Financial Operations System using AWS

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Abstract

This project focuses on enhancing the operational efficiency of Hindustan Tungsten Carbide Company, a prominent manufacturer of tungsten carbide products, which has faced significant challenges, including commitment failures and financial losses due to manufacturing tracking inefficiencies. To tackle these issues, we propose a comprehensive solution featuring real-time product tracking throughout the manufacturing process, fostering transparency and timely notifications for customers and administrators alike. The system comprises four key modules: the Product Inventory Module for efficient management of raw materials and finished products; the Employee Management Module for streamlined employee data handling and performance tracking; the Salary Module for automated payroll processes with accurate disbursement of salaries; and the Sales Prediction Module utilizing machine learning algorithms to forecast future sales trends. By optimizing production schedules and inventory management, this integrated approach aims to mitigate financial risks and enhance overall productivity within the company.

Keywords: Hindustan Tungsten Carbide, Operational Efficiency, Real-Time Tracking, Product Inventory, Employee Management, Payroll Automation, Sales Prediction, Machine Learning

I. INTRODUCTION

Hindustan Tungsten Carbide Company is a leading manufacturer in the tungsten carbide sector, renowned for producing high-quality products that cater to various industrial applications. However, the company has recently encountered significant operational challenges, including commitment failures and financial losses in the last fiscal year. These issues primarily stem from inefficiencies in tracking products throughout the manufacturing process, leading to delays, miscommunication, and inadequate inventory management.

To address these challenges, this project aims to revamp the company's operational processes by implementing a comprehensive solution that ensures real-time tracking of products during manufacturing. By integrating advanced modules, such as inventory management, employee performance tracking, and automated payroll systems, the proposed system will enhance transparency and streamline communication between customers and administrators. Additionally, the incorporation of machine learning algorithms for sales prediction will empower the company to make informed decisions regarding production schedules and inventory levels, ultimately reducing financial risks and optimizing resource allocation. This innovative approach not only seeks to improve operational efficiency but also aims to foster a culture of accountability and productivity within the organization.

II. LITERATURE SURVEY

[1] From ERP to Cutting edge Asset Arranging: Working on Functional Execution by Getting the Data sources Right, Marc Lambrecht; Nico Vandaele, In this paper, we show that the planning and decision help

capacities of the MPC (Gathering Orchestrating and Control) system, which shapes the focal point of any ERP group, may be phenomenally redesigned by including a General Resource Organizing (ARP) module as an extra at the midterm orchestrating level.

[2] Planning Green Acquirement Framework In light of Big business Assets Making arrangements for The Elastic Handling Industry, Octa Karlina; Ari Yanuar Ridwan, Global Gathering on Electrical Designing and Informatics (ICEEI).

[3] An examination of grouping strategies for perceiving single-preliminary ERP in RSVP-based cerebrum PC interfaces , Xiaolin Xiao; Minpeng Xu.

[4] ERP framework reception conventional ERP frameworks versus cloud-based ERP frameworks , Abdullah A. Al-Ghofaili; Majed A. Al-Mashari.

III. METHODOLOGY

- Conduct meetings with stakeholders, including management, employees, and customers, to gather requirements and understand existing operational challenges.
- Develop a comprehensive system architecture that outlines the various modules (Product Inventory, Employee Management, Salary, Sales Prediction) and their interactions.
- Create detailed wireframes and prototypes for user interface design to enhance user experience.
- Plan and execute a social data set administration framework (RDBMS) to store and oversee information connected with items, workers, compensations, and deals.
- Ensure data integrity and security through appropriate measures.
- Product Inventory Module: Develop functionalities for real-time tracking, stock management, and inventory alerts.
- Employee Management Module: Create features for employee data entry, performance tracking, and task allocation.
- Salary Module: Implement automated payroll calculations, bonus management, and deduction tracking functionalities.
- Deals Expectation Module: Use AI calculations to investigate verifiable deals information and anticipate future patterns, coordinating apparatuses like Python or R for model turn of events.
- Ensure seamless integration of all modules to facilitate smooth data flow and user interactions across the system.
- Direct unit testing for individual modules and framework testing to confirm the incorporated framework's usefulness.
- Perform client affirmation testing (UAT) with accomplices to endorse that the structure meets their essentials and suppositions.

IV. SYSTEM ACHITECTURE

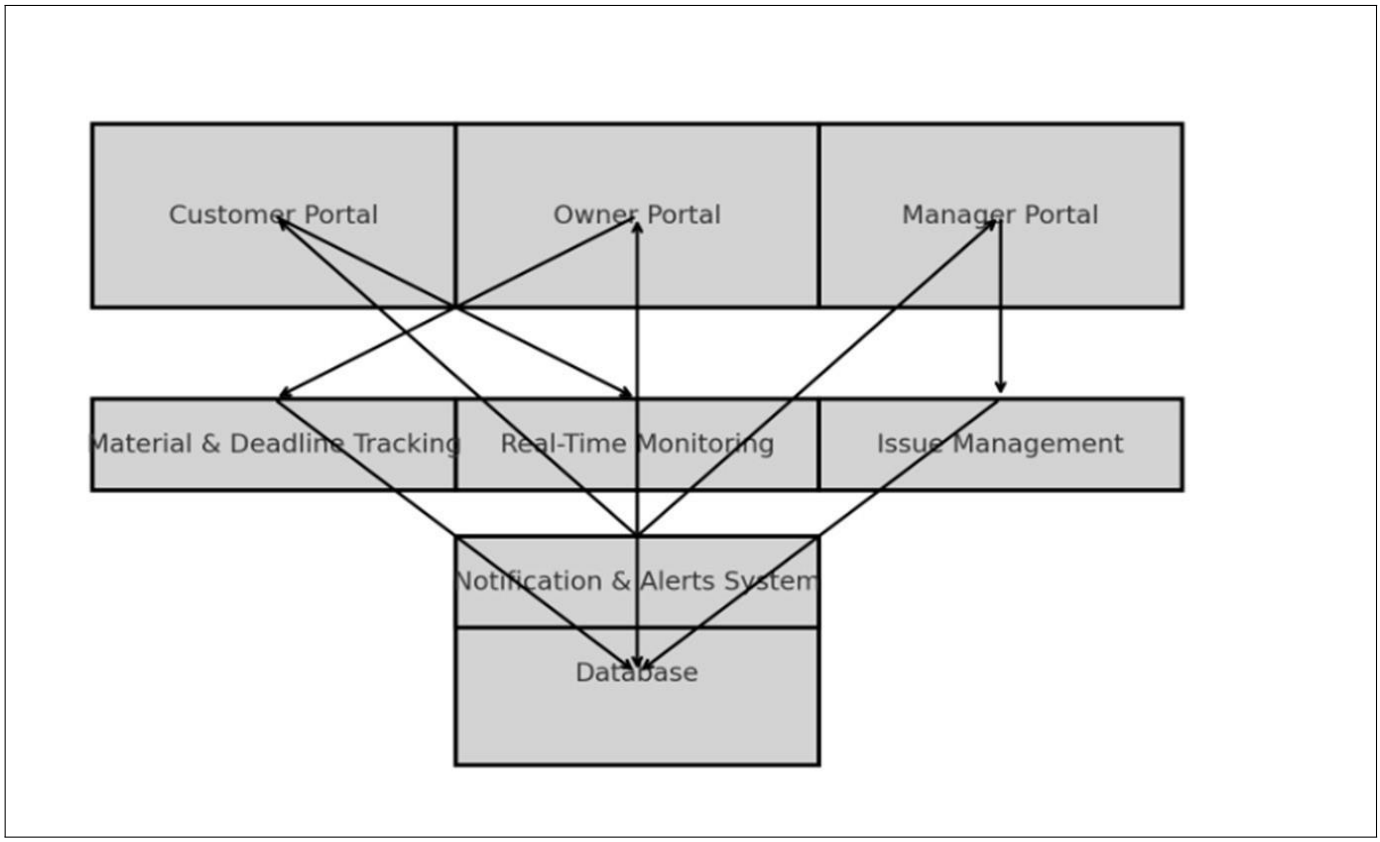

Fig. No. 1.1 System Architecture

Modules

Product Inventory Module: This module will enable efficient tracking and management of raw materials and finished products, ensuring accurate inventory levels and reducing the risk of shortages or overstocking.

Employee Management Module: This feature will streamline employee data management, track performance, and ensure proper allocation of tasks to enhance productivity and accountability.

Salary Module: The salary module will automate payroll processes, ensuring accurate and timely disbursement of salaries, while also managing bonuses and deductions with minimal manual intervention.

Sales Prediction Module Using Machine Learning: To aid in better decision-making and financial planning, this module will use advanced AI calculations to anticipate future deals patterns, empoweringthe company to optimize production schedules and inventory management, ultimately minimizing financial risks.

V. DFD Diagrams

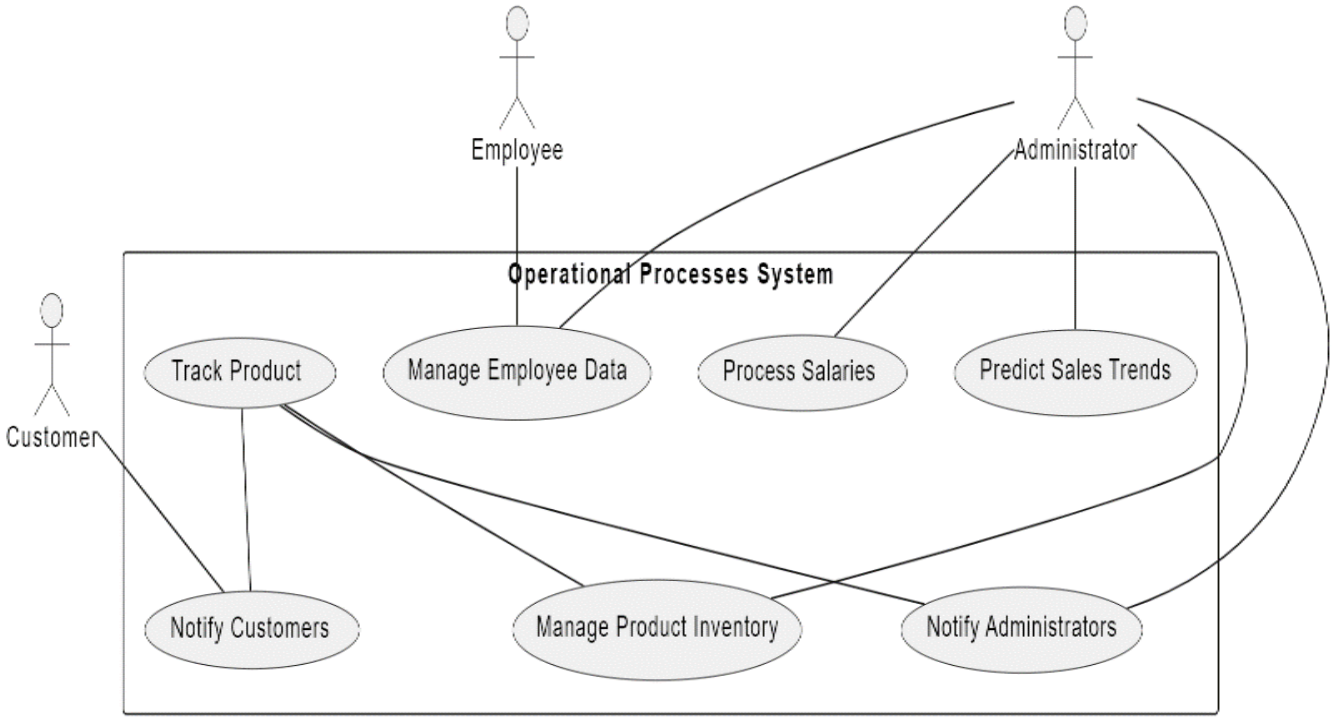

Fig 1.2 USE Case Diagram

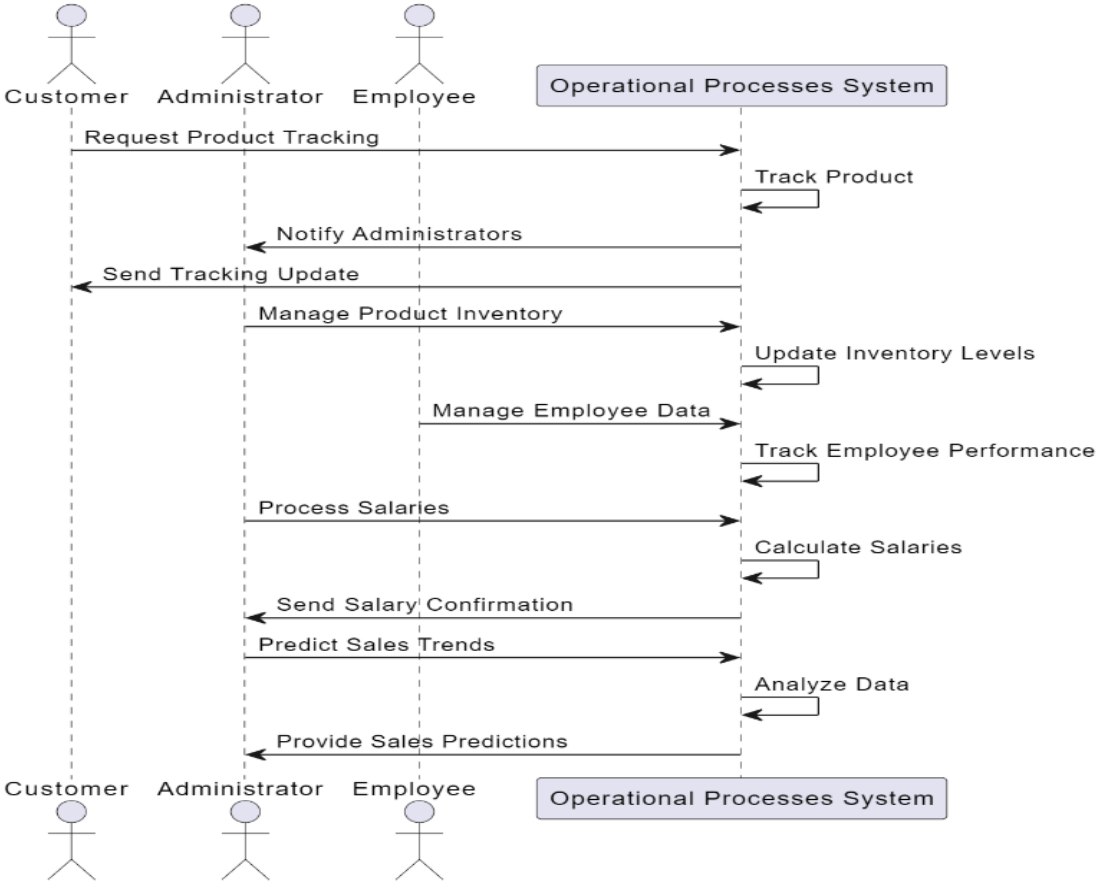

Fig 1.3 Sequence Diagram

VI. RESULTS

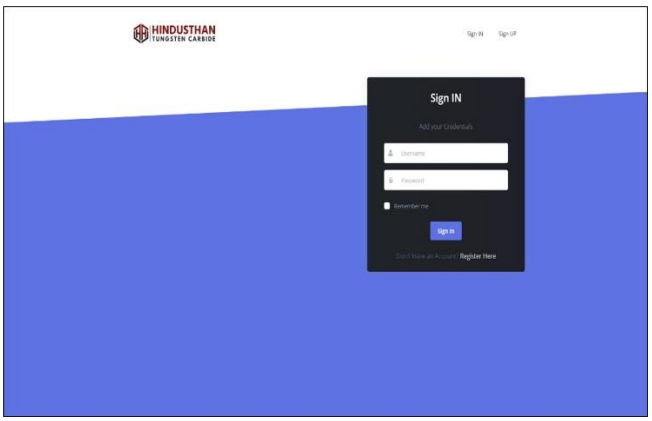

Fig 1.4 Login Page

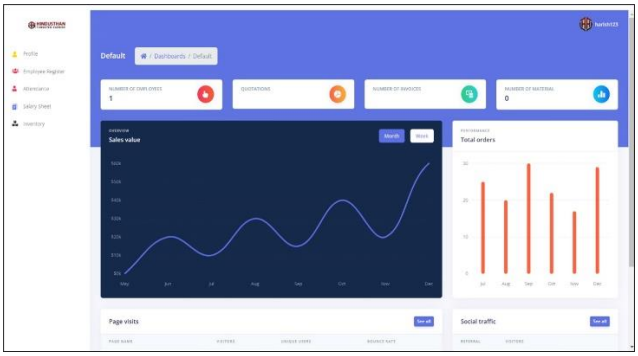

Fig 2: Dashboard

VII. CONCLUSION

In conclusion, the proposed project for Hindustan Tungsten Carbide Company aims to revolutionize its manufacturing processes through a comprehensive solution that addresses current inefficiencies. By implementing real-time product tracking, automated payroll management, and advanced sales prediction using machine learning, the company can significantly enhance operational transparency, reduce financial risks, and improve overall productivity. The integration of these modules will not only streamline internal processes but also foster better communication between stakeholders, ultimately driving growth and ensuring the company's competitive edge in the tungsten carbide market. Through this initiative, Hindustan Tungsten Carbide Company is poised to overcome its existing challenges and achieve sustainable operational excellence.

VIII. REFERENCES

[1] From ERP to Cutting edge Asset Arranging: Working on Functional Execution by Getting the Data sources Right, Marc Lambrecht; Nico Vandaele, In this paper, we show that the planning and decision help limits of the MPC (Gathering Organizing and Control) structure, which shapes the focal point of any ERP pack, may be phenomenally redesigned by including a General Resource Orchestrating (ARP) module as an extra at the midterm orchestrating level.

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