Implementing New Technologies in a Contact Centre Environment

Lucrecia Benjamin[1], Geoff A Goldman[2*]

[1]Dept of Business Management, University of Johannesburg, Johannesburg, RSA.
Orcid: 0009-0005-0840-3298

[2]Dept of Business Management, University of Johannesburg, Johannesburg, RSA.
Orcid: 0000-0002-3069-3106

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Abstract

The fourth industrial revolution has ushered in technological advances that have revolutionised our way of life. In modern contact centres, technology affects the nature of work and, due to automation of routine tasks, job uncertainty and distress prevails. The fear of redundancy influences many employees to resist the adoption of new technologies. This study aims to understand the factors that influence people's decision to adopt or resist new technologies. A single case study of a contact centre, employing qualitative methods in the form of semi-structured interviews and directed content analysis were utilised.

The findings indicate that employees do not oppose technology, but are concerned about job losses, redundancy, and being replaced by machines. Workers are, however, enthusiastic and eager to learn new technologies to upskill themselves. In addition to examining factors that influence the decision to resist or adopt technology, this study focuses on encouraging and supporting employers and employees' transition to new technologies. The findings of this study indicate that fear of loss and uncertainty persist following the adoption of technology. These findings demonstrate the need to assist employees in managing the stress associated with such feelings.

* Corresponding author
[1] lucrecia1511@gmail.com
[2]* ggoldman@uj.ac.za

1. Introduction and background

In the 1960s, new technology enabled telephone systems to service large numbers of customers, and the call centre was born. Today, call centres rely on technology to service thousands of customers. Technology has transformed the humble call centre into a modern contact centre with multiple channels of communication for customers to interact with the company. According to Business Process Enabling South Africa (BPESA, 2018), the contact centre industry employed over 228 000 people in 2018, making it a significant employer of people between the ages of 18 and 34 (DTI, 2018).

The fourth industrial revolution (4IR) has seen transformations that will forever alter the human condition (Schwab, 2016). It has altered the way in which people interact with each other by connecting people across the globe and introducing previously unimaginable processing power, data storage capabilities and information access. These technologies empower consumers to help themselves and reduce their dependency on contact centres. They improve efficiency and productivity without the errors made by humans (Brynjolfsson & McAfee, 2011), leaving humans susceptible to being replaced by technology.

Almost three decades ago, Jeremy Rifkin hypothesized that technology would reduce the need for humans to produce services and goods for the global population, resulting in a 'near-workerless' world (Rifkin, 1996). Frey and Osborne (2013) attribute increases in global unemployment to technology, and express concern that technology is automating routine office tasks previously performed by humans. The possibility that technology could replace humans generates social tension, as automation threatens job security, which makes people uncertain about their future prospects and control of their lives (Juma, 2016).

Constant technological change characterises call centres (Mosese & Mearns, 2016). This necessitates the development of new skills to service customers who use technology for business transactions. Contact centre employees fear redundancy and replacement by technology if they do not acquire new skills (Baker, Moon & Ward, 2006; McClure, 2018; Oschinsky, Stelter & Niehaves, 2021). Modern technology significantly affects the reconfiguration of work, necessitating the acquisition of new skills, and the complexity of these technologies necessitates not only the need to be technologically proficient, but also the need to learn how to use new technologies (Carillo, Cachat-Rosset, Marsan, Saba & Klarsfeld, 2021). Acquisition of new skills and the modification of work patterns cause contact centre employees' fear of job loss and insecurity (Juma, 2016), leading to the notion that contact centre employees oppose new technologies as an act of self-preservation (Padayachee, 2017).

2. Rationale for the study

Based on the scenario presented in the previous section, the following problem statement is presented:

> *It is necessary to comprehend the factors which impact upon technology adoption amongst contact centre employees. A perception exists that contact centre employees do not support the implementation of new technologies in their workplaces out of fear of being made redundant. The lack of advanced technological skills have a negative impact on contact centre employees, making them susceptible to structural unemployment.*

From the abovementioned problem, the following research question is forthcoming:

> *How does the fear of job loss in a contact centre influence employees' attitude toward adoption of new technologies?*

To answer this research question, the study set out to achieve the following primary objective:

> *To understand how contact centre employees perceive the implementation of new technologies in their work environments*

3. Literature Review

This literature review contextualises the role contact centres play in in the South African economy. Further, the argument also focuses on challenges endured by employees when having to implement and adopt new technologies, the potential impact this might have on people's current jobs, and the perceptions associated with not adopting or resisting the implementation of new technologies. It must be stressed that literature that specifically focusses on the contact centre environment, whether in South Africa or elsewhere, is relatively scant and slightly dated, and the arguments presented below should be seen against this backdrop.

3.1 Contact centres in the context of the South African economy

Traditionally call centres, whether in-house or outsourced, have been used to deliver and improve customer service, generate sales, or retain customers (Ellis & Taylor, 2006; Locke & Lowe, 2007). Furthermore, call centres are also seen as areas where customer service can be centralised and revenue can be generated, and so they continue to be areas of expansion within the business service sector globally (Banks & Roodt, 2011; Wayde & Rogerson, 2014). As such, call centres are a valuable provider of jobs.

The South African Business Process Outsourcing (BPO) market is valued at $461 million with an annual growth projection of 3% (DTI, 2018), which translates to 21 310 new jobs by 2030 (DTI, 2018). The contact centre industry is a burgeoning sector in the services industry, and plays a significant role in the economy through both revenue generation and employment creation for people aged 18 to 34. The services provided

by contact centres to international markets include telephonic sales, legal processes, back-office processing and debt collection. The BPO market drives real growth in the services sector and South Africa is one of the best locations in the world for these services. In terms of job-creation, it is the most sought-after service request within the BPO sector (Wayde & Rogerson, 2014; Penter, Pervan & Wreford, 2009).

Contact centres employ more than 64 000 people servicing major global markets, and have grown consistently over the past 25 years (BPESA, 2019). With the adoption of cloud-based services, South African contact centres are more flexible, enabling a workforce that can work remotely. Government incentives support the business services sector on a national and regional level to boost skills development and contact centre expansion. Global contact centre standards, ISO 18295, are based on South African quality standards, and this sector is POPI compliant (BPESA, 2019).

Contact centres utilise the SETA levy grant system to provide training and employment to young people. This helps create employment for entrants to the job market. In the first quarter of 2019, this strategy contributed to 3 321 jobs, the majority were people aged between 18 and 35 (BPESA, 2019). Contact centres also employ many temporary staff, although temporary employees are vulnerable to layoffs, low pay and unstable income sources, as temporary employees are scheduled to work for part of a standard workweek. Thus, although contact centres contribute to alleviating unemployment, as well as employing temporary staff, these are the people normally the most vulnerable to economic changes and volatility.

3.2 Challenges facing South African contact centre employees

After the global financial crisis of 2008, which saw 1.12 million domestic job losses, unemployment in South Africa did not recover (Dadam, 2017), Moreover the cost of labour in South Africa continued to rise since 2008 (Dadam, 2017). South Africa's unemployment rate of 35.3% in 2021 can be considered as dismal (Stats SA, 2021). The number of unemployed in South Africa increased by 278 000 in the fourth quarter of 2021 alone, resulting in 7.9 million unemployed South Africans (Stats SA, 2021). Although the unemployment figures have been exacerbated in recent times by the effects of the Covid19 pandemic and associated lockdowns and restrictions, causing the economy to contract by 16% (Stats SA, 2021), the fact of the matter is that the South African labour market is typified by high levels of unskilled and semi-skilled labour, and these sectors of the labour force are the most vulnerable during times of economic crisis.

As stated, contact centres rely on staff in the age group 18 – 35 for the majority of their work force. Not only do the majority of contact centre employees have low levels of education, but they also do not possess many work-related skills or experience. Technological changes can have factor biases such as capital and

labour and in situations in which factor bias leads to labour-saving technology changes, this can result in a mismatch of skills. This kind of labour-saving factor-biased technology change exerts pressure to push wages down and unemployment up, and the increasing demand for skilled labour versus low-skilled labour contributes to wage inequalities (Adachi, Inagaki, Nakamura & Osumi, 2019). For the period 2000 to 2012, key growth sectors showed economic growth and yet South Africa experienced rising unemployment (Stats. SA, 2021), meaning that GDP and employment do not move together in the long term (Fourie, 2019). This shows that South Africa has evolved a capital-intensive rather than labour-intensive industrial model, which poses a challenge to contact centres, as they are labour-intensive. As demand for technology increases, business is seeking to automate routine tasks, resulting in an ever-decreasing need for contact centres.

3.3 Structural unemployment and the required skills

Structural unemployment in South Africa is mostly attributable to a mismatch between increasing skill requirements of available jobs and skills possessed by the labour force (Fourie, 2019). This is influenced by industry changes, unemployment duration and technological development (Nonyana & Njuho, 2018).

In contact centres, typical skills and pre-requisites entail a matric certificate, communication skills, customer service skills, empathy, and the ability to resolve customer complaints. Proficiency in Excel, Word and Outlook are the most basic technology related skills required in contact centres, although not always necessary. However, computer literacy is low among unemployed youth, and demand exists for software developers, multi-media specialists, IT analysts, and IT security professionals (BPESA, 2019). Also, millennials are uncomfortable with voice communications, preferring social media and other digital platforms (Schofield & Dwolatzky, 2019).

To maintain a competitive edge and provide a superior customer experience, contact centre employees must upskill themselves to remain abreast of technology. Baker, et al. (2006) found that technologies used in contact centre work are no longer a means of communication between employees, with their managers, and with customers, it has also become a means of work reconfiguration, thus indicating that new technologies necessitates the development of new skills. Technological complexity brings about forced technological self-efficacy, as people need to learn how to use new technologies (Carillo, *et al,* 2021). Organisations, therefore, need to ensure that their employees do not become 'technologically disadvantaged', but rather constantly stay abreast of technological advances that effect their work routines (Baptista, 2012).

The services sector is one of several viable options for sustaining economic growth in South Africa (Rodrick, 2016). As part of the services sector, contact centres employ an increasing number of low-skilled

clerical-type staff (Benner, 2006), thereby increasing the demand for low-skilled employees in the business services sector (Altman, 2007). Yet, whereas the trend exists for technology to replace routine-intensive tasks (Aaronson & Phelan, 2020; Adachi, *et al*, 2019), this has increased the demand for jobs requiring interpersonal skills and has affected low-skilled employees disproportionately (Aaronson & Phelan, 2020).

As education plays a significant role in the ease with which people adopt new technologies, it is assumed that university graduates will easily find employment (Pauw, Oosthuizen & van der Westhuizen, 2008). The South African paradox, however, is that skilled labour is unable to find employment in a skills-constrained economy, which impedes economic growth. Dysfunction and neglect in education and training has resulted in a skills gap as the skills produced are not necessarily the skills required by the economy (Mateus, Allen-Ile & Iwu, 2014). Due to the fact that contact centre employees receive low-skills training and educational institutions do not provide high-skills training, employers develop and provide in-house training to their employees. This leaves people with poor levels of education and low-level skills with little chance of competing for contact centre positions that require higher levels of skill.

3.4 Technological unemployment

Contact centre employees face an additional form of structural unemployment, namely technological unemployment. Economist John Maynard Keynes predicted that whilst technology would help solve economic problems, it would inevitably result in technological unemployment (Kim, Kim & Lee, 2017; Rifkin, 1996). More and more, it is noticeable that technology is enabling jobless growth (Frey & Osborne, 2013). Technological unemployment is therefore becoming a reality as more low-skilled jobs are being replaced by ever evolving technologies (McClure, 2018).

This situation is leading to great unease amongst low-skilled employees, who now fear rapid advances in technology (McClure, 2018). This fear manifests in fear of unemployment and loss of financial security (Brynjolfsson & McAfee, 2014; McClure, 2018). Rapid implementation of technology disrupts the economy and as technology becomes more advanced, companies will need fewer low-skilled employeess (Brynjolfsson & McAfee, 2014). Many employees are aware that they must keep up with these changes (Song, 2003), and the fear of being 'left behind' is driving technology adoption (Lally, 2020).

The advent of the Fourth Industrial Revolutions (4IR) has transformed peoples' lives to the extent that advances in technology are poised to set in motion unprecedented changes across the globe (Schwab, 2016). The effect hereof on the labour market is bound to have a number of negative repercussions, such as greater

inequality in labour markets (Brynjolfsson & McAfee, 2014), and increased social tension between low-skill/low-pay and high-skill/high-pay segments of the market (Schwab, 2016).

Although contact centre work is office-based and falls within the services sector, it falls in the category of low skill/low pay (Novoa, 2021). Concerns over increased production at the expense of job losses have been an industry trend for decades. Traditionally job losses in manufacturing were offset against increases in office jobs, but as of late automation is also replacing office work (Autor, 2015). Office automation is enhancing the productivity and efficiency of office workers, resulting in cost savings for all businesses. Technological innovation to automate repetitive administrative tasks, such as robotics process automation, is quick, dependable and precise (Mohamed, Mahmoud, Mahdi & Mostafa, 2022). When the labour share of income generated exceeds the capital share of income, organisations are more likely to decide to invest in labour-saving technologies, despite the fact that this reduces employment rates (Adachi, *et al*, 2019).

In a contact centre, labour costs account for 72% of operating expenses, with basic technology accounting for the next-highest expense at 6.9%. This rapid decline in the cost of technology (Ellis & Taylor, 2006) provides employers with an incentive to invest in technology to perform computational and other work tasks as a substitute for costly labour. As more work automates and robots become more affordable, low-paying jobs, such as contact centre work, remain at risk (Mohamed, *et al,* 2022).

3.5 The importance of technology in contact centres

The evolution of contact centres from earlier call centres is largely attributable to capitalist competition, technology, and the ongoing introduction of new contact centre technologies as an alternative customer-service paradigm (Ellis & Taylor, 2006). Since the inception of call centres as a means for businesses to provide customer service, retain customers, and increase sales, the focus has shifted to delivering customer experiences through concentrating service efforts to deliver the most value to the customer.

3.5.1 Theories of technology adoption/resistance

Various theories exist trying to explain and evaluate the factors that influence an individuals' decision to adopt or resist technology. In considering why people resist technology, it is essential to comprehend what is being resisted. Is it the transition from the known to the unknown, the fear of losing jobs, power, and possessions, or the technology itself? Humans readily adopt technology if it supports their desire for inclusion, meaning and purpose but, just as readily resist technology if perceived as substituting their humanity instead of augmenting it (Juma, 2016). It is, therefore, a function of technological identity (Ulucanlar, Faulkner, Peirce & Elwyn, 2013). Opinions, beliefs, perceptions, attitudes, and the media

interact to produce these identities, which are socially constructed heuristics, and shape the desirability, acceptability and feasibility of adopting or resisting technology (Ulucanlar, *et al*, 2013).

Resistance to new technologies is influenced by societal views on whether said technology will benefit a small section of the population but have widespread risks. Such resistance arises when technology changes the scope of work and users perceive a change in their work life balance, but no significant benefits accruing to them (Rose & Bearman, 2017). This resistance occurs when the interaction with technology in the context where it is used, results in a loss of power. (Kim & Kankanhalli, 2009). Employees resist technology if they find it difficult to learn and use, don't deem it useful, or if it causes stress (Rose & Bearman, 2017).

Even though implementing new technology might be good for business, enhancing efficiency, and profitability, this might cause employees to resist adoption if they have legitimate concerns of how their future is going to be affected (Naweed, Dorrian & Rose, 2017). Employees often communicate displeasure over technology that causes disruption. In such instances, making technological dysfunctionalities known prevents the use of technology that has negative consequences.

3.5.2 Theories of Technology Adoption

Theories of technology adoption are presented here to ascertain the main factors that contribute to technology adoption or resistance to adoption of new technology.

Technology Acceptance Model (TAM): Assists in determining the factors that influence individual's decision to accept or resist technology (Venkatesh & Davis, 2000). It was developed to predict and measure factors that influence a user to adopt technology which creates value in terms of understanding users' demands and for managers to be able to evaluate and assess technology offerings (Davis, 1989). The TAM theory states that an individual's intention to use technology influences their attitude regarding the technology, their perceptions of ease of use and usefulness of the technology, and how it benefits them.

Status Quo Bias Theory (SQB): explains adoption or resistence of technology as a preference in the decision-making process to maintain a decision already taken instead of changing the decision, or adopting a new one (Samuelson & Zeckhauser, 1988). SQB comprises three core categories, rational decision making (a basic cost/benefit analysis), psychological commitment (a mental act of deciding what to learn or not to learn about something, resulting in either resisting or adopting it), and cognitive misperceptions (people's misunderstanding of the intentions, purpose or value of technology) (Mock, Halpenny, Koroll, Blye, Eagles,

Flannery, Lemieux & Doherty, 2022; Fox, Cooper & Glasspool, 2013). SQB occurs when small sacrifices made by people due to technological changes are perceived to be larger than they actually are.

Diffusion of Innovations (DOI): A particular innovation or advance in technology gets dispersed amongst members of a social system in a particular fashion over time via certain channels (Rogers, 2010; Van den Berg & Van der Lingen, 2019). Awareness of the innovation's capabilities and features influences the user's behaviour intention to adopt that innovation (Al-Tarawneh, 2019; Rogers, 2010). Thus, the decision to adopt technology or not is influenced by differences in capabilities and features between different innovations. Some innovation features can be useful in certain environments but not useful in others. Innovation adoption takes place after passing through several stages of decision making, from understanding the innovation and its features, persuasion, making the decision to adopt and implementing the innovation to confirming the application of the innovation (Lai, 2017). The rate at which technology is adopted is influenced by the characteristics of the innovation (Rogers, 2010). The speed at which diffusion of innovation happens is directly influenced by certain characteristics of the innovation, such as complexity, cost and radicalness, more trialable and observable advantages, and greater compatability (Lai, 2017).

Social Network Theory (SNT): Social networks as an influence on technology adoption are studied in two categories, social influence and information diffusion. Social influence takes the form of social support, community, friendship, advice and communication (He, Lovo & Veronesi, 2022). In social networks, learning takes place by imitating the behaviour of others within the network (He, *et al,* 2022; Lai, 2017). Social learning involves searching for information from others within the social network to find support, exchange knowledge and rationalise beliefs (Filippini, Marescotti, Demartini & Gaviglio, 2020). As information about the innovation is exchanged in the social network, the characteristics of the network will influence when and if the innovation will be adopted.

3.5.3 Individualism vs Collectivism and Actor Network Theory in decision-making

The nature of contact centre work allows the formation of groups or teams either through specialist type work or through generalist work that is influenced and determined by team members' skills level and training (Wayde & Rogerson, 2014). Therefore, contact centres rely on teams as structural elements, and their social networks breed collectivism in groupthink and influence with a strong uniformity that supports routines and rhythms (Houlihan, 2004). According to the Social Identity Theory, work groups that have collectivist characteristics value group esteem, that fundamentally comprises psychological and self-esteem derived from group identity (Yamagishi, Jin, & Miller, 1998). Collectivists strive to create and maintain cooperation toward the group interests and group goals rather than the interests of the organisation (Van

den Broeck, Vansteenkiste, De Witte & Lens., 2008). Some work teams form a level of cohesion to meet their own needs, even going as far as to engage unions collectively when resisting management decisions (Townsend, 2005). This can have a negative effect on organisational restructuring and the deployment of new technologies if the group is resistant to new ways of working. Perceptions often change, and whether people perceive change as good or bad is therefore influenced by the degree of collectivism present in the group (Teng & Yazdanifard, 2015). Some contact centre employeess use the team or group structure cooperatively to resist change or exert peer influence to coerce other team members into a specific action, including ways to manoeuvre around new technologies (Van den Broeck, *et al*, 2008).

The level of uncertainty regarding technology adoption is the determining factor between the organisation, the technology and the contact centre employees. Technology has been the target of collective action in situations where employees feel loss of control in their work (Van den Broeck, *et al,* 2008). Both individualist and collective factors influence change, however, collective factors seem to have a greater positive impact on change (Teng & Yazdanifard, 2015). Some contact centre employees feel pressured to conform to not 'let their team down' (Townsend, 2005). Perceptions gain credibility regardless of being wrong or right, and employees will make decisions to adopt or reject technology that can transcend the business case if influenced by groupthink or factors such as perceptions or feelings (Ulucanlar, *et al,* 2013).

The space where technology adoption occurs can be associated with Actor-Network Theory (ANT), which suggests that the decision to adopt technology or not occurs in a network of actors made up of humans, organisation, technology, evidence, etc., which are in constant interaction with each other (Locke & Lowe, 2007; Nyberg, 2009). This interaction ultimately influences the adoption decision (Uluncalar, *et al,* 2013). ANT tries to understand how all the actors constantly interact, and therefore one can learn how these actors can deliver beneficial outcomes versus merely competing with each other (Locke & Lowe, 2007).

3.5.4 The impact of technology on work adjustment

Both personal and situational factors affect individual adjustment to new workplace technologies (Ulucanlar, *et al,* 2013). The emphasis on individuals is important for managers to understand in order to ensure a working environment that is conducive for innovation. For this reason, new technologies and innovations should not be considered in isolation but attention should also be given to their role in the psychological workspaces (Carillo, *et al,* 2021) Considering the exponential rate at which contact centre technologies are developing, individual workplace stress is a debilitating factor on an individual's ability to adapt, making it imperative that employers help employees to manage stress when introducing new ways of working because of implementing more advanced technology (Carillo, *et al,* 2021).

3.6 Conclusion

The South African contact centre industry is critical within the services sector for youth employment, and necessitates the provision of effective learnership programs. This literature review, highlights many challenges that contact centre workers face, which underpin threats to job security, work adjustment and psychological well-being resulting from contact centre employees' fear of job losses due to the implementation of more advanced technology. The rapidly changing technological world is fuelling the drive to hire employees with higher skills for higher pay, thus, implying that low skill employees are at risk and are experiencing very little job security. There are perceptions that contact centre employees resist adopting new technology out fear that their skills are obsolete and their jobs at risk. Understanding how contact centre employees perceive new technologies will enable management to address employees' resistance to technology not only in this case study but in other contact centres as well. The various technology acceptance models and theories discussed have highlighted factors that contribute to technology adoption or resistance, thus enabling a better understanding of this phenomenon.

4. Research Methodology Employed in the Study

This study employed an Interpretivist approach, as Interpretivism assumes that knowledge is created and understood within a social context with shared assumptions. Researchers interpret and make sense of the socially constructed assumptions expressed within the context being studied (Saunders, Lewis & Thornhill, 2012). The data collected for this study is interpreted based on specific opinions, perceptions and attitudes of the contact centre employees and management rather than generalisations (Creswell, 2014). In qualitative research, researchers don't strive to re-create an exact replica of reality, but offer an interpretive depiction of what is being studied (Charmaz, 2014). In the context of this study, interpretive data analysis resulted in theory formulation to explain the perceived resistance to new technology by contact centre employees.

In line with the interpretivist philosophy, the study used a qualitative research approach to gain an understanding of the contact centre employees' perceptions, opinions and beliefs regarding the implementation and adoption of new technologies. Qualitative research provides rich, detailed and thick descriptions of social phenomena, as participants are encouraged to converse about how they reached a particular opinion and why they think so (Creswell & Poth, 2016; Khaldi, 2017; Saunders, *et al*, 2015). Furthermore, a single case study design was pursued in this study, and more particularly, a contact centre was selected from an organization in the beer industry. Case study research is suited for in-depth investigation of current events in actual contexts (Yin, 2012), and in this case, the intention of this research was to understand the perceived problem (Creswell & Poth, 2016; Saunders, *et al,* 2015) of contact centre employees resisting technology adoption to avoid job losses.

From the contact centre, a sample of 20 research participants were selected on a purposive basis. Of these 20 contact centre employees, four occupied managerial positions and 16 were contact centre workers. Data was collected at the site where participants are employed, a practice that allowed the researcher to understand the context of the research participants, and to allow the research participants to feel at ease during the data collection process. A major function of data collection is to uncover issues in routine processes and practices (Flick, 2014), such those that occur in contact centres. In this study, data were collected through semi-structured interviews (Saunders, *et al*, 2015) with the selected research participants. A private meeting room was booked at the research participants' work premises for conducting the interviews. The interviews were guided by themes informed from literature.

Qualitative data analysis aims to describe the research phenomena and compare commonality or differences in order to explain them and develop a narrative relating to the phenomena under investigation (Flick, 2014). In this study, data from the interviews were classified into categories regarding contact centre employees' adoption of new technology. This allowed for the development of themes relevant to the research topic. Data were analysed using directed content analysis (Mayring, 2014), which was facilitated through the four-stage analytic process of Erlingsson and Brysiewicz (2017). The analytic process involves:

1 – Identify and develop codes from raw data
2 – Develop relationships and connections between the codes
3 – Develop categories
4 – Develop themes from interrelated categories

To uphold ethical standards in the research, ethical clearance for the study was obtained from the College of Business and Economics, University of Johannesburg (Ethical clearance number 22SOM17). Ethical clearance was also needed as this study formed part of an MCom qualification, and this paper is extracted from the MCom dissertation. In addition to gaining permission from the beer company in question to conduct this research at the selected contact center, informed, voluntary consent was sought from each research participant. Research participants were reassured that data would be treated confidentially and anonymously. It was explicitly stated to research participants that participation was voluntary and that they had the right to withdraw at any stage.

5. Findings and Discussion

All research participants are employed in a contact centre environment. Their roles are spread across different areas, representing both supervisory level management and 'on the ground' staff. Interviews lasted

around 30 minutes each, and all research participants were at ease when interviewed. Written consent was obtained from each research participant prior to the interview. The analytical process resulted in the reduction of data into four key themes. These will be unpacked in turn. In the interests of brevity, evidence in support of the claims has been kept to a minimum. Further evidence can be obtained from the authors

Primary Theme 1: The role of technology

Research participants reflected on the role of technology in their daily work activities, and how it affected the way they approached and performed work. It was evident that technology is important and needed in contact centres. Technology is also convenient, as work is performed remotely and customers interact and conduct business with the company whenever they wish to. A number of participants acknowledged that the world is changing and that they too need to change. This change refers to using and working with technology to do their work. Participants also said that they do not want to be left behind by new technology. There is a strong sense among participants that if employees do not use technology, then it is possible that the company will no longer exist. Some participants made mention of other companies that were forced to close because they did not adapt to working with new technology. It is clear that research participants believe it is necessary for management and employees to work with technology for the company to survive. One can, therefore, assume that social influence and information diffusion are determinants that influence participants' opinions and perspectives regarding the significance of technology.

From the interviews, it is evident that participants find the technology they work with easy to use. Furthermore, new technologies introduced are easy to learn, as they are user friendly, have clear instructions, and are visual with 'pop-ups' to ease understanding and navigation. Some participants mentioned that they preferred older technology due to familiarity with it. Social constructs such as contact centre work groups share experiences and work solutions with each other. The adoption and use of new technology has a different meaning for users and varies according to the user's personal experience (Procter, Wherton, Greenhalgh, Sugarhood, Rouncefield & Hinder, 2016). In the case of a contact centre employee, the experience of testing and 'playing' with new technology influences their attitude and perceptions of it.

On the whole, the view on technology remains contentious. Research participants acknowledged that customers are no longer completely reliant on them as contact centre staff, mentioning that technology is more advanced than it was three years ago, and that they could not have imagined the company having an App for customers to conduct certain transactions remotely. Although it improves productivity and efficiency, speeds up transactions, and facilitates convenience, the constant threat remains that they could become obsolete and replaced by the very technology that makes their work easier, which is in line with

views expressed in literature (McClure, 2018; Oschinsky, *et al,* 2021). Modern technology demands that new skills are developed and, in turn, results in changes to job scope and work patterns (Baptista, 2012). The complexity of new technology requires self-efficacy, and the contact centre employees are expected to not only use technology, but to learn new technology (Carillo, *et al,* 2021). Research participants were eager to learn new technologies, as they believe it would benefit both the company and themselves personally.

Research participants reflected that their work increases when technology is not available, as they are forced to revert to manual methods of task execution. This not only negatively affects their daily task execution but negatively affects customers as well, as customers are unable to access account information speedily, or transact with the company as they usually do. Participants mentioned that this has a spin-off effect of creating a backlog of work and associated frustrations for both customers and contact centre employees. Participants also mentioned that when technology is unavailable, their attention is often diverted from engaging in their primary task to solving the root of the problem at hand.

The contact centre the research participants work in is currently introducing new technology. During the interviews, it was mentioned that some people chose to adopt new technologies, as they do not want to be left behind, with some participants acknowledging it being better to accept the change. Most contact centre employees are excited about acquiring new skills and learning about working with new technologies in their daily tasks. However, some participants expressed a degree of scepticism toward the new technologies, while some research participants expressed outright fear at the prospect of using new technology, yet admitted that they would adapt so as not to be left behind and to secure their jobs. Interestingly, some research participants expressed concern for customers who were not ‘tech savvy’ or who preferred more ’traditional’ ways of transacting with the company. These participants feel strongly that technology does not necessarily need to be adopted at all cost, as there is a need to serve these customers. They believe that the new technology must target a specific customer base and is not suitable for all customers.

Below are quotations from the interviews in support of the claims made:

Participant 4: "*The role of technology in the contact center is actually quite important for me. Why I say that is because we are developing, the world is digitally transforming therefore we can't really stay behind. Example, as we know, there are companies in the past, who did not adapt to any digital transformation and, it's sad to say that today they don't exist anymore and other companies have taken over which have decided that they're going to adapt to technology"*
Participant 9: "*It is easy, I mean its very clear, the wording. Like everything is easy it's not complicated. Plain English simple English, you know and what I like is that they even have these images to sort of navigate you so if you can maybe read you can see that this is what I want. So it's very clear and simple and anyone can be able to use it so it's very easy and simple".*
Participant 17: "*You know the productivity at my work it becomes low I need to focus on fixing the technology that's number one then productivity would be lesser because now, whatever that I'm doing, I have to fix and, but I still have to execute wherever that technology was supposed to execute".*
Participant 10: "*In all honesty, even though I have the fear of being replaced I will still move forward with the new technology. Because like I said it simplifies work it makes it easier and faster, whereas the old technology they were still about maybe 20 steps before that's just an example it's not actually 20 but i'm saying you have to follow procedure and steps in order to get the job done. Whereas, with the new technology everything's add to it, it tells you what it requires you to do, or what you need to do in order to do your job that makes sense, it does make sense".*

Primary Theme 2 – Fear

It was evident from the interviews that research participants hold many fears in the contact centre environment. The majority of these emanate from the implementation of new technologies with enhanced capabilities, and the associated uncertainties surrounding redundancy, job security, and control of the future.

The fear of job loss seems omnipresent. The contact centre in this study is implementing new technology and some contact centre employees expressed the fear that this technology will make them redundant and cause them to lose their jobs. They fear having less opportunity for human contact when servicing customers, making their jobs seem less purposeful. Examples of other companies reducing staff in favour of new technologies perpetuates participants' fear of job losses. Thus, technology is accepted when it is perceived as useful in the execution of tasks, but not when that technology threatens jobs. If fact, around three quarters of research participants feared job losses associated with new technologies.

On the other hand, there were contact employees who welcomed the advancement of technology and expressed excitement about learning new technologies. These participants could see the value for the business in new technology, as fewer errors would be made. They mentioned that technology could help improve customer service levels and bring about further opportunities to improve the interface between customer and the company, which made them feel more excited than fearful. Some participants mentioned that rather than fearing job loss, they feared stagnation, with no prospect of advancement.

However, it is apparent from the interviews that participants understand that changes are the norm in their work environment. New technologies and IT innovations drive change, and the trend seems to be that companies are favouring a drive toward digital systems. Contact centre employees are aware that they need to keep abreast of these developments, not only to overcome their fear of job loss, but also to stay relevant in the job market. Some participants did, however, express scepticism that humans adapt only if they want to, as humans are often too lazy to change. This hinders many humans to learn about technology.

The fears associated with new technologies encroaching upon their work environments are perceptions that influence whether or not contact centre employees will adopt technology. The perceived loss that people experience, albeit tangible or not, due to the implementation of new technologies, and the perceptions they form about these technologies, will influence the degree to which employees in that environment resist these technologies, as pointed out by Juma (2016), and Naweed, *et al*, (2017).

Contact centre employees in general felt uncertain if the adoption of new technologies would replace them and make them redundant. The implementation of new Apps allow customers to personally execute many tasks, such as placing orders, checking statements, and securing delivery dates. Participants acknowledge the usefulness of these Apps, however, they also fear that such Apps might cost them their jobs. The uncertainty between the usefulness of the technology and being replaced by the same technology makes participants' hesitant to adopt new technology. Some participants even speculated that the company might reduce the number of people needed, as contact centre agents will only be needed to help customers when there are technical glitches. There is, therefore, selective acceptance of technology but not full acceptance, selective in that it is accepted when it makes work easier, but not when it threatens a persons' job.

The interview extracts presented below support the claims in the above statements:

Participant 3: *I think, ultimately, my job becoming redundant because when more technology is implemented there is no need for human intervention. Technology results in less mistakes to save more money in terms of human errors that they make So I think that would be a fear that with the more technology implemented within contact centre or a business that ultimately equals less human heads needed, that means my job may become redundant.*
P**articipant 4:** *I actually think that's the thing. I'm so excited about technology I really don't have fears, but at first it was that oh, my goodness, I remember at Mc Donald's had like seven employees now this machines, so if we have the APP that means that there's going to be less of us so that's what I associated with that. I'm looking at it with a positive eye, I don't know if that makes a sense. I don't have any fears like there's gonna be more growth in terms of technology, because technology is not going anywhere*
Participant 7: *I have no fear regarding my job. .Regarding my job would be to be stuck in one position for very, very long. That is my business and I do not want to be stuck in a position I have been in it for five or10 years and do not see any problems. You know, so that is my biggest yeah always want to climb up the middle. There different positions management, maybe, like some people I know. So yeah, that would be my biggest fear when it comes to my job and not being valuable to the company.*
Participant 6: *I don't want to lie but some of the human beings, some of us, some of the individuals we are, once laziness kicks in you just see blank. You like on a border with this and then you find it difficult, but once you get off the lazy mode and you start actually reading and browsing through and learning more and probing and asking questions and calling it, you know it's actually is, you can run with it.*

Primary Theme 3 – Change

According to the majority of participants interviewed, change cannot be avoided, least of all in the workplace. They reflect that their workplaces are becoming more digitised, and therefore they too must change by adopting new technologies and working with them. By adapting and learning to use new technology, the scope of jobs change and a set level of task execution becomes the expected outcome.

In terms of whether contact centre employees were aware of changes that were taking place and how these changes affected them, which speaks to their level of awareness of existing technologies, what purpose they serve, and their knowledge of these technologies, research participants noted that in the face of all-encompassing change, they too must adapt to change or be left behind. The fear of being left acting as a catalyst to accept change brought about by new technology has also been purported by Lally (2020).

It is evident from the interviews that many contact centre employees feel that it is better to work with technology because the whole world is become digitised. They agreed that humans and technology work together – humans create technology and human intervention is needed when technology is unavailable. Research participants are also aware that the company must adopt new technologies for continued existence. These technologies impact the lives of both employees and customers. Customers in the sense that their interactions with the company are made easier because they can personally place orders, check delivery

dates, and statements. Employees in the sense that these technologies increases the speed and reduces the complexity of their work and, thus improves productivity and efficiency.

However, it is also clear from the interviews that contact centre employees' understanding of the purpose of these new technologies differs, nor is there a singular understanding of how the new technologies will affect the work the contact centre employees currently perform. Some understand the new technology will benefit the customer only by enabling them to do certain tasks themselves, while others understand the purpose of these technologies to be due to global changes and pressures to evolve.

Some research participants reflected that the new technologies implemented had an effect on the scope of their jobs, while others observed that it did not. Some research participants mentioned there were changes in how they serviced customers, which also implies a change in scope. They mentioned that they are educating customers on how to use the technology to access product choices, place orders, check delivery dates, and view statements. These changes in scope are logical consequences of new technologies, a sentiment echoed by Baptista (2012), although Baptisa refers to this as a change in work patterns.

Some research participants noted that their workloads had reduced due to the new technologies that automated routine tasks, a tendency also noted by Mohamed, *et al,* (2022). Automation decreases the demand for human labour, which fuels people's fear of job loss. Changes to the scope of work leads to resistance to new technology if the change affects employee's work-life balance, which was encountered in this study. Decisions to adopt new technologies were influenced by social learning, and some participants mentioned the information they obtained from others regarding scenarios at other companies with job losses after implementing new technologies. With social learning, such as a contact centre network, an exchange of information regarding the new technologies, including the characteristics of this technology is vital in influencing employees' decision to adopt the technology or not.

Participants are eager to learn about new technology and upskill themselves. The adoption of new technology is an opportunity to learn, and to stay relevant in a digital workplace. There are multiple methods of learning, including training material, 'buddying' to learn through observation, self-learning through simulations, and experimentation. Learning through online research to understand technology trends and the changes taking place in the world is also valuable. People use technology in their daily lives to complete basic tasks such as shopping and banking thus learning how to use the new technology is easy for most of the contact centre workers. Self-efficacy resonates strongly with participants because they welcome the opportunity to learn about the new technology despite feeling threatened with job loss. Learning is easy for

some workers because they enjoy learning new skills and using new technology for their personal use. Learning happened when staff and management completed user acceptance testing during the pilot of the new technology, this practice allowed them input into the development of the new system's functionality. Reading articles and subscribing to online newsletters is another form of learning that happens.

The interview extracts presented below support the claims in the above statements:

Participant 3: *My scope of work as a manager in a contact center has changed. My KPI's has changed, because now it has adopted digital KPIs. For myself, and the agents. The traditional KPI is not relevant anymore because of the transition to the digital sphere. My KPI's are more focused on our customers, our agents productivity, firstly speaking to the customers and I have to manage that, but also making sure that our customers are educated on how to use the app, so it is moved to educating the customer and that's why my KPI's as a manager has changed.*
Participant 7: *I am. Both inbound and outbound and with inbound or outbound it has made a list so I call this customers, but when customers do have an issue with the APP or to have a certain situation happening with the APP obviously I need to assist be But it has made my job, like this with regards to outbound calls okay yeah.*
Participant 12: *For me, and because I like technology myself, I'm open to it. I like conveniences mentioned. I'm learning from articles. I read about how the world is changing and everything. I've had multiple Apps on my phone which I'm also just playing around and seeing the importance of it. We've seen it with banks, I don't have to go into an actual bank to do whatever it is that I need to do, I just sit at home and I'm able to work, work, my way around the bank just from the comfort of my couch.*
Participant 14: *not frequently but yes it is okay or not frequently maybe probably given some time, maybe a year or year and a half, then come something new, with it yeah unless it was something you can see that Other companies are doing it, and especially benefiting well on it can, yes I guess you can change it so like you think it's a it's not a good idea to do it.*

Most of the contact centre employees stated that they find it easy to adapt to new technologies, as utilisation thereof in their personal lives for activities such as banking and shopping promotes understanding and ease of use of the basic functionalities of technology. Research participants understand that technological change is good for business, and some believe this change will happening regardless of their personal feelings. They also stated that although change is positive, it should be introduced slowly because not everybody is comfortable with change and some people need time to accept the new technology and learn how to use it.

The South African economy has witnessed change resulting from the advancement of technology, with new ways of work coming about, especially in the services sector (Novoa, 2021). The Covid-19 pandemic saw a substantial dependence on contact centres and contact centre employees, and subsequently these employees had to adapt to remote working, with all the challenges associated with it. Research participants mentioned that they enjoyed the option of working remotely, however some participants mentioned that working alone at home often made them doubt their ability to reach specific goals. Changes in technology can lead to factor bias if the purpose of the chosen technology is purely to ensure labour-saving costs.

Labour-saving technology increases the demand for new skills (Adachi, *et al,* 2019). Some research participants felt uncertain and uncomfortable about technological change, as they do not know if these technologies will replace them, a notion also encountered in literature (McClure, 2018). However, in a 4IR world, technology is the catalyst that is bringing about transformation in the world (Schwab, 2016).

Primary Theme 4 – Interdependence within the contact centre

Research participants reflected that despite new technologies being implemented, both the company and the company's customers relied on the contact centre employees to meet business requirements and satisfy customer needs. The company launched a customer order app called BEES. Customers can conduct business transactions via the BEES App, such as placing orders, checking deliveries, accessing account information and online promotions, and logging queries and complaints. Yet, customers need the contact centre employees to educate them on how to use the App. When this technology is unavailable, customers will revert back to the contact centre to conduct their basic business activities. In this way, technology and humans don't only work together, they also compliment each other. Technology can perform tasks that humans cannot such as processing large amounts of data in record time, and humans can perform tasks that technology cannot do such as empathising and sympathising with customers. This human touch is a key element of customer service and is pivotal to the organisation. Contact centre employees use their knowledge of human nature to explain certain things to customers to help them understand better.

The interview extracts presented below support the claims in the above statements:

Participant 2: *Right what I'm going to say is that the technology in nowadays is a bit more advanced for most of the customers. It also assist us as an agent, so that you can educate our customers, as when if maybe our customers are the ones who come to our department, then they can be able to do it on their own platforms right its easy that way yeah.*
Participant 1: *Yes, the human touch is very important. The understanding technology talking to an app sometimes it won't make sense to another person, but talking to a person it actually makes more I don't know more sense or more understanding it gives you more understanding.*
Participant 9: *number one technology for me, does not have feelings it's not compassionate me as a human being and very compassionate I can make even maybe if i'm dealing with a difficult claims, I can be compassionate towards them regarding the issue they caught info, I can assure them that is, we are doing something about your situation and, like technology if it's a noise unknown try again next time*
Participant 12: *My own service is a personal touch and make the call or the conversation more personal as opposed to the customer talking to a robot and navigating here going they're going day it's more personal but for the benefit of the customer likes convenience, it does that them*

The company thus needs contact centre employees to assist customers with the BEES app, especially when the technology is unavailable. Customers will experience bad service if they have to wait for long periods of time before their queries are attended to, and the company needs contact centre employees to work

through heavier workloads when the BEES App is unavailable. Technology makes work simpler and faster, but work becomes more complex and causes more stress when it is not functioning.

7. Conclusion and recommendations

From the findings, it appears as though the propensity to adopt new technology is high amongst contact centre employees. However, the capabilities and functioning of these technologies facilitate ease of use, which seems to be an important consideration when it comes to adapting to new technologies in the contact centre environment. Contact centre employees are excited about new technologies and are eager to learn about them. Technology provides better access to information for both customer and contact centre employee. This allows contact centre employees to work remotely and serve customers anywhere and at any time. At the same time, it allows customers to be able to perform certain activities themselves via the BEES App. However unavailability of technology complicates work and increases workloads, negatively impacting the productivity of contact centre employees and causing poor customer service.

Findings suggest that the implementation of new technologies has caused changes in scope of work, and the emergence of technological self-efficacy. Contact centre employees are not only keen to learn about technology, they also experiment with it to understand it. Despite the excitement about new technologies, the fear of job losses persist amongst the majority of research participants. There is a need for psychological safety to mitigate the fear of job loss and technology replacing humans in the contact centre. The awareness and understanding of change and the fact that the whole world is digitising helps to influence the decision to adopt the new technology. Although this general awareness of change is prevalent, implementing technology too rapidly and frequently poses a risk to customer migration from the old technology to the new technology because some customers still prefer traditional modes of conducting business.

Although fear of job losses exist, contact centre employees, if given a choice, will seemingly choose to adopt new technology. Awareness of technology, as well as changes in personal and working lives across the globe supports technology adoption. Training further provides clarity on capabilities, features and functionality of new technologies and facilitates learning. Technological self-efficacy, and understanding of the technology enables contact centre employees to have all the right information needed to service customers with confidence. Training and changes to their scope of work meant that these employees acquired new skills, and thus knew that they were still necessary to the efficient functioning of the business.

Fear of job loss exists because technology provides efficiency humans cannot achieve, creating the impression of a reduction in the availability of work for humans. This causes uncertainty as employees are

not sure if the new technology is being implemented is to replace them. From the research findings, it was evident that humans and technology work together in the studied contact centre. Despite the fear of job loss and loss of financial security, the research provides evidence that the propensity for technology adoption is high. Workers choose technology adoption to stay relevant in a rapidly digitising world.

Resistance to technology adoption can be mitigated by specific steps taken to overcome uncertainty when implementing new technology. It is clear from the study that the propensity for technology adoption is high amongst the contact centre employees interviewed, which is advantageous for the company. Firstly, this 'adoption propensity' promotes inclusivity. Because contact centre employees use the technology as part of 'everyday life', they have a very good understanding of the capabilities and functionality that will enhance the customer experience and can provide input into the development of technology. Inclusion in the testing phase of new technologies promotes buy-in, as employees can become ambassadors for the technology and encourage others to adopt. Secondly, a high propensity for technology adoption can act as an enabler in terms of ease of use of new technologies. Reinforcing the 'adoption propensity' with training programmes about new technologies, such as simulations and observational learning, builds confidence and reduces anxiety regarding the adoption of new technologies amongst contact centre employees.

Implementing new technology brings change to the nature and scope of work. The ways that work is executed changes to align more with the capabilities of the technology but these changes are not explained to contact centre employees. Instead, employees are left to 'figure it out' for themselves. Management should consider job re-design that best fits the new world of work associated with technological changes and explain these changes to contact centre employees followed by proper communication. Job re-design open communication can reduce uncertainty and anxiety on the part of employees.

Technology creates efficiency, but when it is unavailable it compounds efficiency and creates greater inefficacy. It would be optimal to create a structure whereby the company can operate at the new efficiency level and ensure business continuity when technology is unavailable. Management should also try to make provision for training time, coaching and mentoring, and capability assessments and create a business continuity plan that includes manual processes that can be trained and implemented.

8. Limitations and areas for future research

Although this study sheds light on the challenges faced by contact centre staff pertaining to the adoption of new technologies, it must be borne in mind that this is a single case study within the beer industry, and consequently findings are applicable only to that context. In order to get a more rounded perspective of

contact centre employees' attitudes regarding the adoption of new technologies, it would be necessary to extend this study to different industries. It might also be prudent to focus on different stages of technology implementation, and assess how the change to new technologies affects and impacts contact centre employees at different phases of the technology implementation process.

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