**Business Case**

**Apelo Dental Clinic System (ADENICSY)**

**Apelo Dental Clinic**

**R0203, Apelo Bldg 8271, Dr Arcadio Santos Ave**

**Parañaque City, 1700**

**2023**

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# Executive Summary

## Issue

At the Apelo Dental Clinic currently, traditional techniques are employed to conduct business operations, including the utilization of index cards for patient data, and writing numbers on paper to schedule appointments. Patients arrive at the clinic as early as 4 in the morning to obtain a queue number, which will give them a better chance of being seen earlier. However, the clinic only commences its operations at 9 in the morning. Since patient information and payment records are both kept on index cards, some records of other patients cannot be found. In each of the processes implemented in Apelo Dental Clinic, patients and clinic staff encounter difficulties or challenges.

## Anticipated Outcomes

The project anticipated outcomes of an efficient web application namely Apelo Dental Clinic System (ADENICSY) by the end of June 2023. The implementation will take place within the company's intranet, utilizing the existing records. The proposed system should include 6 major functionalities for account management of patients and employees, queuing management, search function, dental records and payment records management, and dashboard.

The execution of the proposed project will lead to an enhanced user experience at Apelo Dental Clinic by reducing waiting time and preventing the loss of patient data. The need to physically go to the clinic to obtain a queue number and inquire about the current serving number will be eliminated. The digitalization of patient data will enable the Dental Clinic to retrieve patient information quickly and prevent the excessive use of physical space. Additionally, the system will allow patients to access their payment records for services received and view their remaining balance.

## Recommendation

As a solution to the issues that are listed, it is recommended to Apelo Dental Clinic combine all the functionalities. The project can alleviate the main pain points, which are the long waiting time for patients, and the loss of medical records of the patients. It is concluded in our interview with the patients of the clinic that having a poor queuing system is the main pain point of the clinic.

As the team has plans on scaling in the future, it is also high time to transition from a traditional technique to a technology-ready clinic. Old data of the patients that are stored in the index cards will be transferred to each of their accounts, which means there will be fewer manual actions needed from the patient’s end.

## Justification

The Apelo Dental Clinic System is a much-needed solution for dental clinics facing challenges with manual processes, including long waiting times and the risk of losing patient records. Our system provides a digital platform to automate queueing and record-keeping, enabling clinics to increase efficiency, improve patient experience and reduce costs. With our system, patients can easily view their queueing status online, and clinics can maintain accurate and secure patient records without the risk of losing them.

The implementation of the Apelo Dental Clinic System is a worthwhile investment for dental clinics. The system will provide significant benefits, including reducing waiting times and errors, improving patient satisfaction and retention, and increasing the overall productivity of the clinic. By embracing digital technology, clinics can save time and costs, reduce manual errors, and improve the quality of patient care. Ultimately, the Apelo Dental Clinic System can lead to a more streamlined and efficient clinic operation, benefiting both patients and dental practitioners.

# Business Case Analysis Team

Table 1 demonstrates the groups comprising experts who will collaborate to develop the plan, and their specific responsibilities in the project are the following:

|  |  |  |
| --- | --- | --- |
| Role | Description | Name |
| Project Team Leader | Assist in monitoring and guiding the project toward successful completion. | Patricia Anne L. Meltran |
| Project Manager | Oversee the business case and be responsible for executing the project. | Janssen Pedrola |
| Project Team Member | Oversee the project`s process improvement. | Guiler Marion R. Regalado |
| Project Team Member | Provide technical support for the project. | Alfonzo Louise De Vera |
| Project Team Member | Oversee the project`s process improvement. | Earl Eufimeah Dahinao |
| Project Team Member | Supervise the project team’s documentation improvement. | Ivan Emmanuel Flores |
| Executive Sponsor | Provide guidance to the project. | Dr. Denroe Apelo |

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# Problem Definition

## Problem Statement

Apelo Dental Clinic is a company that provides a wide range of dental services to its customers. Usually, they focus on preserving good oral hygiene and avoiding or addressing dental problems. However, Apelo Dental Clinic System (ADENICSY) is a web application that supports day to day operation of Apelo Dental Clinic.

The company employs manual procedures for its daily operations, which involve using paper-based systems for queuing management and index cards to keep track of patient data. This results in a delay of approximately 1 to 4 hours to obtain a number, and patient information retrieval is time-consuming and occupies significant space in the dental clinic. All the current manual procedures are vulnerable to human mistakes and data loss. Despite efforts to maintain a large amount of data, some are still lost, and patients experience excessive waiting times, making it difficult for the company to maintain all the data of their patients and accommodate all the patients in their dental clinic.

## Organizational Impact

The implementation of Apelo Dental Clinic will have a significant impact on the company. By reducing long waiting times in queuing and improving the manual process of recording records, the clinic can redirect its savings toward other important initiatives. This will help drive the overall performance and efficiency of the company.

In addition, the project aims to improve the current process by introducing agility into the system. By eliminating the need for patients to physically obtain numbers for queuing, the process becomes more efficient and saves time for both the patients and the clinic staff. Additionally, the project will address the challenge of storing patient information by reducing the amount of space required for physical storage. With these improvements, the clinic can focus on providing quality healthcare services and enhancing patient experiences. Overall, the project will revolutionize the healthcare sector by creating a seamless and hassle-free process for patients and healthcare providers alike.

## Technology Migration

The system will be developed using HTML, PHP, JavaScript, and SQL to create a web application, as they currently rely on manual processes that involve number cards and index cards. The data migration process will involve the dental clinic staff manually entering the information from the index cards. After the system is developed, it will be implemented through the company's VDI environment.

# Project Overview

## Project Description

The goal of the project is to create a system that will aid in the daily operations of the Apelo Dental Clinic by addressing both patients wait times and data management concerns. As an overview of the system, it includes functionalities that convert the current queuing management process in the dental clinic into a digital format. The system will generate queue numbers and show the number of patients currently being served. Additionally, the system's data management capabilities will efficiently and effectively organize, store, retrieve, and manage large amounts of data.

By developing a comprehensive system that manages daily operations, the efficiency of the dental clinic can be greatly improved. With this new system in place, employees will have an easier time managing patient information, and patients will be able to experience shorter wait times. With the digitalization of patient information, the employees can retrieve the information easier and faster making the transaction with the patient smoothly. Also, the system will include a dashboard that allows the administrator to easily monitor the performance of the clinic.

## Goals and Objectives

The Apelo Dental Clinic System aims to automate queueing and record-keeping processes in dental clinics, improving their operational efficiency. This system addresses the common business problem of long waiting times and manual record-keeping, which can lead to errors, patient dissatisfaction, and loss of revenue. By implementing the system, dental clinics can achieve the following objectives:

* Develop and implement a digital platform for queueing and record-keeping processes in dental clinics.
* Enable patients to view their queueing status online, reducing wait times and enhancing patient experience.
* Secure patient records in a digital database, reducing the risk of manual errors and loss of records.
* Improve operational efficiency by automating manual processes, reducing costs, and increasing revenue.
* Enhance patient satisfaction through improved service quality and reduced wait times.
* Provide user training and ongoing support to ensure effective implementation and adoption of the system.

## Project Performance

The Apelo Dental Clinic System project will be considered successful if it achieves the following performance metrics:

* **Reduction of waiting times:** The system should reduce the average waiting time for patients by at least 20% compared to the previous manual process.
* **Accuracy and security of records:** The system should ensure that all patient records are accurately and securely stored in a digital database, reducing the risk of manual errors and loss of records.
* **Increased operational efficiency:** The system should increase the operational efficiency of dental clinics by reducing the time and resources required for manual queueing and record-keeping processes, resulting in cost savings and increased revenue.
* **Enhanced patient satisfaction:** The system should enhance the overall patient experience by providing a more streamlined and convenient queueing process, resulting in increased patient satisfaction ratings.
* **Effective implementation:** The system should be implemented on time, within budget, and with minimal disruption to the normal operation of dental clinics.
* **User adoption:** The system should be successfully adopted by users, including both clinic staff and patients, with minimal training required.

By meeting these performance metrics, the Apelo Dental Clinic System project will be considered a success, achieving its goals of improving operational efficiency, enhancing patient experience, and supporting the long-term success of dental clinics.

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## Project Assumptions

Here are the preliminary assumptions to the proposed system:

* 1. The dental clinics that will implement the system have reliable internet connectivity and appropriate hardware and software to support the digital platform.
  2. The clinic staff and patients are willing to adopt and learn the new system, with minimal resistance to change.
  3. The project team will have access to all necessary information and resources from the dental clinics to effectively design, develop, and implement the system.
  4. The project team has the necessary technical expertise and project management skills to develop and implement the system on time, within budget, and with minimal disruption to the normal operation of dental clinics.
  5. The system will comply with all relevant data privacy and security regulations, ensuring the confidentiality and integrity of patient records.
  6. The system will be scalable to accommodate future growth and changes in the needs of dental clinics.
  7. The system will integrate with existing software and hardware systems used in dental clinics, such as electronic health records and imaging systems, to ensure seamless operation.
  8. The system will provide a user-friendly interface for both clinic staff and patients, requiring minimal training to use effectively.

## Project Constraints

* Budget: The project must be completed within the allocated budget, and any additional costs must be approved by the project sponsor. The project team must prioritize tasks and resources to ensure that the system is developed and implemented within budget constraints.
* Timeline: The project must be completed within the agreed-upon timeline, with milestones and deadlines set and met by the project team. Any delays or changes to the timeline must be approved by the project sponsor, and the project team must take appropriate measures to ensure timely completion of the project.

## Major Project Milestones

To guide the team’s progress in completing the project, the following milestones and deliverables for this project have been identified:

1. Set up a preliminary meeting with Dr. Denroe Apelo, Owner of Apelo Dental Clinic to discuss the initial system requirements and status of the existing technologies by April 26th, 2022.
2. Conduct the analysis phase and present findings to the primary stakeholder by May 7th, 2022.
3. Complete the design phase and present mockup design to the primary stakeholder by June 1st, 2022.
4. Develop the features outlined during analysis and design stages using the resources provided by Apelo Dental Clinic and implement the agreed upon user interface by August 15th, 2022.
5. Achieve a simulated solution which allows no security breaches and complete testing by January 31st, 2022.
6. Conduct a close out meeting and provide hand-off documents to key stake holders before September 30th ,2023.

# Strategic Alignment

If the Apelo Dental Clinic System project is aligned with the strategic goals and objectives of Apelo Dental Clinic, the company can increase the project's value and guarantee its contribution to the efficiency and success of the business.

**Apelo Dental Clinic aims to improve the overall experience for patients.**

The system project's alignment with this goal signifies the company's commitment to providing an exceptional patient experience and staying ahead of the competition. The implementation of the system project is aimed at achieving the goal of increasing the efficiency and effectiveness of the company's processes, which will, in turn, enhance its reputation. By digital queue numbers and the digitalization of patient information, the project will facilitate a seamless patient experience and contribute to the company's competitive advantage in the market.

**Apelo Dental Clinic aims to improve data management and security.**

The system project aligns with this goal by modernizing and streamlining the operation of the dental clinic, which will allow the employees of the clinic to effectively manage the queue numbers and patient data. The project's introduction of cutting-edge technologies and streamlined processes will enable the organization to maintain a competitive edge in a rapidly evolving market. By continuously innovating and adapting to the latest trends and advancements, the project will ensure that the company stays ahead of the curve and is well-positioned for long-term success.

# Cost Benefit Analysis

The cost-benefit analysis will help determine the potential benefits of the Apelo Dental Clinic System (ADENICSY) project in comparison to the cost incurred. The primary benefit of this project is the optimization of the dental clinic's operational processes, which will result in improved efficiency and effectiveness. ADENICSY will facilitate real-time updates and faster data sharing, resulting in an increase in patient satisfaction.

1. **Benefits**

* Reduced waiting time: The system will reduce patient’s waiting time, leading to increased patient satisfaction, improved staff productivity, and increased revenue due to the ability to see more patients.
* Improved record-keeping: The system will improve the accuracy and security of patient records, reducing the risk of errors and loss of records.
* Increased operational efficiency: The system will reduce the time and resources required for manual queueing and record-keeping processes, leading to cost savings and increased revenue.
* Enhanced patient experience: The system will provide a more streamlined and convenient queueing process, resulting in increased patient satisfaction ratings and potential for increased patient referrals.
* Competitive advantage: The system will provide a competitive advantage for dental clinics that implement it, as it will improve operational efficiency and enhance the patient experience compared to clinics still using manual processes**.**

1. **Cost**

* Development and implementation costs: The initial cost of developing and implementing the system, including software and hardware, staff training, and any required customization or integration with existing systems.
* Ongoing maintenance costs: The cost of maintaining and updating the system, including software updates, technical support, and ongoing training.
* Operational costs: The cost of operating the system, including internet connectivity and any additional hardware or software required to support the system.

Based on these costs and benefits, it is likely that the Apelo Dental Clinic System project will result in a positive return on investment (ROI) over time. The initial costs of development and implementation will be outweighed by the benefits of increased efficiency, improved patient experience, and potential revenue growth. It is important to continue monitoring and evaluating the system's performance over time to ensure that it continues to provide the expected benefits and to identify areas for improvement.

# Alternatives Analysis

**Alternative 1: Maintain Current Manual Processes**

Pros: No initial development or implementation costs; no need for staff training or hardware and software upgrades.

Cons: Manual processes are time-consuming, prone to errors, and can result in long wait times and loss of records, leading to decreased patient satisfaction, revenue loss, and increased costs due to inefficiencies.

**Alternative 2: Implement a Third-Party Digital Queueing and Record-Keeping System**

Pros: No need for internal development or implementation, reduced operational costs, potential for increased efficiency and patient satisfaction.

Cons: Lack of customization, potential for compatibility issues with existing systems, lack of control over updates and maintenance, potential for data privacy and security concerns.

**Alternative 3: Develop and Implement an In-House Digital Queueing and Record-Keeping System**

Pros: Customizable to the specific needs and processes of the dental clinics, greater control over updates and maintenance, potential for increased efficiency and patient satisfaction.

Cons: Higher initial development and implementation costs, potential for delays or technical issues during development and implementation, ongoing maintenance costs, potential for data privacy and security concerns.

Based on this analysis, it appears that Alternative 3, developing and implementing an in-house digital queueing and record-keeping system, is the best option for the Apelo Dental Clinic System project. While there are higher upfront costs and potential risks, this option provides greater customization and control over the system, ensuring it is tailored to the specific needs and processes of the dental clinics. Additionally, it can provide a competitive advantage and potential for revenue growth over time.

# Approvals

The project approval should come from the project sponsor and key stakeholder – Dr. Denroe Apelo, Owner of Apelo Dental Clinic.