Chapter 15
Chatbot Implementation in a Steel Company in Russia: Towards a Model for Successful Chatbot Projects

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ABSTRACT

Chatbots (sometimes just called "bots") are the subject of much corporate and public interest today. Many enterprises are looking to get started with chatbot development initiatives to improve communication efficiency as well as reduce operating costs. Current research indicates constantly growing interest in this area and forecasts that 70% of office employees will interact with chatbots daily in 2022. This chapter reports on the challenges inherent in chatbot integration projects and identifies key operational factors for successful chatbot projects, as well as highlighting issues of strategic significance. Different technology adoption and project management models are explored, analysed, and applied in the context of chatbot implementation, and based on an in-depth case study, a model is put forward to aid the manageability of chatbot implementation in other similar environments.

INTRODUCTION

There is a growing belief that chatbot technology can improve organizations in a variety of ways (Goasduff, 2019). Chatbots leverage artificial intelligence (AI) and can automate different business functions and repetitive tasks. Higher employee productivity, personal attention to customers, and effective communication between employees are mentioned as the most anticipated benefits that conversational bots can deliver. Furthermore, successful chatbot implementation cases demonstrate a dramatic reduction in per-query cost, considerable improvement in response times, ability to offer 24x7 customer service, and significant increases in customer satisfaction (Srinivasan et al., 2018).

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Despite the undoubted benefits of chatbots, there are relatively few success stories. Companies tend not rush to adopt new technology, and prefer to observe and learn from others. In most cases, successfully launched chatbots automate only a particular business process or activity. Also, bots mostly supplement pre-existing reliable processes, hitherto supported by other information systems. Leading technology corporations, such as IBM, Google, Amazon, and Microsoft, provide cloud services that allow technical teams to deploy AI-powered conversational bots relatively quickly. However, available online services and open source software cannot solve company-specific problems that require implementation of custom bot behavior, data preparation and integration (Gwendal et al., 2020). Another difficulty is the need to change the existing working processes and employees' behavior. A lack of experienced specialists, high deployment costs, and overall transformation complexity are the key factors that are currently inhibiting many companies from embarking upon their chatbot initiatives (Srinivasan et al., 2018). In this chapter, however, research objectives (ROs) concern identifying and discussing how companies can move forward with chatbot projects. The objectives are, first, to identify key factors for successful chatbot projects (RO1); and second, to design a new framework or model for chatbot implementation in the corporate environment (RO2).

Following this introduction, there are six further sections. The next section provides a context for the research upon which this chapter is based, examining published material on a number of related themes. The selected research method is then discussed and detail of the EVRAZ case study is provided. Then, building upon concepts and success factors evident in the extant literature and in existing models, a provisional model for chatbot project implementation is put forward. This is then applied and developed in the following section based on the EVRAZ case study findings. Finally, the conclusion summarizes the key themes of the chapter, and discusses relevant theoretical perspectives in the context of the main research findings.

RELEVANT LITERATURE

Origins and Evolution of Chatbot Technology

Chatbots are very attractive in a work environment due to their conversational nature. They provide people with an interface to communicate with information systems, in a way that is more instinctive for human beings, through dialog (Williams, 2018). The origin of chatbots goes back to 1950, when Alan Turing proposed a test to assess a machine's ability to demonstrate intelligent behavior, and therefore be judged as a human (Turing, 1950). His publication caused great philosophical debates about whether machines can think, and if the test was applicable to measure intelligence. Later, in 1966, Weizenbaum created a computer program named ELIZA, a virtual character that played the role of a Rogerian therapist (Hingston, 2009). Many people experienced emotional conversations with the program and described its behavior as human-like. Although it used a simple pattern-matching structure, and did not recognize context, ELIZA's ability to pass the Turing test was surprisingly clear-cut (Rhee, 2010).

Sculley and Byrne (1987) described a theoretical device called Knowledge Navigator. They also published a concept video, which demonstrates how Knowledge Navigator could assist a professor in checking incoming mails, making appointments, finding publications, etc. Many of these ideas were implemented in a real device much later in 2010, when Apple released its Siri assistant, then integrated it into their iOS operating system for mobile devices in 2011. A little later, Microsoft introduced their