

EVALUATION AND IMPROVEMENT OF TELEPHONY CALL CENTER BUSINESS PROCESS AT AN INDONESIAN BANK

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Keyword

BPR, service blueprint, value-added activity, non-value-added activity, call center

Abstract

This research focuses on the problem of uneven queuing distribution among call center agents at PT. BXX, revealing flaws in the organization's current business process. Business process reengineering (BPR) is employed, involving service blueprint mapping, analysis, and the development of a new process to rectify this issue. The data collection process incorporates various sources such as company reports, observations, and interviews with the call center manager. The analysis reveals 14 necessary but non-value-added activities and 8 value added activities within the current business process. A potential fail point is identified where instances of the product owner failing to fulfill the caller's request within the expected time resulting in repeat calls. Repeat callers are required by the company to be assigned to the previous agent they interacted with to save time. However, this can lead to the accumulation of long queues for certain agents, resulting in increased average waiting time and a higher likelihood of abandonment. The proposed to-be business process suggests incorporating a progress update process and modifying the queuing process to include a callback option. These solutions aim to reduce repeat calls, inform callers about their requests, and prevent queue buildup. Expected outcomes are improved queuing distribution, reduced wait times, and decreased call abandonment. This research contributes to the business process management field by using BPR to address uneven queuing in BXX's call center. Findings provide guidance to organizations facing similar challenges, offering insights into enhancing efficiency and customer service through business process reengineering

INTRODUCTION

BXX (disguised name, real data) is one of the largest government owned conventional banks in Indonesia as it controls 15,7% of the Indonesian conventional bank market share based on assets according to Otoritas Jasa Keuangan (OJK). Just like most other banks, it has a call center, which on its own, exists on a division within BXX (Service and Call Center Division or short for SCC). The call center provides various channels of communication such as email, SMS, Twitter, Instagram, Facebook, and the most used of all channels, the telephone. Although there are various channels provided by SCC, this research only focuses on the telephone channel.

One of the factors that have to be well considered by call centers is the waiting time for customers. Waiting times in the form of a call queue is a common thing to happen during peak hours. Long waiting times can prompt customers' frustration, which may have a negative impact on how they perceive the quality of the service (Taylor, 1994, as cited in Pugh, 2017). When consumers' expectations are not met, the psychological impact can significantly alter how they view and rate the quality of the services provided (Larson, 1987; Maister, 2005, as cited in Pugh,

2017). As argued by Moghavvemi et al. (2018), it is difficult to attain product differentiation in the fiercely competitive banking industry, therefore the best method to set a bank apart from its competitors is the service quality. Hence, customer service is crucial given the fierce competition in retail banking, and banks must pay close attention to how their clients perceive the quality of their services (Muyeed, 2012; Hossain and Leo, 2009). This indicates that the key for competitive advantage in the banking industry is to provide high quality service. Thus, always evaluating their service quality is a must. According to a study through a survey of 1500 consumers done by Arise (2019), 66% responded that they are only willing to wait 2 minutes or less when asked about how long they are willing to wait for a call center agent to pick up the call before hanging up. Another study done by Zendesk (2022) through a survey of 3511 consumers states that 61% of them would switch to a company's competitor after just one poor customer service experience, which includes long waiting times on hold. Therefore, waiting time for customers is an important factor for the bank.

With the importance of customer waiting time, comes the need for optimal queuing distribution among call center agents in order to effectively handle the amount of inbound calls. Mismanagement in such distribution can lead to the dissatisfaction of customers as they might unnecessarily waste time in waiting for call center agents to pick up the call. At BXX, this issue was detected during the 2022 divisional review, where employees provide feedback on divisional processes, including the call center. Some agents reported an inability to redistribute calls efficiently, leading to longer queues and wait times. Of 217 agents surveyed, 31 (14.2%) noted this problem.

DF, a senior SCC executive, confirmed the issue during the review presentation. In an interview, MK, a contact center manager at BXX, also verified the problem, particularly during peak hours. Extended wait times lead to customer complaints, with most customers unwilling to wait beyond 2.5 minutes. Prolonged waits may even result in call abandonment, a loss for the company. These findings highlight flaws in the current business process, identified through the divisional review and confirmed by senior officials. In summary, uneven queuing distribution within some call lines is a part of the current business process.

Further, this research found that the root cause for the problem is the unavailability of feature that allows to inform callers regarding request fulfillment process which prompts repeat calls in case of overtime in request fulfillment and the unavailability of feature that allows to disperse congestion in the queuing line if repeat calls do happen. Therefore, if there are occurrences of overtime in fulfilling callers' requests which prompts repeat calls, it can build up extensive queuing line on certain agents because the repeat call policy states that callers have to be assigned to the previous agent who was in contact with. This implies that the current business process of the telephone call center in BXX needs improvement.

The term business process is explained as a series of activities and actions that produce an output in the form of a product or service (a defined business outcome) (Brenig-Jones and Dowdall, 2021; Mohapatra, 2013). Further, Dumas et al. (2013) clarified that the first step in understanding a business process is to collect data on important activities in order to create a process map or business process mapping. One of the methods available for mapping a business process is the service blueprint. According to Lovelock and Wright (1999), the service blueprint refers to the visual map that shows the activities necessary to deliver services, including the front-and back-end components and the connections between them. They further stated that analyzing service blueprints often allows to identify potential fail points in the service delivery process. Fail point refers to a point in a process where problems exist with a significant risk of damaging service quality (Lovelock and Wright, 1999). A study done by Trkman et al. (2015) on a technology company suggested that the use of service blueprint can be implemented to visualize the business process and identify problems which were located at the customer contact system aspect of the company. The service blueprint was used to map the customers' activities within the company's business process and it allows them to identify causes of the problem. By then, steps

could be taken to address them. This is similar to what Lovelock and Wright (1999) regarded as fail points. This ability of the service blueprint is important for this research because it allows to map and find causes of the uneven queuing distribution. In other words, it is useful for both identification and analysis of as-is business process steps of the BPR

Business processes can be linked to value added and non value added activity analysis in order to identify whether the activities within a process are value added or not. For a series of activities to be considered as value added (VA), it must meet three criteria, which are appreciated by the customers (the customer is willing to “pay” for such activity), either physically modify the product or service in a certain manner, or be a mandatory prerequisite to another activity, and done right in the first time (Brenig-Jones and Dowdall, 2021). With the definition of VA and NVA activities, processes can be reviewed and NVA activities can be removed. Both authors also stated that it is important to carry out NNVA activities as quickly and efficiently as possible.

By removing activities that are considered to be non-value-added, business processes become simpler and companies will be able to save resources. In order to improve an existing business process, business process reengineering is required to redesign such a process to be simpler. Business processes reengineering (BPR) is a tool to help companies to improve their customer services, decrease operational costs and establish themselves to be industry leaders (Srinivasan, 2011; Nurcahyo et al., 2020). BPR works by identifying a business process's potential for improvement, followed by reevaluating and redesigning the process (Grozniak and Maslaric, 2010). Although BPR is known for “radical” changes of business process, a study by Subramoniam et al. (2009) introduces the concept of incremental changes in using BPR.

The cycle of business process reengineering based on Mohapatra (2012) includes the identification of current business process followed by a thorough As-Is analysis. This allows to clearly identify possibilities for improvements within the current process. It is then continued by the To-Be analysis and creation of a new design so that the company is aware of its goals and where it needs to go. This step calls for creativity and innovation in creating the desired process. Furthermore, if the organization agrees on the To-Be design, it can develop an implementation strategy and evaluate the To-Be design's efficacy. In implementing the BPR, this research uses service blueprint to identify the business process and reconstructs it based on classifying the activities within such process of whether they are value-added or non-value-added. The use of BPR in this research is also supported by a study done by Doomun and Jungum (2008), which showed why the BPR can be used in evaluating a call center's business process. Their study claims that in dealing with problems within a call center's business process, the BPR is relevant to use due to its flexible configuration, which can be adapted to both radical or incremental change.

What this research aims to offer is the redesign of the business process for the telephone call center at BXX using BPR. The BPR was carried out by identifying the current telephone call center process and analyzing the As-Is process to point out why the issue happened and to find out other possibilities of improvements by using the value added and non-value-added activity analysis. The outcome from these steps is considered to be the basis of the redesigning of the business process, which is the “Design To-Be” step of BPR. The result of this research is in the form of the outcome of the “Design To-Be” step, which is a proposed new business process. The proposed to-be business process suggests innovations incorporating a progress update process and modifying the queuing process to include a callback option. These solutions aim to reduce repeat calls, inform callers about their requests, and prevent queue buildup. Expected outcomes are improved queuing distribution, reduced wait times, and decreased call abandonment.

This research contributes to the business process management field by using BPR to address uneven queuing in BXX's call center. Findings provide guidance to organizations facing similar challenges, offering insights into enhancing efficiency and customer service through business process reengineering

METHOD

This research uses qualitative methodology to reengineer the current business process into a new one that will prove to be an improved version of the previous one. The data collection process for this research includes the acquisition of company report collected from the company regarding the current workflow process for telephone call center at the company, the observation of BXX's call center office, and an interview with the call center manager, MK. The company report provided by the company regarding the current workflow process for the telephone call center at BXX is used as a general description about the business process for telephone call center that is currently implemented by BXX. The observation approach was a naturalistic observation, which is a method that involves observing subjects in their natural environment in order to examine behavior in a natural setting without intervention (Mestre, 2012). The observation was done in early December for 30 minutes, while the author acted as a non-participant, which means that during the observation, the author did not get involved in any form of activity within the subject of observation (Kabir, 2016). During the observation, the author visited the company's call center office and acted as a spectator for which the activities that were done by the agents within the office were written down and identified. In this research, the interview is in the form of casual conversation/in-passing clarifications or what Rubin and Rubin (2012) regarded as a "mini interview". Rubin and Rubin (2012) stated that such mini interviews occur spontaneously when the researcher and interviewee come across each other during the participant observation phase of a project. These encounters are typically brief, completely unstructured, and open-ended. In the case of this research, the interview was conducted at the same time with the observation. The interview was done in early December 2022 for 30 minutes. During the observation, MK helped to elaborate the activities identified during the visit to the call center office. At the same time, the author also asked questions regarding the criteria of what is considered as a value added and non-value added activity.

The purpose of the data collection is to be analyzed to identify the current business process of telephone call center at BXX, then find what caused the aforementioned issue that occurs in the SCC division of BXX. Therefore, the appropriate solution to address such issue can be produced. However, some of the data related to the current workflow process are confidential and therefore can not be publicized. Hence, there are limitations in this research. Additionally, the data that were obtained from the company cannot be measured, therefore this research identifies value added and non-value added activities as the basis to reengineer the current business process.

Data that have been collected are then used to map and analyze the as-is business process of the telephone call center. The provision of current workflow process of the telephone call center in BXX along with the result of interview and observation is used to identify and analyze the as-is business process. The workflow process that was provided by the company and the result of observation is used in combination to draw the current business process in the form of a service blueprint. With the as-is business process mapped, it is then analyzed with the use of value added and non-value added activities analysis. The interview was done to justify the company's view regarding what is considered as an activity with value or non-value. During the interview and observation, the call center manager also helped to elaborate the activities that were identified while the author was on observation to further identify which activities are considered as value added or non value added.

RESULTS

a) Identification of Current Business Process

Before analyzing the current business process, process mapping is an important feature in identifying a business process (Dumas et al., 2013). In the process mapping, the author tries to map the current (as-is) business process of the call center by using company report data. Observation and Interview was also done to support the mapping by identifying the current process in actual condition. Figure 1 shows the current business process design of the call center which was made using Edraw Max.

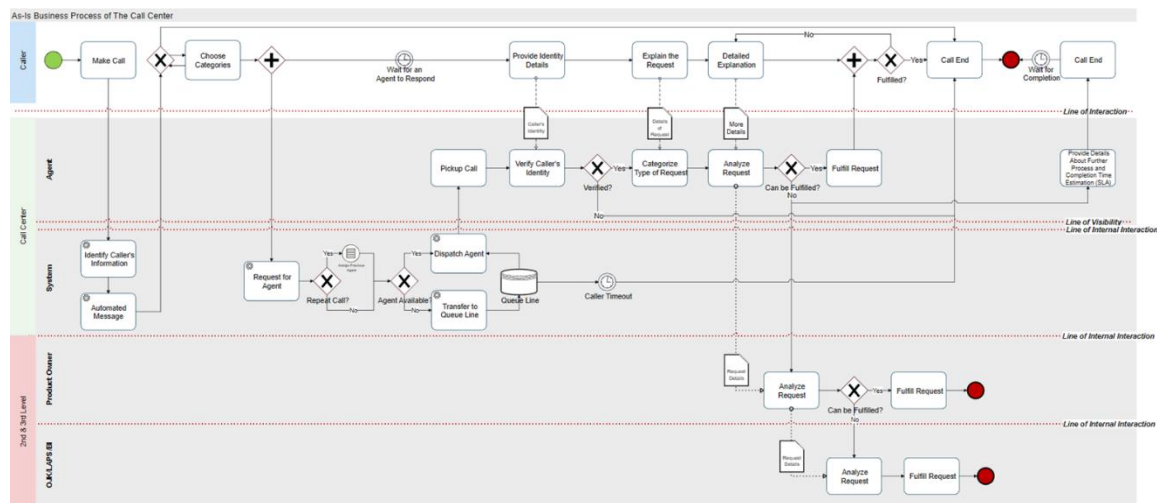


Figure 1. As-Is Business Process

b) Analysis of Current Business Process

To highlight the value added and non-value added activities, it is essential to have a clear understanding of the criteria that determine how an activity is classified value added (VA), non-value-added (NVA), or necessary but non-value-added (NNVA). Thus, the result of the interview comes in place to give an understanding of such criteria. To sum up the interview result, there are the criteria to determine each value added (VA), non-value-added (NVA), and necessary but non-value-added (NNVA) activities according to the call center manager. The first criteria is that the caller has to be willing to “pay” for the activity in a sense that fulfills the interest of the caller. MK described that the interest of the caller are the activities that have a direct contribution to the purpose of the call, which is the information exchange between caller and agent to communicate the caller’s request and the fulfillment of the request itself. The second criteria is that an activity has to be accurately carried out as quickly as possible or done right in the first time. The third criteria is an activity has to be a mandatory prerequisite to another activity, or be a company requirement.

With the criteria explained, the definitions of each value added (VA), non-value-added (NVA), and necessary but non-value-added (NNVA) can be identified. Value Added (VA) activities are the ones that fulfill all three criteria. Non-Value Added (NVA) activities are the ones that do not fulfill all three previously mentioned criteria. Necessary but Non-Value Added (NNVA) activities are the ones that are categorized as NVA, but fulfills the third criteria.

Within the current business process, there are 20 activities identified. In one call activity, there are 6 activities in the “Caller” pool, 10 activities within the “Call Center” pool in which five of them are done by the system and the rest are done by the agent. Additionally, there are 4 activities within the “2nd & 3rd Level” pool in which 2 of them are done by the product owners and another 2 activities are done by the Otoritas Jasa Keuangan (OJK), Lembaga Alternatif Penyelesaian Sengketa (LAPS), or Bank Indonesia (BI). The analysis is done by examining each activity within the current business process on the basis of criteria given by the call center manager to determine whether an activity is considered as value added (VA), non-value-added (NVA), or necessary but non-value-added (NNVA). From the analysis, it is identified that there are 14 necessary but non-value added (NNVA) activities and 8 value added (VA) activities. The VA activities are marked with blue dots on Figure 2 while the unmarked ones are identified as NNVA.

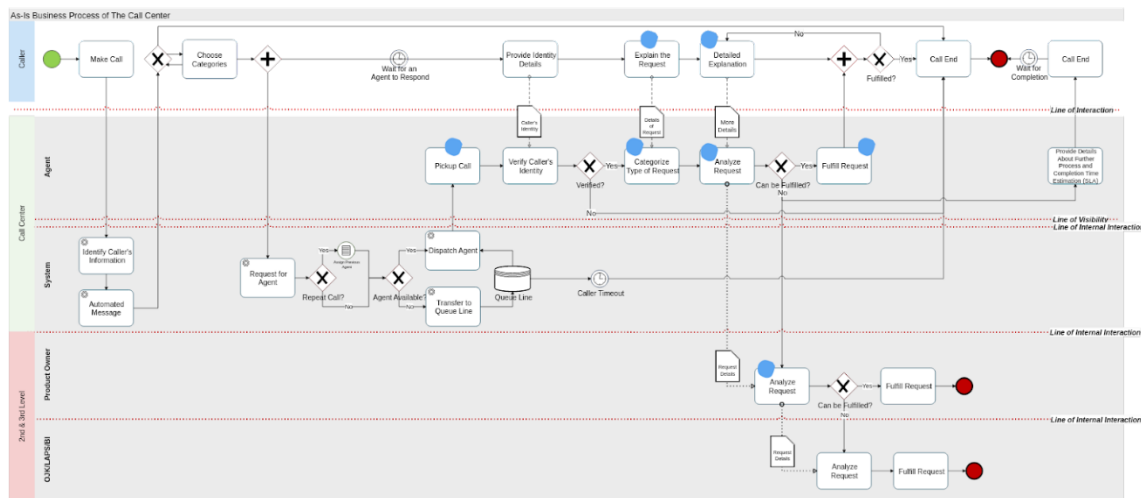


Figure 2. As-Is Business Process With VA and NNVA

DISCUSSION

After analyzing each activity and categorizing them as either value-added (VA), non-value-added (NVA), or necessary but non-value-added (NNVA), a potential fail point is found. According to Lovelock and Wright (1999), fail point refers to a point in a process where problems exist with a significant risk of damaging service quality. They further argued that if a fail point is identified, the process can be reconfigured to remove the fail point by modifying current service delivery systems (perhaps through use of new technologies), add or delete specific elements, or reposition the service to appeal to other segments (Lovelock & Wright, 1999).

The potential fail point is highlighted based on the previous analysis of value added and non-value added analysis. The potential fail point is found where NNVA activities are involved, which is the "Transfer to Queue Line" activity associated with the "Fulfill Request" activity by the product owner or 3rd level entities and the policy of repeat call. The potential fail point arises within the queuing system in accordance with when a caller's request(s) have to be forwarded and processed by another department (product owner), which is outside the scope of the call center. As mentioned before, MK, the call center manager, stated that although the time of completion is clearly stated in the SLA guideline, in practice, the time of completion/request fulfillment may exceed the estimation depending on the product owner's work. When such occurrences happen, callers whose request is not fulfilled according to the time estimation provided during the call, may make another call to ask for explanations. These callers are categorized as repeat calls, in which they have to be assigned to the previous agent who were in contact with in the previous call to prevent wasting time by reexplaining the caller's request. MK also noted that most of the repeat calls happened due to over SLA by the product owners. MK further noted that the result of these occurrences are that at certain times, usually peak hours, a queue line would stack up on certain agents because of the repeat call, unable to be transferred to other agents. Thus, creating an uneven queueing distribution between the agent/call lines. The impact of this instance is that callers will have to wait for a prolonged amount of time in the queue until the agent is available. While waiting in the queue, callers may decide to leave the system without being served (abandon). This caller is then lost for the call center without possibilities to be recontacted, which MK considers as a lost potential for the company. Figure IV.2 shows the activities of the current queuing system, of which are classified as NNVA. The current queuing system simply puts callers into a queueing line until the agent is available. The "Transfer to Queue Line" activity is considered as NNVA, thus, as stated by MK in the interview and Brenig-Jones and Dowdall (2021), it cannot be removed. Even though it cannot be removed, it can be modified or reengineered.

It is also worth noting that in the banking industry, the provision of quality service plays a pivotal role in customers' decision-making process when choosing between competitors. According to Moghavvemi et al. (2018), achieving product differentiation is difficult in the highly competitive banking sector. Consequently, the most effective method for a bank to distinguish itself from rivals is through the quality of its service. Therefore, given the intense competition in retail banking, customer service holds significant importance, and banks must carefully consider how their clients perceive the quality of the services offered (Muyeed, 2012; Hossain and Leo, 2009). From the explanation above, it is clear that with the potential of fail point identified within the current business process, it is necessary to reengineer it so that the risk of damaging service quality can be minimized.

a) Proposed To-Be Business Process

With the mapping and the analysis of the as-is business process done, the next step for business process reengineering is to create the to-be business process. Previously, it has been described that the current business process suffers from a fail point. However, due to the fail point being caused by repeat calls, and that repeat calls are caused by overtime for caller request fulfillment by other departments, it lies beyond the call center's capacity to handle the problem. With that in mind, the solution is made within the boundaries of the call center to disperse the uneven queueing call line.

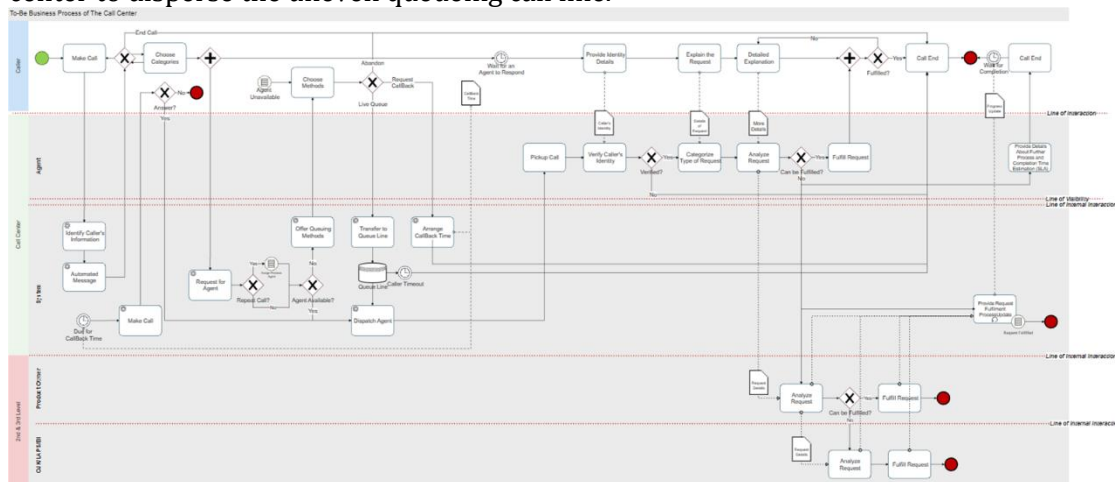


Figure 3. To-Be Business Process

The To-Be design adds a progress update process and modifies the queuing process. The queuing process, which despite the existence of other NNVA activities, is the only relevant process that can be reengineered or modified to address the underlying problem of the queuing process. The author proposed the addition of progress report and usage of callback option for callers to choose when the system assigned agent is unavailable.

The idea behind the two solutions is to implement the progress report process so callers are provided with updates regarding their requests that require forwarding to another process for fulfillment which leads to a reduction of repeat callers. However, if somehow the information provided by the company does not reach the callers or that the callers insist on making another call, a mitigation is needed to keep the call queue from stacking up within the call center. This is where the callback option comes into play.

b) Progress Update Process

The progress update process functions by providing updates to the caller regarding the progress of the request(s) fulfillment. The intention behind this suggested process is to provide callers with updates regarding their requests that require forwarding to another process for fulfillment. This is done to avoid the need for callers to make additional calls to ask about the progress, ultimately leading to a reduction in the number of repeat callers. The progress update works when a caller's request(s) have to be forwarded and processed by another department (product owner). In the as-is model, the caller is left with information

about the time expectation of request fulfillment before the call is ended and the caller is expected to wait for the request to be fulfilled accordingly. This causes the caller to repeat call when the request is not yet fulfilled even after the given expected time has passed and there are no information regarding the request fulfillment process, leaving callers in the dark. Instead, this new design proposes that information is routinely provided to the callers regarding the request fulfillment process, including if delays occur. The aim is to keep the callers informed of the request fulfillment process, rather than making another call. There are various media that can be used for the progress update, such as Whatsapp and Email. However, MK stated that although providing callers with information updates may notify them regarding the request(s) fulfillment progress, some form of mitigation is still needed in the case when the updates fail to reach the callers or that callers insist on making another call.

c) Callback Option

The callback option proposed by the author works when the agent assigned by the system is unavailable. The system then gives the caller an offer to be called back at a later time or wait in the normal queueing line. In turn, callers use the announced information and their personal preferences to decide whether to wait for real-time service, leave a callback request, or simply abandon. If callers prefer to use the callback option, they may register a request and the system will call them back within a prespecified amount of time. The system will then keep the callers' places in line and launch an outbound call to the caller at the agreed time. When the callback is answered by the caller, the call is routed to an agent, who handles it as a normal inbound call. By replacing regular hold time with this offline version, callers are free to do other things. Armstrong (2021) explained that a question arises when callers realize that they can call back and potentially talk to an agent before their callback happens. However, Armstrong (2021) stated that this is rare, as they will most likely be put on hold again due to call volume.

With the callback option, callers have the option to end the call rather than wait for a prolonged amount of time in the queue, and be contacted by the company at a later time (Armony and Maglaras, 2004; Legros, et al, 2016; Legros et al., 2017; Armstrong, 2021). This is valuable because the use of the callback option reduces the congestion of queues within the call center (Armony and Maglaras, 2004; Legros et al., 2017; Armstrong, 2021).

Additionally, a study done by Hathaway (2019) proved that callers experience far more discomfort while waiting online than offline and that is why callers are more likely to accept callback offers during peak hours when there is a long queueing line. Another finding is that research conducted by Armony and Maglaras (2004) and Hathaway (2019) proved that offering callbacks increases system throughput by reducing the percentage of lost calls (abandonment), especially during peak hours.

CONCLUSION

In conclusion, this research addresses the problem of uneven queueing among call center agents at BXX, highlighting flaws in the organization's current process. To tackle this, the business process reengineering (BPR) was applied by mapping, analyzing, and developing an improved process. Data was collected from various sources, including company reports, observations, and interviews with the call center manager, to understand challenges and solutions better.

Within the current business process for BXX's telephone call center, it is identified that there are 14 necessary but non-value added (NNVA) activities and 8 value added (VA) activities. A potential fail point is found which is the result of some of the NNVA activities. The potential fail point arises when the product owner does not fulfill the caller's request according to the expected time given to the caller. Thus, the caller makes another call regarding the previous unfulfilled request, which is considered a repeat call. Repeat callers are required by the company to be assigned to the same agent they previously interacted with in order to avoid time wastage by having to re-explain the caller's request. However, this can lead to the accumulation of long

queues for certain agents, resulting in increased average waiting time and a higher likelihood of abandonment (lost potential).

The proposed to-be business process takes into account the identified shortcomings and introduces strategic changes to address them. The author proposes an addition of a progress update process and modifies the queuing process to have a callback option. The proposed solutions aim to keep callers informed about their requests that need to be forwarded for fulfillment, reducing the need for repeat calls. However, in case the provided information doesn't reach the callers or they still want to make another call, a mitigation strategy is necessary to prevent call queues from building up. This is where the callback option becomes relevant. The addition of the callback option aims to ensure a more balanced distribution of calls among the agents, reducing the occurrence of uneven queuing, and therefore, reducing the average waiting time while simultaneously minimizing call abandonment. The findings and recommendations of this research serve as a foundation for Company BXX to implement improvements in their call center operations. It is anticipated that the adoption of the suggested to-be business process will result in more equitable queuing distribution and a more streamlined call center workflow. In regard to the research questions.

In order to fully benefit from the usage of both progress update process and callback option, further research is recommended. It is not surprising, with such initiatives, they do raise some practical questions. Such as, what is the routing rule that maximizes system performance while ensuring the quality-of-service guarantee for "callback" callers? Should there be another exact predetermined time to propose the callback offer? What are the correct implementation plans? What is the proper media for progress updates? Another recommendation is to adjust the existing standard operating procedure in regard to the proposed to-be business process and socialization of the use of the proposed solutions. Additionally, to enhance employee capabilities and achieve high performance, it is recommended for the company to provide employee training in standard operating procedures (SOP), knowledge, skills, and in implementing the proposed solution itself. Improved employee performance leads to a higher level of service quality in meeting customer demands

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REFERENCES

- Armony, M., & Maglaras, C. (2004). Contact Centers with a Call-Back Option and Real-Time Delay Information. *Operations Research*, 52(4), 527–545. <https://doi.org/10.1287/opre.1040.0123>
- Armstrong, J. (2021). *AMAZON CONNECT: Up and Running*. Packt Publishing Ltd.
- Brenig-Jones, M., & Dowdall, J. (2021). *Lean Six Sigma For Dummies* (4th ed.). John Wiley & Sons.
- Claes Fornell International. (2022). *CONTACT CENTER SATISFACTION INDEX (CCSI) REPORT | Q1 2022*. CFI Group. Retrieved March 6, 2023, from <https://cdncom.cfigroup.com/wp-content/uploads/CCSI-CFI-Group-Report-2022.pdf>
- Dumas, M., La Rosa, M., Mendling, J., & Reijers, H. (2013). *Fundamentals of Business Process Management*. Springer.
- Groznik, A., & Maslarić, M. (2010). Achieving competitive supply chain through business process re-engineering: A case from developing country. *African Journal of Business Management*, 4(2), 140–148. <https://doi.org/10.5897/ajbm.9000040>
- Hathaway, B. (2019). *DATA-DRIVEN STUDIES OF CALLER BEHAVIOR UNDER CALL CENTER INNOVATIONS* [PhD dissertation]. University of North Carolina.
- Hossain, M. A., & Leo, S. (2009). Customer perception on service quality in retail banking in Middle East: the case of Qatar. *International Journal of Islamic and Middle Eastern Finance and Management*, 2(4), 338–350. <https://doi.org/10.1108/17538390911006386>
- Kabir, S. M. (2016). Methods of Data Collection. In *Basic Guidelines for Research: An Introductory Approach for All Disciplines* (pp. 201-275). Book Zone Publication.
- Legros, B., Ding, S., Van Der Mei, R., & Jouini, O. (2017). Call centers with a postponed callback offer. *OR Spectrum*, 39(4), 1097–1125. <https://doi.org/10.1007/s00291-017-0487-x>
- Legros, B., Jouini, O., & Koole, G. (2016). Optimal scheduling in call centers with a callback option. *Performance Evaluation*, 95, 1–40. <https://doi.org/10.1016/j.peva.2015.09.002>
- Lovelock, C. H., & Wright, L. (1999). *Principles of Service Marketing and Management*. Prentice Hall.
- Mestre, L. S. (2012). The value and process of usability studies. In *Elsevier eBooks* (pp. 223–246). Elsevier BV. <https://doi.org/10.1016/b978-1-84334-688-3.50010-x>
- Moghavvemi, S., Lee, S. H., & Lee, S. L. (2018). Perceived overall service quality and customer satisfaction. *International Journal of Bank Marketing*, 36(5), 908–930. <https://doi.org/10.1108/ijbm-06-2017-0114>
- Mohapatra, S. (2013). Business Process Reengineering. In *Management for professionals*. Springer, Singapore. <https://doi.org/10.1007/978-1-4614-6067-1>
- Muyeed, M. A. (2012). Customer Perception on Service Quality in Retail Banking in Developing Countries - A Case Study. *International Journal of Marketing Studies*, 4(1). <https://doi.org/10.5539/ijms.v4n1p116>
- Nurchahyo, R., Indramawan, Z. Z., Yadrifil, Z. Z., Habiburrahman, M., & Wibowo, N. (2020). Business process re-engineering for reducing time of procurement and inventory process in telecommunication tower company. *10th Annual International IEOM Conference, IEOM 2020*, 2460–2469.
- Pugh, W. K. (2017). *Call Center Experience Optimization: A Case for a Virtual Predictive Queue (Order No. 10684858)* [Doctoral dissertation, University of The Incarnate Word]. <https://www.proquest.com/dissertations-theses/call-center-experience-optimization-case-virtual/docview/2013337870/se-2>
- Rubin, H. J., & Rubin, I. S. (2012). *Qualitative Interviewing: The Art of Hearing Data*. SAGE Publications.
- Srinivasan, R. (2011). *Business Process Reengineering*. Tata McGraw-Hill Education.
- Subramoniam, S., Mosbah, M., & Krishnankutty, K. (2009). The role of BPR in the implementation of ERP systems. *Business Process Management Journal*, 15(5), 653–668. <https://doi.org/10.1108/14637150910987892>
- Trkman, P., Mertens, W., Viaene, S., & Gemmel, P. (2015). From business process management to customer process management. *Business Process Management Journal*, 21(2), 250–266. <https://doi.org/10.1108/bpmj-02-2014-0010>
- Zendesk. (2022). *CX Trends 2022*. Improve your bottom line by putting customers at the top. Retrieved March 6, 2023, from <https://cdn2.assets-servd.host/paltry-coyote/production/exports/2194a329d6f053118e42d885fe38fae7/zendesk-cx-trends-2022-report.pdf>