

Why do Chatbots fail? A Critical Success Factors Analysis

Completed Research Paper

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Abstract

Chatbots gain more and more attention, both in research and in practice, and enter several application areas. While much research addresses technical or human-centered aspects, development, and adoption, little is known about Critical Success Factors (CSFs) and failure reasons of chatbots in practice. Design Science Research (DSR) oriented, we first analyze 103 real-world chatbots to examine the discontinuation rate of chatbots in 15 months. With a literature review and 20 expert interviews, we derive 12 specific CSFs and identify failure reasons which are evaluated in a focus group discussion with chatbot experts, afterwards. We explain chatbots' failure in practice, improve chatbot knowledge in Information Systems (IS) and Human Computer Interaction (HCI), and finally deduce recommendations and further research opportunities.

Keywords: Chatbot, conversational agent, failure reasons, critical success factors, design science research

Introduction

Due to technological advances in Artificial Intelligence (AI) and Natural Language Processing (NLP) as well as increasing user acceptance, chatbots have gained tremendous popularity in research and practice over the last years (Adamopoulou and Moussiades 2020; Diederich et al. 2021). Practitioners see the chatbot market growing from \$17.17 billion in 2020 to \$102.29 billion in 2026, indicating the high relevance of the field (Mordor Intelligence 2021). This progress is also visible within an enormous increase of scientific publications about chatbots (Zierau et al. 2020; Adamopoulou and Moussiades 2020). Chatbots also known under the term conversational agents (Zierau et al. 2020) are mostly internet-based software systems that interact with humans within a simulated conversation to perform tasks (Brandtzaeg and Følstad 2018). These assistants are used to automate redundant processes in a wide variety of areas, such as education, health or customer support, e.g., to ensure 24/7 availability, to increase efficiency or to minimize customer support costs (Adamopoulou and Moussiades 2020; Janssen et al. 2020) and can be found on websites, social networks or apps (Janssen et al. 2020). Chatbots are seen as typical examples of HCI, as they are constantly changing due to further technological developments whereas the interaction with the user is