

Car Database Analysis

Project Scenario

Mint Classics (a retailer of a classic model vehicles) would like to close one of their storage facilities. They are looking for data-driven recommendations to reorganize or reduce inventory while keeping their timely service to their customers.

Skills demonstrated

Structured query language (SQL)
| Data Analysis | EER diagrams |
Analysis Techniques | Database
Importing | Data understanding |
Data-driven insights | Business
Understanding

Tools

MySQL workbench
GitHub (where the project will be
uploaded)

SUMMARY

The aim of the business is to reduce inventory and understand if it would be possible to shut down a warehouse without slowing too much their service times. The goal is to answer these three main questions:

1. Where are items stored and if they were rearranged, could a warehouse be eliminated?
2. How are inventory numbers related to sales figures? Do the inventory counts seem appropriate for each item?
3. Are we storing items that are not moving? Are any items candidates for being dropped from the product line?

POSSIBLE SOLUTIONS

1. **Rethink the product catalogue** by considering to drop the 1985 Toyota Supra's unit stored since it has never been ordered in the past year. This will free up space in *warehouse b*.
2. **Avoid Overstocking.** All the product lines are losing money due to high quantity stocked that largely exceed those ordered. It may be reasonable that stocks units do not exceed 2500 (as the avg units x order are roughly 324). Restock units for those prods below this amount (36,590) and drop units for the prods above the threshold (316,721). This will free up space in each warehouse.
3. **Adjust some prodLines' stocking.** There are some prodLines that have high amount of stocks while units ordered are really low, such as *Trains*, *Ships* and *Planes*. Drastically reducing the stocks of these products (even below the 2500 threshold) can free up space and save money.
4. **Suggest discount tiers to customers.** Most customers have a low amount of order (< 5). As such, it could be useful to propose discount tiers to customers that reach a specific amount of order (i.e 5 or 10 x year) or a specific payment amount. This strategy can be either tailored to a customer (to push it to spend more) or a general rules (ex. 5% discount for orders > 5 in a year)
5. **Consider Closing warehouse d.** *Warehouse d* is both the warehouses with less units in stock and the less amount of order received per year. Moreover, it stocks 2 of the most un-ordered prodLines (Ships and Trains). Finally, closing *warehouse d* will force mint to relocate roughly 57,500 unit, the lowest amount possible (and perfectly within the $> 200,000$ spaces left free by employing the 2500units threshold). Each prodLine in *d* can also be assigned to a different warehouse based on proximity with the customer that order more those prods.

APPROACH

The company's databases have been meticulously scrutinized and the issue at task has been tackled by several different angles. The natural consequence is that many different analysis have been developed, such as: warehouse analysis, product analysis, product line analysis, inventory analysis, pricing analysis, customer analysis and employee analysis. Once performed, the results of every single analysis have been intersected. Altogether, they provided a thoroughly view of the company, that was fundamental to obtain data-driven insights about how to proceed to reduce stocks and keep an excellent service.

PROJECT LINK

<https://github.com/Lulloooo/MySQL-mint-casestudy/tree/main>