Artificial intelligence marketing: Chatbots

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Artificial Intelligence is a tool that enables marketers to create highly personalized customer experiences, increases organization's responsiveness and solve customers' problems. In this paper, the chatbot is analyzed as an artificial intelligence tool in marketing, its today's application, as well as its future potential in the above-mentioned field. A survey of respondents' behaviors, habits, and expectations when using different communication channels was conducted, with particular emphasis on chatbots, their advantages and disadvantages in relation to other communication channels, in total sum of 60 survey respondents. The results showed that the greatest advantage of using chatbots in the marketing service was when providing simple, fast obtained information, but also showed respondents' fear of chatbots giving them the wrong information. Organizations should consider using chatbots, especially if challenges in communication with customers are reality, but also if they intend to keep up with the growing number of consumers' lifestyle.

Keywords—chatbot, chatbots, artificial intelligence, marketing, big data.

I. INTRODUCTION

Artificial intelligence with the development of technology, and consequently development of technical capabilities, is gaining increasing attention from both the scientific community and the general public. A growing number of projects aim to incorporate artificial intelligence into business flows and potentially benefit from the aforementioned implementation. The goal of marketing, from the perspective of the writer of this paper, is the resale of good or service. Continuous sales i.e. a satisfied customer who has an added value from the product or service purchased, and then returns to make the purchase again. With the entry of artificial intelligence into the marketing sphere, opportunities increase. Using a machine that can track customer behaviour, document observed behaviour, and notice patterns, it will be possible to create personalized products and services, giving marketers far more opportunities.

The role and potential of artificial intelligence in marketing will be explained in the following section, with a focus on chatbots and conducted survey will be presented, which examined behaviour, habits and expectations of respondents while using different communication channels, as well as the advantages and disadvantages that chat bots have compared to other channels of communication.

II. ARTIFICIAL INTELLIGENCE MARKETING

There are many different expert definitions that explain what artificial intelligence is. The definition of Demis Hasibis, co-founder and CEO of Google DeepMind is widely accepted, he defines artificial intelligence as "the science of constructing smart machines." Smart machines in this case signify the level of success of copying the human mindset [1].

Artificial intelligence enables marketers to create highly personalized customer experiences while costing less than expensive, traditional marketing campaigns. Any user interaction with a product or service is used to optimize and personalize that product / service in the future.

Artificial intelligence has transitioned from a concept used in science fiction to today's technological reality. According to a PwC survey [2], 72% of marketers interviewed see the use of artificial intelligence as a business advantage.

With customer data, companies can make their offer more relevant and gain a competitive edge:

1. They can produce more consumer-oriented products.

2. They can provide more consumer-oriented services.

3. They can more accurately determine the target market, resulting in a higher conversion rate.

4. They can fully meet the needs of their customers.

Data becomes the most valuable capital of an organization. With the increase in the amount of data, its usability for the purpose of artificial intelligence development through machine learning also increases. Large amounts of data are necessary to build, test, and prepare artificial intelligence.

Artificial intelligence has great potential when it comes to improving industrial sectors. It has been used by financial firms, the automotive industry, law firms, etc. Owning data and analysing it through the use of artificial intelligence has become essential for businesses looking to outperform their competition. As already stated, artificial intelligence is not recently invented. However, long after its discovery, the possibilities of artificial intelligence and machine learning remained a mystery because we were unable to collect large amounts of data but from different sources and across categories in order to cross each other later. As large amounts of data were necessary to build and test artificial intelligence-based machines, no major leap was made in the development of artificial intelligence at that time.

However, the situation has changed with time. Today, we have the ability to collect and store large amounts of data, but also to cross and analyse them to draw conclusions and connect them. Changing and developing BDs also results in the development of artificial intelligence and its tools.

III. CHATBOTS

Bot is software that performs automated tasks, and chatbots fall into the category of bots that are used in various messaging platforms. The goal of chatbots is to have a conversation with humans, so communication with humans is the primary role of chatbots. It is desirable that access to information be as easy as possible for the person and the messaging platforms are selected as convenient platforms for people to use for daily communication.

A. Breakdown of chatbot market by segmentation type

The chatbots market is divided by following segments [3]:

- Market segmentation by chatbot type
  - Chatbot based on rules
  - Chatbot based on artificial intelligence

It must be noted that rule-based chat bots represent a subset of artificial intelligence-based chat bots.

Chatbots based on rules are generally designed to be an interactive FAQ page. They are programmed to recognize certain concepts and patterns, allowing them to respond with a predefined set of answers.

Chatbots based on artificial intelligence act like an artificial brain, using sophisticated algorithms. They not only understand the user's request, but also the context, intention, emotion and continually becomes "smarter" by learning about the particular user through each individual conversation.

- Market segmentation by chatbot´s interface
  - Chatbot based on the web
  - Chatbot base on the application
- Market segmentation by chatbots´ end user
  - News and media
  - Online shopping
  - Banking and insurance
  - Health care
  - Games and entertainment industry
  - Telecommunication

B. Evaluation criteria for chatbots

Information as an answer - Does the chatbot provide the requested and correct information when responding? The focus is on quantitative results and the quality of the user experience is not taken into account. The metrics used are accuracy, precision and response.

Language principles - Is the chatbot capable of natural and longer conversations? A non-numerical expert court is required.

User Experience - Is the chatbot interactive and provides an engaging user experience? Qualitative experience is measured and based on experience evaluations related to task fulfilment and customer satisfaction, but measuring these criteria can be difficult and expensive.

Artificial Intelligence - Does a chatbot behave like a human, to what extent is its intelligence similar to human? The "humanity" of artificial intelligence is measured through the observation of logical and abstract thinking.

IV. ORGANIZATION´S CHATBOTS COMMUNICATION SURVEY

Survey was used as a method of data collection. It was created, and later analyzed, using Google's tool, Google Forms. The survey was distributed online on several student groups of the Faculty of Organizational Sciences on Facebook. The aim of the survey is to investigate the communication of respondents with chatbots of organizations, i.e. respondents' behaviour, expectations and habits when using different communication channels, especially Internet communication channels, and then reflecting on the advantages and disadvantages of chatbots compared to other communication channels, as well as assessing how respondents perceive chatbots.

The target audience chosen is students, ie the most active millennials because they are the most common users of social networks and the Internet in general (pewresearch.org, 2018). Several basic demographic questions were asked at the beginning of the survey.
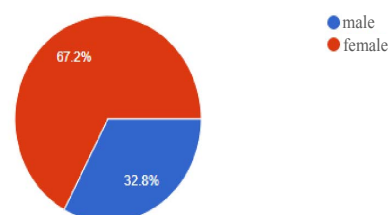
How old are you?

61 responses
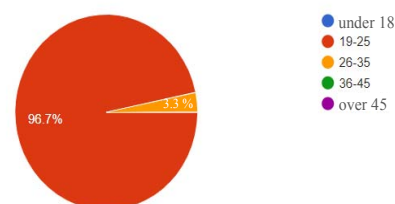
The age of the respondents was first examined. The link to the survey was posted on the Student Groups of the Faculty of Organizational Sciences, so 97% of the respondents are between 19 and 25 years old, was expected.
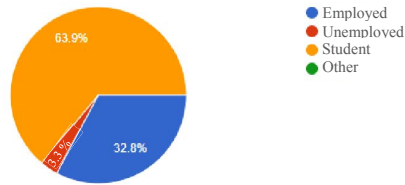
Gender?

61 responses

The gender of the respondents was next. Over two thirds of the respondents are female, while males make up slightly less than a third.
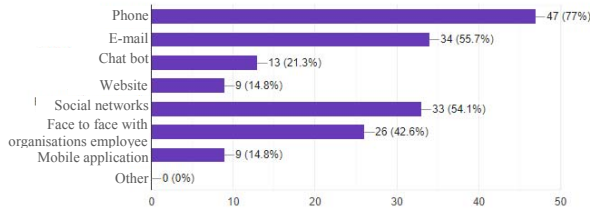
20

Occupation?

61 responses

- ● Employed
- ● Unemployed
- ● Student
- ● Other

63.9%

32.8%

The third question concerned the respondents´ occupation. As expected, almost 64% of the respondents are students, while the number of employees is as high as 32.8%.

How have you communicated with organizations over the past 12 months?

61 responses

Phone	47 (77%)
E-mail	34 (55.7%)
Chat bot	13 (21.3%)
Website	9 (14.8%)
Social networks	33 (54.1%)
Face to face with organisations employee	26 (42.6%)
Mobile application	9 (14.8%)
Other	0 (0%)

When asked: "How have you communicated with organizations over the past 12 months?", 77% of respondents have communicated with organizations by phone, 56% by email, 55% via social networks (not counting chatbots), 43% live with some of their employees given organizations and 21% communicated with the chat bot. Although communication is not very common with the chat bot, it is still more extensive than communication via the site or mobile application.

Do you use an online chat to start a conversation with organisations?

61 responses

- ● Yes
- ● No

37.7%

62.3%
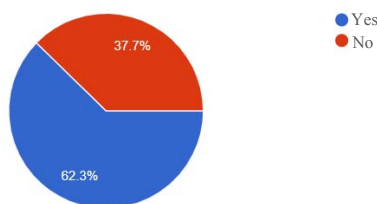
When asked if they use an online chat to start a conversation, 62% of respondents said that they have a custom to start a conversation through an online chat. Next few questions will be presented in textual manner. The next question was to choose from the offered predefined problems on the internet, the ones that they had experienced in the past month. The most common problems respondents have on the internet are the lack of functionality of the site search option,

difficult access to the necessary information on the site and the organization's non-responsiveness to user queries.

When asked on what they think a chatbot would use, users overwhelmingly expect the chatbot to get a quick response (89%), reserve a place in a restaurant, cafe (65%) and product or service information (58%). Next question was to answer in what situation they would not like to communicate with the chatbot if they needed certain information. The majority of respondents when asked for information fear that the chatbot will give them wrong information (almost 50% of respondents). The second most common answer, with 47%, is that they would like to interact with a real person. The third most commonly chosen option (33%) is that they would not like it if the chat bot does not communicate in a friendly way.

After that, they needed to connect the communication channels with the expected speed of response. When it comes to instant response, the chatbot is the most commonly chosen channel of communication, followed by the phone and the mobile application. However, when given a 24-hour time period, about 40% of respondents expect a response via email, website and social networks. As for the response after more than 24 hours, 20% of respondents think they will respond to the email in that period, and 17% respond to the request via the website.

After that, they had to choose the predefined benefits they expected when communicating with organizations. Chatbot respondents expect a quick answer to simple questions, 24/7 availability and easy communication. Chat bot is not the preferred channel of communication when it comes to complex questions as well as getting experts answers.

V. CONCLUSION

After covering the topics of marketing, artificial intelligence and chatbots from the theoretical and side and their influence on the marketing practice of today, one gets the impression that the given influence will be increasing. Chatbots, although a rule-based type, are already widespread and widely used by humans. With the further development of technology, artificial intelligence will become more accessible and further explored, so its practical application will grow further and at some point much of the operational communication will take place with machines based on artificial intelligence. In the survey, the results showed that the greatest advantage of using chatbots in marketing is the provision of simple, fast information, but they also showed the fear of respondents getting the wrong information from chatbots, which is something that needs to be resolved in the future. With the aforementioned increase in the availability of artificial intelligence technology and its application to the realm of chatbots, organizations should consider the benefits they can have, especially in the face of challenges in communicating with customers but also if they intend to keep up with the lifestyle of a growing consumer.

VI. REFERENCES

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