

BUSINESS INSIGHTS 360: ATLIQ HARDWARE

AtliQ Hardware is a prominent provider of computer hardware and peripherals, serving clients globally through diverse distribution channels like retail, direct sales, and distributor networks, leveraging both online and offline platforms.

AtliQ Hardware has faced considerable losses in recent years due to their dependence on static Excel reports, which failed to provide the necessary insights for effective decision-making. These reports were hard to interpret and lacked the ability to generate actionable insights, contributing to significant losses, particularly in the Latin American market.

To tackle these challenges, AtliQ Hardware has enlisted a data analytics team to develop a dynamic Power BI dashboard. The objective is to create a multifunctional tool named **Business Insights 360** that offers crucial insights across various departments, including Finance, Sales, Marketing, and Supply Chain. This robust dashboard, built with Microsoft Power BI, is tailored to deliver comprehensive insights, enabling AtliQ Hardware to make informed decisions and enhance their performance globally.

KEY STEPS

Data Collection and Integration

Data was obtained from various sources, including MySQL and Excel/CSV Files, followed by seamlessly integrating it into Power BI.

- MySQL – Facts and Dimensions Tables for all Departments.
- Excel/CSV – Targets and Market Share Data related information.

Initial data was explored using MySQL followed by loading it into Power BI, wherein it was validated against benchmark numbers. Furthermore, Data Transformation using Power Query (M Language) was implemented wherever necessary.

Following is a list of main tables used for the purpose of this project:

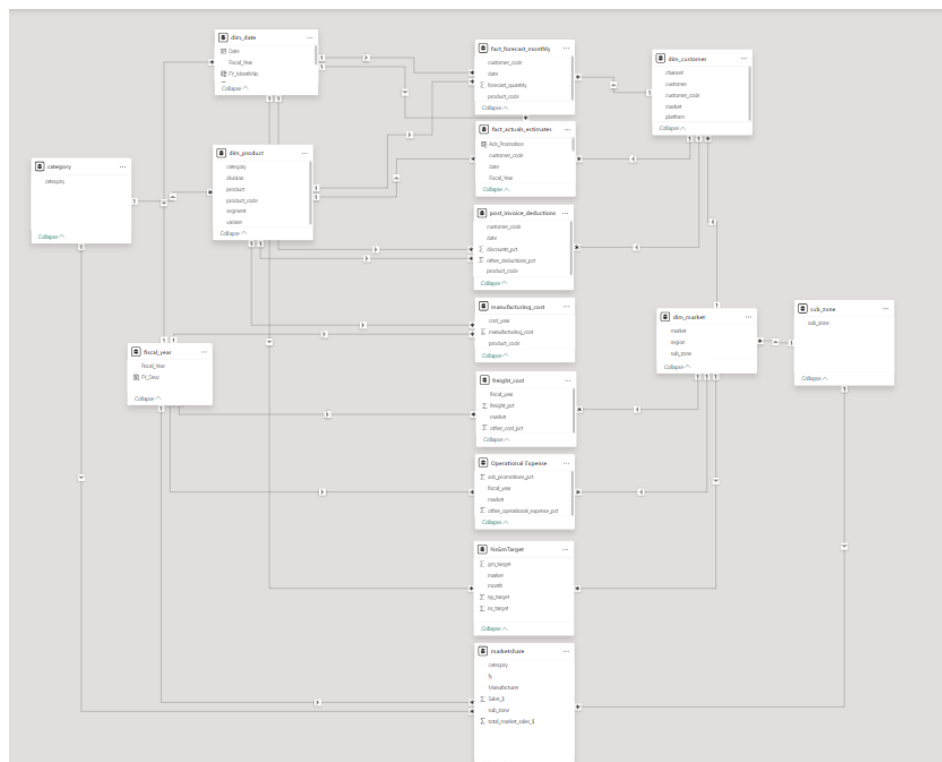
Dimension Tables

- Customer Table: Contains Customer details (customer code, customer, market, platform, and channel).
- Market Table: Contains Market details (market, subzone, and region).
- Product Table: Contains Product details (product code, division, segment, category, product, and variant)
- Date Table: Created using Power Query (date, month, and Fiscal Year).

Fact Tables

- Fact Sales Monthly Table: Contains Transactional Data
- Facts Forecast Monthly Table: Contains Forecast Data.
- Operational Table (Excel): Contains operational expenses details
- Market Share (Excel): Contains Market Share details
- Targets (Excel): Contains Target details

Data Modelling and Visualization



As seen above, the tables are connected to each other based on the snowflake schema technique.

A snowflake schema is a refined version of a star schema used in a multi-dimensional data, where dimension tables are further divided into subdimensions. This structure increases the complexity of the data model but makes the model more organized and easier to work with (Databricks, 2024).

It consists of two main types of tables: fact (positioned at centre and holds facts) and dimension (contain descriptive attributes corresponding to the facts). The two fact tables are positioned at the centre connected by the surrounding dimension tables, which also indicates their relationship (One – Many or Many – One).

A significant number of Calculated Columns and Measures were created using DAX for implementing various visualizations across all five reports (discussed later). Given below is a list of all the calculated measures, which frequently utilized functions like DIVIDE, CALCULATE, SUM, IF, SWITCH, and so on.

ABS Error	GM/Unit	NS Target \$
ABS Error %	GS \$	Operational Expenses \$
ABS Error LY	LS Month	Other Cost
Ads & Promotions \$	Manufacturing Cost	Other Operational Expenses \$
Atliq Market Share %	Market Share %	P&L BM
BM Message	Measure	P&L Chg
Customer/Product Filter Check	Net Error	P&L Chg %
Forecast Accuracy %	Net Error %	P&L Final Value
Forecast Accuracy % LY	Net Error LY	P&L LY
Forecast Qty	Net Profit %	P&L Target
Freight Cost	Net Profit % LY	P&L Values
GM %	Net Profit \$	Performance Visual Title
GM % BM	NIS \$	Post Invoice Deduction \$
GM % Filter	NP % BM	Post Invoice Other Deduction \$
GM % LY	NP % Target	Pre Invoice Deduction \$
GM % Target	NP Target \$	Quantity
GM % Variance	NS \$	RC %
GM \$	NS \$ LY	Risk
GM Target \$	NS BM \$	Sales Qty
		SalesTrend_Title
		Selected P&L Row
		Top/Bottom_Title
		Total COGS
		Total Post Invoice Deduction \$

Creating Reports

The dashboard's design centers around a comprehensive Home page, providing users with intuitive navigation to various reports and support resources (Info and Support page). The reports themselves are crafted with advanced features to enhance data interaction and readability, ensuring the dashboard is both user-friendly and informative, facilitating efficient data-driven decision-making. Enhanced performance is achieved through optimization with DAX Studio, ensuring the dashboard operates efficiently.

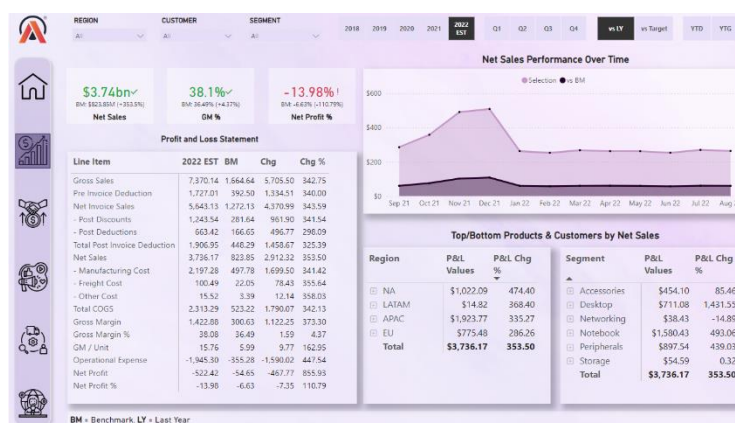
Key Integrated Features:

- Bookmarks to Switch Visuals: Multiple views of the same report page are created using bookmarks, allowing users to switch between different visuals or layouts for versatile data exploration.
- Page Navigation Using Buttons: Interactive buttons enable seamless navigation between different report pages or sections, enhancing the overall user experience without needing to return to the home page.
- Dynamic Titles Based on Applied Filters: Visual or report page titles dynamically change based on applied filters, providing clear context and ensuring relevant information is always visible.
- KPI Indicators: Key Performance Indicators (KPIs) with color coding (e.g., red for underperforming, green for meeting targets) offer quick insights into important metrics for fast assessment.
- Conditional Formatting of Visual Values: Visual values are highlighted with icons or background colors to indicate trends and performance, making it easy to spot important data points and anomalies.

The project involved the creation of five distinct dashboards:

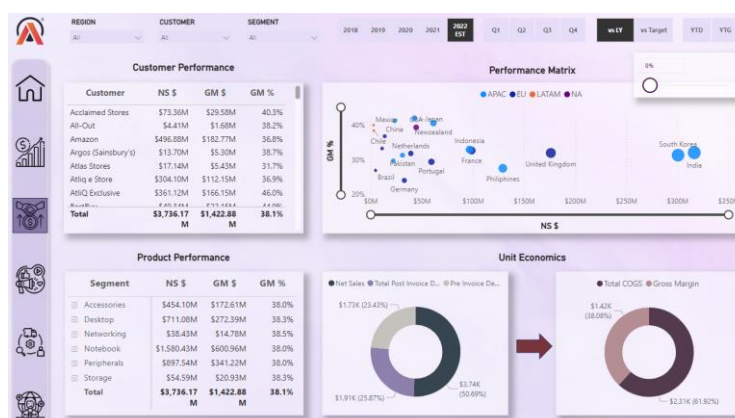
1. Finance View:

- Enhanced financial planning and budgeting processes through the implementation of a robust forecasting model, leading to more accurate budget predictions. Benchmarking against last year's results and target goals was created to improve budgeting.
- This view includes deep dives into P&L statements, Net Sales Performance Trends, and analysis of top-performing products and customers based on various parameters.



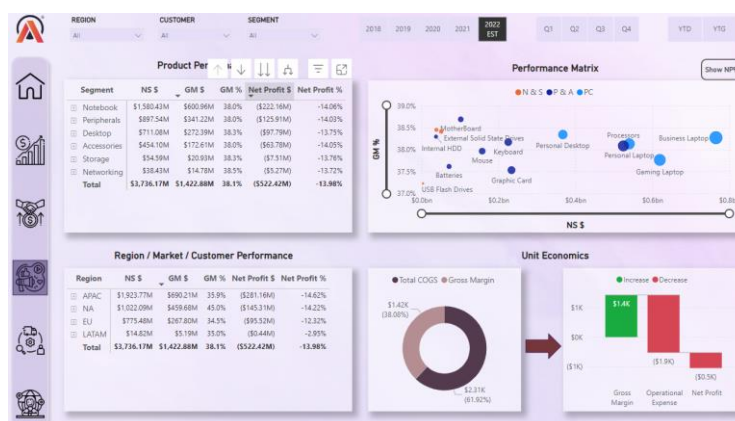
2. Sales View:

- Increased sales revenue and market share by developing comprehensive reports on customer and product sales performance (Net Sales and Gross Margin percentages) Unit Economics (COGS and deductions).
- Key sales trends and KPIs were identified and tracked to enhance customer relationship management.



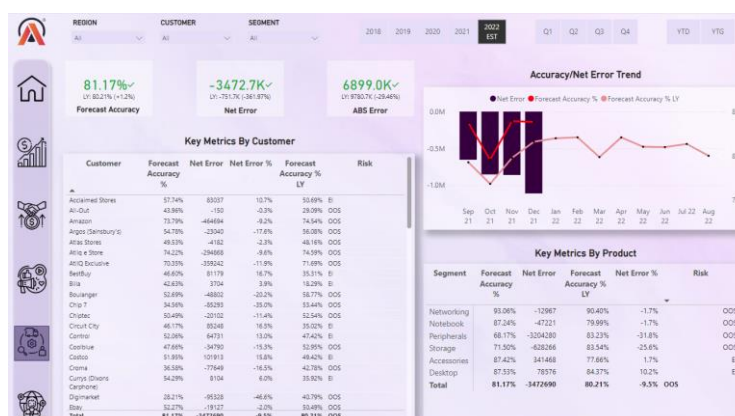
3. Marketing View:

- Increased brand visibility and customer engagement by offering insights on regional, customer and product-wise market performance, GM% & NP%, and unit economics (COGS, operational expenses, and NP).
- Market trends and KPIs were identified and tracked to support data-driven marketing strategies.



4. Supply Chain View:

- Optimized inventory management and reduced lead times by identifying trends in Forecast Accuracy, Net Error, and Absolute Error.
- Key metrics for customer and product demand were highlighted to improve supply management.



REFERENCES

<https://www.databricks.com/glossary/snowflake-schema>