Reducing Reporting Cycle Time & Enabling Autonomous Insights using Amazon QuickSight

Lean Six Sigma Green Belt Project

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Project Definition: Setting the Stage for Transformation

Our Lean Six Sigma Green Belt project began with a clear identification of the problem and a strategic vision for its resolution.

Problem Statement

Business units were spending 5–7 days preparing critical KPI reports, leading to significant delays and inconsistencies in decision-making processes.

Goal Statement

Our primary objective was to reduce the reporting cycle time by >60% and empower business users with self-service insights using Amazon QuickSight.

Business Impact

Achieving this goal would lead to faster, data-driven decision-making, reduced operational costs, and the establishment of a single, reliable source of truth for all key performance indicators.
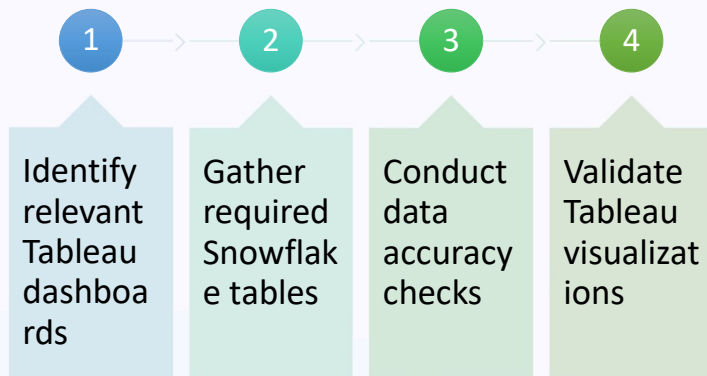
Scope

The project focused specifically on Loyalty KPI dashboards, involving the migration of existing data and reports from Snowflake and Tableau to the QuickSight platform.
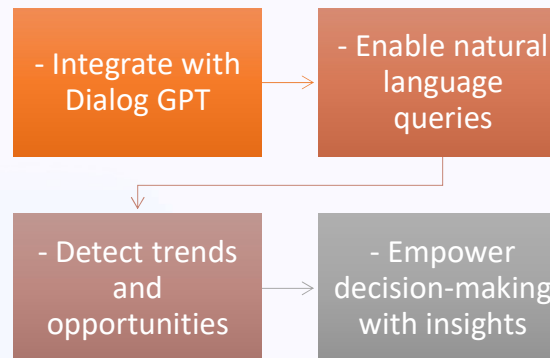
Project Summary & Plan

Integrate Group Loyalty KPI Data into an intelligent, data-driven, and autonomous growth engine for Smarter Decisions, Faster Actions and Enhanced Customer Experiences.

Phase 1:
Tableau & Snowflake Integration

1 → **2** → **3** → **4**

Identify relevant Tableau dashboards	Gather required Snowflake tables	Conduct data accuracy checks	Validate Tableau visualizations

Phase 2:
Augment with Intelligence

- Integrate with Dialog GPT → - Enable natural language queries

- Detect trends and opportunities → - Empower decision-making with insights

Phase 3:
Autonomous Loyalty Management

- AI-driven dynamic offers

- Automate execution of retention & growth actions

- Real-time KPI monitoring and optimization

Measure: Establishing Baselines and Gathering Insights

To quantify the problem and track our progress, we meticulously measured current performance and gathered feedback from key stakeholders.

Baseline Metrics

- Report preparation time: 5–7 days

- KPI accuracy errors: ~20%

Data Sources

Our analysis drew from a variety of sources, including Snowflake data warehouses, Tableau reports, and Amazon QuickSight usage logs to understand existing workflows and pain points.

Analyze: Uncovering the Root Causes of Delays

Through systematic analysis, we identified the core issues hindering efficient reporting, pinpointing areas for targeted improvement.

Root Causes (Fishbone / 5 Whys)

- **Manual Reporting:** Heavy reliance on manual processes like Excel and Tableau extracts.

- **Fragmented Data:** Data scattered across multiple, disparate sources.

- **No Self-Service BI:** Business users lacked tools for direct data exploration.

- **IT/Analyst Dependence:** Over-reliance on IT and data analysts for routine report generation.

Our analysis revealed that 80% of reporting delays were directly attributable to the combination of manual preparation and the use of fragmented, disconnected data tools. Addressing these two areas would yield the most significant improvements.
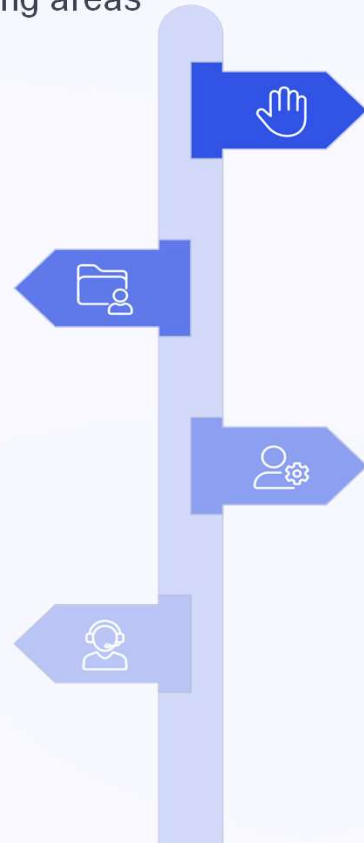
Improve: Implementing QuickSight Solutions & Measuring Results

Leveraging Amazon QuickSight, we implemented a suite of solutions designed to automate reporting, enhance data accessibility and improve accuracy.

Solutions Implemented

- Migrated all loyalty KPIs into **Amazon QuickSight** with live Snowflake connection.

- Enabled **QuickSight Q** for natural language queries, empowering non-technical users.

- Integrated **ML Insights & Auto-Narratives** for automated, faster analysis and commentary.

- Implemented **Scheduled Refresh** and **SPICE optimization** for rapid data loading.

- Established **Row-Level Security** for robust data governance and compliance.

Transformative Results

- **Report cycle time reduced 80%** (from 7 days to less than 1 day).

- **KPI error rate reduced** from 20% to less than 2%.

- Generated **855K** in estimated cost savings per Annum

Activity	Cost Saving
Per day Man Hour Saving	3 Hours
Saving of man hour effort per Annum (3hr*5days*4weeks*12months)	720 Hours
Approximate cost of a man day	LKR 9500
Approximate cost of a man hour	LKR 1187
Total Cost Saving Per Annum	**LKR 855,000**

Control: Sustaining Improvements and Planning for the Future

To ensure the long-term success of our improvements, we established robust monitoring mechanisms and a forward-looking sustainability plan.

Monitoring

- Continuous monitoring of QuickSight usage logs and dedicated SLA dashboards.
- Regular feedback loops with business teams to capture new needs and address issues promptly.

Sustainability Plan

- Ongoing training programs to empower more users with self-service BI capabilities.
- Quarterly KPI accuracy audits to maintain data integrity and trust.
- Future expansion to incorporate AI-driven dynamic offers and autonomous loyalty actions, further leveraging our improved data foundation.

Before vs After: A Striking Transformation

The project delivered a dramatic shift from a cumbersome, manual reporting environment to a streamlined, real-time insights platform.

Old Process: Manual & Slow

New Process: Automated & Real-Time

The traditional process was characterized by manual data extraction and report compilation in Excel and Tableau. This led to:

- **Significant Delays:** Reports took 5-7 days to prepare.

- **Inconsistencies:** Prone to human error and data discrepancies.

- **Limited Agility:** Slow response to changing business needs.

The new process leverages automation and cloud analytics for immediate, accurate insights:

- **Automated Data Flow:** Direct connection from Snowflake to QuickSight.

- **Real-time Insights:** Dashboards update instantly, reducing cycle time to <1 day.

- **Self-Service:** Business users can generate their own reports autonomously.

Conclusion: Driving Business Value Through Data Innovation

This project not only achieved its core objectives but also laid a robust foundation for future data-driven initiatives.

Key Achievement

Successfully reduced reporting cycle time by an impressive 80%, significantly improved KPI accuracy, and enabled AI-driven insights for the loyalty program.

Business Value

The transformation has led to faster, more confident decision-making, substantial reductions in operational costs, and established a scalable reporting framework for sustained growth.

Next Steps

We aim to extend this success to customer-level personalization and implement autonomous loyalty management systems, further cementing our data-driven capabilities.