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Integration of CRM Systems in the Context of University Digital Transformation in the Organization of Online Events

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Abstract. The purpose of the study: to determine effective methods of organizing and promoting online events through the integration of the CRM system of an educational organization. Research methodology: we conducted the empirical research in the form of an experimental method by testing different variants of methods for promoting online courses and conducting online events, we carried out the selection and formulation of which based on methods of comparative analysis, monographic, content analysis. Research results: we given recommendations to improve the effectiveness of event marketing using information technology in an educational environment through integration with a CRM system. It is established that the trend of growth in popularity and demand for advertising channels on the Internet is targeted advertising for the period from 2017 to 2021. The complex of marketing activities of an educational organization has been adapted through the introduction of a platform for automating the university's online events, integrated with a CRM system, allowing to achieve effective influence on the target audience (education, upbringing) on the basis of testing the promotion of educational events. The work performed the differences from similar works of other scientists, forming an undoubted scientific novelty, succinctly listed, and the directions of future research briefly formulated. Originality and contribution of the authors: we developed according to the results of the study, a model of a comprehensive platform for automating online university events, integrated with a CRM system that allows full analytics to attract and retain a wide-open audience of an educational organization. We tested the hypotheses of the study related to the dependence of the number of applicants at the university on the number of events held in the previous year; the least effective channel in promoting educational courses for teachers is email mailing among the promotion tools considered in the study.

Keywords: promotion of online events, CRM system, digitalization of event marketing, transformation of digital technologies, integration with CRM system.

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Интеграция CRM-систем в контексте цифровой трансформации университета при организации онлайн-мероприятий

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Аннотация. Цель исследования: определить эффективные методы организации и продвижения онлайн-мероприятий посредством интеграции CRM-системы образовательной организации. Методология исследования: проведено эмпирическое исследование в форме экспериментального метода путем тестирования различных вариантов методов продвижения онлайн-курсов и проведения онлайн-мероприятий, отбор и формулировку которых мы осуществляли на основе методов сравнительного анализа, монографического, контент-анализа. Результаты исследования: даны рекомендации по повышению эффективности событийного маркетинга с использованием информационных технологий в образовательной среде за счет интеграции с СRM-системой. Установлено, что тенденцией роста популярности и востребованности рекламных каналов в Интернете является таргетированная реклама на период с 2017 по 2021 год. Комплекс маркетинговых мероприятий образовательной организации был адаптирован путем внедрения платформы для автоматизации онлайн-мероприятий университета, интегрированной с СRМ-системой, позволяющей добиться эффективного воздействия на целевую аудиторию (образование, воспитание) на основе тестирования продвижения образовательных мероприятий. В работе кратко перечислены отличия от аналогичных работ других ученых, формирующие несомненную научную новизну, и кратко сформулированы направления будущих исследований. Оригинальность и вклад авторов: по результатам исследования разработана модель комплексной платформы для автоматизации университетских онлайн-мероприятий, интегрированная с СРМ-системой, которая позволяет проводить полную аналитику для привлечения и удержания широкой аудитории образовательной организации. Проверены гипотезы исследования, связанные с зависимостью количества абитуриентов в университете от количества мероприятий, проведенных в предыдущем году; наименее эффективным каналом продвижения образовательных курсов для преподавателей среди рассмотренных в исследовании инструментов продвижения является электронная рассылка.

Ключевые слова: продвижение онлайн-мероприятий, CRM-система, цифровизация событийного маркетинга, трансформация цифровых технологий, интеграция с CRM-системой.

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Introduction

Since the beginning of the pandemic, the demand for offline events has decreased by more than 80 % compared to the same period before the pandemic, in 2020 more than 2,000 planned events were canceled (Zima, 2020). All offline events began to move online, but the difficulty turned out to be that a comprehensive platform for holding events of various formats were not developed (Kanunnikova, Moga, 2022). In the experience of conducting online conferences at the university, we also faced this problem. In addition, there were failures in existing services, as a consequence of which more than 50 % of the audience who initially joined the conference was lost (Larionov, Sheremeteva, Gorshkova, 2021). Now, there are separate platforms that implement the following functions: conferences, online broadcasts, creation of an event website, and registration of participants. However, there is no single integrated space or solution that includes all aspects. Therefore, the study plans to focus on the organization of event marketing using information technology in the educational environment, as well as to analyze the factors affecting the effectiveness of the organization of online events (Kerzina, Farhutdinova, 2013).

The purpose of the study is to increase the efficiency of integration with a CRM system for managing event marketing in an educational environment using the example of Perm State University.

To achieve this goal, the following tasks were set:

- 1) to consider and systematize the features of CRM systems in the educational sphere in Russia and abroad;
- 2) to conduct a study of the effectiveness of event marketing tools using information technology on the basis of Perm State University;
- 3) to propose a program for the application of event marketing development tools using CRM systems and information technologies for educational organizations.

To solve the tasks, we used such methods as monographic, comparative analysis, content analysis, experiment and observation.

Theoretical framework

A CRM system needs at the university to manage relations with academic clients – applicants, students, teachers and university management. The system can help in automating student registration processes, managing class schedules, tracking student progress, accepting electronic payments, managing library materials, holding events, etc. (Novikova, Dobrovljanin, 2022).

The purpose of implementing a CRM system at the university is to simplify, systematize and automate the processes of working with students who have participated in various university activities. As well as ensuring the control of the effectiveness of the activities carried out (Rudskoj, Borovkov, Romanov, Kolosova, 2019). In addition, after the introduction of CRM and integration with the university's website, there is an opportunity for joint partner participation in the loyalty program.

Group 1 University events	Group 2 Applicants	Group 3 Students, applicants of the Master's degree	
 Basic setup of the CRM system 			
 Integration of feedback forms on the universit 	y's website with	CRM	
Import of the contact database into CRM			
 Training and certification of CRM users 			
CRM Technical support			
Automation of document creation in CRM			
CRM integration with SMS mailing service			
• CRM integration with the email mailing service			

Fig. 1. Correlations of customer groups and the main tasks for the implementation of the CRM system (Kotova, Atto, 2019)

As part of the events, partners and sponsors can connect to the CRM system with information about the participants of the events and extract useful and interesting information for themselves when promoting their companies (Skorobogatyh, Popov, 2012). The authors suggest the movement of the applicant through 11 main stages from informing to enrolling in the university. CRM shows how many contacts we can received from one event, and then the contact movement begins along the selected stages (Kotova, Atto, 2019).

The authors also proposed groups of applicants and students and the main tasks for each group on the implementation of a CRM system (Fig. 1).

E. E. Kotova suggests dividing all clients into 3 main groups and defining the main tasks for interaction.

In addition, M. Lie and co-authors in their study «Software for online conferences in radiology: recent trends and usefulness» (Lieux, Sabottke, Schachner, Pirtle, Spieler, 2021) they compare existing platforms for online events and came to.

The following scientific works were also devoted to the study of the success factors of online events. P. Kamel, K. Brookmeyer, H. Tan, L. Solness, C. T. Lin in the study «Tracking and evaluation of conference attendance in the era of virtual conferences» (Kamel, Tang, Solnes, Lin, 2022). We have developed a web platform that monitors and evaluates the attendance of virtual conferences. On the web page, students

and participants of online events can track and evaluate lectures, seminars, conferences that they have attended, but at the same time, this developed platform cannot integrate with CRM systems for automating university tasks.

Statement of the problem

Digitalization of event marketing at the university is currently one of the most effective ways to attract students' attention to various events organized as part of the educational process. To do this, it is necessary to use various methods and strategies that can help in creating interest in events and participation in them (Abramov, Gruzdev, Terentev, Zaharova, Grigoreva, 2020). For the successful holding of virtual events, it is important to choose the platform on which the event will take place, as this determines the final result of the event and the experience of the participants (Kiselev, 2021). Therefore, we proposed to develop a model of a specialized platform for conducting online events that will be synchronized with a CRM system for automating university tasks (Smirnova, 2021).

We consider the model of organizing and promoting online events that currently exists at the Perm State University (PSU). It is determined that in the existing model of organizing and promoting events, it is possible to identify risks associated with «losses» of the audience at various stages of the event organization. At the second stage of choosing platforms for events, university may encounter the fact that none of

the existing platforms fully or partially fit the goals and objectives of the organization and holding of the event. At the third stage of the event organization, there is a risk of not being able to publish all the materials of the online event in a single space for the convenience of the audience. At the fourth stage, when advertising and promoting an event, there is a risk of the audience not understanding exactly where (on which platform) the event will take place. At the seventh stage, during the event, technical failures may occur during the broadcast of the event for participants (for example, zoom or Skype, etc.) and in the «stream» for listeners on social networks, even with full technical readiness and verification at the previous stage. In this connection, there is a risk of losing the audience with these technical failures (Ivanov, Parnikova, 2022).

Thus, with the existing model of organizing and conducting online events, there are currently many risks, as a result of which the loyalty and attitude to the online event among the audience deteriorates. The problem is that there is no single integrated platform for the event, which would include all aspects of holding events online.

Methods

At the first stage of the study, the authors propose a conceptual model for promoting and organizing online events in an educational environment. In addition, we considered the transformation, taking into account the inclusion of the processes of working with applicants through the CRM system. Authors carried out the analysis of the target audience on the features of embedding in the work and a comparative analysis of CRM systems for implementation at the university by functionality.

At the second stage of the study, the study tested the effectiveness of event marketing tools using information technology. We evaluated two hypotheses. The first hypothesis is that the trend of growth in popularity and demand for advertising channels on the Internet is targeted advertising for the period 2017–2021. The second hypothesis is that the least effective channel in promoting educational courses for teachers is email mailing among the promotion tools considered in the study.

The methodology of the study were compiled, which assumes the implementation of the following steps, which are presented in Fig. 2.

In order to determine the most effective channels of promotion and methods of organizing digital events of the university, the stages of the study were compiled.

- 1. Determination of the need for digitalization of event marketing at the university based on the analysis of online events held at the university and identification of the main errors and key shortcomings;
- 2. Analysis of existing CRM systems for universities by comparing the main required characteristics of CRM for the university and rating systems;
- 3. Analysis of marketing tools for the promotion of university events based on the approbation of the data of the conducted research on the promotion of online courses and the definition of effective methods.

Results

Next, we will consider the existing CRM systems that meet the identified requirements for the implementation of this project and are in the top 15 of the CRMindex (crmindex.ru, 2023) agency's rating of CRM systems for small and medium-sized businesses in the field of education (Tables 1 and 2).



Fig. 2. Methodology of research on the promotion of advanced training courses

The Hollihop CRM system offered the most extensive functionality required for the university (Neretina, Solovev, 2009).

The rest of the analyzed CRM offer a narrower functionality, and it does not fully meet the requirements of the university (Diptan, 2015).

Table 1. Comparative analysis of CRM systems for university implementation by functionality

CRM Functional	Aspro.Cloud (aspro.cloud, 2023)	Hollihop (holyhope. ru, 2023)	ALFACRM (alfacrm. pro, 2023)	Fillin (fillin. app, 2023)	Megaplan (megaplan. ru, 2023)
Managing clients	+	+	+	+	+
Interactive schedule	-	+	+		-
Mobile application	-	+	-	+	-
Accounting for the admission of applicants	-	+	-	+	-
Reflection of debtors	-	+	-	-	-
Teacher rates	-	+	-	-	-
History communication	+	+	+	+	+
Analytics, uploading reports	+	+	+	+	+
Automation of mailing lists	+	+	+	-	+
Flexible settings	+	+	+	+	+
Setting homework assignments	-	+	-	-	-
Creating training courses	-	+	-	-	-
Video chat	-	+	-	-	+
Feedback form	+	+	-	-	-
Document flow	+	+	-	+	+
Customer segmentation	+	-	+	-	+
File storage	-	+	+	-	+

Table 2. Comparative analysis of CRM systems for university implementation by possible integration

CRM Integration	Aspro.Cloud (aspro.cloud, 2023)	Hollihop (holyhope. ru, 2023)	ALFACRM (alfacrm. pro, 2023)	Fillin (fillin. app, 2023)	Megaplan (megaplan. ru, 2023)
Website	+	+	+	+	+
Email	+	+	+	+	+
Telephony	+	+	+	+	+
SMS	-	+	+	-	-
1C	+	-	-	-	+
Payment systems	+	+	+	-	-
Calendar	-	+	-	-	+
Social network	-	-	+	+	+
Messengers	-	+	-	+	-

	u c.				
Criteria	Aspro.Cloud (aspro.cloud, 2023)	Hollihop (holyhope. ru, 2023)	ALFACRM (alfacrm. pro, 2023)	Fillin (fillin. app, 2023)	Megaplan (megaplan. ru, 2023)
Duration of implementa-tion	14	Not specified	Not specified	1–2	Individually
Cost, RUB/month.	From 10990	From 7000	From 8470	From 8990	1,399 per employee
Duration on the market, years	13	9	7	7	13
Average customer rating on a 5-point scale	4,9	5	4,5	5	4,2

Table 3. Comparative analysis of CRM systems for university implementation by duration and cost of implementation

We will also conduct a comparative analysis of the selected CRM systems by possible integrations (Table 2).

All systems have sufficient capabilities for integration with third-party services (Shkljar, 2015). In Table 3, we will consider a comparison of CRM by duration and cost of implementation.

The authors conducted a comprehensive analysis of CRM systems for small and mediumsized businesses with the functionality required for implementation at the university (Melnik, Junov, Kovalenko, Ovsjannikova, 2022).

Research on the effectiveness of event marketing tools using information technology

Further, when analyzing the program of promotion of educational activities of the university, the authors hypothesized that the trend of growth in popularity and demand for advertising channels on the Internet is targeted advertising for the period from 2017 to 2021. This hypothesis is based on and continues the study «Prospects for interactive advertising in Russia: the view of advertisers» (Barometer, 2023), in which the most popular and popular channels for advertising on the Internet were identified (Fig. 3).

Thus, the hypothesis confirmed that the growth trend for the period from 2017 to 2021 in terms of popularity and demand for advertising channels on the Internet is targeting.

The authors of the study hypothesized that the least effective channel in promoting educational courses for teachers is email mailing among the promotion tools considered in the study.

According to the methodology of the study of the promotion of advanced training courses, a promotion plan drawn up. The first step of

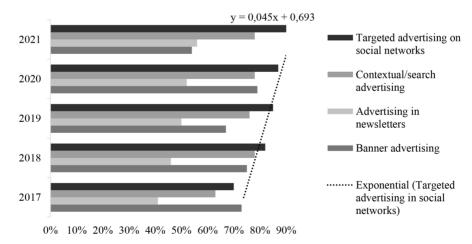


Fig. 3. The most popular advertising channels on the Internet in 2017–2021

the study was the definition of advanced training courses for promotion and target audience. Within the framework of this study, in addition to the typical popular topics of courses, we selected two courses with narrow profile topics. The next step was to set promotion tasks and tools for their solution.

In terms of promotion, authors planned to interest the leadership of universities in educational refresher courses using email mailing. Also inform and attract teachers to educational programs with the help of targeted Vkontakte advertising and contextual advertising in Yandex.

At the last step, we analyzed the results and effectiveness of advertising channels. Authors conducted the study in the period from December 2022 to March 2023. The target audience is teachers of educational institutions aged 25–50 years who are interested in taking advanced training courses (Lobova, Ponkina 2021; Tulchinskij, 2017).

E-mail addresses were collected on the websites of universities with pedagogical areas of education throughout Russia. We selected 100 contacts. The mass mailing was divided into 2 mailing launches in order to prevent the risk of emails falling into «spam». The results of launching the mailing list are presented in Table 4.

The reasons why the letters were not delivered to the remaining 31 email addresses:

- rejected as spam 17 addresses,
- 7 addresses are not available for sending,
- 4 addresses are temporarily unavailable for sending,
- sending to two email addresses is prohibited.

The e-mail newsletter at the first stage of promotion did not show its effectiveness (the hypothesis was confirmed).

Targeted Vkontakte advertising was also launched for selected keywords. In the future, when promoting university advanced training courses with the help of targeted advertising, it is possible to use the data of the top five keywords (Novikova, Tokmjaninova, 2018).

We presented the results of the effectiveness of targeted advertising in Table 5.

Targeted advertising was launched for 7 days, and according to the results of advertising, 22 paid applications for advanced training courses were received (Hackelevich, Lopatina, Zhikina, 2019).

The advertising of the advanced training course 1 showed the greatest effectiveness. At this rate, the CTR is 0.3 %, and the cost of one click to the site is 34.97 rubles. The total number of clicks on the website of this course was 72.

As a result of the implementation of targeted advertising on Vkontakte, 22 participants in advanced training courses who paid for the course and passed it: 12 participants in the advanced training course 1 and 10 participants in the advanced training course 2.

In addition, contextual advertising was launched in Yandex to promote the retraining course. Four different advertisements were created. Contextual advertising in Yandex did not show its effectiveness in promoting the retraining program (there was not a single application for the course). Possible causes and ways of solving problems during promotion are identified.

Firstly, a bad landing page with a long text without target action buttons and specific

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вие	First launc	ch	Secon
	Table 4. Results of the	e-mail mailing	g list, December 2022

Действие	First launch		Second lat	ınch
деиствие	Number, people.	%	Number, people.	%
Shipped	50	100	49	100
Delivered	40	80	29	59
Read	13	33	5	17
Click-throughs	0	0	1	3
Unsubscribe	0	0	0	0
Spam Complaints	0	0	0	0

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Advertisement	Spent, rub.	Impressions, people.	Click- throughs, people.	Transi- tions to the group, people.	Hiding places, people.	CTR, %	eCPC, rub.
Advanced training course 1	2 518,52	24 137	72	7	1	0,3	34,97
Advanced training course 2	917,63	11 768	25	4	4	0,2	36,70
Advanced training course 3, 1 creative	2 267,20	23 755	31	4	7	0,13	73,13
Advanced training course 3, 2 creative	1 320,52	14850	30	1	2	0,2	44,01
Advanced training course 4	1 722,72	17 235	39	2	2	0,23	44,17
Vkontakte post	1 103,41	22 201	9	2	4	0,04	122,60
Total of 6 ads	9850	113 911	206	20	20	0,18	47,82

Table 5. Performance indicators of targeted Vkontakte advertising of advanced training courses for 7 days, 2022

understandable information about the course. Secondly, there were no UTM tags on the links in the advertisement, which must be added to track user actions on the site. Thirdly, the virtual business card about the company in the ad was not filled in (Sturov, Kuvshinov, 2022).

In the future, we recommended using it only to notify clients who have already signed up for training (programs, terms of training). To improve the results, it is necessary to take into account such comments as before launching advertising. Contextual advertising in Yandex has not shown its effectiveness, and therefore the costs of this advertising channel should be reduced.

Discussion

The importance of the study lies in the fact that colleagues conducted a number of studies that consider the issue of digitalization of the organization of online events at the university. The issue of developing a digital platform integrated with a CRM system for conducting online events at the university was not discussed in detail, and such a platform was not developed.

For example, M. Goodsett, M. Eddy, M. Hill, S. Klink, S.M. Kenna and M. Miles note in their study «The transition to digital technologies: strategies for translating the conference into an online format» (Goodsett,

Eddy, Hill, Klink, Kenna, Miles, 2022), that when planning an online event. It is necessary to keep in touch with all participants of the conference, namely, with the participants themselves, speakers and sponsors. The key task of communication with participants is to ensure that they do not forget about the event, and to interest speakers and sponsors, justifying the popularity and importance of the event.

H. Kharoufa and co-authors in the study «Understanding the Experience of Online Events: the Importance of Communication, Engagement and Interaction» (Kharoufa, Biscaiaa, 2020) argue that «digital viewers» of events currently represent a key share in global coverage of events. Thus, the official FIFA World Cup application has been downloaded 24 billion times, which encourages subscribers to actively interact. In addition, on the eve of the 2014 Winter Olympics In Sochi, the International Olympic Committee (IOC) Facebook page grew by more than 2 million fans, and 24 million people took part in the event on the online platform. These figures indicate that consumers are turning to mobile phones and tablets to follow events online, and using social networks to interact with each other online.

Among the recent works devoted to the study of CRM systems, scientists focus on

their transformation into the social sphere (Jalal, Bahari, Tarofder, 2021), including educational (Nermend, Singh, Singh, 2022), and the accumulation of data from previous studies of customer behavior through loyalty programs (Perez-Vega, Hopkinson, Singhal, Mariani, 2022), specifics of the sphere of online interaction with the buyer (Nguyen, Le, Vu, 2022).

Many experts and scientists are thinking about the transformation of scientific events, considering, exploring various criteria for the success of online events.

Conclusion

The authors have developed a model of a digital platform that integrates with a CRM system to automate the tasks of conducting

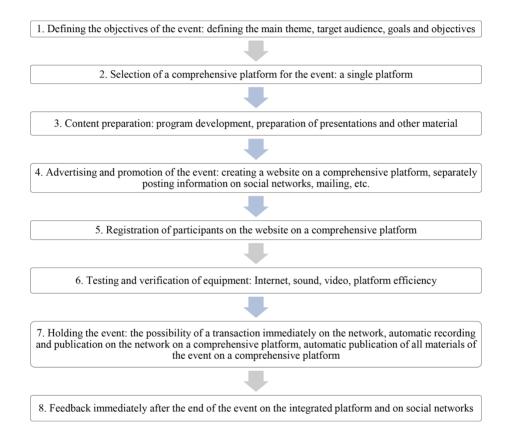


Fig. 4. Model of promotion and organization of online events on a complex platform for online events

Table 6. Functions for listeners and participants in the development of a new platform model

Function	Description
Uploading files	Uploading files by sections, sections, topics, etc. events, saving and accessing files forever, the ability to download all files
Stream	The ability to view the broadcast on the Internet in free access
Recording of events	The ability to review the recording of events on the Internet
Questions to speakers	The opportunity to ask questions to speakers in a separate chat, vote for a question you like to be asked first
Technical support	The ability to contact support to solve technical problems and questions

Table 6 Continued

Function	Description
Personal schedule	The ability to create a schedule with the control of overlapping performances, unloading the schedule, remembering the planned events
Notes	The ability to take notes for a speech and then upload them
Gamification	The possibility of gamification in the form of earning points for participating in certain activities of an online event (additional involvement of listeners in the work of an online event)
Additional features	Screen demonstration, chat, private chat, «raise your hand» function, subtitles

online events and attracting applicants to the university. Therefore, next we will consider the model of promoting and conducting online events, taking into account all the risks in the existing model (Fig. 4).

In addition, the platform should have the function of automatic publication of the recording and publication of all materials of the event. Based on the results of testing of existing platforms presented in previously published works by the authors, the main functions for listeners and organizers are proposed for conducting online events, which must be taken into account in the new model (Tables 6).

The authors highlight the necessary functions for participants in the new model, including uploading files to the platform. Technical support before and after during the event, a personal schedule with a reminder, creating notes, gamification and other additional features are received (Masrianto, Hartoyo, Hubeis, Hasanah, 2022).

Next, we considered the functionality of the platform, which is necessary for the organizers (Table 7).

In addition, the platform integrates with a CRM system for automating tasks at the university. The approbation of the digital platform model proposed by the authors requires further study. The authors also proposed a plan for marketing promotion of online events of the university. Table 8 shows the adjusted program for the promotion of educational courses, taking into account all identified risks and errors.

The model for promoting university events is shown in Fig. 5.

Thus, according to the results of the implementation of the promotion program, it can be noted that the email newsletter at the initial stages of promotion did not show its effectiveness and the proposed research hypothesis was confirmed.

Table 7. Functions for organizers when developing a new platform model

Function	Description
Broadcast time	No restrictions
Challenges	The ability to conduct group calls, create personal rooms for participants
Stream	Broadcast of the event on the Internet in open access with the possibility of restricting access
Number of participants	Unlimited
Recording of events	Recording of events and automatic publication on the Internet
Interaction with the audience	Interaction with the audience before, during and after the event

Table 8. Adjusted program of promotion of educational courses for 2 weeks

The tool	Tasks
Email newsletter	customer notificationreminder of upcoming trainings
Website	check the quality of the design, designreflection of the benefits and advantages of training programs
Targeted Vkontakte advertising	 creation of advertising creatives and texts keyword selection launch of advertising setting key metrics performance analysis
Contextual advertising in Yandex	 creation of advertising creatives and texts keyword selection filling in a virtual business card in an ad launch of advertising setting key metrics performance analysis

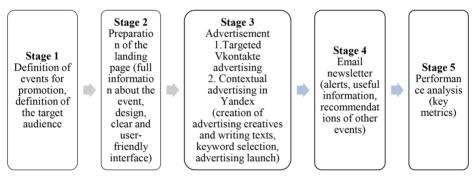


Fig. 5. Model of promotion of university events

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