Visualized historic data to boost revenues by 10% for a leading automotive parts manufacturer.

Application: Sales Dashboard

Services Offered: Data Visualization

Key Highlights

Domain: Automobile

Duration: 4 Months

Team:

2 Data Analysts

1 Project Manager

Technology:

Qlikview, R, MS-Excel

Client

The client is a leading manufacturer and supplier of braking equipment for automotive and non- automotive applications. They offer a range of aftermarket products and service kits for vehicle brake maintenance with around 4000+ parts across vehicle models. Their sales is distributed across ~30+ states with central and regional warehouses managed by their 30000+ distributor – dealer network.

Business Requirements

The client gathered raw secondary sales data repository of 6 distributors for the recent financial year (April 2017 – March 2018). The sales data described the volume and value of all transactions made by the dealer network across brake part segments in different zones. The pressure, as in any sales scenario, was to identify trends in the transactions, revenue etc. against different variables.

The client used dashboards to analyze the transactions on parts sold. The existing view of the dashboards lacked responsive features stalling the primary goal of interpreting trends with the available sales data. The client required efficient data visualizations focused on interactivity, be able to clearly observe points of view and provide actionable insights. The dashboards should suggest new opportunities and also provide information cross section of Sales.

Solution

Indium analyzed the client's dashboards alongside visibility and granularity metrics. Some of the charts were cluttered and trying to solve multiple objectives in a single tab; other observations included absence of a querying tool, no year on year comparisons, inconsistent themes, metrics were not structured for business use.

Indium's Data Visualization solution set off to sort out better interactivity, ready to perceive insights and an improved user experience. Our approach included –

- ✓ Data Preparation for Analysis
- ✓ Data Mining and Visualization
- ✓ Actionable Insights
- ✓ Automating the Data workflow (ETL)

Data Preparation for Analysis

A precursor to setting up the interactive dashboards is cleaning up data. We validated unclean data of 4000+ cities for redundancies and errors using

- ✓ Custom code that verifies the correct names of cities from Government sources

- ✓ Custom google search automation to find the correct data

The result was a 30% elimination in redundant data with 99.9% accuracy. The resultant clean data is prepared to feed into the Data Visualization steps by

- ✓ Organizing data into groups by geography etc.

- ✓ Validation of variables

- ✓ Master data setup

Data Mining and Visualization

The following features were enabled within the dashboards:

- ✓ *Pareto* – 80-20 analysis on the value of distributors, dealers. Individual contributions of value by any of the variables.
- ✓ *Deep dive* – Multiple levels of deep diving within the graphs. An instance being sales in a region, then by states, then by cities. Another being sales in a year, then in a quarter, then in a month.
- ✓ *Reports* – The data of all the charts can be exported as reports. This also helped the marketing department in conducting their own analysis.
- ✓ *Slice & Dice cube* - The data has multiple categorical variables which provided a case for viewing the same data by many variables. To solve this a cube was created where slicing and dicing by any dimension is possible.
- ✓ *Multiple filters* – All the categorical variables were provided as filters. For any graph, any filter can be applied.

Actionable Insights

The solution provided the following insights for the client

- ✓ **Product penetration within the geographical states** were calculated, this gives the cities within the state which are not penetrated.
  Action – Target those cities where the product hasn't penetrated.
- ✓ Compare side by side the **associated products' penetration within a state.**
  Action – Target those cities where one of the associated products is not selling.
- ✓ **Product performance of retailers**
  Action – Identify the products which have not been sold in the recent month compared to the previous months.
- ✓ **Toppers by value and volume**
  Action – Reward the existing month's "Hits and Duds" among the dealers
- ✓ A nested report – **segment penetration within cities within states** was created to find the gaps where the segment hasn't penetrated.
  Action – Push products in the segment where the penetration % is low.

Data Workflow Automation

To address the scalable needs of the dashboard, Indium implemented an ETL process that automates the data loading into the visualization set up and dashboards are refreshed in a timely manner.

| Loading Raw CSV Files | Running Batch files | Data Processing | Loading into Qlikview | Dashboard Refresh |

- ✓ Client's raw distributor data is loaded in the data server and batch ETL process is performed
- ✓ Data Preparation job is auto performed using R and a database is generated with new sales data
- ✓ A scheduled run of Qlikview Management Console loads new data into Qlikview
- ✓ The new data is translated into the Dashboards as visual insights

Business Impact

- ✓ Data Quality improved by a significant 40-50% which is a direct feed to quality Dashboards
- ✓ The dashboards provide a 3 dimensional view of dealer transactional summary with count of unique products, number of transactions and amount transacted. Sales users have a ready utility on analysing sales performance in different regions, product penetrations and so on which helped them strategize and target potential sales regions
- ✓ The management team was able to self-service and visualize their targets being on track or overshoot. The yearly comparisons provided onus on them to propel their sales.
- ✓ Incorporated a fourth dimension "recency" to filter the expired dealers who can be reactivated. This contributed to an increase in their customer life value.