Jurnal MEBIS Manajemen dan Bisnis
ISSN 2528-2433 (print)
ISSN 2599-283X (online)
Volume 9, Number 2
Desember 2024, pp. 170-183

Business Process Analysis on VWX Platform Using Deming's Cycle

Anindo Saka Fitri, Dea Kusuma Ningrum, Astri Purwitasari, Monica Exsanni Araf O., Alya Maytsa Ismawardi
Fakultas Ilmu Komputer, UPN Veteran Jawa Timur, Indonesia

Article Info

Article History:
Received 10 Oct, 2024
Accepted 20 Nov, 2024

Keywords:
Business process, analysis, deming's cycle, process improvement

ABSTRACT

This study focuses on analyzing and improving the business processes of the VWX platform, a major player in the online travel industry. By utilizing Deming's Plan-Do-Check-Act (PDCA) cycle, this research aims to propose a new business process for the VWX platform especially inefficiencies in the refund process, one of the platform's critical service areas. Through tools such as Fishbone Diagram and Cross-Functional Flowchart (CFF), several issues were identified, including system automation gaps, unclear refund policies, and delays in processing due to third-party integrations. To address these issues, the study proposes automated refund systems, clearer refund guidelines, and enhanced customer service training. Additionally, the implementation of real-time notifications and system upgrades is recommended to improve process transparency and user satisfaction. The findings suggest that by adopting these improvements, VWX can significantly enhance operational efficiency, reduce customer complaints, and remain competitive in the digital travel marketplace. This research contributes valuable insights into how continuous process improvement methodologies like PDCA can be applied to optimize digital service platforms.

Corresponding Author
Anindo Saka Fitri
Email: anindo.saka.si@upnjatim.ac.id

INTRODUCTION

In today's increasingly competitive business landscape, companies must continuously improve their business processes to remain relevant and efficient (Kaponda, Kawimbe, Meki Kombe, & Mwange, 2023) Business processes include a series of interrelated activities designed to produce products or services customers desire (Schmid, Cristaldi, & Jacobson, 2001). Effective business process management is essential to achieving strategic goals, increasing customer satisfaction, and ensuring operational efficiency. In this context, using technology platforms such as VWX plays a vital role in automating, simplifying, and monitoring various business activities. VWX is an online travel agency

that provides multiple modes of transportation and accommodation. Initially, VWX was considered a website that compared the prices of goods related to airline tickets between one site and another so that prospective customers could find out the price difference. The following year, VWX transformed into a travel ticket booking site, and customers could transfer tickets to the official site.

In addition, VWX is involved in various aspects of the business, such as booking train tickets, hotels, and other travel services. Analysis of VWX's business process is an eye-opening topic for researchers and business practitioners, considering the company's success in integrating technology into the traditional travel industry. Based on the researcher's observation as a user, one of the main aspects of VWX's business process is efficient inventory management. VWX uses a real-time inventory system integrated with various service providers, including airlines, hotels, and ground transportation providers. This system allows VWX to offer accurate availability and prices to customers while reducing the risk of overbooking. However, this platform integration also presents challenges, ranging from process inefficiencies to less-than-optimal system performance and limited user engagement. The process inefficiencies can be seen from the user reviews we analyzed, which can be seen in Figure 1.

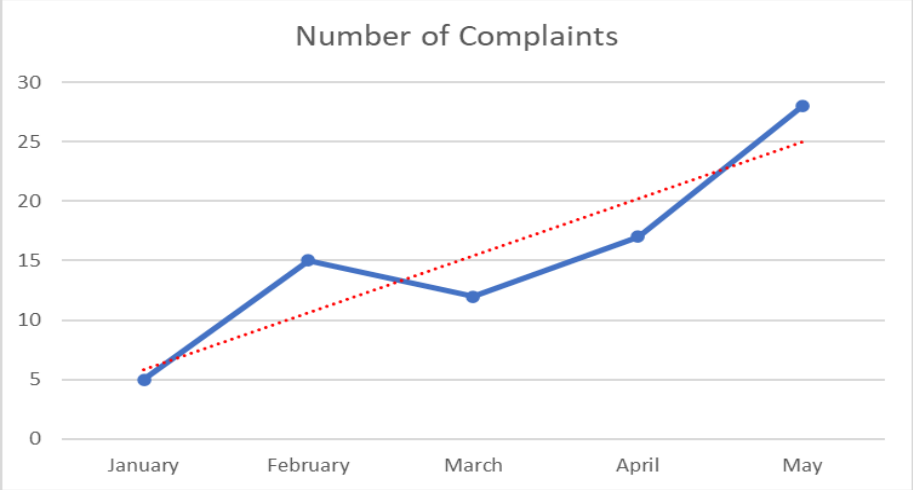

Figure 1. Trend Analysis App Store Complaint of VWX

Based on Figure 1, the number of complaints is shown on the Y-axis; on the X-axis, there are months from January to May. The complaints started low in January, with around 5, then increased significantly in February to around 15. After that, there was a slight decrease in March, but it grew again in April until it peaked in May with almost 30 complaints. The dashed red line is a trend line showing that, generally, the number of complaints has increased over time. This indicates that problems related to VWX transactions are increasingly common and must be addressed immediately.

Companies often use established quality management frameworks to ensure continuous improvement and optimal use of technological resources. One such framework is the Deming Cycle, also known as PDCA (Plan-Do-Check-Act). This model has been widely used to drive continuous improvement in manufacturing and service industries (Deming, 1986). Study about Project Management Information System (PMIS) course using the PDCA cycle concluded, “Continuous improvement in PMIS reporting quality is effective in achieving quality PMIS output information to assist managers in decision making, planning, organizing, and controlling projects. It is also effective in positively influencing project management success in terms of the following three dimensions: Delivering

projects on time, Meeting budget (costs), and Meeting project quality specifications," (Taniguchi & Onosato, 2018). By implementing the Deming Cycle, organizations can systematically identify areas for improvement, implement necessary changes, monitor results, and standardize successful practices.

Like many other business process automation tools, the VWX platform allows companies to integrate multiple workflows and manage them in a centralized environment. While the platform offers many benefits, many organizations struggle to fully leverage its potential due to complex business needs, inefficient workflows, and a lack of ongoing process evaluation. To address these issues, it is important to analyze the business processes running on the VWX platform using the PDCA Cycle to identify inefficiencies, optimize workflows, and improve overall performance.

This study aims to conduct an in-depth analysis of the business processes running on the VWX platform using the Deming Cycle as a guiding framework. This study seeks to identify critical areas that require improvement in the system, such as workflow inefficiencies, user interaction issues, and process delays. The results of this analysis will provide actionable insights into how the PDCA approach can be applied continuously to improve process management on the VWX platform.

LITERATURE REVIEW

Deming's Cycle

The well-known approach to quality management is the Deming cycle (Borys, Milosz, & Plechawska-Wojcik, 2012). It is sometimes referred to as the Shewhart cycle, the Deming wheel, or the Plan-Do-Check-Act (PDCA) model. There are four stages to the method. The Deming cycle is a continuous process, emphasizing the ongoing commitment to quality improvement. Plan: to outline the steps necessary to achieve the objective; Do: to carry out the planned actions; Check: to assess outcomes and confirm the achievement of the goal; Act: to enhance procedures and develop fresh concepts or solutions that may be applied in the following cycle.

Cross Functional Flowchart (CFF)

A cross-functional flowchart (CFF), also called the Swimlane Diagram, describes the interaction of business processes involving several different functions or departments. This CFF will show activities, who does it, and in which department. Cross-Functional Flowchart (CFF) is a tool that is clearly used in the flow process. CFF can identify delays, excessive inspections, repetitive steps, and other stages that cause system failure. CFF can be made vertically or horizontally depending on the focus of the process description (Doddy Y, 2016).

Pareto Charts

A Pareto diagram, also called a Pareto chart, is a diagram that can help management by identifying the most critical areas requiring immediate attention. The stages of a quality improvement program must be determined by using a Pareto analysis to increase an opportunity that may need to be pursued first (Gunawan & Tannady, 2016). The purpose of making a Pareto diagram is to find problems or causes in problem-solving and comparison to the whole (Arif & Gunawan, 2023).

Fishbone Chart

According to A. Vandy Pramujaya (2019), a fishbone diagram is an analysis method used to identify quality problems and checkpoints covering four types of materials or equipment, labor, and techniques. The reasons associated with each category are sometimes tied to different branch bones throughout the brainstorming process. Therefore, according to experts' understanding of fishbone, it can be concluded that a fishbone is a chart shaped like a fishbone used to identify various causes or main factors that affect the control of persistent quality problems. These causes or main factors can be broken down into many categories, including people, materials, machines, procedures, and policies.

Trend Analysis

According to Maryati in Andi Indrawati (2017:227) "Trend Analysis is an up-down movement (tendency) obtained from changes over time". And according to Hery (2015:503) "Trend analysis is an analysis technique to determine the tendency of the company's financial condition and performance, whether it shows an increase or decrease". Based on this understanding, by analyzing financial reports that are more than three years old, the tendency or direction of the trend of the financial position or the results achieved by the company will be known.

Spider Chart

According to Wiggins (2019:1) Spider Web Diagram is a simple technique that all teachers in the classroom can implement. A good class is a class that lives by itself and is strengthened by student conversations that lead to the exploration of essential ideas and questions. In a class like this, the role of the teacher shifts from 'star player' to 'observer.' With the Spider Web Diagram, the teacher trains students to think critically, work collaboratively, participate fully, behave ethically, ask and answer high-level questions, support ideas with evidence, and evaluate and assess their work.

Brainstorming and Idealize

Brainstorming is an action taken to obtain many ideas from a group of people quickly. Brainstorming can also be categorized as a group activity to generate many ideas. A group of people will not only share ideas and complement each other but can also complement each other's experiences. In this way, one person's idea will encourage the ideas of others and eventually become an actual flow of ideas. There are two creative methods, namely brainstorming, and synectics. Brainstorming is an innovative method that directly collects as many creative ideas as possible. An effective way to increase creativity and generate various ideas is to do group brainstorming (Surya & Rosliana, 2020). The concept of idealization is a process in which the team thinks of the best solution or result for an existing problem. Business process analysis can help the team create a better picture of how the process should run based on the observations and studies that have been carried out (Ibrahim, Mulyanto, & Olii, 2023). Combining brainstorming and idealizing can produce more effective and innovative solutions to improve the efficiency and performance of business processes.

RESEARCH METHODS

The method used in this research analysis is the Deming Cycle method (Plan-Do-Check-Act). These stages can be seen in Figure 2 of Deming's Cycle below.

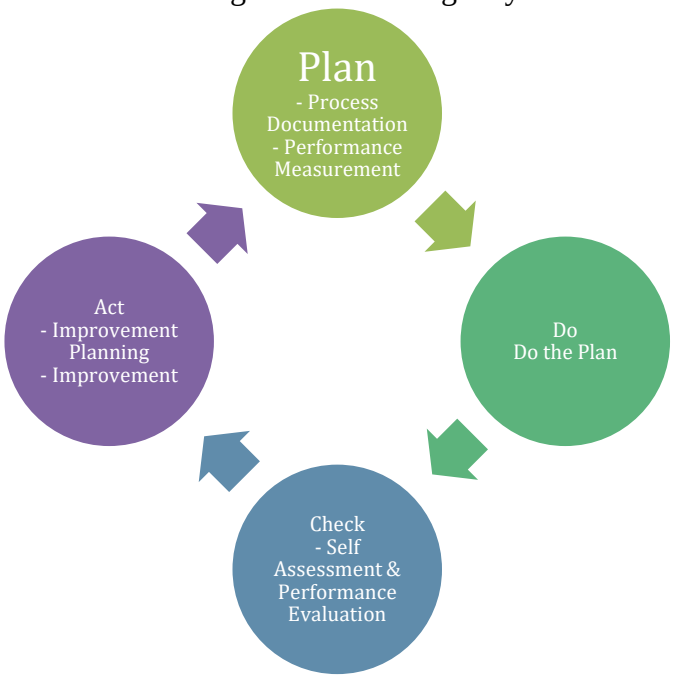

Figure 2. Deming's Cycle

1. Process Documentation
   The first stage in the business process cycle contains problems and related processes, which are identified, limited, and connected. The identification results describe the entire process to be managed and improved again. This study uses a Cross-Functional Flowchart to comprehensively understand the flow, interactions, and critical points in the VWX ordering and transaction process.
2. Performance Measurement
   In this process, actual state data is collected from each relevant process, usually in the form of one or more as-is process models. These models will be the basis for analyzing problems, identifying improvement opportunities, and designing more efficient processes.
3. Self-Assessment & Performance Evaluation
   This stage aims to identify, document, and measure a problem related to a company or organization's performance. The result of this stage is to collect structured problems, which are then prioritized based on their potential and estimated efforts for resolution. This analysis process includes problem analysis consisting of fishbone charts and self-assessment, namely trend analysis and spider charts.
4. Improvement Planning
   Improvement planning involves a Process Decision Program Chart (PDPC) diagram and brainstorming. The improvement stage begins by designing an improvement plan (PDPC diagram) based on the analysis's findings. Brainstorming generates creative ideas for finding solutions.
5. Improvement
   The final stage of our research identifies changes to the process that can help address the issues addressed in the previous stage. Process redesign and analysis complement

each other. Any improvement ideas that emerge are immediately evaluated to see their impact. After much deliberation, the best ideas are combined into a new, more efficient process design. The result is a process model that describes how the process should operate in the future.

RESULTS AND DISCUSSION

Process Documentation

In the business process documentation, the identification of PT VWX's business processes is carried out, which focuses on its application's ordering and payment aspects with the business process flow manifested in a Cross Functional Flowchart (CFF) with several parties involved. This aims to comprehensively understand the flow, interactions, and critical points in the VWX ordering and transaction process. A cross-functional flowchart (CFF) helps show the relationships and dependencies between departments within the VWX Company. This flowchart also helps provide a visual way to describe how each department interacts and depends on each other. This can help improve communication between departments, minimize misunderstandings, and ensure that all parties have the same understanding. Cross-functional Flowcharts (CFF) will provide a deep understanding of how the parts are related and make it easier to respond to changes quickly. Creating a CFF for VWX can create a dynamic business environment.

Figure 3 shows the VWX refund process and who is involved. The image illustrates a flowchart of the refund process in the context of ticket bookings, as is the case with the VWX platform's online travel service. This diagram is divided into two columns: the system on the left and the customer on the right, which shows the interaction between the system and the customer during the refund process. The process begins when the ticket order has been verified, and the customer wants to cancel the order. The customer selects the refund menu, then the system displays whether a refund for the order is possible. Next, the system displays the reasons that can be submitted for a refund, as well as the estimated amount and completion time of the refund. After the customer selects the reason for the cancellation and agrees to the policy and refund amount, the system displays the refund status and estimated completion time. In the next stage, the system waits for the third party (service provider) approval regarding the refund. After the VWX system approves and accepts the refund, the customer receives the refund, and the process is complete.

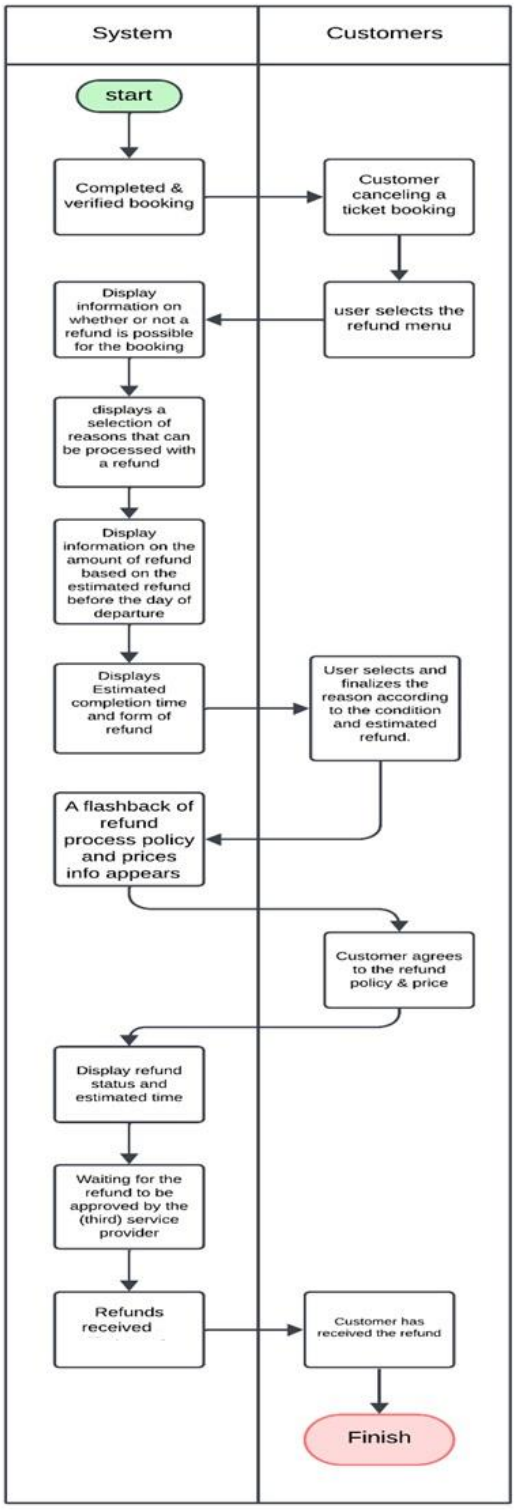

Figure 3. CFF proses refund VWX

Performance Measurement

Next, the author measured VWX's performance by evaluating the results of the user satisfaction questionnaire and reviews on the application provider platform (app store). This analysis provides insight into user perceptions and experiences of VWX's current

services. This study applies performance measurement through the results of the questionnaire and application reviews on the Play Store in the last six months. A qualitative method was used to measure VWX's performance by distributing a questionnaire about "User Satisfaction with Features on VWX." The user satisfaction survey on features on VWX was carried out during a period of use for the last two years, namely from January 2023 to March 2024. Based on the questionnaire results and the app store analysis in Table 1, it can be concluded or represented using the performance measurement process tools, namely the Pareto charts method.

Table 1. VWX Complain from Questionnaire and Play Store Review

Factor	Questionnaire	Play store Review
Difficulty in processing refunds	14	6
Difficulty in rescheduling	13	1
Irresponsible customer service	6	3
Non-consistent pricing	3	4
Non-conformity with photos	2	2
Difficulty claiming promos	4	-
Inflexibility of smart search filters	3	-
User-unfriendly interface	2	1
Failure in transaction	3	
Delay issuance of E-Ticket		3

The Pareto diagram is one of the tools that is often used in terms of quality control. The Pareto diagram in Figure 4 below is a bar graph that shows problems based on the order of the number of occurrences. The order starts from the number of the issues that occur the most to the least. The graph shows it from the highest bar graph (leftmost) to the lowest graph (rightmost). The biggest complaint is "Difficulty in processing refunds," with 20 complaints, followed by "Difficulty in rescheduling," with 14 complaints.

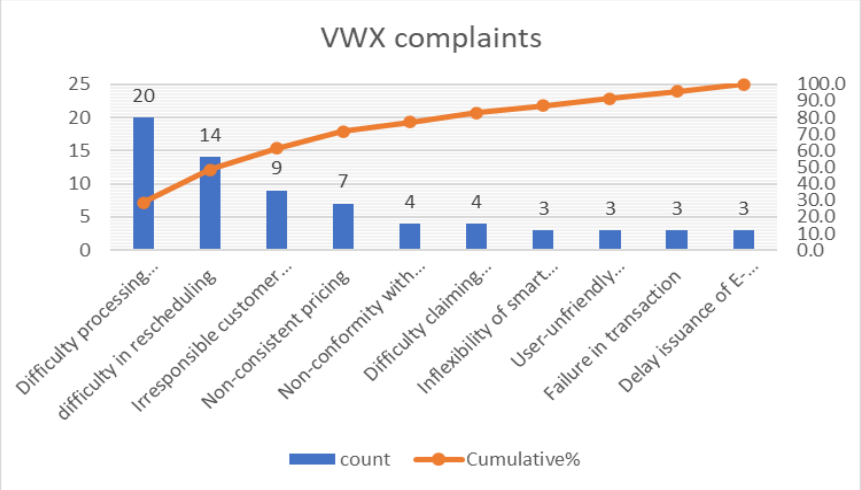

Figure 4. Pareto Chart

Self-Assessment & Performance Evaluation

Self-assessment begins with problem analysis using a fishbone diagram to uncover the root causes of complaints. Trend analysis of complaint data helps to see patterns of problems over time. Furthermore, comparing competitors using a spider chart provides a comprehensive picture of VWX's strengths and weaknesses. With this approach, VWX can systematically improve its business processes, increase customer satisfaction, and become more competitive.

Fishbone Charts

Based on the Pareto charts diagram above, it can be seen that the inflexibility of transactions is the most frequent and annoying complaint for users of the VWX application. Therefore, we chose to discuss this matter to be studied further using the fishbone diagram in Figure 5 below.

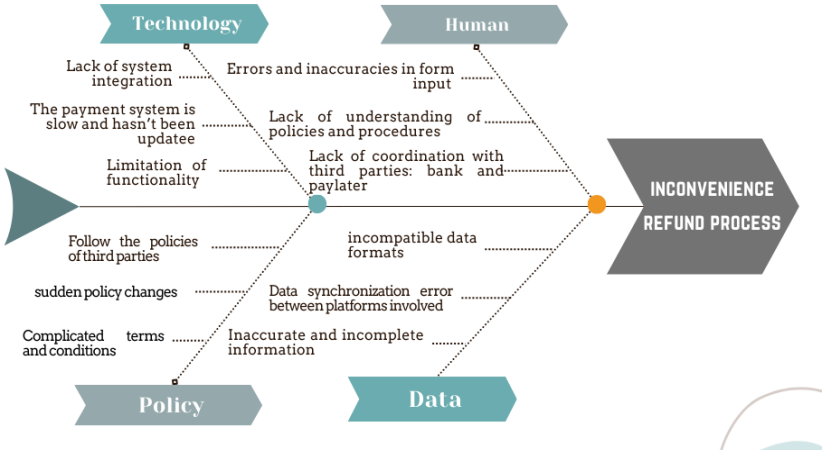

Figure 5. Fishbone Problem Utama VWX

Figure 5 explains four factors that cause transaction inflexibility in the VWX application: Technology, Human, Policy, and Data. On the Technology side, inconvenience arises due to a lack of system integration, delays or lack of payment system updates, and limited functionality. These factors result in technical difficulties that hinder the smoothness of the refund process. On the Human side, problems arise from errors in filling out forms, lack of understanding of policies and procedures, and lack of coordination with third parties such as banks or pay later services. In addition, inconvenience is also caused by Policy and Data. Factors such as sudden policy changes, complicated provisions, and following third-party policies can be obstacles in the Policy field. Meanwhile, on the Data side, errors in data formats that need to be more appropriate, data synchronization between the platforms involved, and inaccurate or incomplete information add complexity to the refund process. Together, these four categories cause inconvenience, hindering efficiency and customer satisfaction in the refund process.

Spider Chart

The Spider Chart in Figure 6 compares VWX with its competitors, such as TKT, ARS, AGD, APZ, and VTML, based on total visits, bounce rate, organic search, paid search, and direct marketing. Total visits measure the number of visitors; bounce rate assesses user convenience; organic search indicates relevance to the search; paid search involves paid advertising; and direct marketing involves direct communication with users. VWX excels in bounce rate and organic search, indicating a user-friendly, fast, informative site

and strong SEO with high-quality backlinks. These advantages allow VWX to retain users and rank at the top of searches. On the other hand, VWX has a relatively low score for the bounce rate metric, indicating that it is not performing well enough in retaining visitors compared to some other platforms. However, it still has the opportunity to outperform other platforms. This data was taken over three months: February, March, and April.

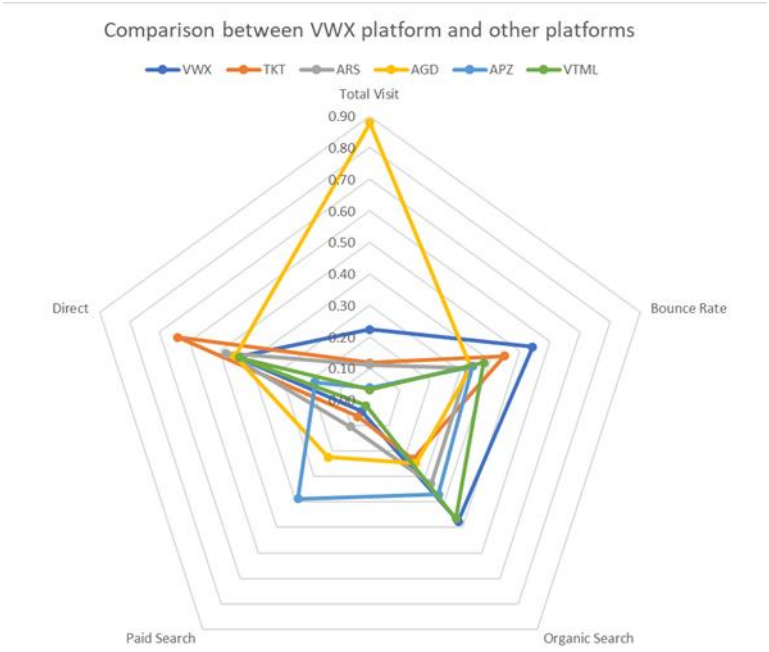

Figure 6. Spider Chart VWX Competitor

Improvement Planning

In this improvement, we use the Process Decision Program Chart (PDPC) method, which takes a tree diagram tasked with anticipating possible problems that occur by analyzing how to handle them. PDPC is used to map out the steps to improve the transaction inflexibility problem identified in the fishbone diagram. PDPC helps design realistic steps to improve, complete with risk anticipation, and ensure successful implementation. In the Policy Enforcement aspect, the improvement suggestions involve cooperation with consumer protection agencies and preparing more relevant policies, with preventive actions in forming a special team to accelerate communication. Technology Support proposes improving the multi-bank payment system and pre-checkout feature, with risk prevention through negotiation with banks and gradual development. In Customer and Development Management, improvements include the creation of clear SOPs and real-time feedback, with mitigation in the form of testing the frequency of notifications so as not to disturb users. Finally, real-time data synchronization and caching are proposed to accelerate access in data operation, with preventive actions in the form of cloud technology and performance monitoring.

Brainstorming and Idealize

In the brainstorming stage, ideas were collected from various perspectives related to the difficulty in refund problems found in the fishbone diagram. First, improvement ideas include intensive training for customer service staff, more explicit guidelines, and an incentive system to increase motivation and accuracy in handling refunds. Improvements

such as developing an automatic refund system, integrating third-party services (banks or e-wallets), and regular system testing to avoid bugs are essential. Then, simplifying the refund procedure and clarifying the refund policy are priorities so that the process is faster and easier to understand, as well as ensuring accurate customer data and improving the necessary documentation.

Real-time monitoring also needs to be implemented to improve process efficiency. Ideas for dealing with a surge in refunds by preparing the system and adjusting to regulations in various regions are required. In the idealizing stage, the most realistic and quickest steps to implement are training customer service staff and compiling clear refund guidelines because this only requires a small cost and can be implemented immediately. Developing an automatic refund system and integrating with third parties can also be done, but it needs more time and resources so that it can be done gradually. Simplifying the refund procedure and improving the refund policy are feasible steps because they do not require significant changes to the system. Meanwhile, real-time monitoring and performance indicators can be implemented when the refund system is more stable. Adjusting to the surge in refunds and regulations is a long-term solution that must be prepared carefully, especially by developing a more adaptive technology infrastructure.

Improvement

Figure 7 illustrates the proposed refund process flow system, a crucial interface between the customer and the system. The system plays a pivotal role in the process, beginning with the completion and verification of the ticket order. It then guides the customer through the cancellation of the order, the selection of the refund menu, and the display of information about the availability of a refund and the reasons for the refund request.
In this flow, the blue boxes indicate new steps that have been added to improve the clarity and efficiency of the refund process. The first step in the blue box is "Features of selecting the available forms of a refund," which contains the choice of refund forms and an explanation of the consequences. Next, "A flashback of refund process policy and prices info" appears, a summary display of the refund policy and updated pricing information, with an FAQ section to answer frequently asked questions regarding refunds. If there are changes to the policy that affect the customer, the system will send a notification about the change and how it will impact the refund process.

The customer must then agree to the policy and refund amount, followed by a display of the refund status and estimated time of completion. After that, the system waits for approval from a third party, such as a bank or service provider, before the customer receives the refund and the process is complete. The addition of this blue box is intended to increase transparency and provide more information to customers during the refund process.

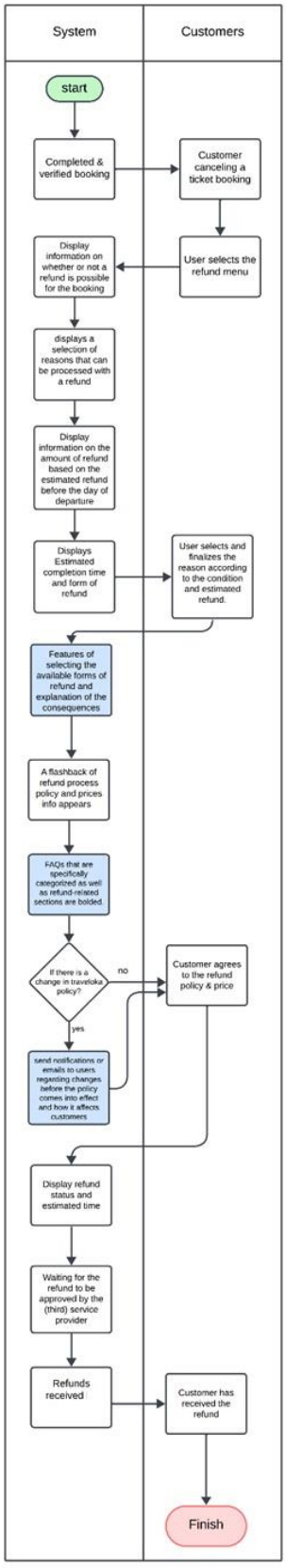

Figure 7. Spider Chart VWX Competitor

After the improvement, the refund business process became more structured and transparent. In the process before the improvement, the flow was more straightforward, where customers only went through several stages, such as ticket cancellation, selecting a refund reason, and waiting for approval from a third party without much additional information. However, this process was less transparent due to the lack of notification or detailed explanation to customers regarding refund policies or price changes. After the improvement, the business process became more thorough by adding steps that provided more complete information. Customers are now given a choice regarding the refund form and the consequences of each option. If there is a change in policy or price, the system automatically sends a notification to the customer. In addition, a flashback feature for the refund policy and an FAQ section to answer frequently asked questions were added. Thus, the new business process offers a more informative experience and ensures that customers are always aware of their refund status in a more transparent and real-time manner.

CONCLUSION

The conclusion of this study highlights the importance of improving the business processes on the VWX platform, primarily related to the issue of inflexibility in the refund process. Through an in-depth analysis using Deming's Cycle method, this study successfully identified various root causes of the problem, such as the lack of system automation, unclear refund policies, and limitations in the capabilities of customer service staff. This inflexibility causes customers to experience delays in the refund process, which impacts user satisfaction levels.

The main recommendations in this study are the development of a more automated refund system and better integration with third parties, such as banks and payment service providers. In addition, improving the refund policy to be more transparent and accessible for customers to understand is an important proposed step. The addition of proactive real-time notification features and FAQs on the VWX platform is expected to reduce customer confusion and ensure they get the latest information about their refund process. This solution is expected to reduce uncertainty and increase process transparency.

With the proposed improvements, the VWX platform can improve the overall user experience, increase customer satisfaction, and strengthen competitiveness in the online travel industry. This study provides an essential foundation for VWX to design a more efficient and user-friendly refund process to face future operational challenges better. Ultimately, these improvements are expected to increase customer loyalty and drive VWX's business growth in a competitive market.

REFERENCES

Arif, R., & Gunawan, A. (2023). Diagram Pareto dan Diagram Fishbone: Penyebab yang mempengaruhiKeterlambatan Pengadaan Barang di Perusahaan IndustriPetrochemicals Cilegon Periode 2020-2022. *Jurnal Riset Bisnis Dan Manajemen Tirtayasa (JRBMT)*, *7*(1), 1–10. Retrieved from https://jurnal.untirta.ac.id/index.php/JRBM

Borys, M., Milosz, M., & Plechawska-Wojcik, M. (2012). Using Deming cycle for strengthening cooperation between industry and university in IT engineering education program. 2012 15th International Conference on Interactive Collaborative Learning (ICL), 1–4. https://doi.org/10.1109/ICL.2012.6402164

Deming, W. E. (1986). Out of the Crisis: Quality, Productivity and Competitive Position. *Massachusetts Institute of Technology. Center for Advanced Engineering Study*, 507. https://lib.ugent.be/en/catalog/rug01:000162160

Diagram Swimlane. (2014, April 30). Retrieved August 18, 2024, from Binus University website: https://sis.binus.ac.id/2014/04/30/diagram-swimlane/

Doddy Y. (2016). Biokimia Universitas Esa Unggul. *Jurnal Gunadharma*, 2–40.

Gunawan, C. V., & Tannady, H. (2016). ANALISIS KINERJA PROSES DAN IDENTIFIKASI CACAT DOMINAN PADA PEMBUATAN BAG DENGAN METODE STATISTICAL PROSES CONTROL (Studi Kasus : Pabrik Alat Kesehatan PT.XYZ, Serang, Banten). *J@Ti Undip : Jurnal Teknik Industri*, *11*(1), 9–14. https://doi.org/10.12777/jati.11.1.9-14

Hery, S.E. (2015). Pengantar Akuntansi. Jakarta: PT. Grasindo.

Ibrahim, S., Mulyanto, A., & Olii, S. (2023). Analisis Dan Rekayasa Proses Bisnis Pengelolaan Ormawa Universitas Negeri Gorontalo. *Journal of System and Information Technology*, *3*(1), 131–132.

Indrawati, Andri. (2017). AnaIisis Trend Kinerja Keuangan Bank Kaltim. Research Journal of accounting and Bussiness Management, ISSN: 2580-3131 Vol.1, No.2.

Kaponda, P., Kawimbe, S., Meki Kombe, C., & Mwange, A. (2023). Models and methodologies for improving and redesigning business processes: A theoretical review. International Journal of Multidisciplinary Research and Growth Evaluation, 4(5), 651–660. https://doi.org/10.54660/.IJMRGE.2023.4.5.651-660

Pramujaya, A.Vandy dan Kurniawai, D. A. (2019).Analisis Penyebab Kegagalan Packer Machine Pada Bag Transfer System Dengan Menggunakan Metode Fault Tree Analysis (FTA), Failure Mode And Effect Analysis (FMEA) dan Fishone Analysis, in The 1st Conference On Industrial Engineering And Halal Industries. Yogyakarta: Faculty of Science and Technology, UIN Sunan Kalijaga, pp. 125–132. http://digilib.uin-suka.ac.id/id/eprint/35839

Schmid, H. A., Cristaldi, A., & Jacobson, G. (2001). A Business Process Component Framework. International Conference on Object Oriented Information Systems, 513–522. https://doi.org/10.1007/978-1-4471-0719-4_52

Surya, R. Z., & Rosliana, R. (2020). Brainstorming Business Model Canvas Pada Formulasi Strategi "Rabuk Diyang" Sebagai Produk Khas Kabupaten Indragiri Hilir. *Selodang Mayang: Jurnal Ilmiah Badan Perencanaan Pembangunan Daerah Kabupaten Indragiri Hilir*, *6*(1), 8–14. https://doi.org/10.47521/selodangmayang.v6i1.141

Taniguchi, A., & Onosato, M. (2018). Information Technology and Computer Science. *Information Technology and Computer Science*, *1*, 1–15. https://doi.org/10.5815/ijitcs.2018.01.01

Wiggins, Alexis .2018. The Best Class You Never taught: How Spider Web Discussion Can Turn Students into Learning Laeders. Alexandria, USA: ASCD