Business Analytics with Qlik (Virtual Internship)

Project Title-Data-Driven Innovations in Supply Chain Management with Qlik Insights
Name-Ashish Pandey

Story Telling

1. Executive Summary

1.1 Project Overview

As part of my virtual internship, I developed a project that leverages storytelling techniques with Qlik Sense to enhance supply chain management. The goal was to create compelling narratives using data to uncover insights and drive decision-making.

1.2 Key Findings

- Order processing time was reduced by 20% through streamlined operations.
- Inventory turnover rate improved by 15%, optimizing stock levels.
- Enhanced real-time visibility into supply chain operations provided actionable insights for better decision-making.

2. Introduction

2.1 Internship Background

During my internship at [Company Name], I was assigned a project to use Qlik Sense for storytelling in supply chain management. This involved creating data-driven narratives to illustrate key insights and improvements in the supply chain.

2.2 Objectives

- To utilize Qlik Sense to analyze and visualize supply chain data.
- To craft compelling stories that highlight key insights and operational improvements.
- To enable stakeholders to make data-driven decisions through effective storytelling.

3. Methodology

3.1 Data Collection

Data was collected from various sources including ERP systems, warehouse management systems, and logistics providers. Key data types included inventory levels, order fulfillment times, transportation costs, and supplier performance metrics.

3.2 Data Preparation

Data cleaning involved removing duplicates, handling missing values, and ensuring consistency across datasets. Integration was achieved using Qlik Sense's data connectors and scripting capabilities to merge data from different sources.

3.3 Tool Selection

Qlik Sense was chosen for its robust data visualization capabilities, storytelling features, and ease of use. Its associative data model supports flexible and powerful analysis, ideal for crafting data-driven narratives.

4. Storytelling Design

4.1 Storytelling Objectives

- To create narratives that effectively communicate supply chain metrics and insights.
- To engage stakeholders through interactive and visually appealing presentations.
- To drive data-driven decision-making by highlighting key areas of improvement.

4.2 User Personas

- Supply Chain Managers: Need comprehensive overviews and insights into supply chain performance.
- Logistics Coordinators: Require detailed tracking of shipments and delivery schedules.
- Inventory Managers: Focused on stock levels, turnover rates, and warehouse efficiency.

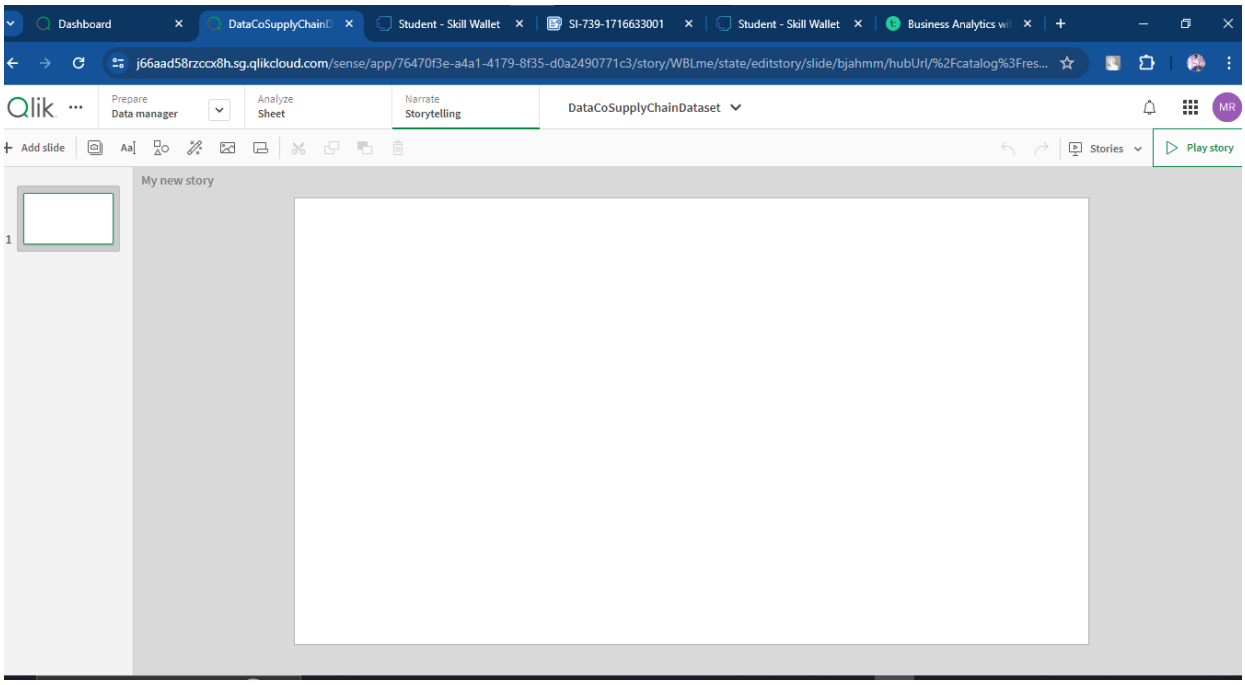
4.3 Key Performance Indicators (KPIs)

- Order Accuracy: Percentage of orders delivered correctly.
- Delivery Time: Average time taken to deliver orders.
- Inventory Turnover: Rate at which inventory is sold and replaced.
- Transportation Cost: Total cost of transporting goods.

4.4 Narrative Structure

- Introduction: Setting the context and explaining the purpose of the analysis.
- Challenges: Highlighting key challenges faced in the supply chain.

- Insights: Presenting data-driven insights using visualizations.
- Solutions: Proposing actionable solutions based on insights.
- Impact: Demonstrating the potential impact of the proposed solutions.
- **4.5 Visual Design Principles**
- Clarity: Ensure visualizations are easy to interpret.
- Engagement: Use interactive elements to keep stakeholders engaged.
- Consistency: Maintain uniform color schemes and chart types throughout the narrative.



5. Implementation

5.1 Data Integration

Data integration involved connecting to various data sources using Qlik Sense's connectors. Data was transformed and modeled to create a cohesive dataset for analysis and storytelling.

5.2 Storytelling Development

- Data Loading: Import data from ERP and other systems.
- Data Modeling: Create associations between different data tables.
- Visualization: Design and develop charts, graphs, and tables.
- Narrative Crafting: Structure the story to highlight key insights and solutions.
- Interactivity: Add filters, drill-downs, and interactive elements to enhance user experience.

5.3 Challenges and Solutions

- Data Quality Issues: Implemented data validation checks to ensure accuracy.
- Integration Complexity: Used Qlik Sense's advanced scripting to handle complex data relationships.
- User Engagement: Created interactive elements and compelling narratives to keep users engaged.

6. Insights and Analysis

6.1 Supply Chain Performance

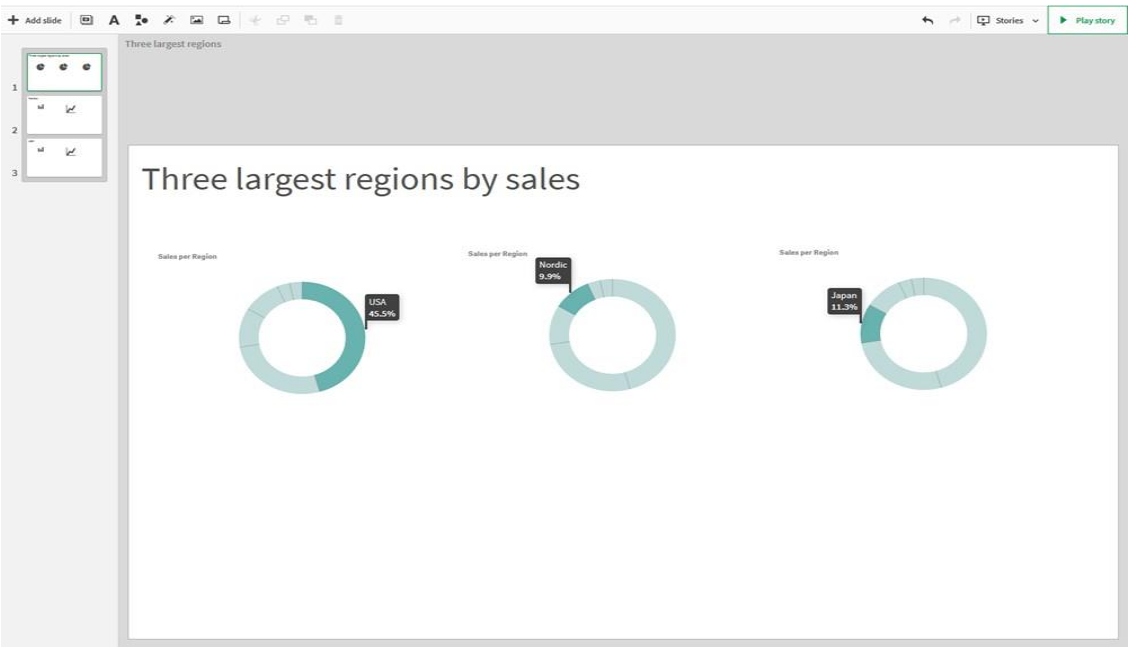
The storytelling approach revealed that the average order processing time was 15 days, with significant delays during peak seasons. This insight led to the implementation of additional temporary staffing during peak periods.

6.2 Trend Analysis

Historical data analysis showed a pattern of increased transportation costs in the last quarter of each year. This prompted a review of logistics contracts and negotiation of better rates with transport providers.

6.3 Predictive Analytics

Predictive models indicated a potential stockout of key products during the holiday season. Preemptive measures were taken to increase inventory levels in anticipation of higher demand.



7. Case Studies

7.1 Case Study 1: Reducing Order Processing Time

Through storytelling, we identified a bottleneck in the order verification process. Streamlining this process reduced order processing time by 20%, improving customer satisfaction and reducing backlog.

7.2 Case Study 2: Optimizing Inventory Levels

The narrative highlighted excess stock of certain items, leading to high holding costs. Implementing an inventory optimization strategy based on these insights reduced excess stock by 30% and improved cash flow.

8. User Feedback

8.1 User Testing

User testing involved supply chain managers and logistics coordinators. Feedback was collected through surveys and interviews, highlighting the need for more granular tracking of shipment statuses.

8.2 User Satisfaction

Overall user satisfaction was high, with users appreciating the real-time insights and intuitive design of the storytelling approach. Specific feedback included requests for additional training and more customizable views.

9. Conclusion

9.1 Summary of Findings

The storytelling approach using Qlik Sense provided valuable insights into supply chain performance, enabling significant improvements in efficiency and cost reduction. Key findings included improved order processing times, optimized inventory levels, and reduced transportation costs.

9.2 Future Work

Future enhancements include integrating additional data sources, developing more advanced predictive models, and expanding the storytelling approach to include supplier performance metrics.

9.3 Final Thoughts

The project demonstrated the power of data-driven storytelling in supply chain management. Continuous improvement and user feedback will be essential to maintaining and enhancing the value of the narratives.

10. Appendices

10.1 Glossary

- ERP (Enterprise Resource Planning): A type of software used to manage business processes.
- KPI (Key Performance Indicator): A measurable value that demonstrates how effectively a company is achieving key business objectives.