PES UNIVERSITY
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UE22CS341A: Software Engineering

Deliverable 1: Synopsis and SRS

SRS (Software RequirementsSpecification) *for* Sales Analytics Dashboard

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Case Study

Unit 1 Deliverable

A Software Requirements Specification (SRS) document for a Sales **Analytics Dashboard using the Waterfall.** The Waterfall model is chosen for the development of the Sales Analytics Dashboard due to its structured and sequential approach, which ensures clarity and control throughout the project's lifecycle.

Software Requirements Specification (SRS) for Sales Analytics Dashboard

1. Introduction

1.1 Purpose

This document specifies the requirements for the Sales Analytics Dashboard. The system aims to provide businesses with a comprehensive tool for analyzing sales data over time, across different regions, and by product categories. The dashboard will offer insights into sales performance, product popularity, and customer segmentation, aiding decision-making and strategic planning.

1.2 Scope

The Sales Analytics Dashboard is designed for use by business analysts, sales managers, and executives. It provides a secure, user-friendly interface for visualizing and analyzing sales data. The system interacts with various data sources (e.g., CRM systems, e-commerce platforms) to extract, transform, and load data into a data warehouse, enabling detailed analysis and reporting.

1.3 Definitions, Acronyms, and Abbreviations

- **ETL**: Extract, Transform, Load
- **OLAP**: Online Analytical Processing
- **CRM**: Customer Relationship Management
- **UI**: User Interface
- **API**: Application Programming Interface

1.4 References

- IEEE Standard for Software Requirements Specifications (IEEE Std 830-1998)

1.5 Overview

This document is structured into sections detailing the functional and non-functional requirements, system features, external interface requirements, and more.

2. Overall Description

2.1 Product Perspective

The Sales Analytics Dashboard is a standalone application that integrates with a company's existing sales data sources. It leverages ETL processes to aggregate and normalize data before presenting it in the dashboard. The system is part of the broader business intelligence strategy and is crucial for decision-making.

2.2 Product Functions

- **ETL Pipeline**: Extract sales data from multiple sources, transform it for consistency, and load it into the data warehouse.
- **Data Modeling**: Implement a star schema for organizing sales data, with a central fact table for transactions and dimension tables for products, regions, and time periods.
- **OLAP Capabilities**: Provide multidimensional analysis features to view sales performance by region, product category, and time period.
- **Reporting**: Generate various reports, including trend analysis, sales gain/loss over time, and detailed sales breakdowns.
- **Visualization**: Offer interactive dashboards with charts, graphs, and other visual aids for easy interpretation of sales data.

2.3 User Classes and Characteristics

- **Business Analysts**: Require detailed data for analysis and reporting.
- **Sales Managers**: Need summary and trend data to make strategic decisions.
- **Executives**: Require high-level overviews and insights for business planning.

2.4 Operating Environment

- **Software**: The dashboard will run on web-based platforms compatible with modern web browsers.
- **Hardware**: The system will be hosted on cloud servers with sufficient storage and processing power to handle large volumes of sales data.
- **Database**: Uses a relational database system (SQL) for data storage and processing.

2.5 Design and Implementation Constraints

- Scalability to handle increasing volumes of sales data.
- Interface must be user-friendly and intuitive.

2.6 Assumptions and Dependencies

- Regular data updates and maintenance to ensure accuracy.
- Integration with existing CRM and e-commerce platforms is possible.
- The system assumes that data sources are reliable and consistently available.

3. External Interface Requirements

3.1 User Interfaces

- **Dashboard UI**: A web-based interface with interactive charts, graphs, and tables.
- **Filters and Search**: Options for filtering data by time period, region, product category, and customer segment.

3.2 Hardware Interfaces

- **Server Hardware**: Cloud-based servers for hosting the application and database.
- **Client Devices**: Computers and tablets with web browsers for accessing the dashboard.

3.3 Software Interfaces

- **API Integration**: Connect with CRM and e-commerce platforms via APIs for data extraction.
- **Database Interfaces**: Interaction with the data warehouse using SQL queries.

3.4 Communication Interfaces

- **Data Transfer**: The system will facilitate the transfer of data between the dashboard and data sources, ensuring efficient and reliable communication
- **User Interface Alerts**: The system will provide real-time alerts directly within the dashboard interface to inform users about critical updates, insights on significant sales trends.
- **Data Sync:** Data synchronization between sources and the dashboard.

4. System Features

4.1 ETL Pipeline

4.1.1 **Description**: Extract, transform, and load sales data into the data warehouse.

4.1.2 Functional Requirements:

- The system shall extract data from multiple data sources (e.g., CRM systems, e-commerce platforms).
- The system shall normalize data to ensure consistency across sources.
- The system shall load the data into the data warehouse for analysis.

4.2 Data Modeling

4.2.1 Description: Organize data using a schema for efficient querying and analysis.

4.2.2 Functional Requirements:

- The system shall create a fact table for sales transactions.
- The system shall create dimension tables for products, regions, and time periods.
- The system shall maintain data integrity and relationships between tables.

4.3 OLAP Capabilities

4.3.1 Description: Enable multidimensional analysis of sales data.

4.3.2 Functional Requirements:

- The system shall allow users to view sales data by different dimensions.
- The system shall provide pivot table functionality for customized views of sales data.

4.4 Visualization

4.4.1 Description: Provide interactive dashboards for data visualization.

4.4.2 Functional Requirements:

- The system shall display sales data using charts, graphs, and tables.
- The system shall allow users to apply filters to customize data views.
- The system shall update visualizations in real-time as new data is loaded.

5. Non-Functional Requirements

5.1 Performance Requirements

- The system shall load dashboard data within a few seconds.
- The system shall support concurrent users without performance degradation.

5.2 Security Requirements

- The system shall ensure data encryption during transmission and storage.
- The system shall require user authentication for access to the dashboard.
- The system shall implement role-based access control (RBAC) for different user roles.

5.3 Usability Requirements

- The system shall provide an intuitive and user-friendly interface.
- The system shall offer documentation for users.

5.4 Reliability Requirements

- The system shall have an uptime of 99%.

6. Other Requirements

6.1 Regulatory Requirements

- The system shall comply with local and international data privacy regulations
- The system shall ensure that all data processing activities are auditable.

6.2 Environmental Requirements

- The system shall be operational in a cloud environment.

7. Conclusion

This SRS document outlines the requirements and specifications for developing the Sales Analytics Dashboard. The document ensures a comprehensive understanding of the system's objectives, functionality, and constraints, guiding the design, development, and testing phases.