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| AI Integrated Inventory Management System |  |
| Project Vision Document | |
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# Introduction

The AI Integrated Inventory Management System (AI-IIMS) Project Vision Document provides a comprehensive software solution designed to facilitate efficient inventory management for a variety of retail establishments through the integration of artificial intelligence (AI). This document outlines the project's vision, objectives, scope, and key stakeholders, setting the stage for a profound shift in the way organizations manage their inventory.

## Purpose

The primary purpose of this Project Vision Document is to establish a clear and shared understanding of the AI-IIMS project among all stakeholders. It serves as a guiding beacon for project planning, development, and implementation. This document lays the foundation upon which detailed project plans, requirements, and design specifications will be built.

* + Optimize Inventory Control: AI-IIMS will enable stores to maintain optimal inventory levels by utilizing historical sales data and delivery schedules to forecast product requirements.
  + Minimize Inventory Costs: By accurately tracking inventory usage, reconciling it with actual sales, and accounting for waste, AI-IIMS will help stores reduce costs associated with overstocking and wastage.
  + Enhance Decision-Making: AI-IIMS will provide store managers with data-driven insights, facilitating informed decisions regarding product ordering, replenishment, and stockout prevention.

## Scope

<A brief description of scope>

### In Scope

* Inventory Forecasting: The system will forecast product quantities to be ordered based on historical data and delivery schedules.
* Reconciliation: The system will reconcile actual sales and inventory data to identify discrepancies.
* Development and implementation of advanced AI algorithms for demand forecasting.
* Integration of the AI-IIMS with existing inventory management systems and databases.

### Out of Scope

* Procurement and deployment of hardware infrastructure.
* Inventory Tracking: IMS will track inventory levels, sales, deliveries, and waste.
* Detailed system design, which will be covered in subsequent project documentation.
* User training programs to ensure efficient utilization of the AI-IIMS.
* Regular monitoring, maintenance, and continuous improvement of the system's AI models.
* Point of Sale (POS) System: IMS will not include POS functionality.
* Payment module
* Accounting: Accounting and financial modules are not part of IMS

## Definitions, Acronyms, and Abbreviations

* AI: Artificial Intelligence
* API: Application Programming Interface
* CRM: Customer Relationship Management
* IIMS: Inventory Management System
* POS: Point of Sale
* Waste: Unsold or expired products that cannot be used or sold
* Inventory Clerk: Personnel responsible for managing and updating inventory records
* Administrator: Personnel responsible for system configuration and user management
* Manager: Store personnel responsible for overseeing inventory and making ordering decisions.

## References

<This subsection provides a complete list of all documents referenced elsewhere in the Project Vision**.** Identify each document by title, report number if applicable, date, and publishing organization. Specify the sources from which the references can be obtained. This information may be provided by reference to an appendix or to another document>

| **Reference File Name** | **Version** | **Description** |
| --- | --- | --- |
| Inventory Management Best Practices |  |  |
|  |  |  |

# Positioning

## Business Opportunity

The AI Integrated Inventory Management System (AI-IIMS) capitalizes on a significant business opportunity by addressing the growing need for smarter, data-driven inventory management solutions in the retail sector. With the integration of artificial intelligence, AI-IIMS positions itself to enhance inventory control, reduce costs, and boost efficiency, ultimately leading to increased profitability and competitiveness for retail establishments.

## Problem Statement

|  |  |
| --- | --- |
| The Problem of | Inefficient Inventory Management |
| affects | Retail Businesses of All Sizes |
| the impact of which is | Suboptimal Inventory Levels, Increased Costs, and Missed Revenue Opportunities. |
| a successful solution would be | Improved Inventory Accuracy, Reduced Operational Costs, Enhanced Profit Margins, and Increased Customer Satisfaction. |

Table 1 Problem Statement

## Product Position Statement

|  |  |
| --- | --- |
| For | retail managers and business owners. |
| Who | optimize inventory management and reduce operational costs. |
| The AI Integrated Inventory Management System (AI-IIMS) | is a cutting-edge inventory management solution that utilizes artificial intelligence to revolutionize the way you manage your inventory. |
| That | utilizes artificial intelligence to revolutionize the way you manage your inventory. |
| Unlike | traditional systems, |
| Our product | leverages AI-driven insights to forecast demand accurately, reduce wastage, and ensure optimal inventory levels, making it the ultimate choice for modern retailers. |

Table 2 Product Position Statement

# Stakeholder and User Descriptions

## Stakeholder Summary

| Stakeholder Name | Represents | Role |
| --- | --- | --- |
| Retail Managers | Store Operations | Oversee inventory management, optimize stock levels, and make ordering decisions. |
| System Administrators | IT Department | Configure, maintain, and monitor the AI-IIMS system. |
| Business Owners | Business Ownership | Set business strategy, budget, and financial decisions. |
| Suppliers | Ingredient Suppliers | Manage ingredient deliveries and ensure smooth interactions with the AI-IIMS. |
| Frontline Staff | Frontline Staff | Prepare and serve products, check ingredient availability, and interact with the system. |

Table 3 Stakeholder Summary

## User Summary

< Present a summary list of all identified users of the system >

| **User Name** | **Description** | **Responsibilities** | **Stakeholder** |
| --- | --- | --- | --- |
| Inventory Managers | Inventory Management | Optimize stock levels, make data-driven ordering decisions, and track inventory usage efficiently. | Retail Managers |
| System Administrators | System Management | Configure and maintain the AI-IIMS, monitor system performance, and provide user support. | System Administrators |
| Business Owners | Business Management | Define business strategy, allocate budgets, and review financial reports for informed decision-making. | Business Owners |
| Suppliers | Supplier Relations | Manage ingredient deliveries, respond to system requests, and maintain a collaborative relationship with clients. | Suppliers |
| Frontline Staff | Operations | Prepare and serve products, use the system for order fulfillment, and ensure smoothie bar operations. | Frontline Staff |

Table 4 User Summary

# Stakeholder Requirements

| **ID** | **Requirement** | **Stakeholder** |
| --- | --- | --- |
| SR01 | Accurate Inventory Forecasting | Retail Managers |
| SR02 | Real-time Inventory Reconciliation | Retail Managers |
| SR03 | Seamless Integration with Existing Systems | System Administrators |
| SR04 | User-Friendly Interface for Business Owners | Business Owners |
| SR05 | Reliable Supplier Interaction and Data Exchange | Suppliers |
| SR06 | Intuitive Frontline Staff Tools | Frontline Staff |
| SR07 | Comprehensive Reporting and Analytics | Business Owners, Retail Managers |
| SR08 | Scalability to Accommodate Different Business Sizes | System Administrators, Business Owners |
| SR09 | Data Security and Privacy Measures | System Administrators |
| SR10 | User Training and Support | System Administrators, Frontline Staff |

Table 5 Stakeholder Requirements

# System Features

| **ID** | **Feature** | **Stakeholder Requirement ID** |
| --- | --- | --- |
| SF01 | Demand Forecasting | SR01, SR08 |
| SF02 | Inventory Tracking | SR02 |
| SF03 | API Integration Capabilities | SR03 |
| SF04 | User-Friendly Dashboard | SR04, SR10 |
| SF05 | Supplier Portal | SR05 |
| SF06 | Order Management Tools | SR06 |
| SF07 | Customizable Reports | SR07 |
| SF08 | Scalable Architecture | SR08 |
| SF09 | Data Encryption and Access Controls | SR09 |
| SF10 | Training Resources and Helpdesk | SR10 |

Table 6 System Features

# Assumptions

* Data Availability: We assume that historical sales data, delivery schedules, and waste data will be available and accessible for the implementation of inventory forecasting and tracking features.
* Hardware Compatibility: It is assumed that the existing hardware infrastructure of the retail establishments will be compatible with the AI-IIMS software without the need for significant hardware upgrades.
* Stakeholder Cooperation: We assume that stakeholders, including retail managers, inventory clerks, and suppliers, will actively participate in the implementation and adoption of AI-IIMS.
* Regulatory Compliance: It is assumed that the regulatory environment for the retail industry will remain relatively stable, and any changes in regulations can be accommodated within the system with reasonable effort.
* User Training: We assume that the necessary user training will be provided to ensure that users can effectively operate AI-IIMS and utilize its features.
* Integration Support: For integration capabilities, it is assumed that third-party systems (e.g., accounting software, POS systems) will provide the necessary interfaces and documentation for integration.
* Security Protocols: We assume that the retail establishments will have appropriate security protocols and measures in place to protect the data processed and stored within AI-IIMS.
* Budget and Resources: Adequate budget and resources are assumed to be available for the development, implementation, and ongoing maintenance of AI-IIMS.
* Scalability: The system is assumed to be scalable to accommodate the inventory management needs of retail establishments of varying sizes without significant reengineering.
* Data Quality: It is assumed that the data entered into AI-IIMS will be of reasonable quality and accuracy, as the system's performance relies on the integrity of this data.

These assumptions provide a foundational context for the planning and implementation of the AI Integrated Inventory Management System (AI-IIMS). They may need to be revisited and validated as the project progresses.

# Constraints

* Budgetary Constraints: The project must adhere to a predefined budget, which may limit the allocation of resources, technology choices, or the extent of system development.
* Timeline Constraints: There may be a fixed project timeline or delivery deadline, which could impact the development and testing phases of AI-IIMS.
* Resource Availability: Constraints related to the availability of skilled personnel, both in-house and external, may affect the project's progress.
* Data Availability: The quality and availability of historical sales data, delivery schedules, and waste data may impose limitations on the accuracy and effectiveness of inventory forecasting.
* Regulatory Compliance: The need to comply with specific industry or regional regulations may restrict certain system functionalities or require additional development efforts.
* Integration Dependencies: Integration with third-party systems (e.g., accounting software, POS systems) may be subject to the availability and cooperation of those external systems' providers.
* Hardware Limitations: Existing hardware infrastructure at retail establishments may have limitations that impact system performance or require upgrades.
* Security and Privacy: Stringent security and privacy requirements may impose constraints on data handling, storage, and access, necessitating additional security measures.
* User Adoption: The success of AI-IIMS depends on user adoption, and any resistance or lack of enthusiasm among users may pose a constraint on the system's effectiveness.
* Scalability Challenges: As the system is expected to accommodate retail establishments of varying sizes, scaling the system while maintaining performance may present challenges.
* Vendor Dependencies: If the project relies on third-party vendors for software components or services, their performance, support, and availability may be constraints.
* Geographical Constraints: If the system is deployed in multiple locations or regions, geographical differences in regulations, logistics, or business processes may impose constraints.

These constraints need to be carefully managed and addressed during the planning and execution of the AI Integrated Inventory Management System (AI-IIMS) project to ensure its successful implementation and operation.