**PROJECT INITIATION**

**Project: AI Customer Analyzer**

**Group: 19**

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# Project Initiation Report History

## 1.1 Document Location

This document is only valid on the day it was printed.

The source of the document will be found on the project's PC in location

## 1.2 Revision History

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## 1.3 Approvals

This document requires the following approvals.

Signed approval forms are filed in the Management section of the project files.

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| **Name** | **Signature** | **Title** | **Date of Issue** | **Version** |
| Dr.Yasas Jayaweera |  | Project Executive |  |  |
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## 1.4 Distribution

This document has been distributed to:

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# Project Initiation Document

## 3 Purpose of Document

The purpose of this project initiation document is to define the AI-powered computer vision-based customer analysis system project, establish a clear understanding of the project's scope, objectives, deliverables, timeline, and resource requirements. It will also form the basis for the project's management and the assessment of overall success. The Project Board will use the PID to authorize the project and ensure that it aligns with the organization's overall objectives and strategies. The Project Manager will also use it as a baseline for project planning, monitoring, and control throughout the project's lifecycle.

## 4 Background

In today's world; companies must understand their customers to serve them better and provide a personalized experience. Customer analysis helps businesses identify the demographics of their target audience, preferences, and behavior. Traditional methods of customer analysis, such as surveys and interviews, can be time-consuming and may not accurately represent the customer base. As a result, many companies are turning to AI-powered solutions to collect customer data in real-time and provide valuable insights.

DreamSpace, based in Sri Lanka, recognizes the need for a more efficient and accurate customer analysis system. To address this, they have initiated a project to develop an AI-powered computer vision-based customer analysis system to monitor and gather data about its customers in real-time. This system will use computer vision and machine learning algorithms to detect the number of customers, age range, gender, emotions, and even race. Additionally, it will monitor the interactions between sales employees and customers to improve their communication skills in the future.

The system will be placed at the entrance of the company's premises. It will perform the essential duties of a security guard, welcoming visitors, counting them, and predicting their age range, gender, and mood. The system will also remind visitors to wear a face mask if necessary, contributing to the customer's and staff's health and safety. DreamSpace aims to develop a user-friendly interface for visitors, making interacting with the system easily.

This project will leverage deep learning algorithms, such as convolutional neural networks (CNNs), and machine learning libraries, such as OpenCV and TensorFlow, to develop an accurate and efficient AI security bot for visitor analysis and mask reminder. The project will be delivered within ten weeks from the start date, with regular updates and progress reports provided to the client. The system will provide valuable insights and data that can be used to understand better and serve DreamSpace's customers, ultimately leading to improved customer satisfaction and business growth.

## 5 Project Definition

### 5.1 Project Objectives

This project aims to develop an AI-powered computer vision-based customer analysis system that will perform the essential duties of a security guard, including welcoming visitors, counting them, and predicting their age range, gender, and mood. The system should also remind visitors to wear a face mask if necessary.

* To make the company’ mall as AI-based one
* To build an AI-powered system that can accurately count the number of customers entering DreamSpace's premises.
* To detect the age range of customers.
* To detect the gender of customers.
* To detect the emotions of customers.
* To detect the race of customers.
* To monitor sales employees' vocals to improve their professional communication skills.
* Provide a backend panel for DreamSpace to view and analyze the gathered data.

### 5.3 Project Scope

This project includes the development of an AI security bot that uses computer vision and machine learning to perform the following tasks:

* Welcome visitors as they enter the premises in Tamil, Sinhala, English,
* Count the number of visitors.
* Predict the age range, gender, and mood of visitors using computer vision and machine learning algorithms.
* Provide reminders to visitors to wear a face mask if necessary.

### 5.4 Project Deliverables and/or Desired Outcomes

* Project Plan: A detailed project plan includes a timeline, milestones, and resources required to complete the project.
* Design and Architecture: A complete design and architecture plan for the system, including the hardware and software requirements.
* Welcome Visitor Functionality: The system should be able to welcome visitors in Tamil, Sinhala, and English.
* Visitor Counting Functionality: The system should accurately count the number of visitors entering DreamSpace's premises.
* Age Prediction Functionality: The system should predict the age range of visitors using computer vision and machine learning algorithms.
* Gender Prediction Functionality: The system should predict the gender of visitors using computer vision and machine learning algorithms.
* Mood Prediction Functionality: The system should predict the mood of visitors using computer vision and machine learning algorithms.
* Race Prediction Functionality: The system should predict the race of visitors using computer vision and machine learning algorithms.
* Mask Reminder Functionality: The system should remind visitors to wear a mask if necessary.
* User-friendly Interface: The system should have a user-friendly interface that allows easy visitor interaction.
* Backend Panel: A web-based backend panel that allows DreamSpace to visualize and analyze the gathered data.
* Audio Monitoring Functionality: The system should monitor sales employees' vocals to improve their professional communication skills.
* Test and system testings testing of the system to ensure that it meets the specified requirements.
* Documentation: Project documentation, including user manuals, technical manuals, and installation instructions.
* Training: Training for DreamSpace's staff on how to use the system and interpret the gathered data.
* Ongoing Support: Ongoing technical support and maintenance for the system after the project is completed.

### 5.5 Exclusions

* Physical implementation of the system: The project description does not specify whether DreamSpace will physically implement the system or outsource it to a third-party vendor. The physical implementation of the system, including hardware installation and integration with the company's existing infrastructure, may not be included in the project scope.
* Data storage and management: While the project aims to collect and analyze customer data in real time, it is unclear how it will be stored and managed. The project may not include the development of a comprehensive data storage and management system.
* Integration with other business systems: The project may not include integrating the customer analysis system with other business systems such as customer relationship management (CRM) software or point-of-sale (POS) systems.
* Advanced security features: While the project aims to perform the essential duties of a security guard, such as welcoming visitors and counting them, it may not include advanced security features such as facial recognition or biometric identification.
* Mobile application development: The project description does not mention whether DreamSpace plans to develop a mobile application for the customer analysis system. The project scope may not include the development of a mobile application for customers to interact with the system.

### 5.6 Constraints

* Time constraint: The project must be completed within six months from the start date.
* Resource constraint: The project team will consist of no more than ten members, including the project manager.
* Funding constraint: The total budget for the project is $500,000. No additional funds will be allocated during the project.
* No-go areas: The project will not include developing any hardware components. The project will not involve legal or regulatory compliance issues outside standard industry practices. The project outcome will not involve any integration with third-party systems or technologies.

### 5.7 Interfaces

* Program Management: This project is part of a larger program and its successful completion will impact the program's overall success. Therefore, regular communication and coordination will be necessary to ensure that the project aligns with the program's objectives and timelines.
* External Stakeholders: The project will require collaboration with external stakeholders such as regulatory bodies, vendors, and suppliers. Therefore, clear communication channels and regular updates will be necessary to ensure the project stays on track and meets its goals.
* Internal Stakeholders: The project team will work closely with internal stakeholders such as IT, finance, and legal teams. Therefore, regular communication and coordination will be necessary to ensure the project aligns with the organization's objectives and policies.
* User Groups: The project will involve developing and deploying a new system for internal use. Therefore, user groups will be a key interface for the project. User feedback and involvement will be necessary to ensure that the system meets the users' needs and is easy to use.
* Related Projects: Other organizational projects may impact or impact the project. Therefore, regular communication and coordination will be necessary to ensure that there is no overlap or conflicts between projects.

### 5.8 Assumptions

* The stakeholders are available and committed to participating in project activities and decision-making.
* The project team members have the necessary skills and expertise to complete their assigned tasks.
* Unforeseen external events beyond the project team's control will not impact the project.
* The project budget and timeline will remain stable throughout the project duration.
* The project team will have access to all required resources, including technology, equipment, and materials to complete the project successfully.
* The project requirements and scope are well-defined and agreed upon by all stakeholders.
* The project will adhere to all relevant regulations, laws, and industry standards.
* The project will not be impacted by changes in the market or business environment.

## 6 Project Organisation Structure

### 6.1 Project Management Team Structure

* Project Board/Executive: Dr. Yasas Jayaweera
* Project Client: Kishoth Navaretnarajah
* Project Manager: Gunarakulan Gunaretnam (2208408)
* Startup Manager: Sangeetha Thangavadivel (2135801)
* Risk Manager: Haritha Thavarajah (2211320)
* Schedule Manager: Mathumitha Arasakulasoorian (2211336)
* Quality Manager: Delaxsan Raj Sathiyanesan (2211294)

### 6.2 Job Descriptions

* **Project Manager:** The role of the project manager in this project is crucial for its success. They are responsible for planning, executing, and closing the project. They must ensure that the project is completed within the given time, budget, and quality constraints while meeting the project objectives. The project manager is also responsible for managing the project team, stakeholders, and risks associated with the project. They must communicate clearly to all team members, stakeholders, and sponsors throughout the project life cycle to ensure everyone is on the same page. The project manager must also ensure that project documentation and status reports are accurate and transparent. They must work closely with the project sponsor and other stakeholders to ensure that project goals are aligned with the organization's strategic objectives.
* **Start-up Manager:** The Start-up Manager is responsible for the project's initial phase, which includes preparing the Project Initiation Document (PID) and creating the project plan. They work with stakeholders to define project goals, develop a scope, identify constraints and assumptions, and assess risks. They ensure the project is aligned with the organization's strategy and establish the project governance structure. The Start-up Manager also works closely with the Project Manager to ensure a smooth transition from the start-up phase to the execution phase.
* **Quality Manager:** The Quality Manager ensures that the project deliverables meet the required quality standards. They develop and implement a quality management plan that outlines the processes, procedures, and standards used to manage and monitor the quality of project deliverables. The Quality Manager works closely with the Project Manager to identify quality requirements and ensure they are met throughout the project lifecycle. They also guide and support project team members on quality assurance and control activities.
* **Risk Manager:** The Risk Manager is responsible for identifying, assessing, and managing risks that may impact the project. They develop and implement a risk management plan that outlines the processes, procedures, and tools that will be used to manage and monitor risks. The Risk Manager works closely with the Project Manager to identify and prioritize risks, develop mitigation strategies, and monitor risk exposure throughout the project lifecycle. They also guide and support project team members on risk management activities.
* **Scheduling Manager:** The Scheduling Manager is responsible for developing and maintaining the project schedule. They work with the Project Manager to define project tasks, estimate the duration of each task, and sequence tasks to create a project schedule. The Scheduling Manager also monitors progress against the schedule, identifies delays or potential delays, and works with the Project Manager to develop corrective actions. They also communicate the schedule status to stakeholders and ensure project team members know their assigned tasks and deadlines.

## 7 Communication Plan

* Attached as separate document

## 8 Project Quality Plan

* Attached as separate document

## 9 Project Controls

Introduction: The purpose of this section is to define the project's objectives, scope, and deliverables. This section will also outline the roles and responsibilities of the project team.

Project Management Team: This section will outline the roles and responsibilities of the project management team. It will include the Project Manager, who will be responsible for the overall management of the project, and the Project Board, who will provide oversight and direction.

Quality Management: This section will outline the quality management process for the project. It will define the quality standards, quality assurance and control processes, and acceptance criteria for the project deliverables.

TRisk Management: This section will outline the risk management process for the project. It will identify potential risks, assess their impact, and develop strategies for managing them. It will also include a contingency plan to mitigate the impact of any unforeseen events.

Change Control: This section will outline the process for managing project scope, schedule, and budget changes. It will include the change control procedures, including the change request form, change assessment criteria, and change authorization process.

Monitoring and Reporting:

This section will outline the monitoring and reporting mechanisms for the project. It will define the reporting frequency, the format and content of the reports, and the stakeholders who will receive the reports. It will also define the exception process, including the escalation procedures and decision-making authority.

Communication Management: This section will outline the communication management plan for the project. It will define the communication channels, frequency, and content. It will also identify the stakeholders and their communication needs.

Project Plan:This section will include the project plan detailing the project schedule, milestones, and resource allocation. It will also include the project budget and the resource plan.

## *10* Initial Business Case

This Business Case document presents the reasons for undertaking the project "Development of an AI-based chatbot for customer support." The document justifies the project, describes the expected benefits and outcomes, and outlines the costs and risks associated with the project.

The current customer support system is time-consuming and often results in long customer waiting times. The manual nature of the system also leads to inconsistent responses and high error rates. Additionally, the current system cannot scale up to meet the increasing demand for customer support, which negatively affects customer satisfaction.

## *11 Initial Project Plan*

* Attached as a separate document.

## *12 Initial Risk Log*

* Attached as a separate document.