

## THE IMPACT OF GENERATIVE CHATBOTS ON THE IT SUPPORT AND HELPDESK LABOUR MARKET

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**Annotation.** This paper analyzes the growing influence of generative artificial intelligence on IT support services and the labour market. Special attention is given to the use of generative chatbots for automating routine technical requests. The study shows that artificial intelligence tools transform professional roles and required competencies rather than completely replacing human workers.

**Keywords:** artificial intelligence, generative models, chatbots, IT support, automation, labour market.

**Introduction.** Artificial intelligence technologies are fundamentally reshaping the landscape of modern digital infrastructures [1]. In recent years, the development and deployment of generative large language models have accelerated dramatically, leading to their widespread adoption across a multitude of sectors. Among the most significant areas of application is customer service and technical support. These sophisticated AI systems possess the advanced capability to process natural language requests with high accuracy, understand context, and generate detailed, coherent responses. This functionality makes them exceptionally well-suited for assisting users with a broad spectrum of technical problems, ranging from the simple to the moderately complex.

Historically, technical support departments have been burdened by a high volume of repetitive and predictable inquiries. Common issues such as password recovery, configuration problems, software troubleshooting, and requests for instructions on using internal corporate systems constitute a significant portion of daily tickets. As these tasks often follow well-defined and predictable patterns, they represent a prime opportunity for automation [1]. The integration of intelligent conversational systems offers a pathway to streamline these processes, reduce the workload on human agents, and provide users with faster, more consistent resolutions.

**Main part.** The core functionality of generative chatbots in this domain lies in their sophisticated ability to analyze user questions, interpret their underlying meaning and intent, and deliver structured, actionable recommendations. Unlike traditional rule-based chatbots that rely on keyword matching, generative AI models utilize deep learning to understand the context and nuances of human language, including slang, typos, and complex sentence structures [4]. When a user describes a problem, the AI model parses the query, identifies key entities and pain points, and cross-references this information with data stored in internal corporate knowledge bases, FAQ databases, and even historical ticket resolutions. In many instances, the system can dynamically generate personalized, step-by-step troubleshooting instructions, guide users through complex configuration wizards using natural language, or provide direct hyperlinks to relevant video tutorials or documentation articles. The immediate and most visible benefit for the end-user is the receipt of instant, “always-on” assistance, available 24 hours a day, 7 days a week, without the frustration of waiting in a queue for a human specialist to become available. This immediacy not only boosts user satisfaction but also reduces the abandonment rate often seen in traditional support channels.

This advanced capability positions generative chatbots to serve as an exceptionally effective first line of support within modern organizations [1]. They act as intelligent triage agents and virtual assistants, initially engaging with the user to collect essential diagnostic information and systematically attempt to resolve the issue automatically. This process can involve asking dynamic, context-aware clarifying questions, running basic remote diagnostic checks, pulling relevant error codes from system logs, or guiding the user through common fixes like clearing a cache or resetting a modem. For example, if a user reports being unable to connect to the corporate VPN, the chatbot can automatically verify their network status, check if their account is locked, and provide the correct connection steps based on their operating system [4]. If the system encounters a problem it cannot solve with certainty, or if the issue is highly novel and falls outside

its predefined confidence threshold, the request is seamlessly escalated and transferred to a human support engineer [1]. Crucially, the chatbot provides this engineer with a comprehensive and structured summary of the entire interaction, including the user's initial problem description, the exact steps already taken to resolve it, any diagnostic data gathered during the session, and the user's device information. This "arm handoff" eliminates the need for the customer to repeat themselves and enables the human expert to dive directly into advanced troubleshooting, thereby enabling a more efficient, informed, and empathetic resolution.

However, the practical effectiveness of these AI-driven support systems is heavily contingent on the quality, structure, and breadth of the underlying data they rely upon. If the organizational knowledge bases are incomplete, outdated, poorly structured, or filled with technical jargon, the AI tool will likely produce inaccurate, irrelevant, or even misleading answers [4]. In some cases, this can lead to the phenomenon of "AI hallucination," where the model generates a confident but completely fictitious response. This dependency underscores a critical prerequisite for successful implementation: companies must often invest considerable effort in a knowledge management overhaul. This involves auditing existing documentation for accuracy and gaps, restructuring information for clarity and consistency, creating new, AI-friendly content, and establishing continuous feedback loops where human agents can flag and correct errors made by the AI. This foundational work ensures that the knowledge fed to the AI is reliable, comprehensive, and contextually relevant, which is the bedrock of building user trust in the system.

The widespread introduction of generative AI into technical support is also having a profound and multifaceted influence on labour market dynamics and the very nature of technical work [2]. Consequently, entirely new professional roles and specializations are emerging within support teams. Engineers may now find themselves involved in "bot training" and prompt engineering curating and maintaining the knowledge bases that feed the AI, monitoring chatbot performance and accuracy metrics, analyzing interaction data to identify emerging product trends or documentation gaps, and strategically integrating AI tools into broader service workflows to optimize overall efficiency [1]. This shift requires a new blend of technical and analytical skills, transforming the support department from a cost center focused on ticket volume into a strategic source of insights and a driver of product improvement.

**Conclusion.** In summary, generative chatbots represent a significant and transformative technological development for the field of IT support services. Their ability to provide immediate, 24/7 assistance dramatically improves response times for common issues and enables organizations to efficiently manage large volumes of routine requests without a proportional increase in support staff. This leads to greater operational efficiency and enhanced user satisfaction. At the same time, it is crucial to recognize that these systems are not designed to fully replace human specialists. Instead, their primary impact is to transform the structure of technical support work by intelligently redistributing tasks between automated systems and human engineers. The future of effective technical support lies not in choosing between AI and human expertise, but in creating a symbiotic relationship between them. Organizations that strategically combine the speed and scalability of artificial intelligence with the nuanced judgment, empathy, and complex problem-solving skills of their human workforce will be best positioned to improve efficiency, reduce costs, and provide a superior quality of technical support in the years to come.

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