

Designing and Implementing a B2B Chatbot: Insights from a Medium-Sized Service Provider in the Energy Industry

Ulrich Gnewuch^{1,2}(✉), Carl Heckmann¹, Stefan Morana², and Alexander Maedche²

¹ hsag Heidelberger Services AG, Heidelberg, Germany
{u.gnewuch,c.heckmann}@hsag.info

² Institute of Information Systems and Marketing (IISM), Karlsruhe Institute of Technology
(KIT), Karlsruhe, Germany
{ulrich.gnewuch,stefan.morana,alexander.maedche}@kit.edu

Keywords: chatbot, design, implementation, business-to-business (B2B), case study.

Chatbots are currently attracting a lot of attention and considered to have great potential in many domains such as customer service, retail, and healthcare. Gartner [1] predicts that 25% of customer service operations will use chatbots and other types of digital assistants by 2020. While many researchers have studied how and why users interact with chatbots, less is known about the real-world process of designing and implementing a chatbot, particularly for business-to-business (B2B) contexts. To shed some light on this process and its challenges, this paper presents insights from a case study implementation of a chatbot at a medium-sized service provider for the energy industry (hereafter referred to as SPE).

SPE offers a range of services, such as business process outsourcing, consulting, and web design, for small and large energy providers. While SPE maintains long-term relationships with most of their existing customers via personal channels, potential new customers often visit SPE's website to find out about services and look up contact information. However, website statistics indicate a low conversion rate (e.g., visitors rarely use the website's contact form). Therefore, SPE decided to implement a chatbot for their website in order to increase conversion rates, generate additional leads, and provide answers to FAQs (e.g., services, locations, contact partners). Two authors were part of the project team and responsible for designing and implementing this chatbot.

Existing research has pointed out the lack of established design principles and development process models for chatbots [e.g., 2, 3]. Therefore, the project team at SPE relied on the ISO 9241-210 standard, which divides the process of human-centered design for interactive systems into four activities (i.e., understanding the use context, requirements specification, design/prototyping, and evaluating). First, a workshop and several meetings were conducted with the sales team to understand the information needs of potential new customers and how a chatbot could address those needs. Subsequently, the project team derived possible dialogs for the chatbot, designed the

conversation flow, and formulated individual responses. Based on these specifications, the chatbot was developed using Microsoft's Bot Framework. This framework was selected as it offers a range of well-integrated components. The prototype was iteratively trained and tested with the sales team, before a larger evaluation with users not involved in the project was conducted. In this evaluation, all employees at SPE were asked to interact with the chatbot for 10 minutes and to provide textual feedback as well as rate the chatbot (e.g., satisfaction, net promoter score). The results of the evaluation (n=43) reveal widely differing opinions about the chatbot. While some employees were pleasantly surprised, others clearly stated the need to improve the chatbot's language understanding capabilities and refine its dialogs. Currently, the chatbot is being revised based on this feedback and will go live at the end of 2018. In 2019, a field study will be conducted in cooperation with a German university to evaluate the chatbot with real customers.

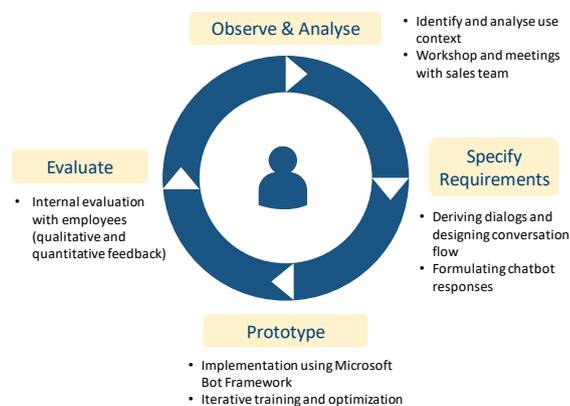


Figure 1. Design Approach (based on [4])



Figure 2. Screenshot

This study highlights the need for further research on the overall process of designing and implementing chatbots. For example, future research could provide methodological knowledge (e.g., models/approaches for chatbot design, evaluation guidelines) that would benefit practitioners in particular.

References

1. Gartner: Gartner Says 25 Percent of Customer Service Operations Will Use Virtual Customer Assistants by 2020, <https://www.gartner.com/newsroom/id/3858564>.
2. McTear, M.F.: The Rise of the Conversational Interface: A New Kid on the Block? In: FETLT 2016. pp. 38–49. Springer, Cham (2017).
3. Gnewuch, U., Morana, S., Maedche, A.: Towards Designing Cooperative and Social Conversational Agents for Customer Service. In: Proceedings of the 38th International Conference on Information Systems (ICIS). , Seoul, South Korea (2017).
4. ISO: ISO 9241-210:2010: Ergonomics of human-system interaction – Part 210: Human-centred design for interactive systems., (2010).