AXIOM CONSULTING GROUP

INNOVATIVE BUSINESS SOLUTIONS

Funmi Esuruoso
James Hanley
Tamora Long

We recognize that expedited and efficient business solutions are imperative to our clients!

COMPANY OVERVIEW

Our Mission: We have the Mission to empower our clients with cutting edge solutions of the highest quality, standards, and cost effective services.

Our Expertise:

- Data/Big Solutions
- Data Lake and Pipeline solutions
- BI & Analytics solutions
- Data Warehousing /Integration

Our Capabilities:

- Data Management, Data Integration, Data Warehousing, Data Quality
- Data Integration, Value Data Engineering, Consolidation & Predictive solutions

Our Industry Knowledge:

- Corporate
- Healthcare
- Financial
- Retail
- Higher Education

PROJECT SCOPE

- Build an integrated data warehouse/ BI solution for FudgeMart Inc.
- FudgeMart is an online retail company (similar to amazon or Walmart)
- Fudgeflix is an online DVD-by mail and video-on demand service (similar to Netflix)

SCOPE OF THE PROJECT

From functional requirements to the business processes

Migrate data from FudgeMart to data marts

Build a Data Warehouse

Build dashboards using BI tools

Validation and Demo of the Data Warehouse

PROJECT TEAM

Role	Responsibilities	Team Members
Project Manager/BI Architect	Coordinates project activities BI Design/Implementation	Tamora Long
Business Analyst/Process Lead	Functional requirement gathering, analysis, & documentation. Dimensional Modeling	Funmi Esuruoso
ETL Architect	ETL Design/ Implementation	James Hanley

COMMUNICATION PLAN

Audience	Information	Method	Frequency	Owner
Project team	Detailed project plan and status	Meeting	Weekly	Project Manager
Project team	Collaboration	Email	As required	Project Manager
Project team	Task allocation/ updates	Trello Board	Every day	Team
FudgeMart stakeholders	Approval	Email Meeting	As required	Project Manager

BUSINESS PROCESSES

- **KEY BUSINESS PROCESSES:**

  - **SALES ANALYSIS (complex): ANALYZING DATA TO INCREASE THE EFFICIENCY OF OUR SALES MANAGEMENT AND ADMINISTRATION**

    - WHICH DEPARTMENT HAS THE HIGHEST SALES?

    - WHICH CUSTOMER HAS THE HIGHEST PRODUCT PURCHASE FROM US?

    - WHAT DO OUR CUSTOMERS PURCHASE FROM US?

  - **SHIPPING ANALYSIS (simple): ANALYZE OUR SHIPPING PROCESS TO INCREASE SHIPPING TIME**

    - WHAT IS THE AVERAGE SHIPMENT LAG TIME

    - WHICH PRODUCT TYPES HAVE LONGER SHIPMENT LAG TIMES?

      - WHICH PRODUCTS SHIP QUICKER/LONGER?

    - WHAT IS THE TOTAL VOLUME OF PRODUCTS EACH SHIPPING COMPANY SHIPPED?

    - WHAT IS THE QUANTITY OF ITEMS SHIPPED PER YEAR BY DEPARTMENT ?

BUSINESS PROCESSES (Not Implemented)

- **EMPLOYEE ANALYSIS(simple): ANALYZING OUR EMPLOYEE PAYROLL PROCESS**
  - WHAT IS OUR EMPLOYEE RETENTION/ATTRITION RATE?
  - ARE EMPLOYEES OVERWORKED/UNDERWORKED?
    - THIS HELPS US ASSIGN RESOURCES TO THE APPROPRIATE EMPLOYEE/DEPARTMENT.
  - HOW ARE OUR EMPLOYEES PERFORMING?
    - INDIVIDUAL/DEPARTMENTAL PERFORMANCE.
- **MARKETING ANALYSIS(complex): ANALYZING DATA TO BETTER MARKET PRODUCTS**
  - HOW ARE OUR CUSTOMERS SEGMENTED?
  - WHAT PRODUCTS ARE OUR CUSTOMERS MORE/LESS INTERESTED IN?
  - WHICH PRODUCTS ARE ACTIVE/INACTIVE?

PROPOSED SOLUTION

Create a new data warehouse by successfully integrating Fudgemart and Fudgeflix's data marts

Perform extractions, transformations, and loading the data into the newly created warehouse following the business rules

Develop and tailor new BI dashboards to analyze data from FudgeMart's business processes

Submit the data warehouse to extensive error, quality, and user testing

Train FudgeMart's IT department to use the new BI dashboards and to properly understand the new data warehouse

BUS MATRIX

| Business Process Name	Fact Table	Fact Grain Type	Granulairty	Facts	Products	Customers	Vendors	DimDate	Product Reviews	Orders	Employee
Shipping (simple)	FactShipping	Transaction	One row per order	Quantity, ShipmentLag	X	X		X		X	
Marketing (product base) (complex)	FactProductMarketing	Accumulating Snapshot	one row per product	retail price, wholesale price, plan price	X		X	X	X	X	
Employees (payroll) (simple)	FactEmployeePayroll	Periodic snapshot	One row per employee	Hours worked, employee status (ft/pt), salary				X			X
Sales Management/Admin (complex)	FactSalesAdmin	Transaction	One row per order "detail"	Quantity, retail price, wholesale price, selling price, cost price, profit margin, amount, shipment	X	X		X		X	

SHIPPING STAR SCHEMA (SIMPLE)

SALES ADMINISTRATION STAR SCHEMA
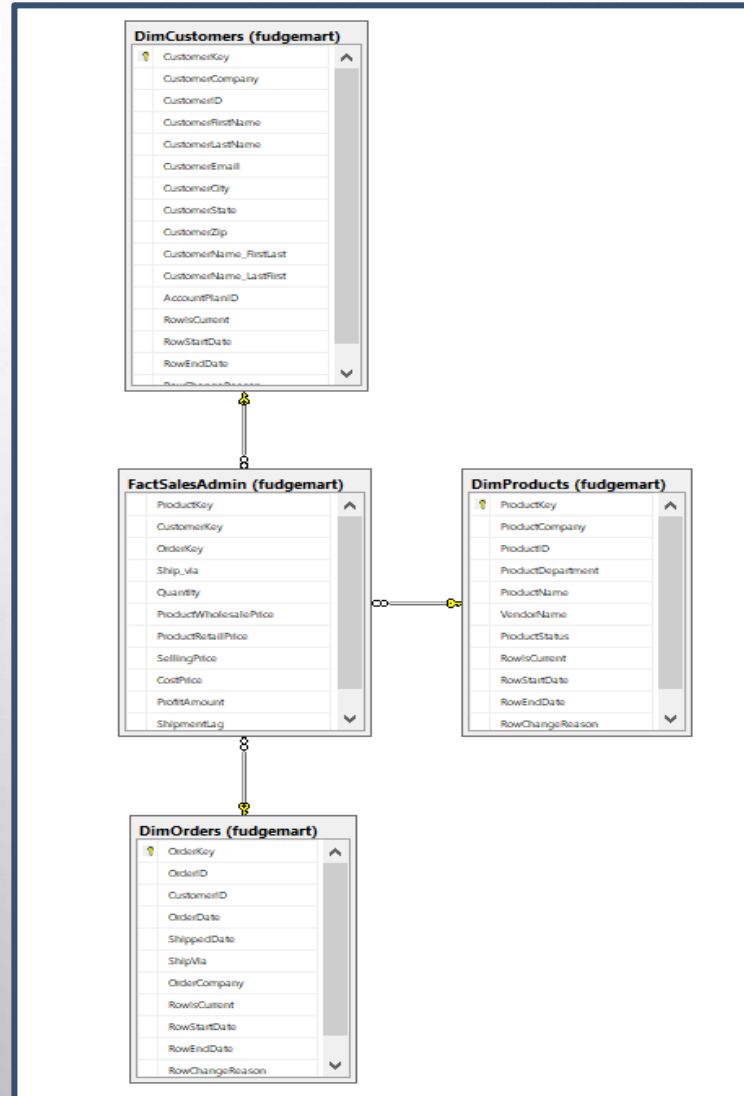
COMBINED STAR SCHEMA
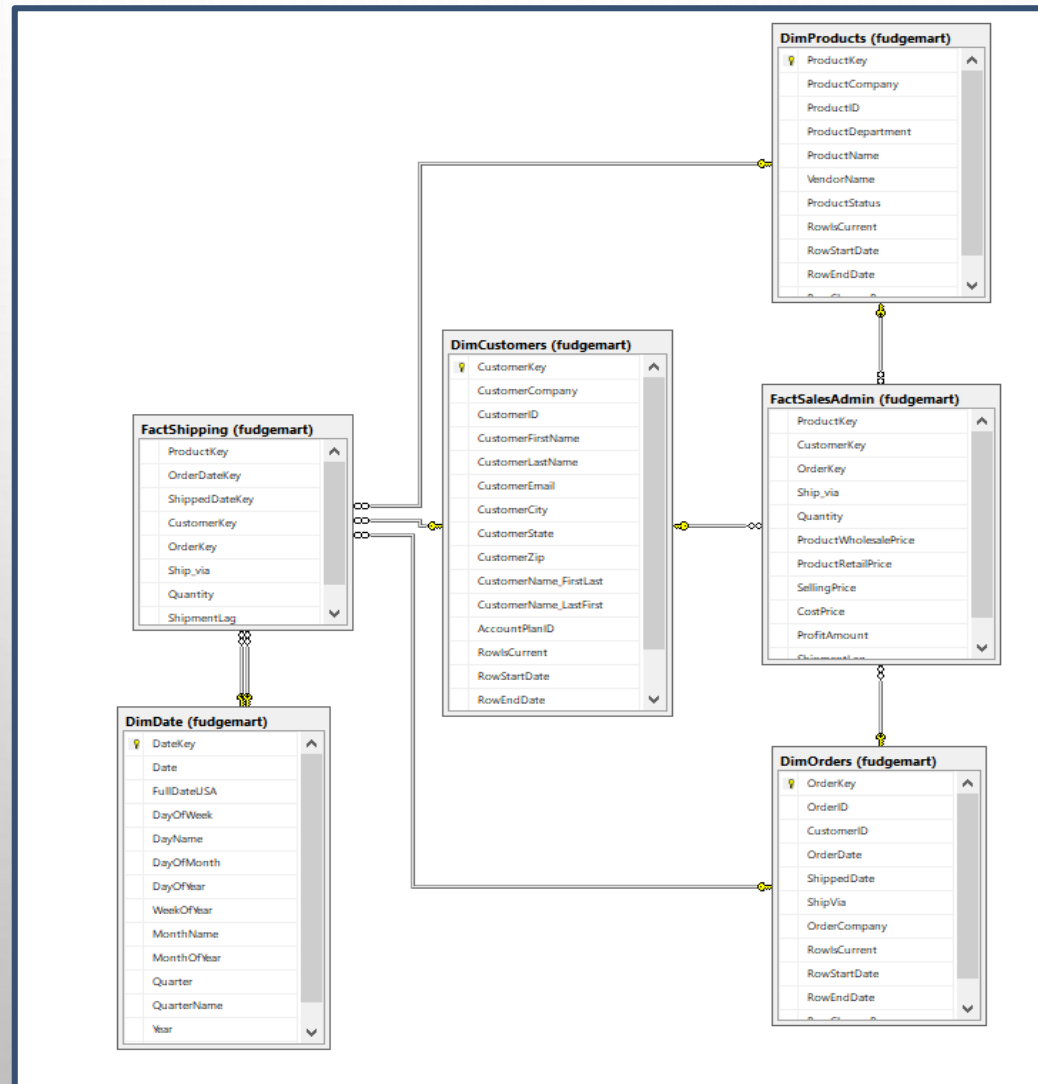
ETL DATA FLOW
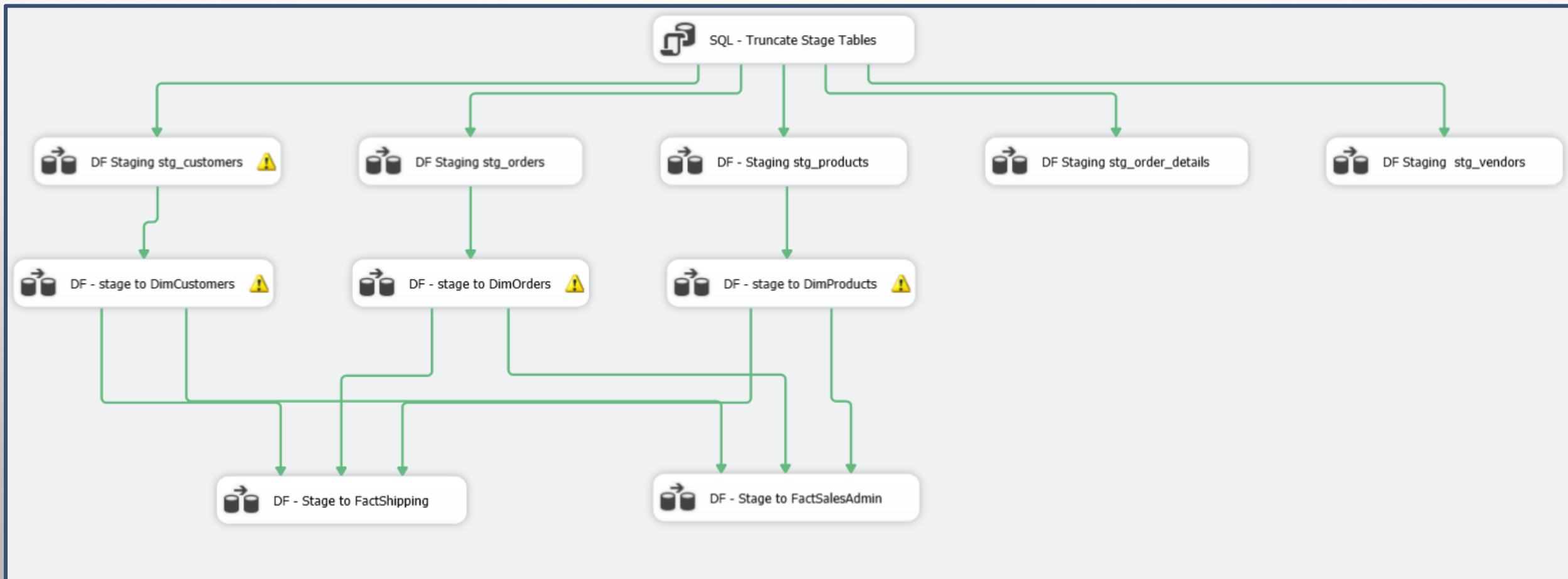
DATA SOURCES

Table	Type	Row Count	Business Key	One Row Is
Customers	Master Data	25	Customer ID	A customer
Orders	Master Data	3516	Order ID	A customer
Ship Via	Business Process	4	Ship ID	A shipping service
Products	Master Data	53	Product ID	A Product
Vendor	Master Data	9	Vendor ID	A vendor
Plans	Master Data	7	Plan ID	A customer's plan
Account billings	Master Data	1294	Account ID	A customer's bill

Row Labels	Shipment Lag
⊟ Clothing	8306
2009	1937
2010	2191
2011	1942
2012	2003
2013	233
⊟ Electronics	3401
2009	770
2010	862
2011	852
2012	787
2013	130
⊟ Hardware	4277
2009	1082
2010	986
2011	1099
2012	974
2013	136
⊟ Housewares	455
2009	88
2010	95
2011	155
2012	96

Row Labels	Quantity
⊟ 10" Miter Saw	82
Active	82
⊟ 12 Pack Golf Balls	67
Active	67
⊟ 17" LCD Monitor	86
Active	86
⊟ 18v Drill Driver Set	108
Active	108
⊟ 19.2v Drill Driver Set	106
Active	106
⊟ 20" LCD Monitor	101
Active	101
⊟ 40" LCD HD TV	195
Active	195
⊟ 50" LCD HD TV	169
Active	169
⊟ 65" LCD HD TV	162
Active	162
⊟ Baseball Cap	212
Active	212
⊟ Baseball Glove	57
Active	57

Product

Products In Inventory

Dim ProductsDepartmentDepartment ▲	Dim ProductsProductProduct	MeasuresQuantity
Clothing	Baseball Cap	212
Clothing	Comfor-fit Tee	317
Clothing	Cool Jeans	329
Clothing	Courdory Pants	286
Clothing	Denim Jacket	349
Clothing	Dri-Fit Tee	465
Clothing	Leather Jacket	395
Clothing	Running Pants	515
Clothing	Running Shorts	255
Clothing	Squeaky Sneaks	409
Clothing	Wool Socks	398
Clothing	Work Gloves	240
Clothing	Work Pants	293
Clothing	X-Train Shoes	237
Electronics	17" LCD Monitor	86
Electronics	20" LCD Monitor	101
Electronics	40" LCD HD TV	195
Electronics	50" LCD HD TV	169
Electronics	65" LCD HD TV	162
Electronics	Blu-Ray DVD Player	223
Electronics	Computer Mouse	157
Electronics	DVD Player	171
Electronics	Ergonomic Keyboard	131
Electronics	HD-DVD Player	184
Electronics	PC Webcam	181
Hardware	10" Miter Saw	82

BI DASHBOARD - Shippers

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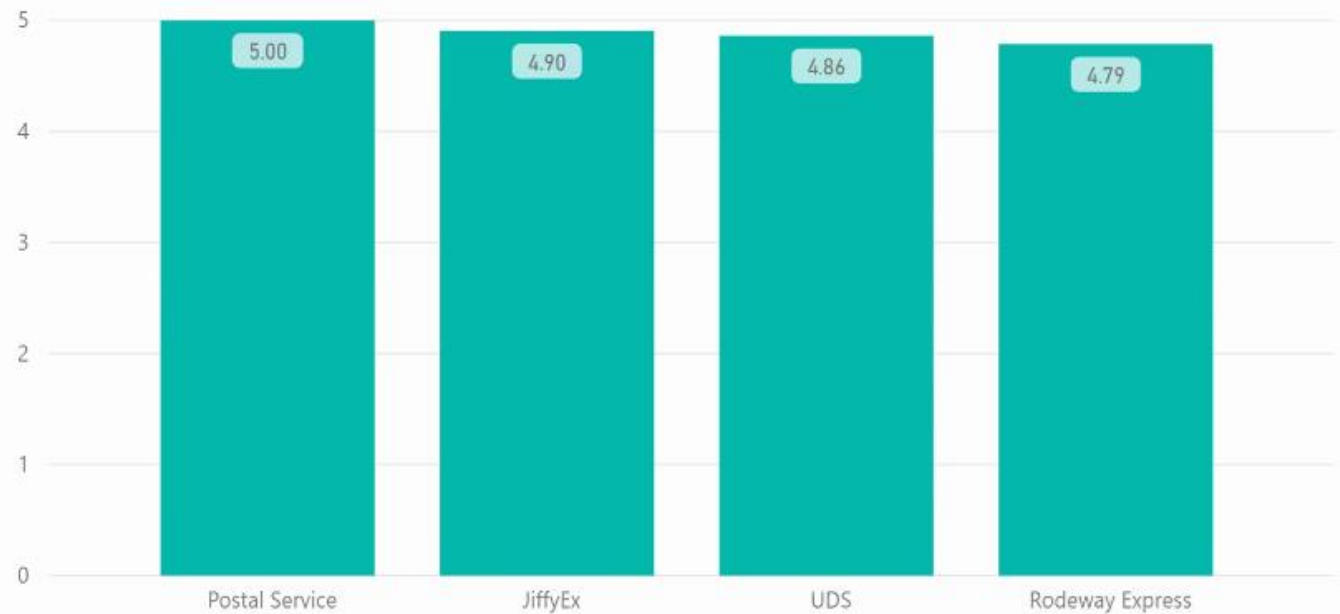
Sales Management
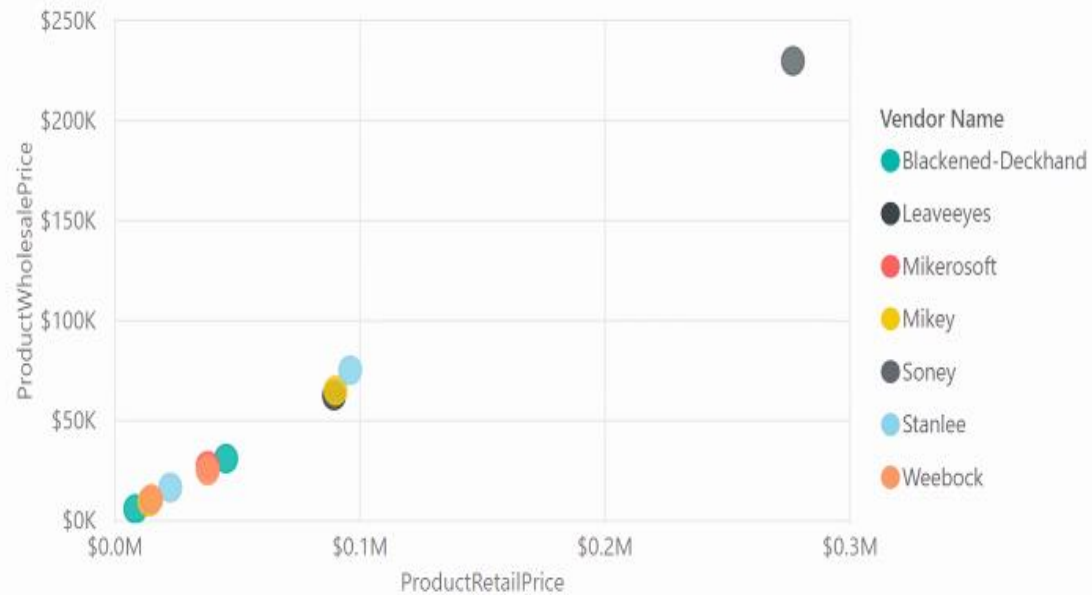
BI DASHBOARD - Shippers
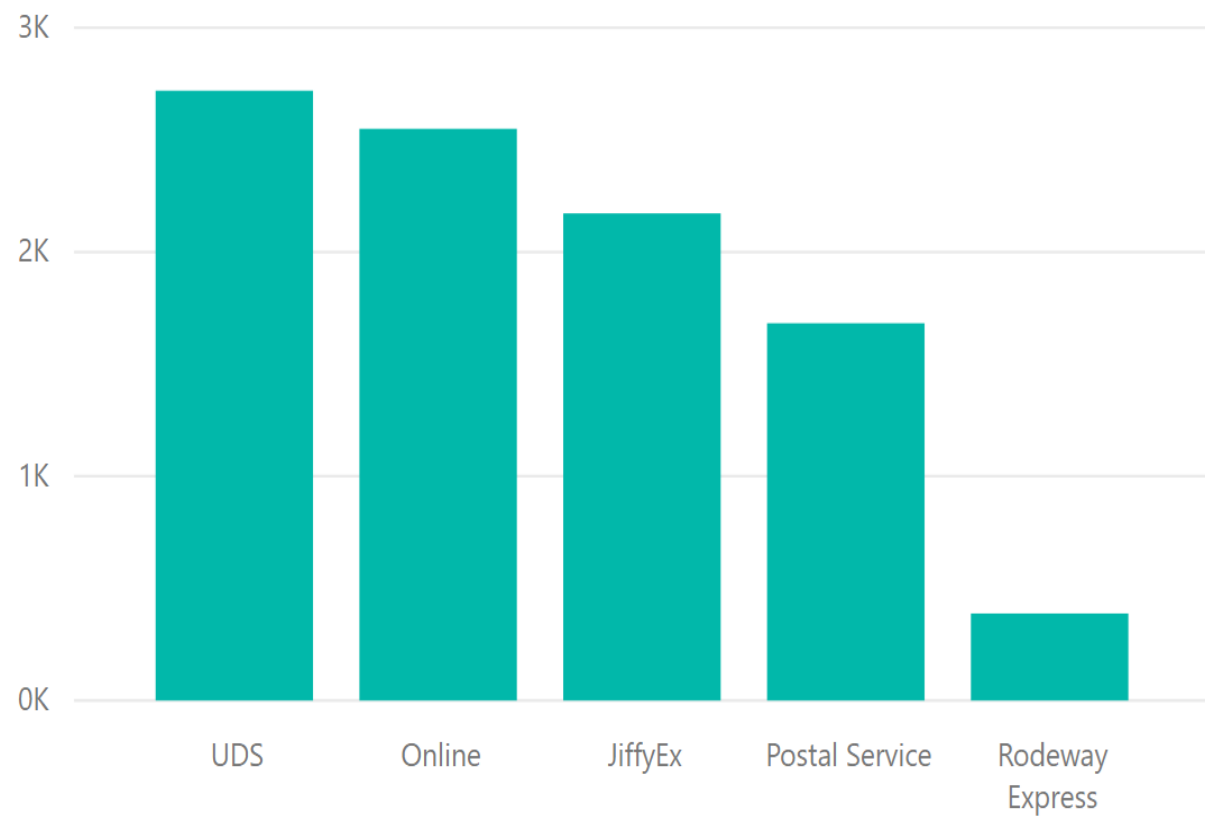
PIVOT TABLE - SALES

Product	▾	Quantity	Profit Amount
⊞ Clothing		4700	115395
⊞ Electronics		1760	147141
⊞ Hardware		2285	46433.05
⊞ Housewares		234	2825
⊞ Sporting Goods		531	19406
Grand Total		9510	331200.05

Highest Selling

	Quantity	Profit Amount
⊟ Clothing	4700	115395
⊞ Baseball Cap	212	1696
⊞ Comfor-fit Tee	317	3170
⊞ Cool Jeans	329	11515
⊞ Courdory Pants	286	3432
⊞ Denim Jacket	349	15705
⊞ Dri-Fit Tee	465	5580
⊞ Leather Jacket	395	19750
⊞ Running Pants	515	11845
⊞ Running Shorts	255	3825
⊞ Squeaky Sneaks	409	18405
⊞ Wool Socks	398	2388
⊞ Work Gloves	240	960
⊞ Work Pants	293	5274
⊞ X-Train Shoes	237	11850

Lowest Selling

	Quantity	Profit Amount
⊟ Housewares	234	2825
⊞ Blender	14	350
⊞ Crock Pot	55	825
⊞ Electric Griddle	73	730
⊞ Monsignor Coffee	51	510
⊞ Steam Iron	41	410
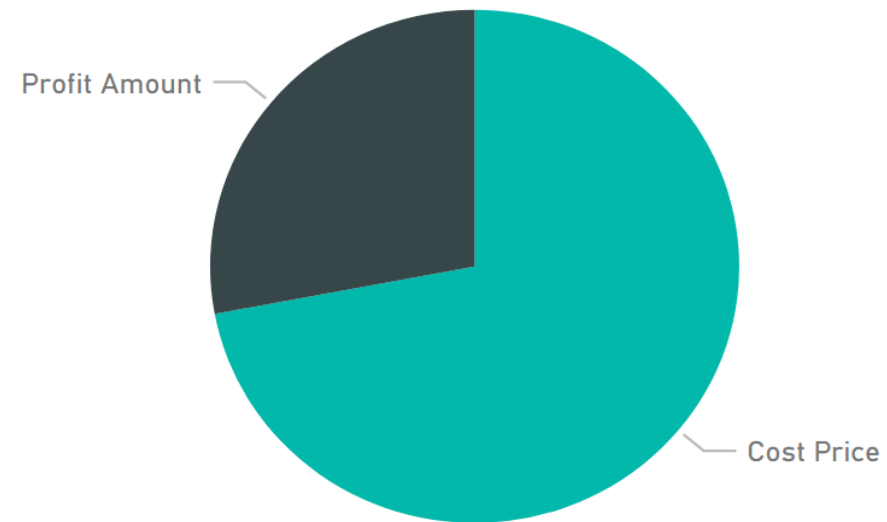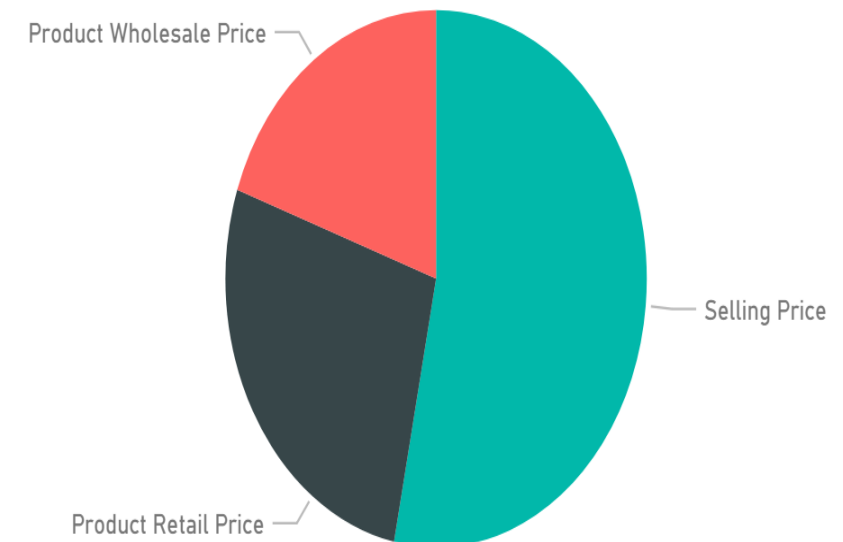
BI DASHBOARD - SALES

BI DASHBOARD - SALES

Profit, Cost, and Sale Price by Product
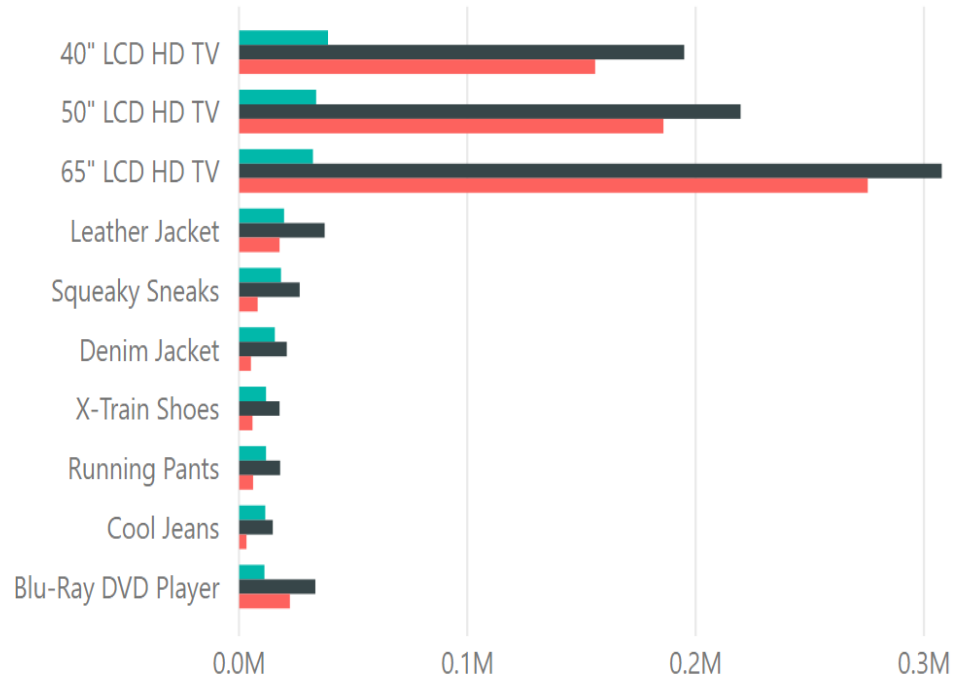
Profit and Cost by Customer
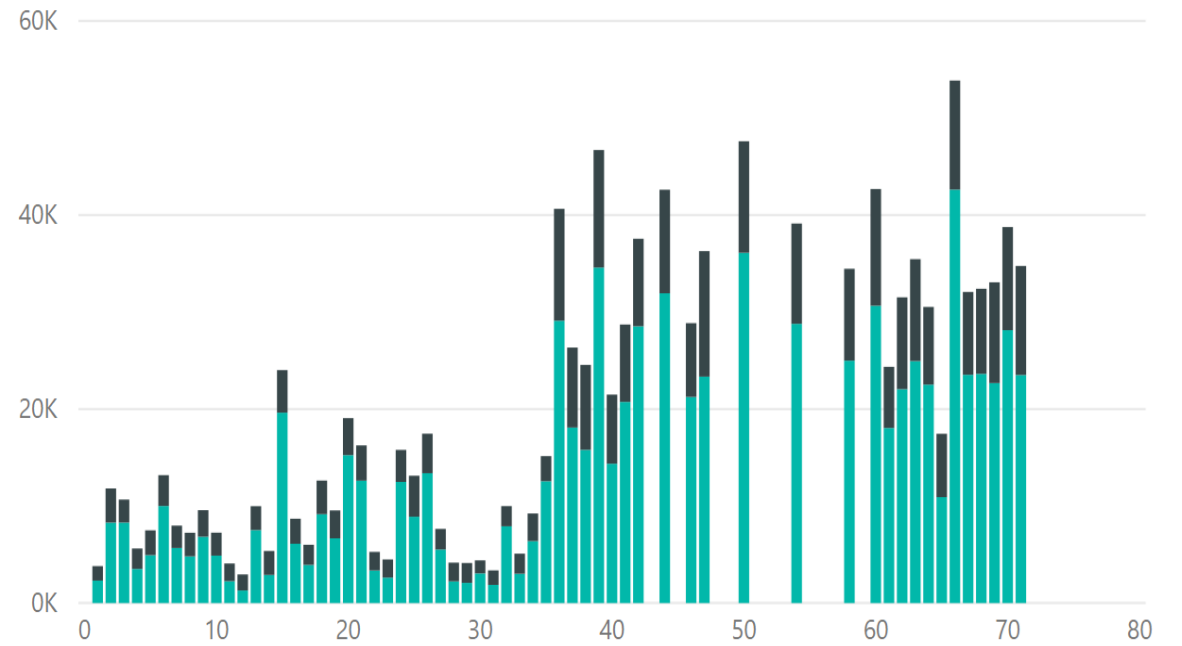
BI DASHBOARD - SALES

Profit by Customer
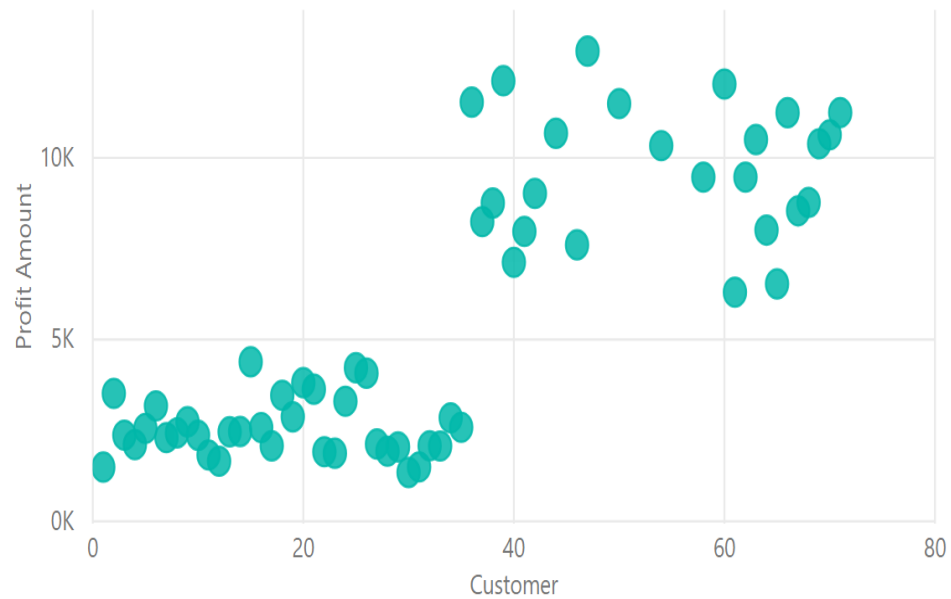
Profit, Cost, and Sale Price by Shipper
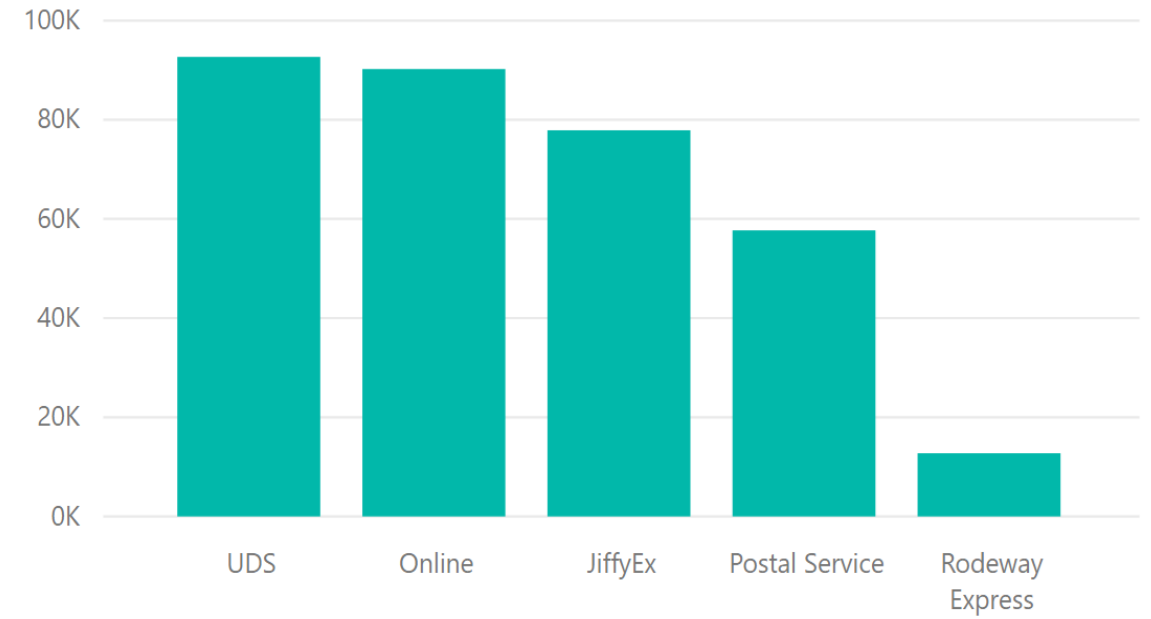
BI DASHBOARD - Company
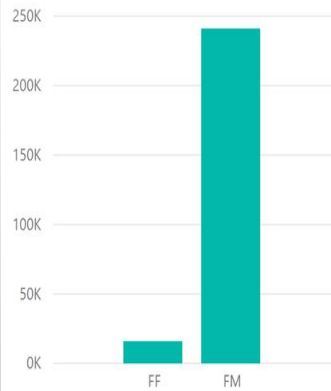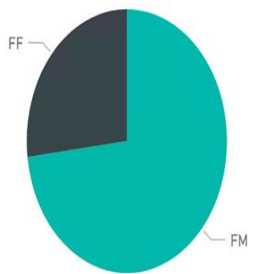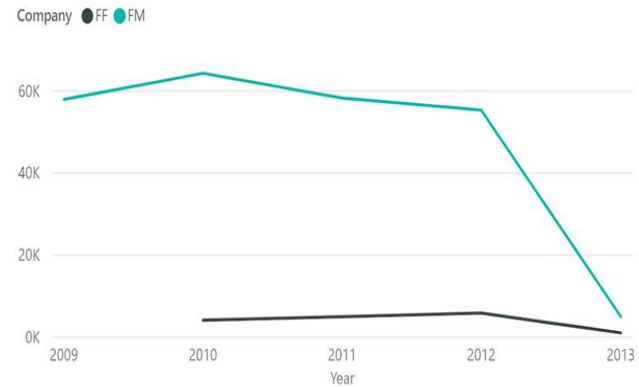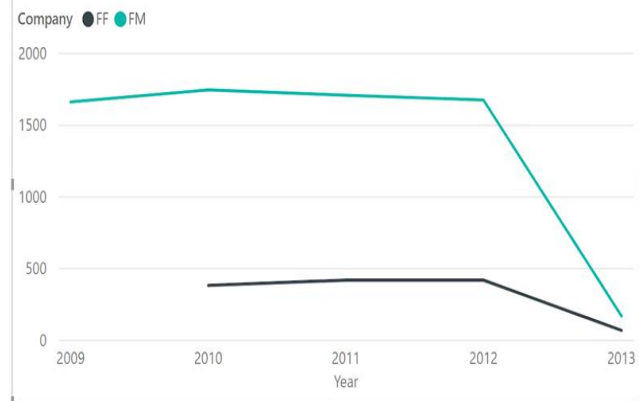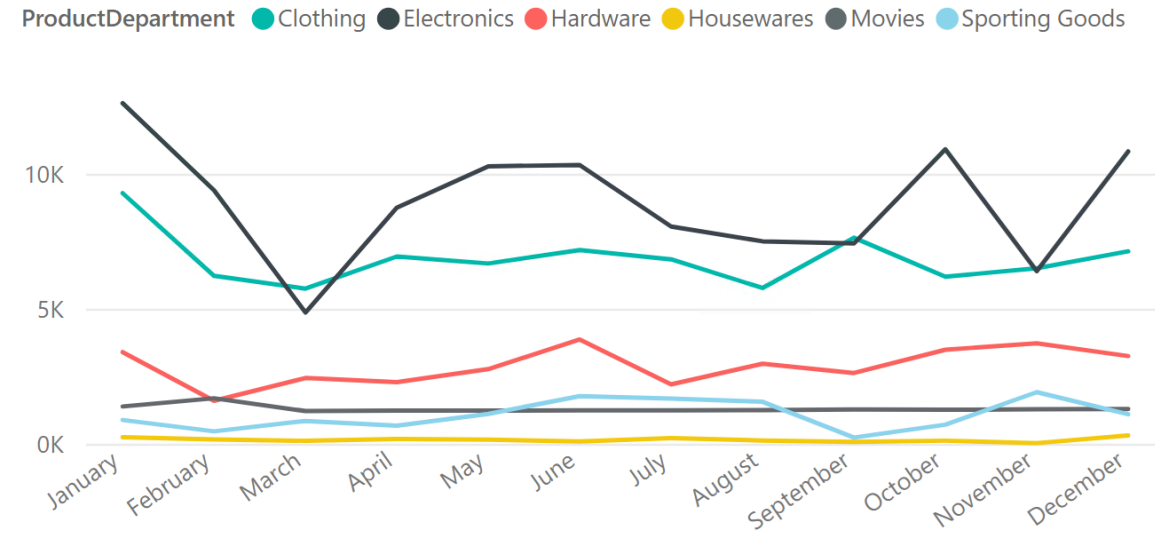
RECOMMENDATIONS

Clothing was most profitable but had the highest shipment lag

- Shift shipments via Roadway Express because they have low shipments and lag time (until optimization is reached)

Customers are either very profitable or not very profitable

- Work with the marketing team to close the gap

Housewares has lowest profits

- We need to increase marketing for housewares

Focus more on Midwest

THANK YOU