RESEARCH ARTICLE:

Contact Centre Agents' Perception on Technology Adoption in Promoting Quality Customer Service

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Abstract

A contact centre is a central key to any organisation and a tool for managing customer service in any private and public organisation. Technology today plays a significant role in the contact centre environment. For the organisation to provide effective customer service, a contact centre allows the organisation to build, maintain, and manage customer relationships. This can be achieved by conducting transactions, providing information, responding to inquiries, and resolving issues and complaints quickly and more effectively than in-person interactions. This paper is based on pilot data collected from respondents similar to the original study population. The purpose was to investigate contact centre agents' perceptions of technology adoption in promoting quality customer service. A quantitative research approach and a survey design were employed. A closed-ended questionnaire was used to collect primary data. The findings reveal that contact centre agents found technology to be both easy to use and valuable in providing effective customer service. Therefore, it is recommended that agents need to perceive technology acceptance as an essential element of providing excellent customer service.

Keywords: *contact centre agents; technology; service quality; technology acceptance model*

Introduction

The role of technology in enhancing customer service has become increasingly crucial in today's rapidly evolving business landscape. According to Kappa *et al.* (2020), contact centres serve as the frontline of customer service, where agents play a pivotal role in ensuring customer satisfaction. The operations of contact centres are undergoing significant transformation due to the rapid pace of technological advancement. Adopting technology in these environments can profoundly impact the quality of customer service provided (Javaid *et al.,* 2022). New contact centre technologies have revolutionised customer service provision, offering new opportunities for performance improvement and enhancing customer satisfaction (Jepson *et al.,* 2022). However, the impact of these technological advancements heavily relies on the perceptions and acceptance of contact centre agents, who play a central role in customer interactions. Furthermore, research by Seufert *et al.* (2021) indicates that agents' attitudes towards these technologies can significantly influence the effective utilisation of these tools to enhance service quality.

This introduction sets the stage for a comprehensive exploration of contact centre agents' perspectives on technology adoption and its role in fostering high-quality customer service. Contact centre employees play a crucial role as the face and voice of a company, significantly influencing customer experiences. These interactions can cultivate a loyal customer base (Bolton *et al.,* 2018). Recognising the importance of these interactions,

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organisations are increasingly turning to technology solutions to empower their agents, streamline operations, and ultimately elevate the quality of customer service (Sigala, 2018).

Literature Review

As described by Jang *et al.* (2021), a contact centre is a dedicated facility where many calls are managed for diverse professional functions such as telemarketing, customer care, sales, marketing, and technical support. Contact centre have undergone considerable expansion in recent years and are typically divided into two main types which are inbound and outbound (Ahmed, 2021). A contact centre is an established facility designed to serve as an intermediary between customers and an organisation staffed by agents. Contact centres that receive incoming calls from customers are referred to as inbound call centres, while those that initiate calls to customers are known as outbound call centres (Reynoso, 2016). Whether inbound or outbound, these centres significantly impact a business's competitive edge when customers are satisfied with the performance of contact centre agents, thereby choosing to maintain their relationship with the organisation (Dharamdass and Fernando, 2018).

According to Aman (2019), contact centres utilise various telecommunications and technological tools to ensure efficient customer service within the organisation. However, contact centres frequently face challenges such as compromises in staffing and technological processes (Shah *et al.,* 2023). They play a crucial role in meeting the increasing importance of providing cross-channel customer service. Within the contact centre environment, agents are tasked with various organisational responsibilities (Diederich *et al.,* 2022). Contact centre agents are pivotal in delivering exceptional customer service and fostering long-term relationships (Proenca and Rodrigues, 2021). Customer satisfaction and loyalty depend significantly on agents' abilities in effective communication, efficient problem-solving, and demonstrating empathy towards customers. According to Iwu *et al.* (2021), contact centre agents act as frontline representatives of the organisation, embodying a commitment to service excellence that leaves a lasting impression of care, integrity, and dedication to customer needs. While the central office of the contact centre holds primary responsibility for customer service, agents provide critical support to customers seeking guidance, assistance, or someone to listen to (Iwu *et al.,* 2021). Whether managing complaints, processing transactions, answering inquiries, or resolving technical issues, agents must consistently react promptly and effectively to a variety of customer demands (Wang and Zhang, 2021).

The foundation of an agent's effectiveness is their ability to communicate. However, to build a connection and earn customers' trust, agents must communicate clearly and concisely, actively listen to understand their issues and show empathy when needed (Lin *et al.,* 2021). Agents need to be proficient in handling various communication channels and adapting their approach to match each customer's preferences (Wang and Zhang, 2021). Agents accurately and effectively address a variety of client concerns thanks to their critical thinking skills and creativity (Lin *et al.,* 2021). Training and ongoing professional development are crucial for contact centre agents to provide effective customer service. Agents acknowledged that the use of advanced technologies, like chatbots, CRM systems, and predictive diallers, increased workflow effectiveness (Legros and Jouini, 2019). Efficiency and productivity are crucial in the high-pressure environment of a contact centre (Story and Castanheira, 2021). Agents must uphold strict performance standards while managing numerous contacts. However, to balance quantity and quality, agents must prioritise tasks effectively, manage their time well, and strive for excellence in metrics such as average handling time, first call resolution rate, and customer satisfaction scores (Dharamdass and Fernando, 2018). Businesses use contact centres to address customer issues and enhance customer value. Contact centres are under growing pressure from organisations to increase revenue and satisfy consumers' needs for excellent service (Salah *et al.,* 2021).

Perceived service quality, defined by Qalati *et al.* (2021), refers to customers' overall perception of an organisation's customer service based on interactions and subsequent outcomes. According to Upadhyai *et al.* (2019), the ability of an organisation to deliver exceptional service quality is crucial for both success and survival in today's competitive business environment. They emphasise that service quality directly impacts customer satisfaction (Supriyanto *et al.,* 2021). In service-oriented industries, such as those focused on client satisfaction, loyalty, and overall corporate success, perceived service quality plays a pivotal role (Chen and Lee, 2023). Mastering the art of delivering exceptional customer service experiences is essential in today's competitive landscape, where choices abound and customer expectations continually evolve (Upadhyai *et al.,* 2019). According to Prakash (2019), customers' subjective assessments of the service they received in comparison to their expectations add up to perceived service quality. In place of tangible goods, services are complicated and intangible and can entail sophisticated relationships between clients and service providers (Ramya *et al.,* 2019). Customers, therefore,

evaluate the quality of services on several factors, including tangibles, ease of use, assurance, responsiveness, and empathy (Uppal *et al.,* 2018). Reliability is when delivering the promised service precisely and consistently to a service provider (Fatima *et al.,* 2019). Responding to the demands and questions of customers in a timely and willing manner is referred to as responsiveness. By providing knowledgeable and polite service, assurance aims to create confidence and trust in clients (Chetty *et al.,* 2021). Understanding and feeling the demands and concerns of customers is all part of empathy. Customers' opinions of the quality of the services they receive are shaped by tangibles, which include the actual buildings, furnishings, and staff look. Convenience reflects customers' desire for hassle-free experiences and refers to how simple and accessible the service is to receive (Fatima *et al.,* 2019).

The expansion of contact centres is primarily driven by technologies that integrate call management systems with networked information technologies (Vasco *et al.,* 2023). These technologies facilitate the efficient distribution of incoming calls to available staff and instant access to customer information (Płaza *et al.,* 2022). In today's digital environment, customer expectations are higher than ever, demanding fast, personalised, and seamless interactions across multiple channels (Pawlik *et al.,* 2022). Contact centres play a critical role in meeting these consumer expectations by providing essential support and assistance (Benjamin, 2022). Advancements in data analytics, computing, and telecommunications have propelled the development of contact centre technology. In addition to telephony technologies, traditional contact centres have evolved into sophisticated multi-channel centres capable of managing diverse communication channels such as social media, emails, live chat, and phone calls (Kivinen, 2020). According to Mabotja and Mkhomazi (2024), Automatic Call Distribution (ACD) is identified as a core component of contact centre technology. ACD systems use intelligence to match incoming calls with the most suitable agent based on skill-based routing, agent availability, and IVR selections. This enhances productivity and customer satisfaction by ensuring prompt connection to the appropriate representative. Interactive Voice Response (IVR) systems also play a significant role in reducing customer contact. IVR systems minimise wait times and empower users to handle basic inquiries independently through self-service options, guiding callers to the appropriate department via pre-recorded voice prompts and menus (Chaudhary *et al.,* 2023).

Computer Telephony Integration (CTI) integrates computer and telecommunication technologies, enabling agents to access relevant customer data during interactions (Chaudhary *et al.,* 2023). This capability equips agents with comprehensive knowledge of past interactions, preferences, and customer histories, empowering them to deliver personalised and contextually appropriate service (Lei *et al.,* 2022). Furthermore, AI-driven analytics technologies such as speech and predictive analytics provide valuable insights into customer sentiment, behaviour, and trends from transcripts (Akter *et al.,* 2022). Contact centres can enhance service quality and foster continuous improvement by proactively resolving customer complaints, identifying new issues, and detecting dissatisfaction by analysing recorded conversations, emails, and chat transcripts (Shankar and Datta, 2020). Technology encompasses integrating tangible objects or artefacts, the processes involved in their creation, and their significance (Lang *et al.,* 2021). Organisations often base their technology decisions on economic factors such as cost savings rather than considering human needs such as the perceived value and ease of use of new technologies (Rajagopal *et al.,* 2022). Elevating workers' perceptions of a new technology's usefulness can positively impact employee performance and mental and physical well-being (Griep *et al.,* 2021). However, the emphasis on technology often overlooks other crucial yet less distinctive features of call centres, including performance monitoring, job design, and human resource management practices. Technology has shifted work practices from technical tasks to soft skills like marketing, networking, and emotional intelligence (Newman and Gopalkrishnan, 2020).

Information and computer technologies are vital in contact centre, focusing on systems like automatic call distribution, interactive voice response, web-enabled joint browsing, email, and WAP mobile technology (Maxmudova, 2018). However, characterising contact centres solely based on technology would oversimplify their nature. This perspective ignores the varied uses of contact centre technologies and overlooks the importance of social systems like work organisation and HR practices (Soltis *et al.,* 2018). Contact centre technology can vary significantly due to technical, organisational, and social factors. Considering these factors, especially their influence on employee well-being, is essential during the design and implementation process. Technology was often viewed by senior agents as a strategic enabler, with long-term benefits for performance and customer relationship management (Rymarczyk, 2020). Additionally, Bondanini *et al.* (2020) argue that organisations must understand how their staff perceive the potential effects of future innovations on their current roles and what proactive steps they are willing to take to prepare for the future.

Drawing on the Technology Acceptance Model (TAM) which is a theoretical framework that analyses how users adopt and utilise new information technology (Doulani, 2018) as introduced by Fred Davis in the late 1980s, the idea has been borrowed in this study to examine user attitudes and behaviours towards technology adoption. The model posits that an individual's intention to use technology is influenced primarily by perceived usefulness and ease of use (Davis, 1989). Perceived usefulness refers to the extent to which a user believes that employing a specific technology will enhance their performance (Davis, 1989). Users are more inclined to adopt a technology if they perceive it as beneficial in accomplishing their objectives or tasks. Perceived ease of use refers to the extent to which a user perceives that technology will be straightforward and devoid of complexity (Davis, 1989). Users are more inclined to adopt a technology if they believe it is easy to learn and operate (Granić and Marangunić, 2019). Factors contributing to perceived ease of use include intuitive interfaces, clear instructions, and minimal learning curves. For example, users may be more likely to adopt a mobile app with a user-friendly interface and straightforward navigation (Davis, 1989). According to TAM, perceived usefulness and ease of use directly influence users' attitudes toward technology, shaping their intention to use it (Doulani, 2018). Furthermore, external factors such as social influence, organisational support, and facilitating conditions can also impact users' attitudes and adoption behaviours (Davis, 1989).

Methodology

The study employed a quantitative approach and descriptive research design to explore how contact centre agents perceive the adoption of technology in enhancing customer service quality. Research methodology is a guiding concept and operational guideline of a specific study approach. A fundamental idea known as research methodology serves to guide studies and elucidate the necessary procedures. The current study adopted a quantitative research design, focusing on numerical data to obtain precise and reliable measurements that facilitate statistical analysis (Mohajan, 2020). The choice to use quantitative methods was supported by the practicality of administering questionnaires with clear and concise questions, enabling effective quantification and comparison of the data (Basias and Pollalis, 2018). The initial study targeted 200 employees from the City of Tshwane Municipality contact centre with 132 employees included in the sample. However, this study targeted 10 employees which is a pilot study. Surveys are used in psychological and social research to explore and describe human behaviour. The design of the survey allowed respondents to share and demonstrate their perspectives on a given topic. Data collection involved distributing a closed-ended questionnaire via email and using Google Forms as the platform (Couper, 2017). Survey design is regarded as the most effective approach for collecting accurate data to represent a large population, making it the most appropriate method for this study, given the relatively large study population (Raghunathan and Grizzle, 1995). The population is defined as the entire set of objects or people that is the focus of a research project and about which the researcher wants to determine some characteristics (Ganguli *et al.,* 2011). The target population are those who fall within the parameters of the population. The population of this study consists of contact centre employees at the CTMM. The study adopted a closed-ended questionnaire with a 4-point Likert scale. A link will be sent to respondents via email that can be uploaded to a website to access and complete the questionnaire. In this study, inferential statistics, such as regression and correlation analyses, were conducted after the descriptive statistics were analysed, with the support of a TUT statistician. Reliability is a measure of the stability of the measured values obtained from repeated measurements using the same measuring instrument and the same environmental conditions (Xiang and Yang 2019). In this study, Cronbach's alpha was used to assess the reliability of the measuring instrument. An acceptable Cronbach's Alpha coefficient is greater than 0,7 (Vaske *et al.,* 2017). A statistician was consulted and an existing validated questionnaire was used in this study to ensure the validity.

Results and Discussion

Understanding the factors influencing agents' perceptions of technology's effectiveness in enhancing contact centre services is pivotal in optimising customer interactions and operational efficiencies. The participants' responses to what they identify as factors that shape agents' perceptions of technology's usefulness in improving contact centre services were critical in achieving the aim of the study. By delving into these factors, organisations can gain insights into how to optimise their technology strategies to better support agents in delivering superior customer experiences.
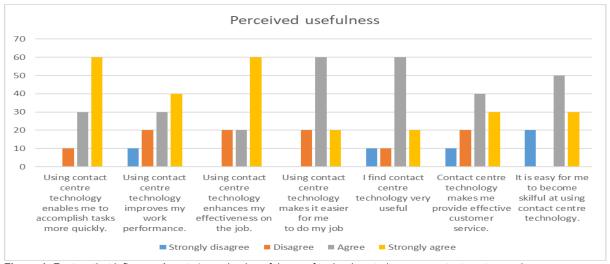
Figure 1: Factors that influence Agents 'perceived usefulness of technology to improve contact centre services

Most agents (60%) strongly agreed, and an additional 30% also agreed that contact centre technology greatly enhanced their task efficiency. However, a minority (10%) of respondents disagreed. This suggests that many respondents generally see technology implementation as a positive development. This finding consists with a viepoint of Sigauke *et al.* (2024), they argued that nowadays organisation cannot preserve continuity through competitive advantage unless they implement the technology. On the other hand, information technology has significantly impacted increasing efficiency (Diawati *et al.,* 2023). However, while most agents view contact centre technology positively regarding task efficiency, there are opportunities to address dissenting opinions and ensure that all agents benefit optimally from technological improvement. Primarily because technology is changing the way businesses and their workers do their jobs (Beer and Mulder, 2020). The effect of technological development on work and implication for continuous vocational education and training (Beer and Mulder, 2020). The impact of technological changes on changes on employee performance (Diawati *et al.,* 2023). The role of information technology in improving the efficiency and productivity of human resources in the workplace (Szymkowiak *et al.,* 2021). Disagreement from the respondents suggests that there may be room for improvement in how technology is perceived or utilised within the contact centre. Understanding the reasons behind this disagreement could lead to adjustments that better align technology with agents' needs and expectations. The lack of agreement among respondents could indicate various factors, such as indifference, uncertainty, or the need for more transparent communication about the benefits of technology. It may be beneficial to investigate why these respondents did not provide feedback.

Technology should be intuitive to enable employees to effectively carry out their duties and responsibilities. When asked about the impact of contact centre technology on their performance, 40% strongly agreed, and an additional 30% agreed. Therefore, Blut and Wang, (2020), stated that modern job creation can be facilitated by information and communication technology (ICT) as networking sites allow people to engage through innovations. However, 20% of respondents disagreed, while 10% strongly disagreed, suggesting they do not perceive contact centre technology as enhancing their work performance. Most employees view contact centre technology positively regarding performance enhancement; there are opportunities to address dissenting opinions and ensure that all employees benefit optimally from technological advancements. However, Younus, (2021), suggested that technology integration is generally seen as beneficial for most employees. For those respondents who disagreed, it could be due to factors such as varying comfort levels with technology, training adequacy, or differences in job roles that impact technology's perceived usefulness. Neglecting to address these factors may lead to respondents not comprehending how contact centre technology can improve their job performance. This is evident from the 20% respectively, who indicated that these technologies do not enhance their effectiveness in their roles. Conversely, 60% agreed, and 20% strongly agreed that contact centre technology enhances job performance. Optimising operational efficiency requires addressing the opinions and worries of people who do not believe that technology is effective (Rasheed *et al.,* 2020). Understanding their challenges and providing targeted support or improvements could improve overall performance outcomes.

Technology has been acknowledged as a tool that enables workers to effectively carry out their duties, as seen in this case (Guston and Sarewitz, 2020). Most respondents (60% strongly agreed and 20% agreed) indicated that contact centre technology simplifies job tasks. This shows that technology is generally seen as a tool that enhances efficiency and productivity in their roles, whereas 20% expressed disagreement. Hence, it is crucial to make adjustments that better align technology with the job requirements and expectations of those who expressed disagreement. This involves determining what needs to be improved so that technology can better serve their needs (Farida and Setiawan, 2022). According Seeber *et al.* (2020), technology enables agents to provide exceptional customer care by facilitating quick information retrieval expeditious inquiry resolution and accurate interaction. Regarding the survey findings, 60% of respondents agreed, and 20% strongly agreed that contact centre technology is beneficial. However, 10% indicated disagreement and strong disagreement, highlighting diverse perspectives among respondents. Additionally, most (40% and 30% respectively) respondents agreed that contact centre technology enables them to deliver effective customer service, contrasting with the minority of 20% who disagreed while 10% strongly disagreed. Regarding technological proficiency, 50% of respondents agreed, and 30% strongly agreed that mastering contact centre technology is straightforward for them. This suggests that most respondents believe they can become skilled with such technology and believe learning the skills required to use it is quite simple (Lawrence *et al.,* 2020). This result indicates that some respondents (20%) do not find it easy to become skilled at using contact centre technology. In other words, they disagree that acquiring proficiency in this technology is straightforward or manageable for them. Therefore, their perception of the ease of using contact centre technology will be a significant concern.
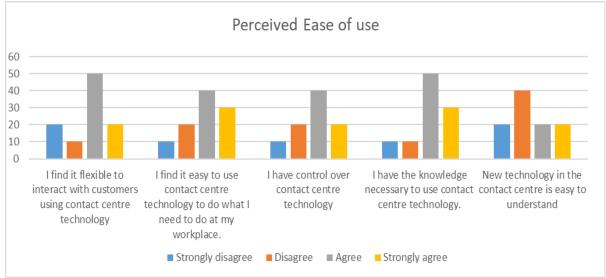

Figure 2: Factors that influence Agents 'perceived ease of use of technology to deliver service.

Understanding how employees perceive the ease of using contact centre technology is critical for delivering customer service effectively. In this study, 50% and 20% of respondents found interacting with customers using contact centre technology flexible, while 20% strongly disagreed and 10% disagreed. These reflect varying perceptions among respondents regarding the flexibility and ease of use of contact centre technology for customer interactions. However, while employees who view technology negatively may struggle, which could affect service quality, those who find it flexible and easy to use are likely to provide superior customer service (Freeman *et al.,* 2020). Those who perceive contact centre technology as flexible are likely to find it easy to use for their workplace tasks, as indicated by 40% and 30% of the respondents, respectively. Conversely, those with a negative perception (20% and 10%, respectively) are less likely to understand how this technology can facilitate their work. However, Lai and Bower, (2019), stated that workers that like the integration and usefulness of technology in the workplace typically feel in charge of the tools they employ. This sentiment is shared by 40% of the respondents, followed by 20% who agree to a lesser extent. However, 20% disagreed, and 10% strongly disagreed with this viewpoint. The organisation should empower employees with the necessary skills and resources to feel in control of technology. This strategy boosts employee happiness and productivity while also fostering innovation and overall organisational performance (Yas *et al.,* 2022). The more individuals embrace technology, the more likely they are to develop knowledge of its use. This sentiment was expressed by 50% of the respondents, with an additional 30% agreeing or strongly agreeing that they possess the necessary knowledge to use contact centre technology.

However, 10% respectively held a different perspective. Therefore, organisations should capitalise on the positive perception and understanding of contact centre technology among most respondents while addressing the needs of those who require additional support. In doing so, as because technology is developing so swiftly, employees will be able to adopt and utilise any new technology that the business decides to use (Akour and Alenezi, 2022). Most respondents find adopting and utilising new technology challenging, with 40% and 30% stating that understanding new technology is not easy. In contrast, 20% respectively indicated that they easily grasp new technology. Employee happiness and engagement can be raised by addressing the difficulties that most respondents encountered when using new technologies (Choudhury *et al.,* 2019).

Technology adoption in contact centres has become increasingly significant in shaping the quality of customer service delivery. This study explored contact centre agents' perceptions regarding the impact of technological tools on their roles, efficiency, and the overall customer experience. The findings indicate a generally positive perception of technology adoption, particularly in areas that enhance task automation, real-time data access, and communication efficiency. A key insight from participants was the role of technology in reducing repetitive tasks, such as call routing, data entry, and basic query handling. According to Chong *et al.* (2021), agents admitted that incorporating sophisticated tools, such as chatbots, CRM platforms, predictive diallers and improved workflow efficiency. By offloading mundane tasks to technology, agents were better positioned to focus on complex and emotionally sensitive customer interaction areas that significantly affect customer satisfaction and loyalty. However, while the efficiency benefits of technology were broadly recognised, A few agents voiced their worries about relying too much on automated technology (Ågerfalk, 2020). They noted instances where scripted responses or rigid system protocols limited their flexibility, thereby impeding the delivery of personalised service. This concern repeats the ongoing tension between efficiency and empathy in technology-mediated service environments. Additionally, Agents stressed the value of system usability and training. While complicated or often updated systems frequently led to errors and annoyance, tools that were seen as intuitive and user-friendly improved the quality of services (Zito *et al.,* 2018). This suggests that the success of technological adoption is contingent not only on the tools themselves but also on how effectively they are integrated into daily operations and how well agents are supported through continuous training.

According to Alam *et al.* (2019) senior agents typically saw technology as a strategic facilitator, seeing long-term advantages for customer relationship management and performance. The perception of technology as a strategic facilitator was common among senior agents, who saw long-term advantages for customer relationship management and performance. In addition, newer agents occasionally felt overwhelmed by technological systems, especially during training (Tovar, 2021). This highlights the need for more adaptive, role-based technology training that aligns with agents' experience levels and learning curves. Ensuring quality customer service in a contact centre environment relies on embracing and effectively using contact centre technology. The data collected shows that technology enhances service delivery. The study indicated that respondents generally view the technology as helpful. However, it is crucial to address the concerns of those who remain sceptical about its ability to enhance work performance. This reassurance is essential to maintain a positive outlook on the potential of technology in improving service delivery. Organisations must prioritise the effective adoption and utilisation of contact centre technology to ensure quality service delivery. This includes providing comprehensive training, user-friendly interfaces, and ongoing support. This continuous support is crucial to enhance employee comfort and proficiency with the technology. Organisations need to identify and address barriers to acceptance through targeted education, demonstration of tangible benefits, and addressing specific concerns or misconceptions.

Finally, in agents' tales, the emotional and psychological effects of technology were clearly indicated. Some expressed concern that adopting and utilising new technology is challenging, stating that understanding new technology is not easy, especially with the increasing use of AI-driven tools. Nevertheless, others saw technology as an opportunity for skill enhancement and career growth, particularly when coupled with upskilling initiatives.

Conclusion

In conclusion, the perceptions of contact centre agents underscore the crucial role of technology adoption in promoting quality customer service. Respondents view technology adoption positively, recognising its ability to improve service quality, enhance efficiency, and empower agents and customers. Despite encountering challenges, agents are committed to overcoming them and continuously leveraging technology to enhance the customer service experience. Organisations should prioritise empowering employees with the skills and resources

needed to feel in control of technology. This strategy boosts individual productivity and satisfaction, enhances overall organisational effectiveness, and fosters innovation.

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