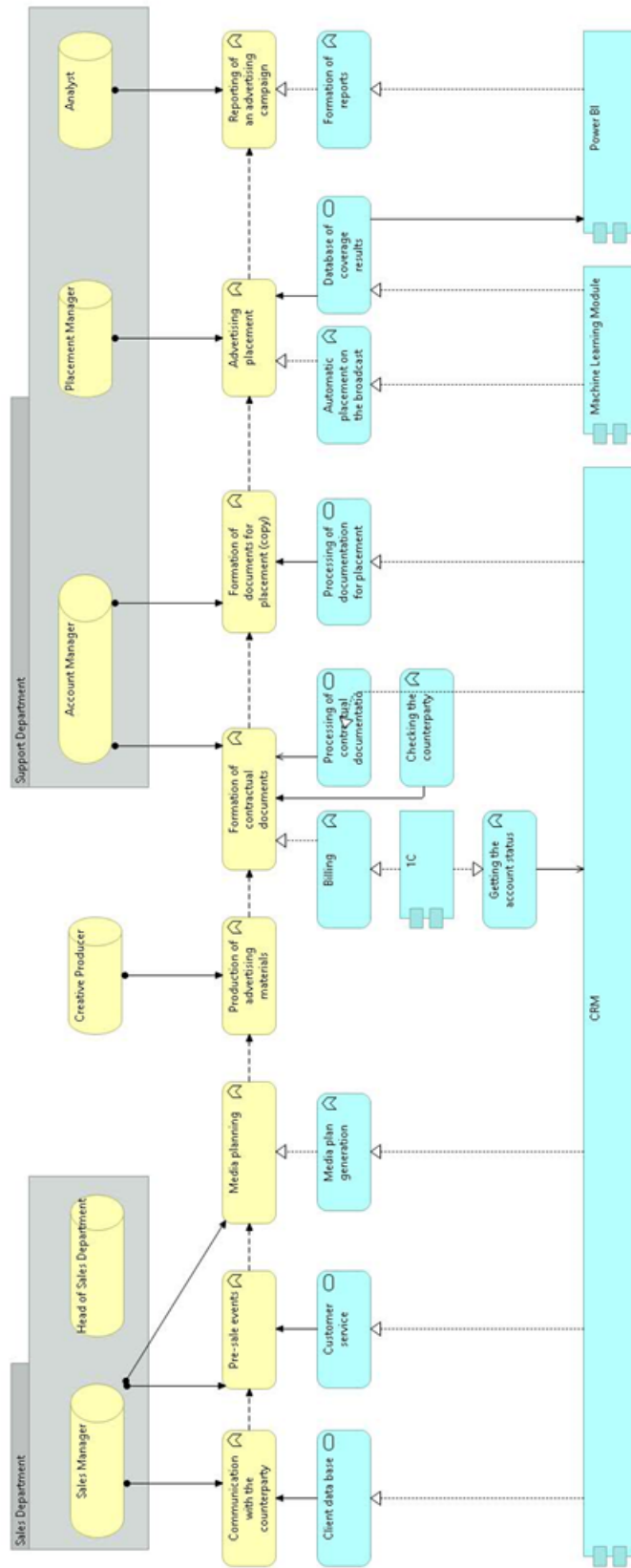
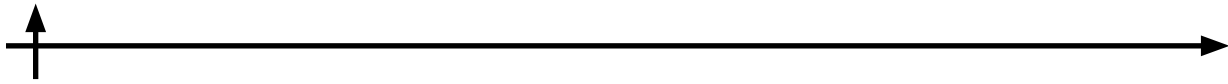
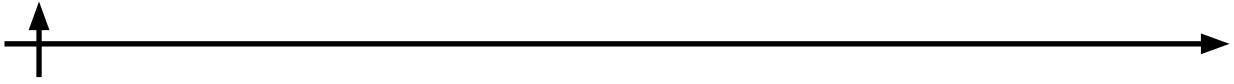


Fig. 3. TO BE scheme



As a result of these changes, the sales process of advertising materials in the media holding has become more advanced and optimized. The sales department and the support department work in a single system, which simplifies communication and information exchange. Automation of media plan generation and a unified customer database allow you to avoid errors, reduce manual operations and improve the accuracy and reliability of data. As a result, the media holding receives advantages in the form of increased efficiency of the sales process, improved customer service and strengthening its position in the market.

Conclusion

The study examined an important topic of automation of the sales process and the introduction of digital solutions in media holding. The purpose of this work was to optimize and improve the sales process of advertising materials, as well as to create an effective system for managing customer data and communications between sales and support departments.

By analyzing the current state of the sales process and identifying its weaknesses, key problems were identified, such as lack of integration between systems, lack of maintenance processes and separated customer databases. The need to solve these problems has become the main motivation for the introduction of a CRM system and other digital solutions.

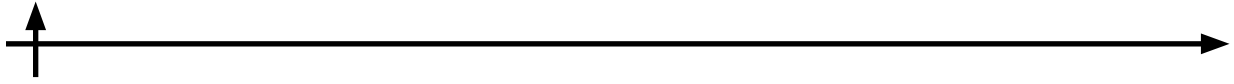
As a result of the implementation of the CRM system and other related systems, the following goals have been achieved:

1. A single system for the sales department and the support department: The introduction of a CRM system made it possible to combine the work of the sales department and the support department within one system. This ensures more effective communication and information exchange between departments, simplifies work processes and increases the overall efficiency of the media holding. The sales department receives up-to-date information about customers and the status of transactions, and the support department can provide appropriate support to customers after the transaction is completed.

2. Automated media plan generation: The introduction of a CRM system has made it possible to automate the process of generating media plans for all types of sales. This eliminates the possibility of manual errors in the formation of documentation and increases the accuracy and reliability of creating media plans. Now the process of forming media plans has become more efficient and faster, which allows you to save time and resources of the sales department and improve the quality of customer service.

3. Unified customer database: The introduction of a CRM system made it possible to combine customer databases into a single one. Now the sales department has access to a common database, which reflects all the clients of the media holding. This eliminates the need to communicate with the support department by mail to obtain information about the reliability of contractors. The sales department can promptly receive information about customers and make decisions based on up-to-date data, which improves the quality of customer service and increases the efficiency of the department.

Thus, the introduction of digital solutions, including a CRM system, into the sales processes of advertising materials of the media holding has significantly optimized and improved the work of the sales department and the support department. A unified system for both departments ensures more effective communication and information exchange, automated media plan generation reduces the likelihood of errors, and a unified customer database improves the availability and quality of customer information. As a result of the achieved goals, the media holding receives advantages in the form of increased efficiency of the sales process, improved customer service and strengthening its position in the market.

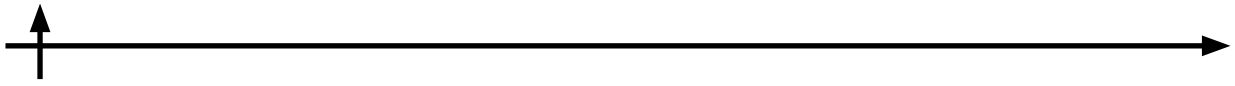


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