EMBRY-RIDDLE
Aeronautical University™
SCHOLARLY COMMONS

Publications

2022

Artificial Intelligence (AI): The New Look of Customer Service In a Cybersecurity World

Sharon L. Burton
Embry-Riddle Aeronautical University, burtons6@erau.edu

Follow this and additional works at: https://commons.erau.edu/publication

Part of the Computer and Systems Architecture Commons, Cybersecurity Commons, and the Human Factors Psychology Commons

Scholarly Commons Citation

ARTIFICIAL INTELLIGENCE (AI): THE NEW LOOK OF CUSTOMER SERVICE IN A CYBERSECURITY WORLD

Sharon L. BURTON

sharonlburton2@comcast.net

CAPITOL TECHNOLOGY UNIVERSITY LAUREL, MARYLAND, USA

ABSTRACT

Cybersecurity leaders are not adequately developed to guide the re-engineering of quality customer service (QCS) workflows, designed with automation and AI, that interrelate with people through customers' perceptions. Realizing re-engineering processes should be a team effort with well-versed leadership and stakeholders guiding the successful design through a follow-up process. Leaders must shape compelling and straightforward needs to learn and teach employees and chat boxes indispensable customer service skills demonstrating patience, self-discipline, flexibility, and resourcefulness in communication with irritated customers or difficult circumstances. Whether the analysis, design, development, and implementation struggles are vacuums in cybersecurity knowledge, skill, and abilities or a dearth of budget and resource limits, creating thorough QSC workflows and training requires time and purpose. This knowledge must be proactively, not reactively built. QSC re-engineering epitomizes a shift from reactionary behaviors to proactively preparing a well-defined collection of intends, activities, and aims delineating how organizations will contend through products and services. This article should benefit respondents absorbed in the success of updating and implementing QCS actions and workflows, practitioners who guide direct customer services initiatives, enterprise governance strategists, QCS and machine learning trainers, and learners who want to know more about QCS swathed in cybersecurity.

1. Introduction

Customer Service (CS), whether business-to-business or business-to-customer, in the age of cybersecurity, must offer processes and changes that should lead to enhanced QCS. Initially, organizational leadership viewed CS as an essential yet vexing aspect of a business. In other words, CS was a cost center situated to deflect objections, protests, complaints, and probes commencing with mostly discontented customers (Morgan, 2019). IT is not the

sole onus of the IT department; guiding QCS through the technology process is a business concern that affects all leadership and employees (Nobles, 2018). Referencing business-to-customer experiences are principally brand-, product-, purchased-, or service-focused and envisaged as moving in one direction, tracking discrete, sequential phases and touchpoints (Sahhir et al., 2021). Concerning business-to-business, customers' experiences are principally relational processes (Witell et al., 2020). Prospective and current customers insist on tailor-made experiences and retorts to inquiries and requests in minimal minutes instead of hours. The capability of leading in QCS and the actuality of delivering QCS are in conflict. Persistent problems continue as follows:

●Customer service succession of steps needed to finish a task or group of tasks that are not in line with customers' understood processes and outcomes.

●Inability of employees to answer customers' questions and excessive call transfers.

●Failing to meet customers' expectancies.

●Managing the expectations of irritated and livid customers.

●Inappropriate tools to handle customers' concerns.

●Outdated processes and procedures to hand QCS calls.

●Missing acceleration procedure and crises management.

Organizational cybersecurity leaders are not adequately developed to apply QCS workflows, which turns CS into a revenue driver as opposed to just a cost center (Morgan, 2019). Guiding QCS to include cybersecurity must apply a fusion of boundary defenses and internal controls (Dawson et al., 2021; Muller, 2020). Cybersecurity leaders should necessitate education and elevated awareness of key knowledge related to QCS, AI, and cybersecurity (Burrell, 2021). The remainder of this article is AI and its integration into QCS regarding assumptions, limitations, delimitations, methods to review the literature, understanding the customer base, cultural change, automation, and QCS review of the qualitative semi-structured purposive sampling interviews, and then the results and conclusions.

2. Assumptions, limitations, and delimitations

Assumptions, ideas made deprived of evidence conformation (University of Louisville [U of L], 2021), were made in this qualitative semi-structured purposive sampling interview and literature approach. First, all generations were assumed to face like challenges with respect to CS across business spectrums, face-to-face and online; therefore, a variety of businesses could gain insight from the findings of this study. Second, customers are assumed to recognize that technology is on the rise and is affecting CS missions and developments. Third, all participants were assumed to be knowledgeable in CS and to voluntarily deliver the most precise answers during the semi-structured purposive sampling interview sessions. Semi-structured purposive sampling interview participants were assumed to understand that CS is service actions carried out to meet customers' needs (Wu et al., 2021) and that AI is an expected business key driver within a cybersecurity world (Böttcher et al., 2022).

The study's results were limited to the experiences of the participants who have engaged in at least ten CS experiences. Limitations are the restrictions based on the research methodology and design; in other words, limitations are constraints that cannot be controlled in this research (Sacred Heart University, 2020). For example, variations in participants' experiences, plus the location of their experiences and culture, may have influenced the understanding and explanation of the experiences. Next, are delimitations, which the researcher will not do (elements outside the set boundaries).

The delimitations are the fixed boundary and limits of this research so that the goal does not become awkward or not possible to reach (Sianes, 2021). Specific delimitations are swathed in face-to-face and online CS environments rather than field services. Also, the delimitations of the study will help this researcher yield the study within the scope of the capabilities. Due to the participants' delimitations, the finishing results recognized in this article may or may not be useable concerning all face-to-face and online businesses.

3. Problem statement

It is not known how customers, who work through CS experiences, whether person-to-person or chat boxes and applications (APPs), describe their experiences. The impact of this problem statement is knowing how this phenomenon can help businesses enhance services to their customers (Soegoto et al., 2018). Also, amassing acumen could benefit organizations to shift from CS call centers to revenue generating and financial sustainability. The change positions organizations' CS operations to thrive as opposed to collapse (Xiao et al., 2019).

The problem statement of this qualitative literature review and semi-structured purposive sampling interview research was developed based on the need defined. This researcher concentrates on improved CS and customizing user experiences that could increase opportunities for organizations (Walch, 2019). If organizations do not realize how customers perceive their experiences, then companies will not be able to offer enhanced experiences to consumers (Xiao et al., 2019). Therefore, offering customers better CS and experiences should improve revenue (Morgan, 2019). As stated by Böttcher et al. (2022), better service could be driven by AI because this technology has the inordinate capability for organizations to establish up-to-the-minute business models plus improve through heightened competitive advantages. This study intends to distinguish the journey of customers that leads to QCS experiences and uncover the impact of AI. Offering enhanced customer experience will lead to decreased financial risk and build trust with customers (Mou et al., 2017).

4. Methods for reviewing the literature

This literature review and the semi-structured purposive sampling interviews are a systematic search conducted in a manner that involved an organized exploration for research and aimed for an evident report of research identification. Initially, over 250 peer-reviewed documents were assessed and studied. The primary key words and phrases and secondary words and phrases searches are listed in Table no. 1.

Table no. 1
Literature Search Tree

Literature Search Tree		
Primary Key Words and Phrases	**Secondary Search Word and Phrases**	**Databases and their Hosts (in parenthesis)**
• Quality customer service • Customer service • Customer service and cybersecurity • Customer service and AI • Clear communication skills • Operations and customer service • Patience • Professionalism and customer service	• Customer satisfaction, Adoption of technology • Customer shortages Customer service and technology education • Utilization • Global impact of technology and customer service	• ProQuest Central (ABI/Inform Dateline, and ABI/Inform Global) • Academic Search Premier (EBSCO) • Business Source Premier (EBSCO) • ERIC (EBSCO) • DOAJ (Directory of Open Access Journals) • Google Scholar

The databases and their hosts (in parentheses) are listed in Table no. 1, too. These databases permitted the location of primary and secondary resources that allowed for a degree of verification regarding the influence of the data retrieved to include the data's rigidness, meticulousness, as well as the controlled review process (Late & Kumpulainen, 2022). Germane documents contained in this semi-structured purposive sampling, literature review qualitative research study focused primarily on research within the last five years to ensure the conclusions are current and embody the current context.

4.1. Understanding the customer base

Organizations must understand the following questions in order to grow and cultivate business. Who are the traditional and current customers? Are these customers residential or from commercial enterprises? Do customers seek more services and products that are utilitarian (necessary, functional, efficient, helpful, and practical) or hedonic services and products (enjoyable, entertaining, enchanting, and thrilling)? Organizations must understand whether their customer bases are changing and why. Data shows that COVID-19, a pandemic, changed the manner in which organizations continue to function. The pandemic propelled the need for online meetings, appointments, shopping, lockdowns, and conferences due to attempts to circumvent the dispersion of the virus and to protect the health of workers and customers (COVID-19 Pandemic, 2020; Pringle, 2021). Was the COVID-19 pandemic the first time customers did not use face-to-face shopping? No, catalog shopping dates back to Benjamin Franklin's 1744 invention of mail-order (Woloson, 2013). Later in 1872, Aaron Montgomery Ward established what is known as the contemporary mail-order business (Pringle, 2021; Smith, 2014). The key point is that Ward specified that customers could return items they were displeased with and receive a full refund; this was a new CS idea of the time (Smith, 2014). Later in 1876, Alexander Graham Bell patented the telephone, and this invention paved the way for the telephone switchboard, which linked customers' voices to businesses (Meisenzahl, 2020). This connecting invention propelled QCS as customers no longer had to travel miles and possibly not be able to return goods and receive services.

Second, the organizations are more amalgamated with the worldwide economy to include growth in demand for value-added and the latest services. The marketplace is open and competitive and in more and more pursuit of developing a suitable end for individuals to discover purchase, and vend products and services (Biden, 2021). With this competitive marketplace, economic empowerment is emerging and increasing.

Third, the fourth industrial revolution, technology fusing physical, digital, and biological worlds, pushed a key benefit for CS by presenting smart technologies. A foremost social trial and a threat of the fourth industrial revolution is linked to a surge in the yearly mandate for substantially capable technology developers of evolving technologies (Balatsky, 2019). Enhanced CS capability leaped from the fourth industrial revolution, industry 4.0, to the fifth industrial revolution, specifically AI. Due to the linking of technology and the ability to use mobile phones, tablets, laptops, and other internet-driven devices (Muir, 2019), consumers are able to connect with CS in a ubiquitous manner. Industry 4.0 has fused every aspect of evolving technological change endeavors for CS (i.e., Internet of Things, and machine learning, and AI) in the 21st century (Burton, 2019). Industry 4.0 progressed computer systems to be capable of completing workflow tasks that previously demanded human intelligence, for instance, decision-making, language detection, visual discernment, and elucidation linking diverse dialects and languages (Burton, 2019).

Progressing technology is not the only change driving CS; it is Artificial Intelligence (AI), the new look of QCS in a cybersecurity world. The digitalization megatrend continues to extend worldwide; the exercise and preparation of systems intelligent thinking are vital for organizations pursuing to progress novel digital ecosystems (Siu, 2020).

Fourth, customer perception, a past ignored concept, is now better understood by organizations (Burger, 1989). The real question is how much is it understood? Data shows that marketing researchers understand customers' perceptions; on the other hand, organizations such as healthcare do not understand the impact of perception on business (Manary, 2013). COVID-19's influence on QCS worldwide has noticeably altered both customers' behaviors and their mandates (Yang-Fei et al., 2021). Some of these changes, for example, the extraordinary increase of technology usage (Kim et al., 2021) regarding online shopping and changes in brand loyalty, have severe implications for certain industries.

4.2. Cultural change, automation, and quality customer service

Cultural change within organizations is essential to applying QCS procedures. The toughest aspect of enhancing and changing CS is getting employees to undergo a paradigm shift. Actions and thoughts must change to support the new processes (Holten et al., 2020). Customers' and employees' styles (the ways they think and behave) and their attitudes (what they believe is important about their work) must be realigned to fit the new CS process. There is a need to comprehend customer archetypes and the manner in which they intermingle and relate, that/which leads to organizational performance enhancements. Inherent to culture is service culture, a setting wherein leaders have empowered employees and tools to offer QSC, which offers excellent CS, a memorable experience (Harris et al., 2020).

Service culture is significant whether the CS teams are predominately people or automation. Globally change in the world is complicated, intricate, and multifaceted in a sense which is outside what was grasped fifteen years ago (Safi & Burrell, 2007). Organizations are shifting to online CS automation tools (chat box technology), AI-powered software that can converse with customers on websites or through Apps (WhatsApp, Facebook Messenger, etc.), and have specified names such as Sydney, and Emma. Customers' reactions are linked to the content of the chat boxes, the perceived value of the changes, as well as cultural characteristics of the change (Holten et al., 2020). Connected to change, culture and QCS is an emerging experience economy with interactive capabilities to include customer self-service, portals email, live chat, and phone; this is a shift from theory to actuality. Leading companies in CS like Disney and Nordstrom have their methods entrenched in their cultures (Post, 2021) to include the overall experience.

4.3. Defining the customer service experience

Since 1876, customers began anticipating and foreseeing more in terms of service. Why is this the case? Customer service is not a single-provider experience. Customers compare received service to other received services. They expect the currently received service to be the best service experience. No longer are text notifications features, and online services considered special features that require a price. Becker and Jaakkola (2020) stated the CS experience is a lived familiarity and a distinctive and idiosyncratic experience. The mixture of experiences is problematic to comprehend and requires the use of technology.

The CS experience and customers' treks are not distinctive regarding business-to-consumer experiences. On the other hand, they are comparably existing in business-to-business experiences (Roy et al., 2019). What's more, the business-to-consumer and

business-to-business experiences are correspondingly pertinent (Roy et al., 2019). Individually, the business-to-consumer and business-to-business experiences accentuate that the fundamental relations and dealings between service offerors and customers are the experiences (Witell et al., 2020). Let us review business-to-business and business-to-customer practices.

The data shows that the service delivery process between the service providers and customers and the CS experience have been investigated separately (Dabaghi et al., 2022, Demirel, 2022, Saricam, 2022). Sahhar et al. (2021) posited that there is no clear understanding of customers' QCS viewpoints because just the performances observed and perceived by customers have been documented. What's more, organizational CS experiences are not complete because customers' responses and feedback are not captured, thus allowing customers' responses and feedback effectiveness to exist as unconsidered (Sahhar et al., 2021). Both sides of the situation are needed. Moreover, each interpretation of the CS experience of each of them has not received enough attention. What is missing are the solutions in which both parties co-establish answers and clarifications. This study exposes the two-fold standpoint of the CS experience and its capability to offer answers to CS provider exercises associated with CS offerors' connections and dealings throughout the experience. There must be a complete understanding of the connection amid customers and service offerors. Henceforward, this article is steered by five research questions reviewed under the heading, Review of the Semi-Structured Purposive Sampling Interviews.

5. Customer Service and operational planning in the age of Artificial Intelligence

The salient question is how does CS connect to operations in the age of artificial intelligence? Customer service, once thought of as a single point of contact for customers,

is now reviewed as customers' overall journey connection to operations (Sahhir et al. 2021). Customer service representatives help customers in multiple ways – in advance of transactions, all through, and subsequently regarding the use of products and services. According to Moubayed (2022), artificial intelligence (AI) is able to increase the QCS experience in addition to growing revenue within the service department. AI is used to help diagnose concerns and offer data to correct malfunctions (Burton, 2019; Moubayed, 2022). More and more organizations are building AI-enabled platforms to improve CS. Operational planning is significant to understand.

Operations planning pushes and drives the completion of progressions and procedures to do activities related to aims void of humanoid help has become a vital provider which saves time, reduces costs, and introduces work areas external to humanoid physical competencies and abilities. Yes, we are in the age of artificial intelligence data-driven Internet of Things systems (IoT), in which a vast collection of systems is or can be straightforwardly linked to the internet (Galbraith & Podhorska, 2021). Customer service with the utilization of digital technologies without face-to-face contact is termed intact (Lee & Lee, 2020).

The key point is that the intricacy of autonomous performances and actions persists to multiply and remains ubiquitous (Yang-Fei, 2021). Existing automation encounters involve linking every aspect of the scheme. With this, there is the offering of their actual and instantaneous operational information, which is essential for organizations to amass and understand the manner to manipulate the system to realize the aims and objectives.

6. Review of the semi-structured purposive sampling interviews

Additional data was gathered for this new look of CS in a cybersecurity world through 12 semi-structured purposive

sampling interviews, a number deemed academically appropriate to reach saturation (Rosala, 2021; Saldaña, 2021). The why for the semi-structured purposive sampling interviews is reasoned as an applicable method to collect data when the researcher desires to: (1) gather qualitative, open-ended information; (2) investigate research respondents' views, experiences, feelings, and beliefs regarding a specific topic; and (3) examine profoundly into individual and sometimes sensitive issues (Tjoflat, 18). Akin to (Brown Jackson, 2016; Lu, 2015), participants were emailed a request to participate in this study. Included in the request was the reason for the study and the note that the participants could stop the study at any time. After participants agreed to participate, a time and date to participate were sent to each participant. Two transcribers were used to document the interviews, and the interviews were recorded using Zoom. Later the data was transcribed and sent to the associated participants for review. Two other researchers appraised the analysis, developing themes, and participant responses to safeguard the accuracy of conclusions, in accordance with Gibbs (2012) and Maxwell (2012). Any noted changes made were returned to the participant for re-review and approval (Creswell, 2022). This researcher based the research findings on the participants' narratives instead of the researcher's stance. Due to taking careful precautions, readers can interpret the results with confidence in following the direction this researcher directed data collection questions to obtain data and outcomes (Nyirenda et al., 2020). Interview permission was obtained prior to the semi-structured purposive sampling interviews via email and re-established at the time of the semi-structured purposive sampling interviews utilizing information sheets. A total of 5 questions were presented, but respondents were given space to deliberate on other relevant concerns.

6.1. Semi-structured purposive sampling research questions

This section offers data results for the semi-structured purposive sampling research study design by giving data that arose for five (5) research questions.

The questions are as follows:

Describe what you consider to be good customer service experiences.

Describe what you consider to be bad customer service experiences.

Describe the differences between customer service experiences when speaking to representatives and when using a chat box or APP.

Describe the influencers on your chat box or APP customer service experiences in terms of the perceived quality of the overall event.

The reasonably minimal numbers of research participants or circumstances in qualitative research preserve the individuality of each analysis (Creswell, 2022; Simmons, 2014). Applying a moderator and the dual-observer slant guaranteed that participants' answers were correctly documented (Oge & Burrell, 2012). Also, research results were documented using sample quotes from the original text from the participants, a technique that assists as supplementary proof for the themes of the interviews and is based on the interviewees' individual and subject matter knowledge (Kuckartz, 2019). Sections 6.1.1 through 6.1.5 will offer sample participant responses and themes. Qualitative research encompasses non-statistical practices of examination to study social phenomena using inductive processes (Tenny et al, 2022). Themes arose from the interviews (Creswell, 2022; Tenny et al, 2022).

6.1.1. Responses to Question 1

In response to the initial research question, the respondents were asked, *"Describe what you consider to be good customer service experiences?"* Sample responses are: *"I believe good customer*

service experiences include receiving fast responses when I ask questions or explain a concern". Another respondent added, *"Good experiences must be felt whether I speak with a person of some of this animation that corresponds with customers".* Also, In terms of the customer, companies have added technology wherein a robot or something talks to the customer; these robot responses are different according to the company". *"Another great customer service experience is when organizations procedures for those who do not understand technology, and can only voice what they need to say".*

Five (5) themes identified: Question One (1)

Theme Number	Themes
6.1.1	What types of services are considered good customer service?
6.1.2	How must AI be added to assure good customer service?
6.1.3	What must be added to programming and training to assure good empathetic QCS whether a customer speaks to a live representatives or an AI component?
6.1.4	What extras are needed to ensure good QCS to include technology?
6.1.5	What is good QCS for those not very familiar with technology?

6.1.2. Responses to Question 2

The second request was: *"Describe what you consider to be bad customer service experiences?"* Sample responses are: *"Bad customer is when the representative talks over me as I am trying to explain my concern. Also, I do not like those chat boxes. Most of the time, they do not list my issue".* Another respondent added, *"I do not like the chat boxes because they often do not understand the product issue I am explaining".* Another response was, *"A customer service representative's attempt to help more than one customer at a time is bad". "Let me add that some of these online customer service Apps will keep asking the same question repeatedly. It is clear the customer service technology did not understand what I was saying". "One thing I do not like is being transferred to someone with a thick accent that I cannot understand. This type of transfer happens far too often out of frustration, I hang up".*

Table no. 3
Four (4) themes identified: Question Two (2)

Theme Number	Themes
2.1	What types of services are considered bad customer service?
2.2	How must AI be programmed and trained to prevent bad customer service?
2.3	What must be added to programming and training to assure bad customer service and a void of empathy are not experienced by customers whether the customer speaks to a live representatives or an AI component?
2.4	How to prevent bad customer service for those not very familiar with technology?

6.1.3. Responses to Question 3

The third request was: *Describe the differences between customer service experiences when speaking to representatives than when using a chat box or APP.* Sample responses are: *"I like working through the customer service Apps. I do not have to speak with a live person. I just select or write the needed response."* Conversely, another respondent said, *"When I have a concern, I prefer to talk with a live person. Also, these companies want your money, but they do not have the decency to have people help you when there is a problem."*

Table no. 4
Four (4) themes identified: Question Three (3)

Theme Number	Themes
3.1	What must be understood about good customer service from people and from technology - boxes and APPs?
3.2	What compels a customer to want to speak with a live customer service representative as opposed to using technology?
3.3	What must be added to programming and training to assure bad customer service and a void of empathy are not experienced by customers whether the customer speaks to a live representatives or an AI component?
3.4	How to prevent bad customer service for those not very familiar with technology?

6.1.4. Responses to Question 4

The fourth request was: *Describe the influencers on your chat box or APP customer service experiences in terms of the perceived quality of the overall event.* Sample responses are: *"I do not believe that the chat box or APP is giving me all the information I need. The chat box or APP is not able to add interpretation to my questions or statements. I have not experienced quality service with chat boxes or APPs."* Another respondent said, *"Companies seem to think that their individual chat boxes and APPs are the best. I get aggravated when I get a chat box or APP and get asked the same question." "Let me add this, I realize that technology is an influencer; however, all technology is not of the same quality." "Personally, once I experience a chat box or APP of low quality, I do not shop from that company." "Another quality point is that AI is used to respond to self-serve tickets, group complicated tickets as determined, and as an information repository to help customer service representatives locate needed replies and solutions quicker."*

Table no. 5
Three (3) themes identified: Question Four (4)

Theme Number	Themes
4.1	How to get customers to have confidence in the technology - *chat boxes or APPs*?
4.2	What compels a customer to want to speak with a live customer service representative as opposed to using technology?
4.3	What must be added to programming and training to get the technology to respond fast and with accuracy?

6.1.5. Responses to Question 5

The fifth request was: *"Describe the influencers on your person-to-person customer service experiences in terms of the perceived quality of the overall event".* Sample responses are: *"I feel I receive better service when I speak with a representative. My questions are answered and concerns addressed without being asked the same thing over and over".* Another respondent said, *"I have received poor quality from speaking to customer service representatives the same as I have received poor quality from chat boxes and APPs. I believe the difference is the programming of the chat boxes and APPs and the training and empowerment of the customer service representatives." "On the other hand, speaking to customer service representatives offers the ability to ask more detailed questions. Customer service representatives do affect my future purchasing decisions." "My decisions are based on the representative's knowledge and ability to resolve my concern."* Yet, another respondent offered, *"I understand that COVID-19 and a lack of employees have changed service. Yet, the quality of service remains significant. Proper and timely feedback to customers is essential."*

7. Conclusions

The responses from each of the qualitative semi-structured purposive sampling interview respondents targeted the scholarly literature referencing QCS operational planning. To reduce operating costs, it is crucial to craft a technological operation plan that will progress the delivery of quality of service. Gaskin (2008) spoke about the cost of poor CS. A customer ordered a dynamic desktop with RAID 0 (Redundant Array of Independent Disks), and the RAID controller chip did not function right. Due to a defect, the customer could not correct his issue. The customer had various conversations with Dell support and finally received a replacement. Months later,

according to Boyd [different name used to protect the customer], an executive contacted the customer and rudely stated that the customer had no other option and every concern was the customer's fault (Gaskin, 2008).

As given by Yang-Fei (2021), previous studies centered on technology-related service invention and origination, while humanoid-related service improvement and invention persist in remaining unaffected. Ogunjimi et al. (2021) stated the digitizing of organizations carries on to alter customers' buying patterns. This research team offered that brick-and-mortar retail establishments, particularly (small and medium enterprises) continue to encounter unparalleled trials. On the other hand, this study found that there is not always an optimistic connection between service quality and customer satisfaction. This study shows that CS will work better when certain tasks, workflows, and activities are automated and added to the CS experience. Research refers to customer studies wherein technology was central to the process and labeling humanoid modernization and improvement factors as the lesser of the two.

Alternatively, a need exist for the face-to-face or live CS experience. As organizations push to save money through technological advantages, this technology does not work for customers unfamiliar with technology and those not contented with CS usage. Yang-Fei (2021) stated another reason for face-to-face or live CS could be a set aside for a select group of customers to make them feel distinct and superior. Face-to-face or live CS could become an exceptional service for a distinguished group of people. This study reveals that the quality of CS experienced is believed to be low when contrasted to customers' outlooks. Pioneering CS represents the capability to connect with companies on various platforms (live chat with a representative, phone, email, Twitter, Facebook, and mobile devices).

Such platforms should be capable of scheduling appointments. Customer service systems could track orders, exchanges, cancellations, returns, purchase history, and maintain customers' preferences.

Touchscreens are popular in this internet age. Organizations should ensure technology stress first touch resolution. Additionally, the systems should offer contextual help depending on the information needed.

Whether business-to-customer or business-to-business, workflows are needed to offer a sequence of actions essential to finish an undertaking. Other than the first step, every sequence in a workflow should have an exact action prior to and an exact action after it. Key CS business process improvement developments lead toward planned and tested updates and offer the highest return. The returns can entail cost decreases and technical enhancements that extend to improvements in the engagement service infrastructure.

More than CS and business professionals should be involved in the information input. IT and cybersecurity professionals should be involved in the future (to-be) state of the technology design. Cybersecurity, initially thought of as an IT problem, is now understood as a business problem (Murphey, 2020). Paradoxically, cybersecurity leaders bring forth the dire and critical aim of safeguarding organizations (Doan, 2019). The CS design and development process should have a diverse team for input, incorporate innovation, be secured with cyber security, and be well developed to attract a diversity of targeted customers. The inclusive QCS process must be well analyzed and designed to influence positive change.

REFERENCES

Balatsky, E.V. (2019). Global challenges of the fourth industrial revolution. *Terra Economicus*, *Vol.17*, 6-22.

Becker, L., & Jaakkola, E. (2020). Customer experience: fundamental premises and implications for research. *Journal of the Academy of Marketing Science, Vol. 48, Issue 4*, 630-648.

Biden, J.R. (2021). *Executive order on promoting competition in the American economy*. The White House. Available at: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/07/09/executive-order-on-promoting-competition-in-the-american-economy/

Böttcher, T.P., Weking, J., Weber, M., Hein, A., & Kremar, H. (2022). Value drivers of artificial intelligence [Paper Presentation]. *Conference: Americas Conference on Information Systems (AMCIS) 2022*, Minneapolis, MN, United States.

Burger, A. (1998). *The impact of re-engineering on customer perceptions of service quality: A Telkom case study (Order No. 28327312)*. Available at: https://www.proquest.com/dissertations-theses/impact-re-engineering-on-customer-perceptions/docview/2570163401/se-2?accountid=16761

Brown-Jackson, K.L. (2015). *Disrupting and retooling: a model for an effective community-based telehealth program.* [Doctoral dissertation, National Graduate School of Quality Management]. Available at: https://media.proquest.com/media/hms/PFT/2/dDOAH?_s=olSgjbsfYMdb7oFI2lwLdE6SAPA%3D

Burrell, D.N. (2021). *Cybersecurity leadership from a talent management organizational development lens*. [Unpublished Exegesis]. Capitol Technology University.

Burton, S.L. (2019). Grasping the cyber-world: Artificial intelligence and human capital

meet to inform leadership. *International Journal of Economics, Commerce and Management, Vol. 7, Issue 12*, 707-759.

COVID-19 Pandemic. (2020, Mar 15). *The CCQ temporarily closes its customer-service counters throughout Québec*. Canada NewsWire. Available at: https://www.proquest.com/wire-feeds/covid-19-pandemic-ccq-temporarily-closes-customer/docview/2377110227/se-2?accountid=167615

Creswell, J.D. (2022). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. 5th Edition. Sage Publications.

Dabaghi, H., Ardakani, S.S., & Seyed Mohammad Tabataba'i-Nasab. (2022). Customer experience management in medical tourism (case study: Iranian hospital's medical tourists). Journal of Islamic *Marketing, Vol. 13, Issue 1*, 198-226, DOI:https://doi.org/10.1108/JIMA-04-2020-0092

Dawson, M., Bacius, R., Gouveia, L.B., & Vassilakos, A. (2021). Understanding the challenge of cybersecurity in critical infrastructure sectors. *Land Forces Academy Review, Vol. 25, Issue 1*, 69-75. DOI: 10.2478/raft-2021-0011

Demirel, D. (2022). The effect of service quality on customer satisfaction in digital age: Customer satisfaction based examination of digital CRM. *Journal of Business Economics and Management, Vol. 23, Issue 3,* 507-531. DOI:https://doi.org/10.3846/jbem.2022.15328

Doan, M. (2019, November 27). Companies need to rethink what cybersecurity leadership is. *Harvard Business Review*, available at: https://hbr.org/2019/11/companies-need-to-rethink-whatcybersecurity-leadership-is

Galbraith, A., & Podhorska, I. (2021). Artificial intelligence data-driven internet of things systems, robotic wireless sensor networks, and sustainable organizational performance in cyber-physical smart manufacturing. *Economics, Management and Financial Markets, Vol. 16, Issue 4*, 56-69. DOI:https://doi.org/10.22381/emfm16420214.

Harris, S., Folkes, C., Tyrell, K., & Brown, D. (2020). Nurturing customer service culture in an experience economy: Employees' assessment of the UWI, mona library service model. *Library Management, Vol. 41, Issue 4*, 193-220. DOI:http://dx.doi.org/10.1108/LM-05-2020-0080

Holten, A., Hancock, G.R., & Bøllingtoft, A. (2020). Studying the importance of change leadership and change management in layoffs, mergers, and closures. *Management Decision, Vol. 58, Issue 3*, 393-409. DOI:http://dx.doi.org/10.1108/MD-03-2017-0278

Kim, S., Kim, J, Badu-Baiden, F., Giroux, M, & Choi, Y. (2021) Preference for robot service or human service in hotels? Impacts of the COVID-19 Pandemic. *International Journal of Hospital Management, 93*.

Late, E., & Kumpulainen, S. (2022). Interacting with digitised historical newspapers: Understanding the use of digital surrogates as primary sources. *Journal of Documentation, Vol. 78, Issue 7*, 106-124. DOI:https://doi.org/10.1108/JD-04-2021-0078

Lee, S.M., & Lee, D.H. (2020) Untact: A new customer service strategy in the digital age. *Service Business, Vol. 14*, 1-22.

Lu, Shanel W. (2015). *Developing workforce-staffing models: Path toward an operational sustainability plan for a regulatory financial cyclical environment* [Doctoral Dissertation, National Graduate School of Quality Management]. ProQuest Database. Available at: https://search.proquest.com/docview/2189108247/

Manary, M.P. (2013). *Perceptions of service quality: Evidence for the validity and inseparability of customer reported experiences and true quality* (Order No. 3598797). ABI/INFORM Global. (1459811132). Available at: https://www.proquest.com/dissertations-theses/perceptions-service-quality-evidence-validity/docview/1459811132/se-2?accountid=167615

Meisenzahl, M. (2020, Feb 28). See how the phone has changed since Alexander Graham Bell's 1876 invention. *Business Insider*. Available at: https://www.proquest.com/newspapers/see-how-phone-has-changed-since-alexander-graham/docview/2393578832/se-2

Mou, J., Cohen, J., Dou, Y., & Zhang, B. (2017). Predicting buyers repurchase intentions in cross border e-commerce: A valance framework perspective. *ECIS – Proceedings*, 2382-2394, available at: http://aisel.aisnet.org/ecis2017_rp/151

Morgan, B. (2019, August 6). Customer service is not a cost center and other lessons from Freshbooks. *Forbes,* available at: https://www.forbes.com/sites/blakemorgan/2019/08/06/customer-service-is-not-a-cost-center-and-other-lessons-from-freshbooks/?sh=1006f0703090

Moubayed, A., Shami, A., & Al-Dulaimi, A. (2022). On end-to-end intelligent automation of 6G networks. *Future Internet, Vol. 14, Issue* 6, 165. DOI:https://doi.org/10.3390/fi14060165

Muller, S.R. (2020). A Perspective On the intersection of information security policies and IA awareness, factoring in end-user behavior. *Proceedings of the International Conference on Research in Management & Technovation,* 137-142. DOI: 10.15439/2020KM1

Murphey, D. (2020). How your HR department can help to overcome the cybersecurity skills gap. *BenefitsPRO*. Available at: https://www.proquest.com/trade-journals/how-your-hr-department-can-help-overcome/docview/2376391277/se-2

Nobles, C. (2018). Botching human factors in cybersecurity in business organizations. Holistica – *Journal of Business and Public Administration, Vol. 9, Issue 3*, 71-88. https://doi.org/10.2478/hjbpa-2018-0024

Nyirenda, L., Kumar, M.B., Theobald, S., Sarker, M., Simwinga, M., Kumwenda, M., ... & Taegtmeyer, M. (2020). Using research networks to generate trustworthy qualitative public health research findings from multiple contexts. *BMC Medical Research Methodology, Vol. 20, Issue 1*, 13. Available at: https://doi.org/10.1186/s12874-019-0895-5

Oge, D., & Burrell, D.N. (2012). Applied qualitative research analysis of military recruiter leadership behavior and the perpetuation and development of ethical behaviors. *Journal of Global Intelligence & Policy, Vol. 5, Issue 9*, 92-106.

Ogunjimi, A., Rahman, M., Islam, N., & Hasan, R. (2021). Smart mirror fashion technology for the retail chain transformation. *Technological Forecasting and Social Change, Vol. 173, Issue 1*. DOI:https://doi.org/10.1016/j.techfore.2021.121118

Post, B. (2021, September 15). The experience economy is booming. *CIO*, available at: https://www.cio.com/article/189246/the-experience-economy-is-booming.html

Pringle, K.G. (2021). From J.C. Penney to amazon.com: How shifts in shopping changed America over the past century. Barron's (Online). Available at: https://www.proquest.com/trade-journals/j-c-penney-amazon-com-how-shifts-shopping-changed/docview/2481096496/se-2?accountid=167615

Rosala, M. (2021). How many participants for a UX interview? *Nielsen Norman Group*, available at: https://www.nngroup.com/articles/interview-sample-size/

Roy, S.S.S., & Bhatia, S. (2019). Service quality versus service experience: an empirical examination of the consequential effects in B2B services. *Industrial Marketing Management, Vol. 82*, 52-69.

Sacred Heart University Library. (2020). *Limitations*. Available at: https://library.sacredheart.edu/ c.php?g=29803&p=185934

Safi, A., & Burrell, D.N. (2007). Developing advanced decision-making skills in international leaders and managers. *Vikalpa, Vol. 32, Issue 3*, 1-8.

Saldaña, J. (2021). *The coding manual for qualitative researchers*. Sage Publications.

Sahhar, Y., Loohuis, R., & Henseler, J. (2021). Towards a circumplex typology of customer service experience management practices: A dyadic perspective. *Journal of Service Theory and Practice, Vol. 31, Issue 3*, 366-395. DOI:https://doi.org/10.1108/JSTP-06-2020-0118

Saricam, C. (2022). Analysing service quality and its relation to customer satisfaction and loyalty in sportswear retail market. *AUTEX Research Journal, Vol. 22, Issue 2*, 184-193. DOI:https://doi.org/10.2478/aut-2021-0014

Sianes, A. (2021). Academic Research on the 2030 Agenda: Challenges of a Transdisciplinary Field of Study. *Global Policy, Vol. 12, Issue 3*, 286-297. Available at: http://dx.doi.org/10.1111/1758-5899.12912

Simmons, T. (2014). *An exploratory study of mHealth technology acceptance for type 2 diabetes self-management among adults in later life* [Doctoral Dissertation, University of North Carolina] (Order No. 3634080) (1612357222).

Siu, L.H. (2020). Digitalization in practice: The fifth discipline advantage. *The Learning Organization, Vol. 27, Issue 1*, 54-64. DOI:http://dx.doi.org/10.1108/TLO-09-2019-0137

Smith, S.S. (2014, Mar 31). Montgomery wards filled catalogs, stores, coffers innovate: Naysayers couldn't keep his capital idea down. *Investor's Business Daily*. https://www.proquest.com/newspapers/montgomery-ward-filled-catalogs-stores-coffers/docview/1511038726/se-2?accountid=167615

Tenny S, Brannan, J.M., & Brannan, G.D., (2022, September 18). *Qualitative study*. PMID: 29262162. StatPearls. StatPearls Publishing. Available at: https://www.ncbi.nlm.nih.gov/ books/NBK470395/

Soegoto, E.S., Delvi, J., & Sunaryo, A. (2018). Usage of e-commerce in increasing company power and sales. *IOP Publishing, Vol. 407, Issue 1*, 1-5. DOI:10.1088/1757-899X/407/1/012035

Tjoflat, I.T., Koyo, S.L., & Bø, B.B. (2021). Simulation-based education as a pedagogic method in nurse education programmes in Sub-Saharan Africa – perspectives from nurse teachers. *Nurse Education in Practice, Vol. 52*. DOI:http://dx.doi.org/10.1016/j.nepr.2021.103037

University of Louisville [U of L] William F. Ekstrom Library. (2021). *Critical thinking and academic research: Assumptions*. https://library.louisville.edu/ekstrom/criticalthinking/assumptions

Walch, K. (2019, July 2). AI's increasing role in customer service. *Forbes*. https://www.forbes.com/sites/cognitiveworld/2019/07/02/ais-increasing-role-in-customer-service/?sh=4f7c14d973fc

Witell, L., Kowalkowski, C., Perks, H., Raddats, C., Schwabe, M., Benedettini, O., & Burton, J. (2020). Characterizing customer experience management in business markets. *Journal of Business Research*, *Vol. 116*, 420-430.

Woloson, W. (2013, March 13). *How Benjamin Franklin invented the mail-order business*. Bloomberg US Edition. https://www.bloomberg.com/opinion/articles/2013-03-13/how-benjamin-franklin-invented-the-mail-order-business

Wu, B., Hui-Jun, J., Wang, C., & Dong, M. (2021). Knowledge and behavior-driven fruit fly optimization algorithm for field service scheduling problem with customer satisfaction. *Complexity*. DOI:http://dx.doi.org/10.1155/2021/8571524

Xiao, L., Guo, F., Yu, F., & Liu, S. (2019). The effects of online shopping context cues on consumers' purchase intention for cross-border e-commerce sustainability. *Sustainability, Vol. 11, Issue 10*, 1-24. Available at: https://doi.org/10.3390/su11102777

Yang-Fei, T., Wang, Y., & Ching-Ching, L. (2021). Technology- or human-related service innovation? Enhancing customer satisfaction, delight, and loyalty in the hospitality industry. *Service Business, Vol. 15, Issue 4*, 667-694.