THE USAGE OF SMART TECHNOLOGIES DURING CUSTOMER INTERACTION IN RETAIL BANKING AFTER COVID-19

COVID-19 SONRASI BİREYSEL BANKACILIKTA AKILLI TEKNOLOJİLERİN MÜŞTERİ ETKİLEŞİMİNDE KULLANIMI

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Abstract: COVID-19 has been affecting all aspects of life as well as retail banking services. Retail banking has faced several transformations since the last 20 years and especially digital transformation influenced the way banks interact with their customers. After COVID-19 most applications should be changed for less contact and more level of sanitation. In this descriptive study, we would like to introduce and explain Smart Technologies which can take a leading role in customer interaction in terms of securing minimum contact, social distance, and hygiene while holding a competitive advantage after COVID-19.

Keywords: Customer Interaction, Service Marketing, COVID-19, Smart Technologies, Retail Banking.

JEL: M31, G21, L81

Öz: COVID-19, hayatın tüm yönlerini olduğu gibi bireysel bankacılık hizmetlerini de etkilemektedir. Son 20 yıldan bu yana çeşitli dönüşümlerle karşı karşıya kalmış bireysel bankacılık alanında özellikle dijital dönüşüm bankaların müşterileriyle etkileşim şeklini tamamen değiştirmiştir. COVID-19'dan sonraki süreçte bireysel bankacılıkta yer alan çoğu uygulama, daha az temas ve daha fazla temizlik düzeyi için değiştirilmelidir. Bu betimsel çalışmada, COVID-19 sonrasında minimum temas, sosyal mesafe ve hijyen sağlama açısından müşteri etkileşiminde öncü rol üstlenebilecek ve böylece rekabet avantajı sağlayabilecek Akıllı Teknolojiler ele alınmaktadır.

Anahtar Kelimeler: Müşteri Etkileşimi, Hizmet Pazarlaması, COVID-19, Akıllı Teknolojiler, Bireysel Bankacılık.

1. Introduction

There have been many changes in the retail banking sector over the last 20 years. The banking sector faces deep digital transformation, and retail banking, in particular, invests heavily in digitalization and plays a leading role in this trend (Pousttchi & Dehnert, 2018: 265). Due to the similarity of the products and services in retail banking, customer interactions at every contact and connection point are important than ever in terms of customer retention and acquisition.

Retail banking is also highly dependent on the high context of business culture, which requires contact. Shortly the retail banking is a service sector that touches and intensely interacts with people (Nagar & Rajan, 2005: 905). Prior to COVID 19, contact with customers had been important because close intervals with the customer allowed cross-selling. However, this was increasing the waiting time for the other

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customers. In terms of marketing, it can be clearly observed that information technologies create great changes in marketing tools in the banking sector (Hossain, Dwivedi, & Naseem, 2014: 538). Although the Internet-based new products and/or new channels were initially programmed and introduced to appeal to certain market segments such as higher education and/or Generation Z, banks have intensely turned to service through digital channels due to the rapid adoption of smart devices and broadband/mobile internet access by all customer groups (Herington & Weaven, 2009: 1222). Thus, each computer and smartphone started to become a bank branch for customers (Filotto, Caratelli, & Fornezza, 2021: 368). In retail banking, long waiting periods, formalities, and dealing with more than one unit are some dissatisfaction causes (Roy, Shekhar, Lassar, & Chen, 2018: 295). To minimize this, improvements have been made on the digital banking side. Although digital applications bring fast and easy processes, they also reduce the one-to-one human relationship between the customer and the bank employee.

During the COVID-19 pandemic, there were major changes in retail banking like the other service businesses (Baicu, Gârdan, Gârdan, & Epuran, 2020: 535). Concerns regarding hygiene (level of sanitation) and social distance are the reasons for being most affected. Therefore, in the first stage, retail banking was directed to physical contactless channels such as online, mobile, call centers. However, these channels have not solved the needs for the operations which require physical contact most of the time, such as depositing or withdrawing cash and proceeding cheques. On the other hand, Smart technologies are becoming able to offer many different services that the customer can perform many transactions without contact. The term "Smart Technology", also referred to as technology-based self-service, defines the technological interfaces that enable customers to produce services without the direct participation of the business employee. (Meuter, Ostrom, Roundtree, & Bitner, 2000: 51).

Smart technologies have been developed to resolve individual banking transactions quickly, easily, and on 7/24 (Omarini, 2015: 6). With the digitalization led by banks, the process of replacing traditional service delivery tools with smart technologies has gained importance with COVID-19. Even if customers physically go to retail banks, they want to minimize contact with branch employees, and minimizing contact is also important in terms of occupational health and safety practices in branches, thus contactless solutions are required (Haapio, Mero, Karjaluoto, & Shaikh, 2021: 4). Smart technologies have become prominent for the development of the automation of services. Considering the dynamics created by these changes, in this descriptive paper we are trying to explain why and how customer interaction and smart technologies in retail banking change after COVID-19.

2. Customer Interaction at Retail Banking

Customer interaction can be defined as the progress and changes occurring between a company and its customers, as well as any communication that enables businesses to connect with potential and existing customers regarding their products, services and applications, and operations (Vandermerwe, 2000: 27-37). Whether customer interactions originate from social media, mass media, or individual relationships, the main point of these interactions is the expectation of contacting customers and solutions provided by businesses. These interactions should be rational and utilitarian, meaning that they need to be beneficial for both parties. The success of the interaction

depends on the behavior change that the business wants to create in the customer. If the customer changes his/her behavior after the interaction and reveals a positive attitude towards the business, it can be thought that these efforts are developing or effective.

In a service setting, the interaction occurs mainly during the service is being produced and consumed, called the service encounter. Customers both join the production of the service in terms of customized offerings (Solomon, Surprenant, Czepiel, & Gutman, 1985: 103), pay for the service, and consume. Kelley (1992: 28) stated that interaction is a key to success in the retail environment. Bitner, Booms, and Mohr (1994: 103) revealed that the interaction between the customer and the service personnel influences customer satisfaction. According to Beatty, Mayer, Coleman, Reynolds, & Lee (1996: 237), the loyalty of customers mainly relies on the service employees because of their role in reflecting the companies' values and approach to the customers.

Interactions mainly occur among the customer, service contact personnel, the service environment, and other customers. Many researchers also focused on the customization of these interactions in the service business (Mittal & Lassar, 1996: 96; Surpresant & Solomon, 1987: 89), the interaction between salespersons and customers (Beatty et al, 1996: 240; Reynolds & Beatty, 1999: 12) which is critical for creating one-to-one relation, the employees and the physical surroundings (Bitner, 1990: 70), retail atmosphere (Donovan & Rossiter, 1982: 34-57; Yoo, Park, & MacInnis, 1998: 257), and the service quality (Parasuraman, Zeithaml, & Berry, 1985: 47).

Customer interaction is mainly controlled by the company (Moore, Moore, & Capela 2005: 486), but for sure the customer reactions and perceptions cannot be controlled (Martin & Pranter, 1989: 5-15). From this point of view, customer-to-customer interaction is also an important factor to be considered. According to Hollebeek (2011: 795), customer interaction relies on a certain level of cognitive, affective, and behavioral activities. Lusch and Vargo (2006: 284) also defined customer interaction as the shared and interactive production between the customer and other company elements, where customer involvement is the key for this mutual production. According to Van Doorn et al. (2010: 253), an interaction that is reflected through customer behavior towards an organization or brand is influenced by stimulation motivation. These interactions may lead to a relationship that is based on both logical and emotional factors. Bowden (2009: 66) stated that customer interaction leads to customer satisfaction, and therefore, customer loyalty through a mental process. Vivek, Beatty, and Morgan (2012: 133) also emphasize the customer involvement in the communications between the employees, and customers and these interactions will grow cognitively, emotionally, behaviorally, or socially.

Sashi (2012: 266) linked the customer interaction with customer engagement and suggested that it starts with any online or offline connection and if the interaction yields satisfaction for the customer then emotional bonds might be created with the help of positive experience from a product, brand, or organization. Other scholars also revealed that customer interaction results in loyalty, satisfaction, trust, and commitment (Brodie, Hollebeek, Juric, & Ilic, 2011: 262; Sprott, Czellar, & Spangenberg, 2009: 92). The customers' willingness to interact may vary in terms of the benefit they expect from the company when considered from the perspective of the theory of consumption values (Sheth, Newman, & Gross, 1991: 160) and the

consumer value (Holbrooke, 2006: 715). Evaluation of customers like trust, and perceived performance influence customer interaction (Harris & Goode, 2004: 148; Verhoef, Reinartz, & Krafft, 2010: 247).

Customer interaction is also changed to a hybrid interaction, with the rapid adoption of smartphones, social media, and the web by the customers (Nüesch, Alt, & Puschmann, 2015: 73). Customers can easily move between one channel to the other in seconds and thus letting channel convergence and releasing the barriers between the electronic channels, physical channels, and mobile channels (Neslin & Shankar, 2009: 77). Nüesch et al. (2015: 73) highlighted three dimensions of the hybrid customer interaction: strategy, process, and technology. The changing customer behavior caused by digital technologies also emerges the need for redesigning the banking industry and the customer interaction at banks. The decline in the ratio of customers who prefers getting service from the branches pushes banks to create models which generate hybrid customer interaction.

In service industries, the service encounter looms large in both service delivery and customer satisfaction (Wu, 2008: 1503). Many researchers investigated customer-to-customer interaction in the service encounter context. Unlike products, the interaction between the provider and customer is more important in the service industry. Customer interaction comprises all the information exchange, collaboration, and cooperation process generated between the company and its customers which creates value for the two sides (Gruner & Homburg, 2000: 12). Service encounter is also the place where these interactions happen (Bitner, Booms, & Tetreault, 1990: 72). The service encounter can be regarded as a branch encounter in retail banking. At the branch, it is enriched with the services offered to the people who provide them.

The determinants of excellence in service encounters were investigated by researchers in the past (Baker, Grewal, & Parasuraman, 1994: 328-339). Fisk, Brown, and Bitner (1993: 13-60) suggested that the interaction at service encounter might be in three different dimensions; customer and employee interactions, customer and physical environment interactions, and customer-to-customer interactions. Baker, Levy, and Grewal (1992: 446) and Turley and Chebat (2012: 131) stated that the service atmosphere has a direct and positive influence over customer satisfaction. Customer-to-customer interaction were also studied in hospitality (Nicholls, 2011: 209-221), retail (Tomazelli, Broilo, Espartel, & Basso, 2017: 339-349), and B2B (Bruhn, Schnebelen, & Schäfer, 2014: 164-176) settings. Besides, Schaarschmidt, Walsh, and Evanschitzky (2017: 119-130) covered the topic in terms of creating hybrid offerings to find the most proper goods and services mix.

The interaction with the customer in banks is through various channels such as face to face, by phone, or digital. Branches are presented to the customers with similar designs to reflect the bank's character as much as possible. Customer representatives have an important role in delivering service with the presence of the customer or proceeding with their operations. Also, the counters where money is exchanged are the places where daily practical transactions can be made. The staff serving at the bank is authorized to carry out numerous transactions such as opening and closing accounts, money transaction orders, EFT, withdrawal, deposit, cheque, and loans. These offered services are mostly related to issues involving direct money exchange.

According to Liao and Wong (2008: 1206) ease of use, security, responsiveness, convenience, and usefulness influence customer interaction in digital banking solutions. Good interaction with customers is provided through the conscious and informed evaluation of human relations, the company's processes, and its products/services. Due to the relationship between customer interaction and customers' perceptions toward the companies, banks need to develop solid strategies to support these interactions (Machado Nardi, Jardim, Ladeira, & Santini, 2019: 248). This will help to gain an advantage over the competition in the banking industry.

Effective tools should be used to build and manage customer relationships, such as improving human relationships, empathy (emotionality), effective listening, social media analysis, measuring satisfaction, and knowledge of people who interact with business issues. Here, solutions related to products and/or services should be offered and with the help of new digital tools, this becomes easier than ever (Elliot, Meng, & Hall, 2012: 324). Also, trust is very important for the quality and continuity of the interaction, otherwise, relationships may suffer.

Interactions can also be considered as a method of learning and awareness for institutions and individuals. This method provides information about why customers choose the institution, which products/services they choose, and for what purpose. It addresses behavior development according to real-life problems by collecting information in providing products/services to customers and creating corporate memory and learning.

3. Changes in Retail Banking Services with Smart Technologies

Meuter et al. (2000: 52) highlighted the widespread adoption of technology in service encounters and stated the role of smart technologies in service outcomes. Smart technologies may reduce or eliminate interpersonal contact between the customer and the service employee but they also increase another interaction, customer-to-customer interaction by asking, sharing, communicating (Nicholls, 2010: 93). Alam (2011: 2742) also stated that the finance industry is an important field to explore the change in interaction by smart technologies because of the widespread use and acceptance of digital technologies widely.

COVID-19 pandemic triggered important changes and transformations in terms of customer expectations (Baicu et al., 2020: 535). Especially for the service sector, expectations have occurred on factors such as minimum contact, social distance protection, and hygiene, and as a result of this shift, product development and differentiation processes started to focus on these needs.

Having a high technological maturity level compared to the other sectors, the banking industry provided reliable and consistent service during the COVID-19 pandemic (Haapio et al., 2021:4). The branch banking will continue to exist with major changes and adapting the requirements of "the new normal". In this study, we discuss the current and possible changes including technological solutions about branch banking to minimize human interaction and technological expectations at the point of social distance and hygiene process in four steps: before service, customer greeting/lobby management, during service, and after service.

3.1. Before Service

This step starts with the need for banking service. Before visiting the branches, customers want to be sure about the size of the crowds and waiting time in branches (Tadic, Aleksic, Mimovic, Puskaric, & Misita, 2016: 1344), and this requirement effects two technologies on the bank side:

- Branch Heat Maps: Branch heat maps are being used to show how many customers are waiting in a branch, how many bankers/tellers are giving service, and how much crowded the branch is. Monitoring the instantaneous densities of the branches -especially the branches close to the customers' current locations- through the mobile banking applications is very important about customers' decisions on branch visit and determining the branch to be visited according to the density and distance of branches. For this reason, branch heat maps will be a necessity for banking mobile applications.
- Appointment Management: There are new regulations about the number of customers/staff per square meter of bank branches (Kuveyt Türk. (2020). Besides appointment management, another issue is integrating the appointment system with existing queue management systems in branches and prioritize customers with appointments by calling these customers from the queue system. In this process, the use of QR codes is generally preferred as a basic element in the integration structure, which will be produced at the end of the appointment registration (Scanova, 2021). And when the customer arrives at the branch at the appointment time, he/she shows the produced QR code to the reader on the customer greeting/queue management kiosks. Afterward, the queueing system sends a query to the management system to confirm the appointment details, and if the appointment is confirmed, then the customer will be called by the related staff preferentially.

3.2. Customer Greeting & Lobby Management

The queuing systems are the first and foremost touch point for many customers before they arrive at the bank branches (Varkevisser, 2020). Nowadays queueing systems enable customers to be recognized, prioritized according to banks' segmentation, and directed for transaction flows. Customers are also informed about the services provided by the organization with touch screens or printed tickets and helping the performance management of employees (Q-net, 2021). In the simplest sense, these systems enable customers to be guided by the optimum waiting times after introducing themselves and identifying the transaction types.

The effects of COVID-19 on lobby management are seen in 4 important steps: heat map control, temperature screening, customer identification, transaction type selection & guiding.

3.2.1. Heat Map Control

Due to the regulations and expectations, crowded waiting lounges within the branches are no longer preferred. For this reason, it is tried to control the arrivals of the customers to the branches with the appointment limits as stated above (Akbank, 2020). As a result, persons per square meter are defined with the size of the location. Here, there is a need for technological limitation and it is possible in two ways.

(1) The number of customers entering and leaving the branch can be counted with the sensors to be placed at the door entrance. These smart doorkeepers can allow the entrance of customers within the limits, warning the customers with LED or audible warning mechanisms.

(2) The queueing systems can generate queue numbers for the customers within the limits of the branches, and calling the customers within the defined limits (Qmatic, 2020). The served customer limitation can be controlled by providing only a limited amount of tickets.

3.2.2. Temperature Screening

Measuring the temperature of people when entering public spaces becomes standard practice. This practice is essentially designed to create a perception of trust and safe, that people having SARS-Cov-2 virus will not enter this location. These expectations which were occurred after COVID-19 are realized through the queue management kiosks that meet customers at bank branches. An OEM thermometer integration needs to be installed on existing kiosks, showing the measurement results and even mentioning the results with visual elements such as color and emoji.

3.2.3. Customer Identification

Double or multi-factor authentication methods have been important at every point requiring security. This step is a customer recognition step because it has no security dimension. This process is most commonly carried out in two ways.

(1) Data input via touchscreens (ID, taxpayer identification number, mobile number, account number, customer number, etc.)

(2) Specialized card readers (ID, debit, or credit card)

With COVID-19, alternative customer recognition methods, which do not require contact, and more hygiene, have begun to appear on the agenda, especially since data entry on the touch screen is not preferred. Among these, the most preferred method is QR code applications where mobile phones are easy to access (Scanova, 2021). A QR code embedded in the Mobile Banking application having identity info (ID, taxpayer identification number, mobile number, account number, customer number, etc.) will be enough to identify the customer. When a customer arriving at a branch shows this code then the related operations can be handled without entering any data or inserting any cards, pointing out a contactless solution. This can be also supported with NFC readers for mobile phones.

The recognition of the customer with biometric elements is used to verify the customer rather than know the customer due to the nature of biometric technologies. In other words, fingerprint, vein, face, iris, or voice recognitions are mostly used for verification such as passwords.

3.2.4. Transaction Type Selection & Guiding

The step following customer recognition is to determine the service category that the customer wants to have. This choice is important in terms of guiding the customer to which authorized person or service channels in the next steps. Firstly, there is an increase in data input for transaction/service details to reduce contact with the

teller/representative and direct them to the right channel. After COVID-19, to minimize the contact with bankers, the banking services need to be redesigned by changing the share of banker and customer about service creation especially with the help of self-service technologies developed for both common use and individual use.

Secondly, hygienic alternative technologies for data entry are needed. Mainly two methods are preferred for entering data over kiosks, alphanumeric/numerical physical keyboards plus function buttons and touchscreens. For both options, after COVID-19 because people don't want to touch the screen or keys that others do. Another fact is that some touch sensor technologies do not detect gloves. Although the self-service technology provider companies inform and warn the banks about the cleaning of the products (with the use of disinfectants containing min 70% alcohol), the perception of hygiene is always a problem for the customers.

Apart from the use of alcohol-based disinfectant, antimicrobial/antibacterial film or touch technologies or special long-term affected solutions that support this feature have also been started. These solutions, developed on silver ions instead of alcohol, using the antimicrobial/antibacterial effect of silver. Although not specific for the machines, the use of UV-C rays for direct disinfection of the environment and possible risks are discussed about these technologies.

Besides, alternative methods for data entry to machines such as kiosks are needed. The simplest way can be motion detectors which provide a contactless solution, instead of the physical buttons. Premise solutions about queue management ticket machines are now in use, basing on motion detectors like photocell sensor technologies (Qmatic, 2021). When a customer waves his/her hand over the ticket machine, queue tickets can immediately be printed without touching anywhere on the machine.

It is anticipated that audio technologies will have an important place in the point of contactless comprehensive data entry. Smart assistants such as Alexa, Siri, and Google Assistant have somehow become a part of people's lives with voice and speech recognition technologies. IVR systems that are welcomed in bank call centers based on similar technologies have achieved significant gains in this regard.

The other contactless communication alternative is using QR codes (Scanova, 2021). Most simply, customers withdraw or deposit their cash without touching the ATM, when they determine their transaction details on the bank mobile application and display the generated code to the ATM. In this scenario, the QR-code reader is located on the ATM and the user creates a QR code related to the transaction and shows it to the ATM.

3.3. Service Offer

While the banking sector focused on technological investments to differentiate banking services and to achieve cost advantages, the sector also sees that they have to increase customer loyalty and their cross-sales by focusing on one-to-one relationships (Tadic et al., 2016: 1344). A few years ago, banks were trying to keep the customers out of the branches and push them to use ATMs or call centers. But now, the banking sector is looking for a balance of this change. For this purpose, new

branch concepts were started to be tried to provide customers with different branch experiences.

Customers make one-to-one meetings with their representatives and tell what they need and finish their transactions with ATM, kiosk, and VTM-style machines within the branch with a transaction code. Not only cash deposit, withdrawal, transfer, and payment with different montages and different currencies, but all other banking transactions and applications, as well as cheque transactions, are made through these self-service technologies. This structuring emerges as a pre-transition phase to the "Banking 4.0" point, which conceptualizes a technology platform that offers trust and utility where products or channels are not important (Groenfeldt, 2019). With COVID-19, small arrangements are needed in the new branch concept where people and technology come together.

3.3.1. One-to-One & Face-to-Face Service

During COVID-10 face-to-face communications have started to make both sides (bank employees & customers) uneasy. In addition to the risk of virus transmission, relationship management, with the parties' having different awareness and sensitivity levels about COVID-19 is becoming a problem. The fact that one of the customers or bankers does not have an equal sensitivity about social distance may cause problems in the customer relationship with the staff and then the bank.

In order to avoid such problems and to manage the variability in the possible awareness level of the parties, social distance awareness devices have been put into use. These are LED and audible warning devices placed on the desk of bankers. If the customer is so near to the banker at a level that ignores the social distance, the sensors work and the LEDs are lit in different colors and the customer is warned with an audible warning.

3.3.2. Smart Technologies

Smart technologies used in banking are categorized by Interactive/Non-interactive and Personal/Common Usage dimensions as depicted in Figure 1. These technologies, which are called Alternative Distribution Channels (ADC) in banking, have become the main distribution channels after COVID-19.
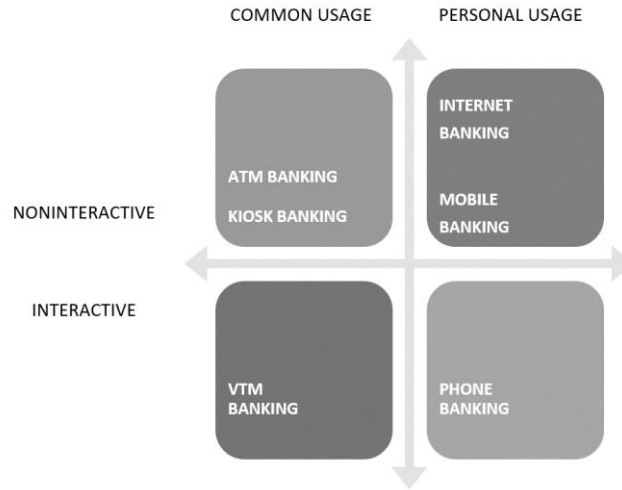
Figure 1. **Categorization of Alternative Distribution Channels**

The common use smart technologies that are developed and diversified to support many different functions are increasing in importance with COVID-19 (Haapio et al., 2021:4). While these technologies offer significant gains in reducing contact with the bank staff, the most important problem of these channels is the need for more hygienic data entry methods and tools, as discussed above.

The second important effect of COVID-19, seen on smart technologies is developing new tools especially self-service kiosks with new functions. In this regard, the most important behavioral changes were related to the use of cash. Promoting contactless cards and changing daily transaction limits of contactless payment were the most important implications. Meanwhile, a different kiosk solution has been brought up. Pre-paid card sales kiosks, called Reverse ATM, accepting the cash in the hands of the people and dispensing the bank cards to the customer (Muhammad, 2021). This kiosk business model, which was developed before COVID-19, targeted tourists at airports to convert their cash into cards without seeking any foreign currency when they travel to another country, but now this model is a good solution for people who don't want to use cash. Self-service hygienic payment modules which are targeting the same type of customers began to be used for payment and/or change transactions.

3.4. After Service

Surveys should be created not only to measure customer satisfaction, but also to raise awareness of the measures taken by the bank after COVID 19. Instead of long customer satisfaction surveys, visual happiness surveys, which are mainly supported by emoji and visual elements, and visual elements in predominantly digital elements, stand out by evaluating the hedonic dimension.
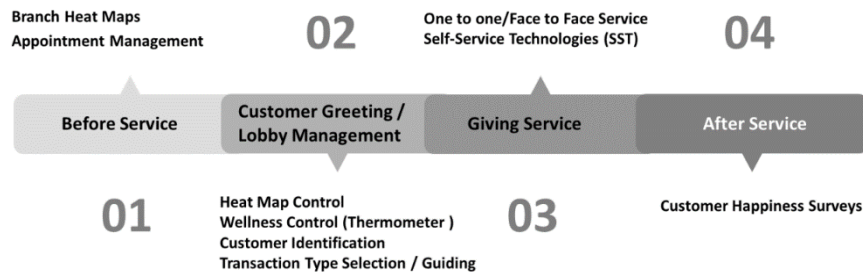
Figure 2. Effects on Banking Service Processes

4. Conclusion

In the last period of the industrial revolution and the transition to the information age, people remained in the "Sales and Promotion" dimension when viewed by sales and customer service. After stepping into the information age, the connections increased environments have changed. In the past, the interaction was physical human-based, and subjective. The relationship with the result was often not clear. The communication, reporting, and intelligence aspects were heavy. After the transition to the understanding of marketing and CRM notion, the interaction moved to the next level to transform into human, digital, and digitally analysed interactions. Then, with the customer being taken to the centre, the instant interaction level has activated. Online, social media, mobile banking, etc. became available before COVID-19 in banking sector. Although there were some improvements for smart technologies, there was a slow progress. ATMs were put in place to provide convenience to the customer and to work 24/7 which means shrink the branch, increase productivity, decrease personnel costs.

The COVID-19 outbreak in 2020 also affected these dynamics, especially in the banking sector (Wójcik & Ioannou, 2020: 394). To adapt to these rapidly changing environments, to show successful performance, it is necessary to turn to the human element, especially customers, to differentiate or differentiate in a competitive environment. Therefore, customer interaction is a factor that increases the competitiveness.

Smart technologies are at automation level at the moment, thus there is no direction to act like a human yet. However, this has become a strength in the current situation. After COVID-19, human beings escaped from human beings due to social distance. Therefore, while the banking sector is struggling to increase human interaction as in other sectors, it is now struggling to reduce contact and interaction time.

Customer interaction is the creation of the right human relations and the conscious evaluation of company processes and products/services, and the integration of information technologies with information processing capacity, as well as customer synergy. First, we tried to explain a customer interaction model to understand why a retail bank customer interact. We tried to explain the interaction process to be revealed with the customer. Then we checked the new smart technologies after COVID-19. In this way, it has been mentioned that it is important to differentiate the business by offering digital and non-digital solutions for the needs and wants of the customers. In

our study, the changes in banking processes, technology and products -which emerged as the reaction after the first shock of COVID-19 and with the transition to normalization have been discussed. In case of pandemic prolongation, these changes will likely be increased and diversified basing on the same factors such as minimum contact, social distance protection and hygiene principles. Rationality and the utility here are to be hygienic and contactless environments for the customers or the less contact operations for the pandemic conditions.

From now on, revealing the innovative and creativity capacities in the triangle of managers, employees and customers will be the effective use of the resources owned by companies and acting in 360 degrees by considering the subject of customer interactions in successful information management practices.

After COVID-19, to supply minimum contact, social distance protection, and hygiene, we need to redesign the banking services by changing the share of bankers and customers about service creation especially with the help of self-service technologies developed for both common use and individual use. This study defines important improvements in terms of operational excellence, safety, and hygiene in a service setting and it needs further empirical analysis. Thus we suggest studies in this context by measuring how smart technologies help retail banks increase their customers' satisfaction and loyalty. Besides studies measuring the improvement in processes like customer greeting and handling, customer requests can be proposed. Another topic for studying might be the increase in the diversity of customer transactions and cross-selling opportunities.

References

Akbank. (2020). Covid-19 precautions. Retreived from https://www.akbank.com/en-us/Content/Pages/Covid-19-Precautions.aspx

Alam, I. (2011). Process of customer interaction during new service development in an emerging country. *The Service Industries Journal*, *31*(16), 2741–2756.

Baicu, C. G., Gârdan, I. P., Gârdan, D. A., & Epuran, G. (2020). The impact of COVID-19 on consumer behavior in retail banking. Evidence from Romania. *Management & Marketing. Challenges for the Knowledge Society*, *15*(s1), 534–556. doi:10.2478/mmcks-2020-0031

Baker, J., Grewal, D., & Parasuraman, A. (1994). The influence of store environment on quality inferences and store image. *Journal of the Academy of Marketing Science*, *22*(4), 328–339.

Baker, J., Levy, M., & Grewal, D. (1992). An experimental approach to making retail store environmental decisions. *Journal of Retailing*, *68*(4), 445–460.

Beatty, S. E., Mayer, M., Coleman, J. E., Reynolds, K. E., & Lee, J. (1996). Customer–sales associate retail relationship. *Journal of Retailing*, *72*(3), 223–247.

Bitner, M. J. (1990). Evaluating service encounters: the effects of physical surroundings and employee responses. *Journal of Marketing*, *54*(2), 69–82.

Bitner, M. J., Booms, B. M., & Mohr, L. A. (1994). Critical service encounters: The employee's viewpoint. *Journal of Marketing*, *58*(4), 95–106.

Bitner, M. J., Booms, B. H., & Tetreault, M. S. (1990). The service encounter diagnosing favorable and unfavorable incidents. *Journal of Marketing*, *54*(1), 71–84.

Bowden, J. L-H. (2009). The process of customer engagement: A conceptual framework. *Journal of Marketing Theory and Practice*, *17*(1), 63–74.

Brodie, R. J., Hollebeek, L. D., Juric, B., & Ilic, A. (2011) Customer engagement: Conceptual domain, fundamental propositions, and implications for research. *Journal of Service Research*, *14*(3), 252–271.

Bruhn, M., Schnebelen, S., & Schäfer, D. (2014). Antecedents and consequences of the quality of e-customer-to-customer interactions in B2B brand communities. *Industrial Marketing Management*, *43*(1), 164–176. doi:10.1016/j.indmarman.2013.08.008

Donovan, R. J., & Rossiter, J. R. (1982). Store atmosphere: An environmental psychology approach. *Journal of Retailing*, *58*(1), 34–57.

Elliott, K., Meng, G., & Hall, M. (2012). The Influence of Technology Readiness on the Evaluation of Self-Service Technology attributes and resulting attitude toward technology usage. *Services Marketing Quarterly*, *33*(4), 311-329.

Filotto, U., Caratelli, M., & Fornezza, F. (2021). Shaping the digital transformation of the retail banking industry. Empirical evidence from Italy. *European Management Journal*, *39*(3), 366–375. doi:10.1016/j.emj.2020.08.004

Fisk, B., Brown, S. W., & Bitner, M. J. (1993). Tracking the evolution of the service marketing literature. *Journal of Retailing*, *69*(1), 13–60.

Groenfeldt, T. (2019, April 19). Bank 4.0 will be all-digital, low-overhead, mobile-first [Blog]. Retrieved from https://www.forbes.com/sites/tomgroenfeldt/2019/04/19/bank-4-0-will-be-all-digital-low-overhead-mobile-first/?sh=574cbfd122ac

Gruner, K. E., & Homburg, C. (2000). Does customer interaction enhance new product success? *Journal of Business Research*, *49*(1), 1–14.

Haapio, H., Mero, J., Karjaluoto, H., & Shaikh, A. A. (2021). Implications of the COVID-19 pandemic on market orientation in retail banking. *Journal of Financial Services Marketing*. doi:10.1057/s41264-021-00099-9

Harris, L. C., & Goode, M. M. H. (2004). The four levels of loyalty and the pivotal role of trust: A study of online service dynamics. *Journal of Retail. 80*(2), 139–158.

Herington, C., & Weaven, S. (2009). E-retailing by banks: e-service quality and its importance to customer satisfaction. *European Journal of Marketing*, *43*(9/10), 1220–1231. doi:10.1108/03090560910976456

Holbrook, M. B. (2006). Consumption experience, customer value, and subjective personal introspection: an illustrative photographic essay. *Journal of Business Research*, *59*(6), 714–725.

Hollebeek, L. D. (2011). Demystifying customer brand engagement: exploring the loyalty nexus. *Journal of Marketing Management*, *27*(7–8), 785–807.

Hossain, M. A., Dwivedi, Y. K., & Naseem, S. B. (2014). Developing and validating a hierarchical model of service quality of retail banks. *Total Quality Management & Business Excellence*, *26*(5-6), 534–549. doi:10.1080/14783363.2013.856545

Kelley, S. W. (1992). Developing customer orientation among service employees. *Journal of the Academy of Marketing Science*, *20*(1), 27–36.

Kuveyt Türk. (2020). Coronavirus precautions. Retrieved from https://www.kuveytturk.com.tr/en/coronavirus-precautions

Liao, Z., & Wong, W. K. (2008). The determinants of customer interactionswith internet-enabled e-banking services, *Journal of the Operational Research Society*, *59*(9), 1201–1210.

Lusch, R. F., & Vargo, S. L. (2006). Service-dominant logic: Reactions, reflections and refinements. *Marketing Theory*, *6*(3), 281–288.

Machado Nardi, V. A., Jardim, W. C., Ladeira, W., & Santini, F. D. O. (2019). Customer interaction in business relations: A meta-analysis approach. *Marketing Intelligence & Planning*, *38*(2), 239–253.

Martin, C. L., & Pranter, C. A. (1989). Compatibility management: Customer-to-customer relationships in service environments. *Journal of Services Marketing*, *3*(3), 5–15.

Meuter, M. L., Ostrom, A. L., Roundtree, R. I., & Bitner, M. J. (2000). Self-service technologies: Understanding customer satisfaction with technology-based service encounters. *Journal of Marketing*, *64*(3), 50–64.

Mittal, B., & Lassar, W. M. (1996). The role of personalization in service encounters. *Journal of Retailing*, *72*(1), 95–109.

Moore, R., Moore, M. L., & Capella, M. (2005). The impact of customer-to-customer interactions in a high personal contact service setting. *Journal of Services Marketing*, *19*(7), 482–491.

Muhammad, M. (2021, June 29). What's a reverse ATM? [Blog]. Retrieved from https://blog.wavetec.com/en/whats-a-reverse-atm

Nagar, V., & Rajan, M. V. (2005). Measuring customer relationships: The case of the retail banking industry. *Management Science*, *51*(6), 904–919. doi:10.1287/mnsc.1050.0376

Neslin, S., Shankar, V. (2009). Key issues in multichannel customer management: current knowledge and future directions. *Journal of Interactive Marketing*, *23*(1), 70–81.

Nicholls, R. (2010). New directions for customer-to-customer interaction research. *Journal of Services Marketing*, *24*(1), 87–97.

Nicholls, R. (2011). Customer-to-customer interaction (CCI): A cross-cultural perspective. *International Journal of Contemporary Hospitality Management*, *23*(2), 209–223.

Nüesch, R., Alt, R., & Puschmann, T. (2015). Hybrid customer interaction. *Business & Information Systems Engineering*, *57*(1), 73–78. doi:10.1007/s12599-014-0366-9

Omarini, A. (2015). Introduction: From banking to retail banking. Retail Banking, 3–24. doi:10.1057/9781137392558_1

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, *49*(4), 41–50.

Pousttchi, K., & Dehnert, M. (2018). Exploring the digitalization impact on consumer decision-making in retail banking. Electronic Markets, *28*(3), 265–286. doi:10.1007/s12525-017-0283-0

Q-net. (2021). Queue management system. Retrieved from https://q-net.pro/?gclid=EAIaIQobChMImojt38Tn8gIVxpTVCh1hJw3uEAAYASAAEgIut_D_BwE

Qmatic. (2020). Qmatic's response to COVID-19. Retrevied from https://lp.qmatic.com/covid-19

Qmatic. (2021). A complete solution for virtual queuingh. Retrevied from https://lp.qmatic.com/instant-mobile-queue-management-package

Reynolds, K. E., & Beatty, S. E. (1999). Customer benefits and company consequences of customer-salesperson relationships in retailing, *Journal of Retailing*, *75*(1), 11–32.

Roy, S. K., Shekhar, V., Lassar, W. M., & Chen, T. (2018). Customer engagement behaviors: The role of service convenience, fairness and quality. Journal of Retailing and Consumer Services, *44*, 293–304. doi:10.1016/j.jretconser.2018.07.018

Sashi, C. M. (2012). Customer engagement, buyer-seller relationships, and social media. *Management Decision*, *50*(2), 253–272.

Scanova. (2021). How financial institutions are using QR codes: some diverse use cases. Retreived from https://scanova.io/blog/qr-codes-in-financial-institutions/

Schaarschmidt, M., Walsh, G., & Evanschitzky, H. (2017). Customer interaction and innovation in hybrid offerings. *Journal of Service Research*, *21*(1), 119–134. doi:10.1177/1094670517711586

Sheth, J. N., Newman, B. I., & Gross, B. L. (1991). Why we buy what we buy: A theory of consumption values. *Journal of Business Research*, *22*(2), 159–170.

Solomon, M. R., Surprenant, C. F., Czepiel, J. A., & Gutman, E. G. (1985). A role theory perspective on dyadic interactions: the service encounter. *Journal of Marketing*, *49*(1), 99–111.

Sprott, D., Czellar, S., & Spangenberg, E. (2009). The importance of a general measure of brand engagement on market behavior: development and validation of a scale. *Journal of Marketing Research*, *46*(1), 92–104.

Surprenant, C. F., & Solomon, M. R. (1987). Predictability and personalization in the service encounter, *Journal of Marketing*, *51*(2), 86–96.

Tadic, D., Aleksic, A., Mimovic, P., Puskaric, H., & Misita, M. (2016). A model for evaluation of customer satisfaction with banking service quality in an uncertain environment. *Total Quality Management & Business Excellence*, *29*(11-12), 1342–1361. doi:10.1080/14783363.2016.1257905

Tomazelli, J., Broilo, P. L., Espartel, L. B., & Basso, K. (2017). The effects of store environment elements on customer-to-customer interactions involving older shoppers. *Journal of Services Marketing*, *31*(4/5), 339–350.

Turley, L. W., & Chebat, J.-C. (2002). Linking retail strategy, atmospheric design and shopping behaviour. *Journal of Marketing Management*, *18*, 125–144.

Van Doorn, J., Lemon, K. N., Mittal, V., Nass, S., Pick, D., Pirner, P., & Verhoef, P. C. (2010). Customer engagement behavior: Theoretical foundations and research directions. *Journal of Service Research*, 13(3), 253–266.

Vandermerwe, S. (2000). How increasing value to customers improves business results. *Sloan Management Review*, *42*(1), 27–37.

Varkevisser, H. (2020, January 22). Queue management systems in banks [Blog]. Retreived from https://www.qmatic.com/blog/queue-management-systems-in-banks

Verhoef, P. C., Reinartz, W., & Krafft, M. (2010). Customer engagement as a new perspective in customer management. *Journal of Service Research*, *13*(3), 247–252.

Vivek, S. D., Beatty, S. E., & Morgan, R. M. (2012). Customer engagement: exploring customer relationships beyond purchase. *Journal of Marketing Theory and Practice*, *20*(2), 127–145.

Wójcik, D., & Ioannou, S. (2020). COVID-19 and finance: Market developments so far and potential impacts on the financial sector and centres. *Tijdschrift Voor Economische En Sociale Geografie*, *111*(3), 387–400. doi:10.1111/tesg.12434

Wu, C. H-J. (2008). The influence of customer-to-customer interactions and role typology on customer reaction. *The Service Industries Journal*, *28*(10), 1501–1513.

Yoo, C., Park, J., & MacInnis, D. J. (1998). Effects of store characteristics and in-store emotional experiences on store attitude. *Journal of Business Research*, *42*(3), 253–263.