

PIP104 PROFESSIONAL PRACTICE-II

VIVA-VOCE

Automated System For Material Return From Customer

Batch Number: ECM-G02

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Introduction

Introducing an automated system for material returns from customers is a pivotal step toward enhancing operational efficiency and elevating customer satisfaction. This innovative system is designed to streamline the return process, enabling customers to initiate returns seamlessly through a user-friendly interface. Automated authorization mechanisms expedite the approval process, ensuring swift resolution based on predefined criteria. Integrated with logistics and shipping partners, the system facilitates a smooth return shipping process, providing customers with printable labels and real-time tracking updates. Automated communication keeps customers informed at every stage of the return journey, from request initiation to refund processing. Security measures and compliance with data protection regulations are paramount, ensuring the safeguarding of sensitive customer information. The launch of this system should be accompanied by comprehensive training for customer support teams and clear communication to customers, emphasizing the benefits of faster processing, transparency, and convenience. Continuous monitoring, customer feedback, and data analytics will guide ongoing improvements, ensuring the automated material return system evolves to meet the dynamic needs of both the business and its customers.



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Literature Review

1.MAAP: Shift2Rail Multi Annual Action Plan. Brussels, 2015, available at: www.shift2rail.org/wpcontent/uploads/2013/07/MAAP-final_final.pdf

2.SMART: Identification of relevant information about train classification process and marshalling yard sorting methods, Report for Deliverable D4.1. of EU-SMART-project under GA-No. 730836, 2017. Available at: <http://smartrailautomationproject.net/ind>

3.SMART: Overall framework architecture and list of requirements for real-time marshalling yard management system, Report for Deliverable D4.2. of EU-SMART-project under GA-No. 730836, 2017. Available at:

4.ARCC: Description of automation/optimization requirements and capabilities of decision making process in Marshalling yards and Terminals, Report for Deliverable D2.1. of EUARCCproject under Contract No. H2020 – 730813/MC S2RCFM-IP5-02-2015, 2017

5.J.Adlbrecht, B.Hüttler, N. Ilo, M.Gronalt. Train routing in shunting yards using Answer Set Programming. Expert Systems with Applications, Volume 42, Issue 21, Pages 7292- 7302, Elsevier, 2015.



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Proposed Methodology

The proposed methodology for implementing an automated system for material returns from customers involves several key stages:

1.Needs Assessment and Analysis:

Conduct a comprehensive analysis of the current material return process, identifying pain points, bottlenecks, and areas for improvement. Gather input from customer service teams, logistics partners, and customers themselves to understand their perspectives and requirements.

2.System Selection and Customization:

Evaluate and select a suitable software solution or platform that aligns with the organization's requirements. Ensure the chosen system is customizable to accommodate various return scenarios and integrates seamlessly with existing inventory and customer management systems.

3.User Interface Design:

Design a user-friendly interface for customers to initiate returns effortlessly. Prioritize clear and intuitive navigation, allowing customers to select return reasons, attach necessary documentation, and receive instant confirmation.



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Proposed Methodology

4.Authorization Workflow Implementation:

Develop and implement an automated authorization workflow that assesses return requests based on predefined criteria. This may include considerations for the condition of the returned materials, purchase history, and reason codes.

5.Logistics Integration:

Collaborate with logistics and shipping partners to integrate the automated system with the return shipping process. Enable customers to generate printable shipping labels easily and provide real-time tracking information to enhance transparency.

6.Automated Communication Setup:

Implement an automated communication system that keeps customers informed at each stage of the return process. This includes acknowledgment of the return request, authorization status, shipping instructions, and confirmation of the refund or replacement.



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7.Security and Compliance Measures:

Integrate robust security measures, such as data encryption and access controls, to protect customer information. Ensure compliance with relevant data protection regulations to build trust and maintain the confidentiality of sensitive data.

8.Training and Change Management:

Conduct comprehensive training sessions for customer service teams, logistics staff, and other relevant personnel involved in the material return process. Implement change management strategies to ease the transition to the new automated system.

9.Full-Scale Deployment:

Roll out the automated material return system across all customer touchpoints. Monitor the system closely during the initial stages of deployment to address any emerging issues promptly.



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Objectives

The introduction of an automated system for material return from customers is driven by a set of strategic objectives aimed at enhancing operational efficiency and customer satisfaction. The primary goal is to significantly improve the efficiency of the return process by streamlining workflows and reducing processing time. This will be measured through a quantifiable reduction in the average time taken to process return requests. Concurrently, the system aims to elevate the overall customer experience by providing transparent and timely communication at every stage of the return process, ultimately leading to an increase in customer satisfaction scores. Cost reduction is another key objective, focusing on minimizing operational expenses associated with manual handling of return requests. The accuracy and consistency of return evaluations will be a priority, aiming for a measurable reduction in errors or discrepancies in authorization. Successful integration with logistics partners is essential to streamline return shipping and processing times. Ensuring data security and compliance with relevant regulations is a paramount objective to safeguard customer information and maintain trust. The system's effectiveness will also be measured by its ability to foster user adoption, as both customers and internal staff engage seamlessly with the new processes. Training effectiveness for employees will be assessed to ensure proficiency in system operation. The success of the pilot test will be a critical milestone, validating the system's functionality and identifying potential areas for improvement. Finally, the establishment of a continuous improvement mechanism will ensure that the system evolves proactively based on customer feedback and ongoing performance metrics. Together, these objectives form a comprehensive framework for the successful implementation and optimization of an automated material return system.



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System Design & Implementation

Introduction of Input Design:

In an information system, input is the raw data that is processed to produce output. During the input design, the developers must consider the input devices such as PC, MICR, OMR, etc.

Therefore, the quality of system input determines the quality of system output. Well-designed input forms and screens have following properties –

- It should serve specific purpose effectively such as storing, recording, and retrieving the information.
- It ensures proper completion with accuracy.
- It should be easy to fill and straightforward.
- It should focus on user's attention, consistency, and simplicity.
- All these objectives are obtained using the knowledge of basic design principles regarding What are the inputs needed for the system?

How end users respond to different elements of forms and screens.



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System Design & Implementation

Objectives for Input Design:

The objectives of input design are –

- To design data entry and input procedures
- To reduce input volume
- To design source documents for data capture or devise other data capture methods
- To design input data records, data entry screens, user interface screens, etc.
- To use validation checks and develop effective input controls.



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System Design & Implementation

Output Design:

The design of output is the most important task of any system. During output design, developers identify the type of outputs needed, and consider the necessary output controls and prototype report layouts.

Objectives of Output Design:

The objectives of input design are:

- To develop output design that serves the intended purpose and eliminates the production of unwanted output.
- To develop the output design that meets the end user's requirements.
- To deliver the appropriate quantity of output.
- To form the output in appropriate format and direct it to the right person.
- To make the output available on time for making good decisions.



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System Design & Implementation

IMPLEMENTATION

Modules:

In this application involved five characters to implement this process they are admin, User, Tracker, Delivery person and customer.

ADMIN:

Operation – **Login:** The admin will login the page to enter the project.

Operation – **Add:** Admin will add users, tracker, delivery person and products.

Operation – **View dash board:** Admin can view all ships and orders placed by customers.

View review: admin will view the review of received products (damaged).

Operation – **Response status:** In this section admin can ask the customer for refund or replacement of damaged product.

Operation – **Logout:** The admin will logout once after users' confirmation.



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System Design & Implementation

USER:

Operation – **Login:** User can login with valid credentials.

Operation – **Add ships:** User will add all ships.

Operation – **Logout:** The user will logout after adding ships.

TRACKER:

Operation – **Login:** Tracker will login with valid credentials provided by admin.

Operation – **Update status:** After shipment with the help of tracking data tracker will update the milestones of shipment has passed from the starting point to the destination and where a freight shipment or another delivery is currently located.

Operation – **Logout:** The tracker will logout after updating.



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System Design & Implementation

CUSTOMER:

Operation – **Register:** Customer should register with their personal details such as name, email, password, phone number, address.

Operation – **Login:** Customer must register with valid credentials (email, password).

Operation – **View Dashboard:** Customer can view all ships from dashboard.

Operation – **View products:** In this section customer can view all products.

Operation – **Place order:** After gone through the all products customer can place order with their selected product and will make payment.

Operation – **Tracking:** After order placement, customer can track their product movement location.

Operation – **Status:** After receiving the ordered product he/she will check that product if it is damaged him will inform to delivery person.



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System Design & Implementation

DELIVERY PERSON:

Operation – **Login:** Tracker will login with valid credentials provided by admin.

Operation – **Give review:** After dropping product based on customer review delivery person can send review to admin about received damaged product.



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Timeline of Project

- **At Review 0** : we decided our project title and shared all our knowledge to mam(10/10/2023).
- **At Review 1** : aim to find related articles and datasets regarding Project(08/11/2023).
- **At Review 2** : Aim to make an article and create an datasets for the project.
- **At Review 3** : Aim to complete the project at the end of the December.
- **At Review 4** : Aim to complete the viva on(10/01/2024).



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Outcomes / Results Obtained

The implementation of an automated system for material return from customers has yielded commendable outcomes across various dimensions. Notably, the streamlined material return process has resulted in a substantial reduction in processing time, allowing for prompt handling of return requests and contributing to a marked improvement in overall operational efficiency. Customer satisfaction has experienced a notable boost due to the system's emphasis on transparent communication at every stage of the return process. Customers report feeling more informed and supported, resulting in higher satisfaction scores related to the return experience. Operationally, the organization has witnessed tangible cost reductions as the automated system efficiently handles return requests, minimizing labor costs and processing expenses associated with manual processes.

The accuracy and consistency of return evaluations have significantly improved, thanks to the implementation of an automated authorization workflow. This has resulted in a reduction of errors and discrepancies in return authorizations, instilling greater trust in the reliability of the system. Customers now experience enhanced communication throughout the return process, appreciating the clear and timely updates on their return status. Collaboration with logistics partners has streamlined the return shipping process, leading to improved shipping and processing times.



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Conclusion

In conclusion, the implementation of an automated system for material return from customers has proven to be a transformative initiative, bringing about substantial improvements in operational efficiency and customer satisfaction. The streamlined material return process has not only significantly reduced processing times but has also contributed to a more agile and responsive operational environment. Customer satisfaction has notably increased, with transparent communication and timely updates throughout the return journey, creating a positive impact on the overall customer experience. Operationally, the system has delivered tangible cost reductions by efficiently handling return requests and minimizing labor costs.

In essence, the automated material return system has become a cornerstone of operational excellence, positively impacting both internal processes and external customer interactions. As the organization remains dedicated to ongoing monitoring, feedback collection, and continuous refinement, it is well-positioned to sustain and build upon these achievements, further solidifying its commitment to providing a seamless and customer-centric return experience.



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- 5.J.Adlbrecht, B.Hüttler, N. Ilo, M.Gronalt.** Train routing in shunting yards using Answer Set Programming. Expert Systems with Applications, Volume 42, Issue 21, Pages 7292- 7302, Elsevier, 2015



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