



VS Group



IT & Product Strategy Proposal

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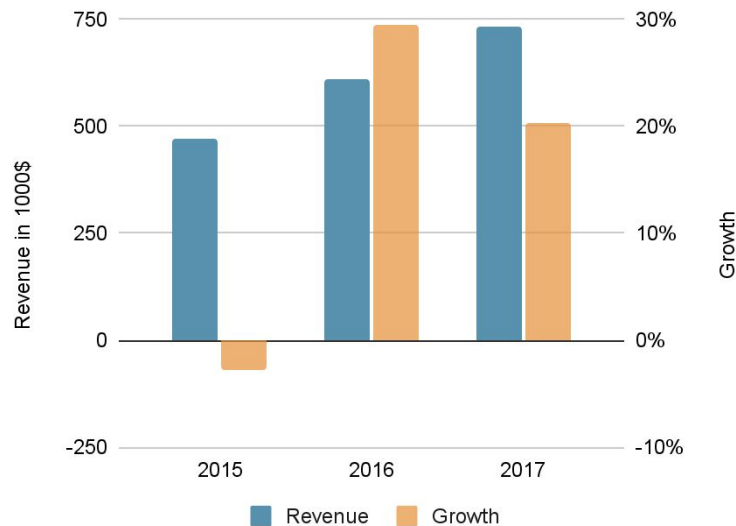
VS Group - Yet Another Office Discount

- Discount office product retailer
- Small-size e-commerce business at growth stage
 - **\$730.000** revenue across the USA in **2017**
 - rapidly growing: **30%** in **2016**, **20%** in **2017**



- Challenges
 - IT Infrastructure has to handle growth
 - Strategic approach and go-to market strategy to sustain the growth

Revenue and Growth



20%



growth in 2017

Agenda

- Modernization of the IT
 - System Design: Map and Design considerations
 - Analytics System to become a data-driven company
- Competitive Analysis: Product Category Analysis
 - Which product categories generate the most sales and profits?
 - How should the product portfolio be adapted in order to minimize costs and maximize profits?
- Conclusions & Proposals



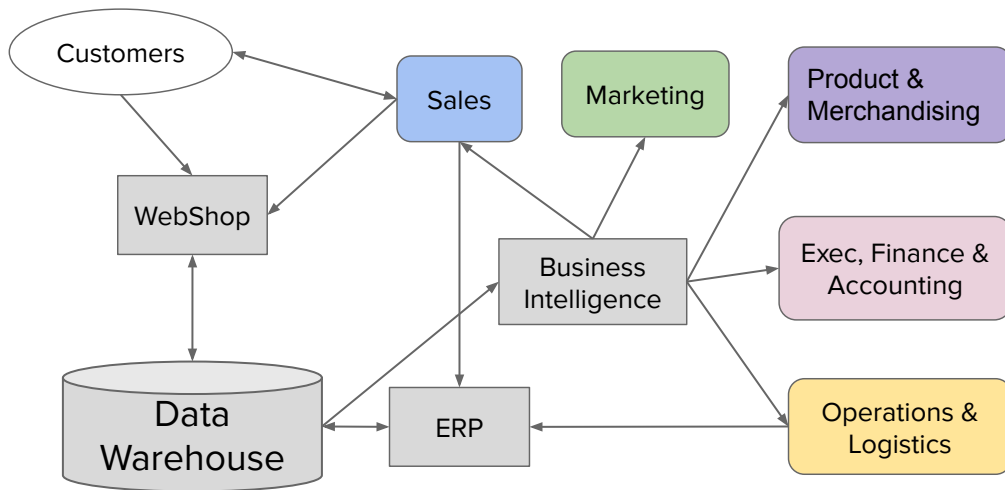
System Map

Requirements

- Fast flow of information:
 - Read: customer, product, shipment data
 - Write: Placing an order
- Reliable Analytics System
 - Feature Engineering
 - Data Quality Checks
- Future proof for data heavy analyses, e.g. recommender, tracking etc.



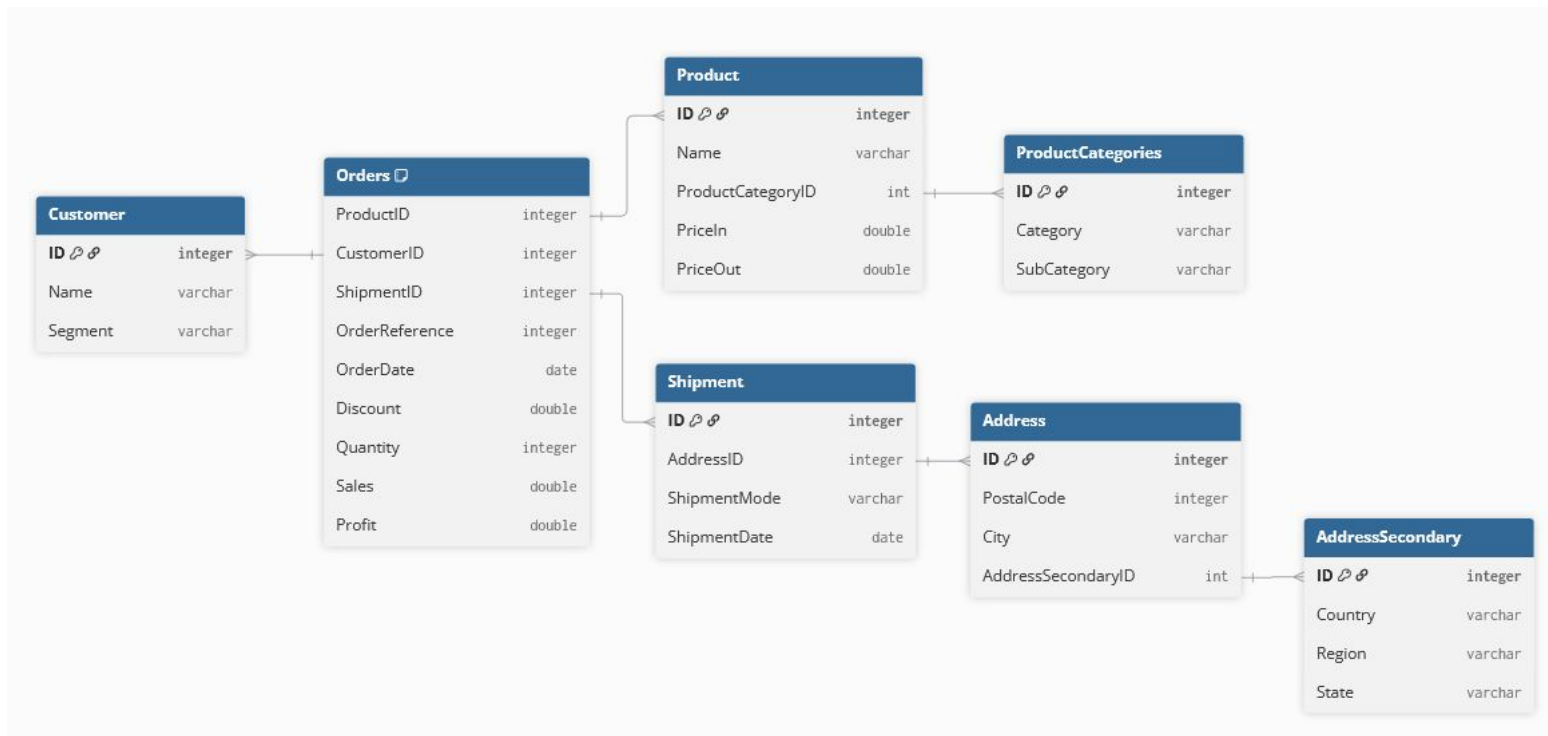
Main flow of information in VS Group



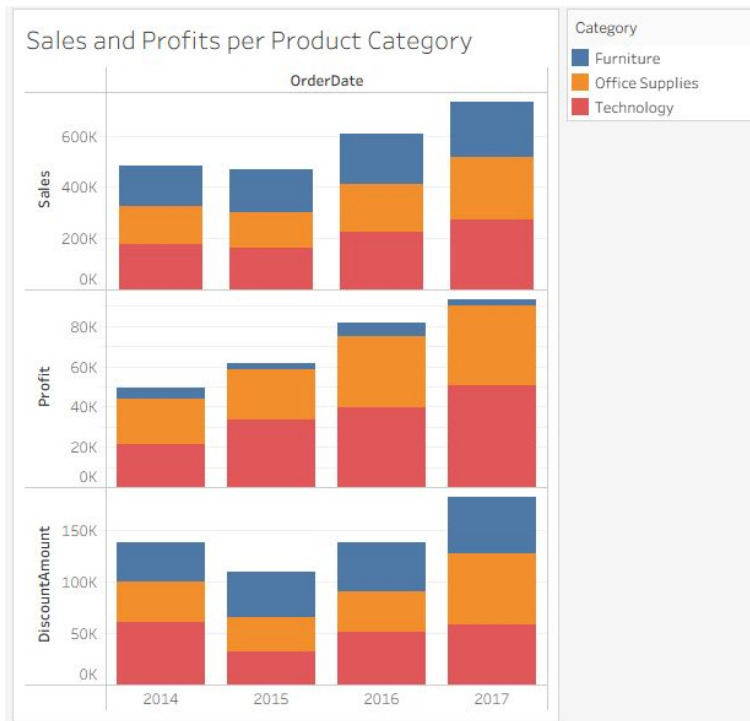
Design Principles

- Balance read-write-operations
- High quality data

Database Design



Revenue by Product Category



- All product categories have an almost equal share of sales
- But **Furniture** is not doing well
 - very **low profit**
 - Discount Amounts are quite high
 - Margins are naturally low
- What is going on?
- Take this out of the product palette?
- How can the profits be maximized?



Customer Segmentation

- Customer Segmentation using K-Means Clustering with
 - Sales data on Product Categories
 - Furniture Profit
 - Has the customer ever bought furniture?
Profitable / not Profitable
- 5 customer groups can be distinguished with medium significance
 - All groups buy furniture
 - 2 groups spend a lot on furniture



Discount hunters manage to apply discounts such that profit is negative!

Conclusions & Proposals

1 | IT Infrastructure

We achieved future-proof IT system design and built the data foundation for useful Data Analytics with Tableau dashboards.

Next steps

- Monitoring of database performance and data quality
- Implement Data Pipeline for continuous data flow
- ML-Pipeline for Recommender systems

2 | Product and Discount Strategy

- Discounts have driven Sales growth, but also decreased profits
- Customer Segmentation on Product Sales reveals 5 groups; discount hunters on furniture may produce negative profits!

Proposals

- Use different discount strategies that
 - bind the customers
 - balance Profits along customer segments
- Give discounts on second purchases

Next steps

- Do customers move between the groups?
- How to address the groups in order to maximize profits?
- How to trim the furniture product palette?

**Thank you for
your attention!**

Observations

- Overall: growth period
 - Sales, Orders are going exceptionally up
 - Discounting campaign (assumption) is working
- Segment
 - All segments behave equally
 - Home Office: shows some growth
 - Corporate: buys when discounts are given
- Category
 - Assumptions: Customers like the range of products that we offer (Do Customers buy in all categories or just in specific ones? Is there a shift in time?)
 - Sales are growing in all categories
 - Furniture is doing the worst: Take this out of the product palette? What to do about this?
- Region, State
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 - Why do we lose money i certain states, like Texas? WTF happened in Texas? Use the discount as crazy!
- KPIs
 - AOV: Going down
 - Profit Margin: Going down
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