**Data Warehouse Design Report for TGS**

**Introduction**

This project is aimed at creating a data warehouse for The Guac Stop (TGS) to all 44 localities in the USA and Canada, where it can already be found, and to other countries it may expand to, in the future, which will then enable it to manage the operations in the best way. Resource management and sales, inventories, customer demographics, and promotions transparency can be realized with the help of a properly arranged and well-organized set of tables in a data warehouse. The article identifies the requirements-gathering technique, introduces a dimensional model with fact and dimension tables, the focus limits, and gives recommendations.

**Methodology**

Before creating the data warehouse, the stakeholder interview was conducted with sales VP. He informed us about the Company’s requirements and problems. The direct interview with the Sales Vice President brought up such issues as the absence of proper inventory tracking options, segmentation products as per demography, sellers’ performance, as well as the problems arisen while before judging the store performance. Among the items discussed were global expansion and the demand for cross-departmental reporting. It was difficult for them to track sales and revenue of each store and quantify the sales of each product. The difficulty of reporting being the fact that these systems are decentralized impressed the people behind their design. For which, we resolved using the Kimball technique in creating a high-level dimensional model with dimension tables for consumers, stores, promotions, items, staff, and time to market. It also presented a unified transaction fact table that was the combination of sales and inventory data.

**Activities**

With the definition of activities, there were many important milestones during data warehouse design. First, questions for interviews should lead to the determination of primary business processes, key performance indicators, and pain points in current reporting. In a mapping exercise, the Retail Transaction System was mapped to sales, while the Inventory Management System was mapped to stock. On the other hand, fact tables were based on sales and inventory, while dimension tables were based on customers, stores, products, employees, and promotions in the dimensional model. The framework will accommodate future reporting needs to allow sales performance analysis by product category or location. Finally, to provide for an alignment of reporting across all functions, an Enterprise Bus Matrix was developed to map dimensions with business activities.

**Limitations**

Various inadequacies in the tracking process's general efficacy motivated the analysis. First, data fragmentation was a key challenge since it was difficult for campaign data, which were managed in software spreadsheets, to be smoothly integrated. This also led to the inconsistent results that hampered automation. Further, unless improved customer segmentation was put in place for an in-depth analysis of consumer behavior, it would be necessary to undertake further data collection efforts to develop improved client profiles. There was hence uncertainty if TGS tracked B2B and B2C transactions separately; this was clearly problematic for reporting purposes and left out the identification of different types of transactions to specific data.

**Outcomes and Recommendations**

The research suggests some improvements for TGS. First, TGS should establish a single-point data warehousing system that integrates data from its Retail Transactions, CRM, Inventory, and Order Fulfillment into one cohesive database to purge fragmented spreadsheets and present one version of the truth. A new dimensional model would enhance KPI reporting, which would support objectives for store development and customer retention as it permits drilling down into customer repeatability, store performance, vendor performance, and sales velocity. The analytic capabilities of the data warehouse will augment vendor management by providing insights into vendor affinity and product performance to improve negotiations. Finally, this manageable model would further incorporate new KPIs like market basket studies and data analytics from overseas locations in France and Italy in the future.

**Conclusion**

This report provides a roadmap for designing a data warehouse aligned with TGS's strategic objectives. Integrating existing systems into a cohesive DW will enhance reporting efficiency and support data-driven decisions for future expansion, ensuring a future-proof solution for the business.