**Business Requirement Document (BRD)**

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| Domain of Project | e-commerce application using springboot and microservices |
| Proposed project title | Great Outdoors Project |
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**Table of Contents**

1. Abstract

2. Introduction

3. Scope of the Study

4. Functional Requirements

4.2.1 Order Management

4.2.2 Change Revenue Mix

4.2.3 Returns Management

4.2.4 Retail Store Inventory

5. Non-functional Requirements

6. System Architecture

7. Data Requirements

8. Security Requirements

9. System Requirements

10. Risks and Mitigations

11. Project Timeline

12. Appendices

1. **Abstract:**

The Returns Reduction Project undertaken by Great Outdoors (GO) addresses key challenges in the outdoor product distribution industry. Focusing on minimizing returns, optimizing order management, and enhancing revenue mix, the project aims to bolster GO's profitability and operational efficiency. Through strategic redirection of sales visits to online platforms, incentivized changes in revenue mix, and proactive returns management, GO seeks to significantly reduce the financial impact of returns and improve customer satisfaction.

The implementation includes a comprehensive IT solution incorporating order management systems, real-time tracking of inventory at retail stores, and advanced analytics to monitor and analyse sales trends. By embracing these initiatives, GO anticipates not only a reduction in operational costs but also a streamlined approach to product distribution, ensuring sustainable growth and profitability in the competitive outdoor products market.

1. **Introduction**

In the dynamic landscape of outdoor product distribution, Great Outdoors (GO) stands as a pioneering electronic distributor, connecting manufacturers with retailers across diverse global markets. GO's success is rooted in its ability to eliminate intermediaries, enabling competitive pricing and rapid revenue growth. This case study delves into the intricate challenges faced by GO, focusing on the intricate balance between its soaring revenue and thin net profit margins. Despite its strong presence in the Americas and Europe, GO's negligible footprint in emerging economies poses a growth opportunity. The company's product portfolio encompasses five primary categories: Camping Equipment, Golf Equipment, Mountaineering Equipment, Outdoor Protection, and Personal Accessories. Each category presents unique profitability challenges, emphasizing the need for strategic optimization.

One of the major concerns for GO is the escalating rate of product returns, a multifaceted issue stemming from unsatisfactory, defective, or wrong products delivered to customers. Additionally, certain products experience prolonged shelf time at retail stores, impacting throughput and profitability. To counter these challenges, GO has formulated a Returns Reduction Project. This initiative is not merely about reducing returns but also about revamping the order management process, altering revenue mixes, and optimizing inventory management. The project demands a holistic transformation across various departments, including Supply Chain, Sales, Product Design, Operations, IT, and Finance. The Returns Reduction Project aims to enhance the profitability of GO by implementing strategies to minimize product returns and optimize operational efficiency.

1. **Scope of the Study**

The scope of this study encompasses a detailed analysis and implementation plan for the Returns Reduction Project at Great Outdoors. The study delves into intricate aspects of order management, revenue mix enhancement, returns reduction, and efficient inventory management, aiming to bolster GO’s profitability and market standing. By scrutinizing the existing IT environment and operational challenges, the study provides actionable recommendations for implementing advanced technological solutions, process enhancements, and proactive measures to reduce returns. The study’s focus extends to enhancing customer satisfaction, optimizing supply chain processes, and ensuring the seamless flow of products from warehouses to retail stores. Through this comprehensive analysis, the study aims to equip GO with a robust strategy and IT framework, fostering sustainable growth and profitability while addressing the complexities of the outdoor product distribution industry.

1. **Flow Charts:**

**User Flow:**

**A diagram of a product

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**Admin Flow:**

A diagram of a product

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**Retailer Flow:**

**A diagram of a product process

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1. **Functional Requirements**
   1. **Order Management**

**A diagram of a process flow

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* Reduction of Order from "Sales Visits":
* Redirect orders received from "Sales Visits" through the web.
* Provide incentives to Retailers by offering attractive discounts (not exceeding 20% of cost savings) to change the mix.
* Generate monthly/quarterly/annual reports and alerts indicating:
* Whether targets are met, not met, or exceeded.
* Reduction in bonus for salespeople if their contribution to retailer sales increases from 2012 levels.
  1. **Change Revenue Mix**
* Increase Share of Outdoor Protection:
* Offer monthly and quarterly promotional discounts on Outdoor Protection items.
* Monitor changes in revenue due to promotional events and provide reports on:
* Amount of change (in USD).
* Percentage change.
* Colour code the data for each reporting period:
* Green: Revenue growth >= 10%
* Amber: Revenue growth between 2% to 10%
* Red: Revenue growth <= 2%
* Implement proactive solutions to address primary causes of returns.
  1. **Returns Management**

**A diagram of a customer credit management

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* Reduce Returns by Targeting Specific Categories:
* Address returns related to incomplete or wrong products shipped.
* Provide month-on-month/quarter-on-quarter/year-on-year reports on reductions in returns, including:
* Number of items returned.
* USD value of returns.
* Percentage change.
* Colour code the change:
* Green: Reduction >= 10%
* Amber: Reduction between 3% to 10%
* Red: Reduction < 3%
* Implement proactive solutions to eradicate causes of returns.
  1. **Retail Store Inventory**
* Optimize Inventory at Retail Stores:
* Generate monthly/quarterly/annual reports on the time items stay on retail store shelves.
* Track time taken for items to reach retailers from GO's warehouses.
* Identify outliers in delivery times and products with minimum and maximum delivery times.

1. **Non-functional Requirements**

* All reports to be generated within 3 seconds.
* System downtime not to exceed 2 hours per month for maintenance.

1. **System Architecture**

A diagram of a software structure

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The system will be designed using a microservices architecture, ensuring scalability, flexibility, and modularity.

1. **Data Requirements**

The system will integrate data from product databases, order records, and customer information to facilitate order management and returns reduction.

1. **Security Requirements**

* User Authentication: Implement secure login mechanisms for all users.
* Data Encryption: Ensure all sensitive data is encrypted during transmission and storage.
* Access Control: Implement role-based access control to restrict unauthorized access to sensitive information.

1. **System Requirements:**

* **Hardware:**  
  🡪 Servers: Sufficient physical or virtual servers based on the expected load and scalability requirements.  
  🡪 CPU, RAM, and Storage: Adequate resources based on the estimated workload and data storage needs.
* **Network Infrastructure:**  
    🡪 High-speed internet connectivity.  
    🡪 Network security measures like firewalls, intrusion detection systems, etc.
* **Database Servers:**  
  🡪 Database servers (e.g., PostgreSQL, MySQL, MongoDB, etc.) for storing product data, user information, and other relevant data.  
  🡪 Sufficient storage and resources for the databases.
* **Software Requirements:**

1. Operating System: MAC based operating systems for production servers.
2. Java Development Kit (JDK): JDK 11 or later for Spring Boot application development.
3. Integrated Development Environment (IDE): An IDE such as IntelliJ IDEA, Eclipse, or Visual Studio Code for developing Spring Boot applications.
4. Spring Boot: The Spring Boot framework for creating microservices. Use the latest version available.
5. API Documentation: Tools like Swagger or Spring doc for documenting your microservices' APIs.
6. API Testing: Postman for testing microservices APIs.
7. **Risks and Mitigations**

* Risk: Resistance to change among Retailers.
* Mitigation: Conduct training sessions and provide support to Retailers during the transition.

1. **Project Timeline**

* Project Kick-off: 30/10/2023
* Implementation Phase:

🡪 Sprint Phase- 1 : 20% (week 1)

🡪 Sprint Phase- 2 : 65% (week 2)

🡪 Sprint Phase- 3 : 100% (week 3)

* Testing: It is done at end of Phase- 2

1. **Appendices**
   * Appendix A: Detailed Use Case Diagrams

A diagram of a product

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* + Appendix B: Class Diagram

A diagram with colorful squares

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* + Appendix C: Object Diagram

A diagram of a product

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* + Appendix D: Entity Relation Diagram

A screenshot of a computer

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* + Appendix E: Sequence Diagram

A diagram of a product

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