A CHATBOT

CASE STUDY

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Varna Regional Library

Slaveykov Regional Library was established in 1883 with the generous donations of prominent public figures and patriots from the city. The library, the oldest cultural institution in the city of Varna, is a leading library institution in the country with responsibilities supporting the educational, informational, social, and cultural functions.

"**Hello, how can I help you?**" is such a well-known phrase that it has become the equivalent of one of the most popular cultural institutions - libraries, and the application of artificial intelligence is an innovative service for the community in Bulgaria. Since the bots can respond to a remarkably large number of customer inquiries with accurate information, Pencho Slaveykov Regional Library decided to use a chatbot as a virtual assistant librarian

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The library has a universal collection containing over 890,000 library documents. Our modern look is also manifested in the new forms that have replaced the traditional library service:

- online catalog, reflecting about 50% of the library documents
- digital library
- electronic system for registration of readers
- maintenance of reader's cards in electronic format
- identification of library documents by barcode
- electronic application for documents
- interlibrary loan and receipt of documents from other libraries in the country and abroad
- request for a reference and bibliographic references.

Since 2016, readers have at their disposal points for self-borrowing and self-return of books, an electronic reader's card, personalized virtual space for readers - My Library.

The Varna Digital Library started in 2008 with the participation of the Pencho Slaveykov Regional Library in a project that provides access to the stored collections in libraries, museums, and archives through the European Digital Library EUROPEANA.

Digitalization is not only a modern alternative in terms of preserving library collections, but also a process of full "opening" and accessibility of library and information resources. Today, the Varna Digital Library provides a wide range of types of documents - postcards and photographs from the late nineteenth and early twentieth century to emblematic figures of the city and region, events, sites, Revival literature and periodicals published in Varna after 1880, ownership of the library and related cultural institutions.

ABOUT

The transformation of the modern public infrastructure determines the change in the positioning of the libraries in the information space so that they meet the public and personal needs. The functions of the libraries are preserved, but they are modified, supplemented, and updated in accordance with the specific activities for their actual implementation.

Pencho Slaveykov Regional Library is actively presented on the Internet, communicating daily with readers through social networks, maintaining its own profiles on Facebook, Pinterest, Twitter, Instagram, and Youtube. More and more users are using modern communication channels such as e-mail, online chat, messenger, instead of the obsolete telephone or written correspondence. Communication is not strictly fixed during working hours and more and more people want to receive an answer to their inquiry immediately and if possible 24/7. This pattern of behavior leads to the need to maintain staff who are ready to respond to inquiries and deliver information immediately. Given the nature of the work (searching for information in library databases, inquiries about the status of preserved literature, as well as general questions), some of these staff could work remotely (remotely). This raises the issue of remuneration and administrative documentation of this type of work. The functions of

questions and answers related to information are assigned mainly to the specialists working in the Reference and Bibliographic Department, part of which is the Information Center. On the other hand, the librarians working in this department are among the most highly qualified, and it makes sense for them to focus on tasks that require the accumulation of information and the creation of new data.

A "virtual reference service" is a service known and used successfully in libraries over the last decade. The service is based on the "questions-answers" principle, asked by e-mail and processed by a librarian. In recent years, the service has been supplemented with the ability to conduct online chats, but unfortunately only during the working hours of the library.

CHALLENGES

The decision to implement a chatbot as a virtual assistant librarian was taken as part of the measures to restructure and optimize the work process. The obligations imposed on the chatbot upgraded existing services, modifying them according to the demands and requirements of users.

The use of a chatbot as a virtual assistant-librarian is mainly limited to providing information on topics most widely used in the communication "reader / user-librarian-reader", as well as performing searches in the database. The implementation of the chatbot in the direct activity of the library saves at least 2 jobs, and the employees who have performed this activity can be redirected to other tasks that correspond to their qualifications.

The identified risks when using a chatbot with elements of artificial intelligence could be defined as:

- loss of the librarian-reader connection
- loss of interest from readers to the services provided by the library due to the lack of "personal" attitude towards the user
- failure to cover a topic and, accordingly, lack of opportunity for the chatbot to have a conversation.

Identified problems using the chatbot:

- continuous monitoring of chatbot conversations
- The initial definition of a wide range of topics on which the chatbot can respond
- analysis of the used conversation means and permanent addition of the possibilities for having a conversation
- The presence of elements of artificial intelligence requires the development of scenarios for chat conversations.

The virtual assistant librarian is used as a virtual additional employee. The functions assigned to it cover the provision of information on topics that are usually of interest to readers, both fully professional and general. With the help of the chatbot the working hours of the Reference Department were increased/extended. The time to answer each question was shortened to the state of "receiving an instant answer".

Library management strives to follow world trends in the field of Information Technologies and good library practices. In this regard, the use of a chatbot was a logical solution in the context of the library development strategy.

Identified needs:

- providing information and answers to questions in real-time
- optimization of the working hours of the employees engaged in this process
- simplifying the process of communication librarian-user, sometimes users feel uncomfortable asking questions in person
- saving human resources

DECISION

Better customer service.

Chatbot is a computer program that automatically responds to user queries, giving them the feeling of talking to a real person. The dialogue takes place through text and various visual elements, such as images and emoticons. This innovative way of communication guarantees our users visiting the library's website or Facebook page, immediate and personalized help 24 hours a day, 7 days a week. There is no need to constantly engage 2 employees answering inquiries or redirecting their requests.

Extending working hours.

Statistics on user activity report that time zones in which there is active reader-librarian-reader communication are not limited to traditional working hours but extend to the range of 17.00-24.00. There are also sporadic inquiries made in the time zone midnight to 5:00, but they are more incidental than practice. This proves the thesis that the bot successfully fits into the concept of "extended" working hours and successfully replaces employees in the specified time range.

Improving the speed of customer service.

The chatbot provided an opportunity to take full advantage of technologies that effectively save time. The implemented innovation allows to process a huge amount of information in a short time and thanks to it to be useful both for our users and for the library itself.

Assignment of specific library functions.

One of the routine functions performed by librarians is to re-assign borrowed to home literature. The service "re-assigning of borrowed materials" can be requested by a reader through various communication channels - in person, by phone, by email, through the tools provided by the function "My Library", and from the beginning of 2020 also through Ellie - the virtual assistant-librarian.

Statistics show that 3 months after activating the chatbot, this is the feature most actively used by users. In March 2020, Eli took care of 30% of the requests for re-assignment of borrowed literature.

This turns out to be one of the most used functions performed by the chatbot.

Attracting users.

Through its timely and personalized help, the chatbot is part of the library's overall strategy for attracting users. Its implementation on the website and Facebook page of the library has become an ideal tool for increasing the interest of the readership and the authority of the library.

Increasing the volume of communication in the messenger.

After the activation of Ellie, there is an exponential increase in communication between readers and the library in messenger. Prior to the launch of the chatbot, the messenger channel was used negligibly little. During the first quarter of 2020, the number of exchanged messages increased to an average of 600 messages per month.

Thank You

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