

AI-powered Enterprise Chatbots: Employee Experiences, Benefits & Challenges

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Abstract

The adoption of AI-powered Chatbots (EBs) in the enterprise marks a significant advancement in Human Resource Management (HRM). EBs are particularly effective in handling repetitive queries, supporting employees during peak periods, and facilitating remote work. They offer direct benefits such as 24/7 availability, task automation, and a unified platform for data, while indirectly boosting productivity, reducing costs, and improving service quality.

Qualitative interview with an HR manager from a global IT services company highlights the practical benefits and challenges of EBs. Key benefits include query resolution, information, and knowledge sharing, supported by an organisational culture that encourages chatbot use. Facilitating conditions, such as organisational and technical resources, are crucial for the chatbot's development and continued use.

Challenges faced by employees include the need for precise query framing and the chatbot's sensitivity to specific words, indicating areas for improvement in NLP capabilities. Expectations for future enhancements include voice command integration and more human-like interactions.

In conclusion, AI-powered chatbots hold transformative potential for HRM, supporting employees, enhancing decision-making, and fostering better communication. However, organisations must balance leveraging AI's power with addressing ethical and safety concerns to ensure long-term success and acceptance of these intelligent solutions.

Introduction

The advent of Artificial Intelligence (AI) has heralded a transformative era in Human Resource Management (HRM). AI-powered Enterprise Chatbots (EB) have emerged as a pivotal tool in this digital transformation. AI-powered enterprise chatbots have been integrated to enhance HR processes by automating routine tasks, facilitating efficient communication, and providing data-driven insights for decision-making.

Enterprise chatbots can play a crucial role in answering employees' queries, thereby reducing the need for human intervention. Chatbots are best suited for handling repetitive tasks or answering frequently asked queries without a human service agent.

During peak-load periods such as weekends and holidays or during crises such as pandemics, enterprise chatbots can become a powerful tool for employees to stay engaged and connected with the organisation. This also applies when employees work from office locations outside the company's headquarters or the comforts of their homes.

Most company HR offer flexible working timings and hybrid working options to their employees in knowledge-based industries, including BFSI, E-Commerce, IT & ITES. In such scenarios, the organisation that employs enterprise chatbots to manage their employee queries would be able to enhance efficiency and employee productivity, leading to improved employee engagement.

As organisations adopt AI-powered enterprise chatbots in the workforce, they stand to benefit from streamlined operations and improved employee engagement. The direct benefits include 24/7 availability, tasks and/or business process automation, and a single platform for all systems and data sources. The indirect benefits include Increasing productivity and efficiency, reducing costs and improving service quality.

However, the deployment of chatbots is not without its challenges, including employee expectations in the intricacies of human language comprehension, human likeness and the potential for algorithmic bias in its response.

Literature Review

Definition and Terminologies

The terminology for conversational technologies is inconsistent, with terms like *Virtual Assistants*, *Virtual Agents*, *Conversational Agents*, and *Chatbots* often used (Strohmann et al., 2018). Stieglitz, Brachten, and Kissmer (2018) introduced the term ‘Enterprise Bots (EBs)’ to avoid confusion regarding the terminology and to specifically address chatbots in an enterprise context.

An EB is defined as “*an automated user service that provides casual and conversational interactions with complex enterprise systems and processes*” (Stieglitz et al., 2018).

Conversational AI encompasses technologies that enable machines to engage in human-like dialogue, primarily through chatbots and voice assistants. These systems are designed to understand and respond to user inquiries in a natural manner, facilitating interactions that span various domains, including customer service and information retrieval.

At the core of conversational AI is Natural Language Processing (NLP), which allows machines to interpret and generate human language, enhancing their ability to understand user intent beyond mere keywords.

This capability is crucial for creating more sophisticated conversational agents that can handle complex queries and provide relevant responses, making them invaluable in applications that involve troubleshooting and support.

Voice assistants, a subset of conversational AI, utilise voice recognition to perform tasks and provide information, further enriching user interaction through spoken dialogue.

As these technologies evolve, they are increasingly integrated into various environments, prompting discussions about their potential applications and the need for user-centric design to improve interaction quality. Such advancements pave the way for more personalised experiences, enabling systems to learn from user preferences and adapt their responses accordingly.

This adaptability fosters a deeper connection between users and technology and encourages greater trust in automated systems, ultimately leading to widespread acceptance and reliance on these intelligent solutions.

Enterprise Chatbot Application Areas

In the review conducted by Meyer von Wolff, Hobert, Masuch, and Schumann (2020), some of the most commonly used application areas of enterprise chatbots include the following:

- a. Supporting employees in carrying out self-service activities on existing HR systems.
- b. Supporting the functioning of the HR department for activities such as employee onboarding or running employee surveys
- c. IT Support and Maintenance
- d. Knowledge and Information Management

Direct [Short-term] Benefit of Enterprise Chatbots: *Query Resolution*

The direct or short-term/immediate benefit of implementing chatbots within the organisation is to resolve employee queries by answering Frequently Asked Questions (FAQs) and processing employee requests, thereby freeing up HR professionals to focus on more strategic activities (Sakib et al., 2024).

They play a pivotal role in query resolution by automating interactions and providing instant responses to employee queries. Implementing a chatbot-based dialogue interface facilitates interactive question answering, enabling users to ask follow-up and clarification questions. This interactivity is vital for resolving complex queries, allowing for a more nuanced understanding of user needs.

Query resolution can be categorised into three levels: L1, L2, and L3, each addressing different complexities of user queries. L1-level query resolution typically involves basic queries that require minimal processing and direct responses, making it essential for efficient user interaction. As queries increase in complexity, L2 and L3 levels come into play, necessitating more sophisticated processing techniques.

The underlying technology of these chatbots often includes an automated agent system. The system redirects and refines queries and ensures that users receive results they might not have encountered otherwise, thanks to its sophisticated matching capabilities. The synergy between relational matching and AI fosters the development of systems that can learn from experience, adapt to new information, and provide insights that were previously unattainable.

Thus, a comprehensive approach to query resolution encompasses understanding the levels of complexity that not only streamlines the querying process but also empowers users to harness the full potential of diverse datasets, thereby facilitating deep insights.

Indirect [Long-term] Benefits: Two indirect or long-term benefits of enterprise chatbots are enhanced decision-making and improved organisational communication.

- A) *Enhanced Decision-Making:* AI chatbots can serve as decision-support tools that analyse large datasets to provide insights into employee performance and recruitment strategies, aiding HR managers in making informed decisions.
- B) *Improved Communication:* Chatbots facilitate better organisational communication by

supporting cross-cultural interactions that can enhance team collaboration and project management.

By embracing these technologies, organisations can cultivate a culture of continuous improvement. This commitment to innovation enhances operational performance and positions businesses as leaders in their respective industries, driving sustainable growth and long-term success by ensuring they remain relevant and thriving in a rapidly changing landscape.

Research Methodology

For a deeper understanding of an employee’s perspective on the role of chatbots in the enterprise, an employee using chatbots at the workplace was identified from the researcher’s connections. The employee, hereby referred to as Participant 1 (P1), consented to the interview on the condition of keeping her personal details and organisation name confidential. The author prepared an interview guide to conduct the semi-structured interview.

P1 works in a global IT services and consulting company with over 10,000 employees worldwide and a significant presence in India. P1 is in a managerial position working in the HR Department. The first interview was conducted in November 2022, with a follow-up interview conducted subsequently for better clarification and additional follow-up questions prepared after examining the first interview data. The combined interview time with P1 across both interviews was close to 2 Hours. The interviews were conducted online with prior permission to record and transcribe the interview.

The transcribed interviews were masked to remove sensitive information, and a copy of the raw and anonymised interviews was sent to P1 for her review. The interview data was coded using ATLAS.ti, a Computer-Assisted Qualitative Data Analysis Software (CAQDAS). The first-order codes and categories (higher-order codes) are discussed in the findings of this paper, along with some sample quotes used by P1 to support the findings.

Findings

Based on the interview content, two chief benefits emerged from the data – (1) Query/Problem Resolution and (2) Information/Knowledge Sharing. Besides the benefits, the role of (3) Organisation Culture and (4) Facilitating Conditions in supporting the adoption of enterprise chatbots emerged from the interview.

Finally, the interview also raised (5) Challenges and Expectations from the CB in its ability to interact with her, comprehend her queries and accordingly give her an appropriate response.

Some of the sample quotes and Codes (1st order) that fall under the category – ‘*Query/Problem Resolution*’ are as follows:

Sample quotes	Codes (1 st order)
<p><i>“... So let us say, I want to raise a ticket... Because I want to interact with the technology team or the HR team for some query; so we can use the chatbot for raising a ticket as well. So tickets are for resolution of a problem..”</i></p>	<p>Raising support tickets through CB</p>
<p><i>“... In a WFH kind of context, it is a good support system. Because anyway you cannot interact with the human being... So at least you know that there is a system in place through which you can either raise your query, get some information...”</i></p>	<p>Chatbot support in WFH context.</p>
<p><i>“... You can in the chat have the chatbot to ask you to which department do you want to route your query, payroll or attendance and then you keep choosing the options and then you can see in the end which person the ticket has been assigned.”</i></p>	<p>Raising support tickets through CB</p>
<p><i>... the best part is that when you use a chatbot and email goes to the concerned person, maybe he or she needs to do some research on your question before responding. So it gives them the time window to think about your query/issue before they respond to you rather than responding top of their head and giving you some incomplete response.</i></p>	<p>Better resolution through CB compared to other channels.</p>

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Some of the sample quotes and Codes (1st order) that fall under the category – ‘Information/Knowledge- sharing’ are as follows:

Sample quotes	Codes (1 st order)
<i>“... And the fourth functionality is that the chatbot also interacts with me by providing me information about the company in general. Like it talks about the vision & mission of the company.”</i>	Sharing Company Information
<i>“... It (Enterprise Chatbot) acts as a tool to send reminders also.. of town halls or learning event or other events which are happening in the company... so I may or may not be interested in these.”</i>	Providing Event Reminders.
<i>“...We could ask the chatbot on how to use the chatbot and then it would typically point you to the training manual link.”</i>	Providing links to access training material

Besides discussing some of the Benefits derived from chatbots, another important dimension that emerged from the interviews was the role of ‘Organizational Culture’ that encourages the use of chatbots.

Though the use of chatbots is not mandated from employees, they are often expected to use them as part of the organisation’s work culture. Some of the sample quotes and codes are as follows:

Sample quotes	Codes (1 st order)
<i>“... So our work culture is very hybrid. Its not that if there is not chatbot... It’s not that I cannot contact the human. I can contact the human. But we are encouraged to use the chatbot.”</i>	Org culture supporting voluntary use of CB;
<i>“... And in fact we are encouraged to talk to the chatbot, to interact with the chatbot, to raise our queries through the chatbot, rather than approaching the humans directly.”</i>	
<i>“... So even for inter-department communication very often we were encouraged to use the chatbot for any support.”</i>	

P1 also highlighted the role of ‘Facilitating Conditions’¹ that include the organisational and technical resources invested in the development and enhancements of the chatbot over time.

Sample quotes	Codes (1 st order)
<p>“ So ours is an internally developed product. And I’m sure that in the application development process the active inputs must have been taken from the HR team as well as from the line managers to understand about the processes and only then the processes must have been embedded into the functionality of... the support mechanism of the chatbot...”</p>	<p>Internally developed CB with multiple stakeholders involved.</p>
<p>“..... So from some of the basic version, the objective was to program the chat bot into a much more advanced version, which can probably answer many more queries.</p>	<p>CB evolves over time</p>
<p>“..... the enterprise would be bringing new versions of the chat bot and gradually improve the chat bot to a level where we can interact with it without any effort”</p>	

However, learning how to use the CB has not been without any effort from P1. She highlights some of the issues she has encountered interacting with the CB and her expectations of what improvements can be made in the chatbot to make it more user-friendly and human-like in its behaviour.

These have been categorised as ‘Challenges & Expectations’

¹ Facilitating Conditions is a construct included in the Unified Theory of Acceptance and Use of Technology (UTAUT) Model (Venkatesh, Morris, Davis, & Davis, 2003). It is defined as “The degree to which an individual believes that the organizational and technical infrastructure exists to support the use of the system”.

Sample quotes	Codes (1 st order)
<p><i>“.....So you have to know how to frame the question and sometimes you have to try different permutations and combinations. You have to use some exact combination of words and then probably you would get an accurate answer that is relevant for you..”</i></p>	<p>CB Challenges in NLP.</p>
<p><i>“..... The version we were using was less intelligent because it responded in a positive way only when the question was typed in a specific manner. It was very sensitive to certain words.”</i></p>	
<p><i>“.....So if it can take voice command, that might be (useful feature to have). Because as you working, rather than going to the chatbot, you can just give a voice command and the other is to make it more human-friendly”</i></p>	<p>CB Expectations: Human-like (Anthropomorphism)</p>

Conclusions

The evolution of conversational AI, natural language processing, and query resolution techniques identifies the potential of Enterprise Chatbots to transform HRM. Organisations can harness the full potential of AI-powered chatbots to support their employees in resolving their queries and sharing relevant information and knowledge resources. This can be particularly relevant for freshly hired employees who are still unfamiliar with many organisational resources and practices and may prefer to interact with a chatbot rather than a human being for routine questions.

There are also organisational factors that support the adoption of chatbots. These include a conducive work culture that encourages employees to use chatbots over traditional communication channels such as email or telephone. Besides, organisations must invest adequate technical and human resources to ensure the chatbot evolves over time.

Long-term use of AI-powered chatbots is incumbent upon technological advances that help understand human nuances, safeguard data privacy, and mitigate algorithmic bias. It is imperative to strike a balance between leveraging the power of AI to create more intelligent chatbots at the workplace and addressing the safety and ethical use of AI in the organisation.

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