CelDial: Case Study Analysis

INTRODUCTION

Celdial Corporation is a Telecommunication enterprise which started out as a manufacturer of cell phones but grew to manufacture a broad range of telecommunication products. Hence, it opened its own sales outlets. So, now with the expansion of the company, Celdial needs to put its efforts into revamping the sales and increasing the capacity of the inventory.

OBJECTIVE

Objective of this project is to create a Data Warehouse and perform analysis on Cost and Revenue.

The two systems are defined as

1. **Operational System**

Users of an operational system turn the wheels of the organization. They take orders, sign up new customers, monitor the status of operational activities and log complaints. The operational systems are optimized to process transactions quickly. These systems almost always deal with one transaction record at a time. They predictably perform the same operational tasks over and over, executing the organization's business processes. Given this execution focus, operational systems typically do not maintain history, but rather update data to reflect the most current state.

2. **Data warehouse System**

Users of a DW/BI system, on the other hand, watch the wheels of the organization turn to evaluate performance. They count the new orders and compare them with last week's orders, and ask why the new customers signed up, and what the customers complained about. They worry about whether operational processes are working correctly. Although they need detailed data to support their constantly changing questions, DW/BI users almost never deal with one transaction at a time. These systems are optimized for high-performance queries as users questions often require hundreds of thousands of transactions to be searched and compressed into an answer set. To

further complicate matters, users of a DW/BI system typically demand that historical context be preserved to accurately evaluate the organization's performance over time**.**

SCOPE OF THE PROJECT

The project will help the user to analyze the constant revenue of various product model manufactured by celdial. This analysis could be done on various grounds incorporating factors such as time, manufacturing region, order, inventory and sales region. The project will be limited to total cost and revenue. The manufacturing cost are calculated on the inventory level and hence the cost of the components are considered. The data warehouse will be flexible enough to accommodate in future changes. This will also enable us to know the available quantity in the inventory, the reorder level, discounts on the models, total cost and revenue on a daily weekly and monthly basis with desired granularity.

UNDERSTANDING & ANALYZING REQUIREMENTS –

Design Approach:

Conceptual Model Design

• Data Mart chosen: Sales, Inventory

• Granularity specified: Time (week, month) , Outlet (corporate, retail)

• Dimensions: Time, Customer, Product, Employee, Manufacturing

• Facts Chosen: Sales ,Inventory

Entity Details

FACT TABLE	DIMENSION	No. of ATTRIBUTES
Inventory(10)	Manufacturing	4
	Product_Model	7
	Order	4
	Time	5
	Components	3
Sales(13)	Order	4
	Product_Model	7
	Customer	6
	Outlet	6
	Time	5

Logical Design: Required Trace Ability Matrix

Subject Area	Key Business Measures	Granularity	Dimensions involved in Analysis
SALES	Total Revenue	Time: Day,Week, Month	Time, Order, Outlet, Product _Model, Customer
	Total Sold Quantity	Outlet: Retailer, Corporate Sales Office	
	Discount	Product type, Model	
INVENTORY	Total Cost	Time: Day,Week, Month	Time, Manufacturing, Order, Components, Product_Model
	Available Quantity	Inventory: Product type, model.	
	Reorder	Inventory: Product type, model.	

FACT / DIMENSION	Total sold quantity	Total produced quantity	Re-order Level	Total Revenue	Total Cost	Discount
Time(D)	✓	✓	✓	✓	✓	✓
Order(D)	✓		✓	✓		✓
Manufacturing(D)		✓	✓		✓	
Product Model(D)	✓	✓	✓	✓	✓	✓
Inventory(F)		✓	✓		✓	
Sales(F)	✓			✓		✓

Physical Design:

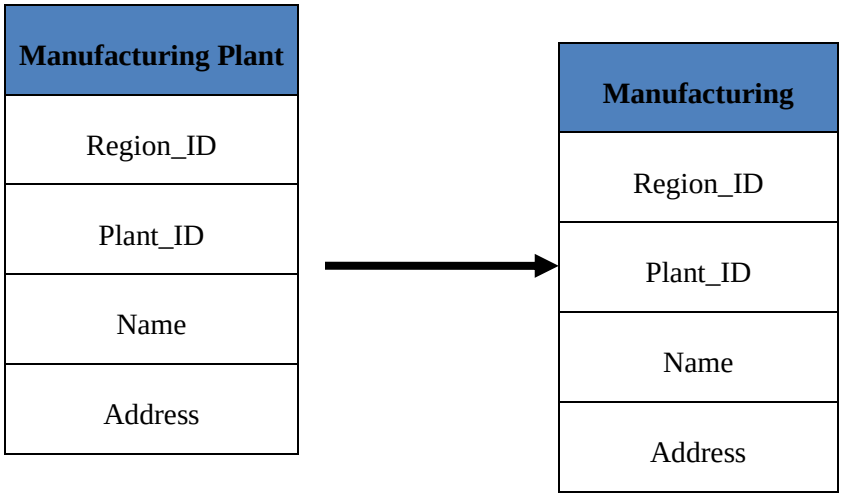
DIMENSION	ATTRIBUTES	STANDARDS
MANUFACTURING	REGION_ID	NUMBER(6)
	PLANT_ID	NUMBER(5)
	NAME	VARCHAR2(30)
	ADDRESS	VARCHAR2(80)
COMPONENTS	COMPONENT_ID	NUMBER(5)
	UNIT_COST	NUMBER(5)
	COMPONENT_DESC	VARCHAR2(80)
PRODUCT MODEL	PRODUCT_ID	NUMBER(5)
	MODEL_ID	NUMBER(5)
	PROD_DESC	VARCHAR2(80)

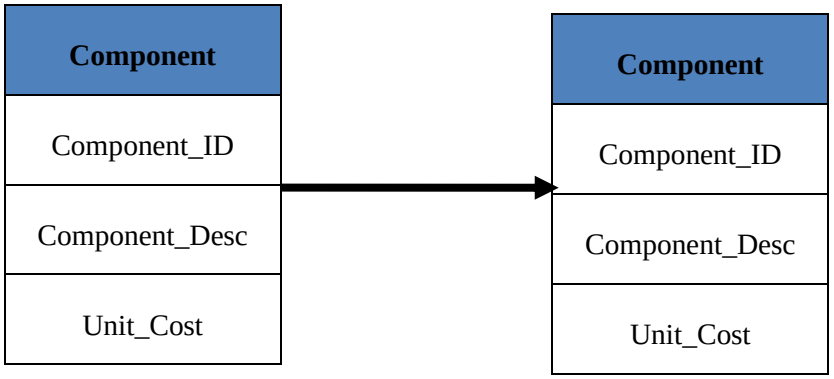
	NO_OF_COMPONENTS	NUMBER(5)
	SUGGESTED_WP	NUMBER(8)
	SUGGESTED_RP	NUMBER(8)
	VOLUME_DISC	CHAR(1)
TIME	TIME	DATE
	DATE	DATE
	WEEK	DATE
	MONTH	DATE
OUTLET	OUTLET_ID	NUMBER(5)
	REGION_ID	NUMBER(5)
	SALESPERSON_ID	NUMBER(5)
	NAME	VARCHAR2(30)
	NO_OF_ORDER_DESKS	NUMBER(5)

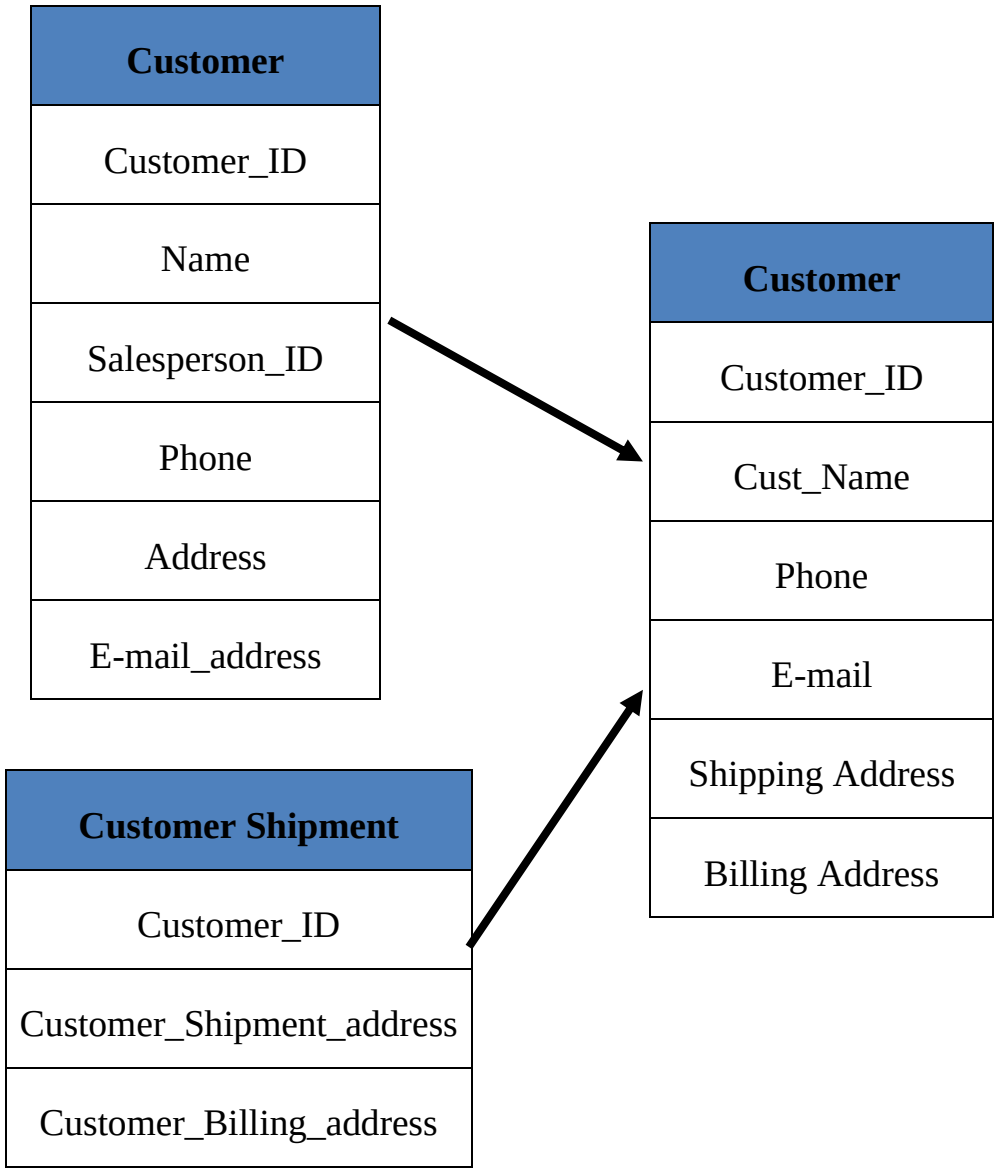
	ADDRESS	VARCHAR2(80)
CUSTOMER	CUSTOMER_ID	NUMBER(5)
	CUST_NAME	VARCHAR2(30)
	PHONE	NUMBER(10)
	EMAIL	VARCHAR2(50)
	SHIPPING ADDRESS	VARCHAR2(80)
	BILLING ADDRESS	VARCHAR2(80)
ORDER	ORDER_ID	NUMBER(5)
	PRODUCT_ID	NUMBER(5)
	MODEL_ID	NUMBER(5)
	QUANTITY	NUMBER(5)

Operational to Dimensional Model

MAP:



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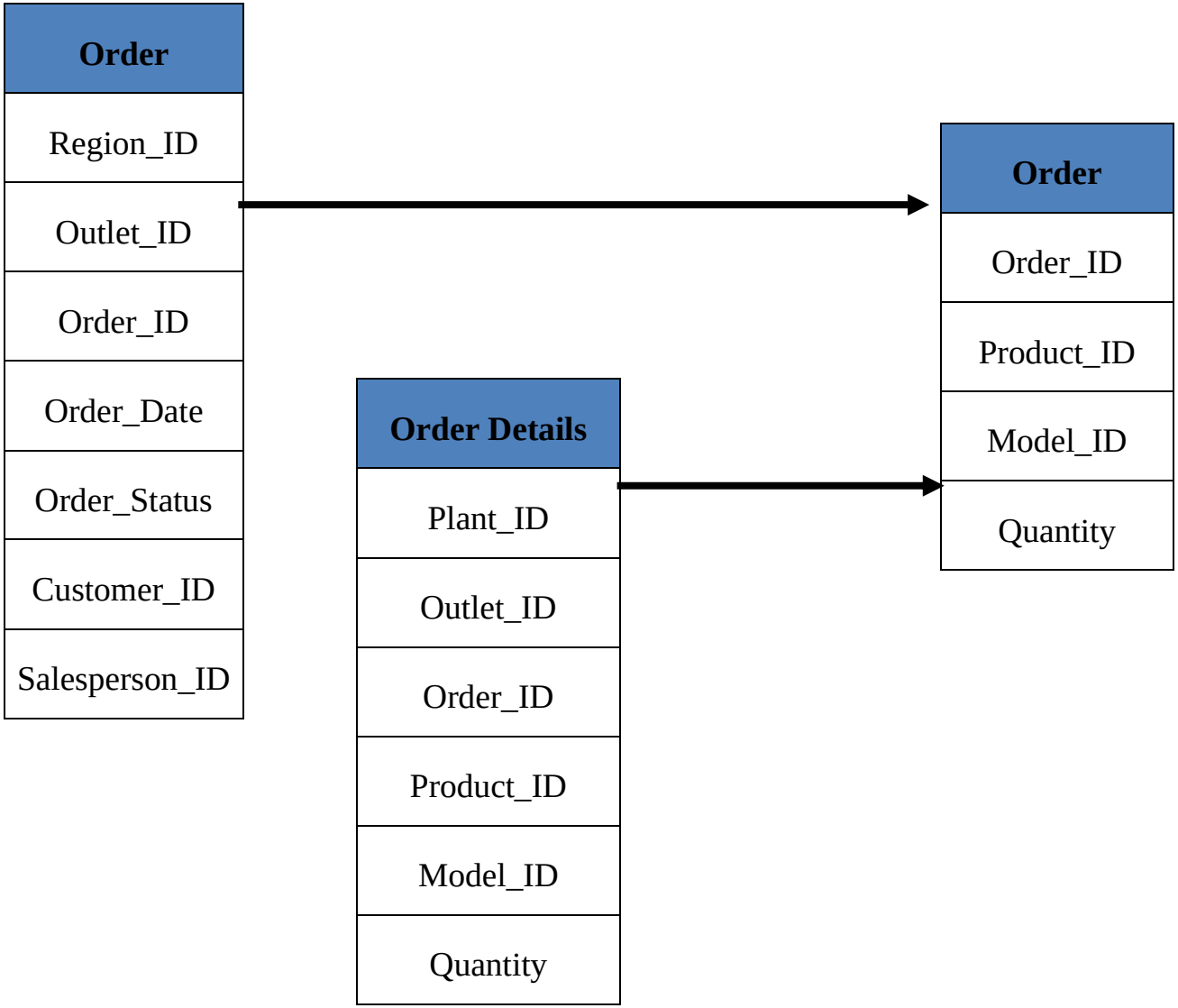
Name
Salesperson_ID
Phone
Address
E-mail_address
Customer
Customer_ID
Cust_Name
Phone
E-mail
Shipping Address
Billing Address
Customer Shipment
Customer_ID
Customer_Shipment_address
Customer_Billing_address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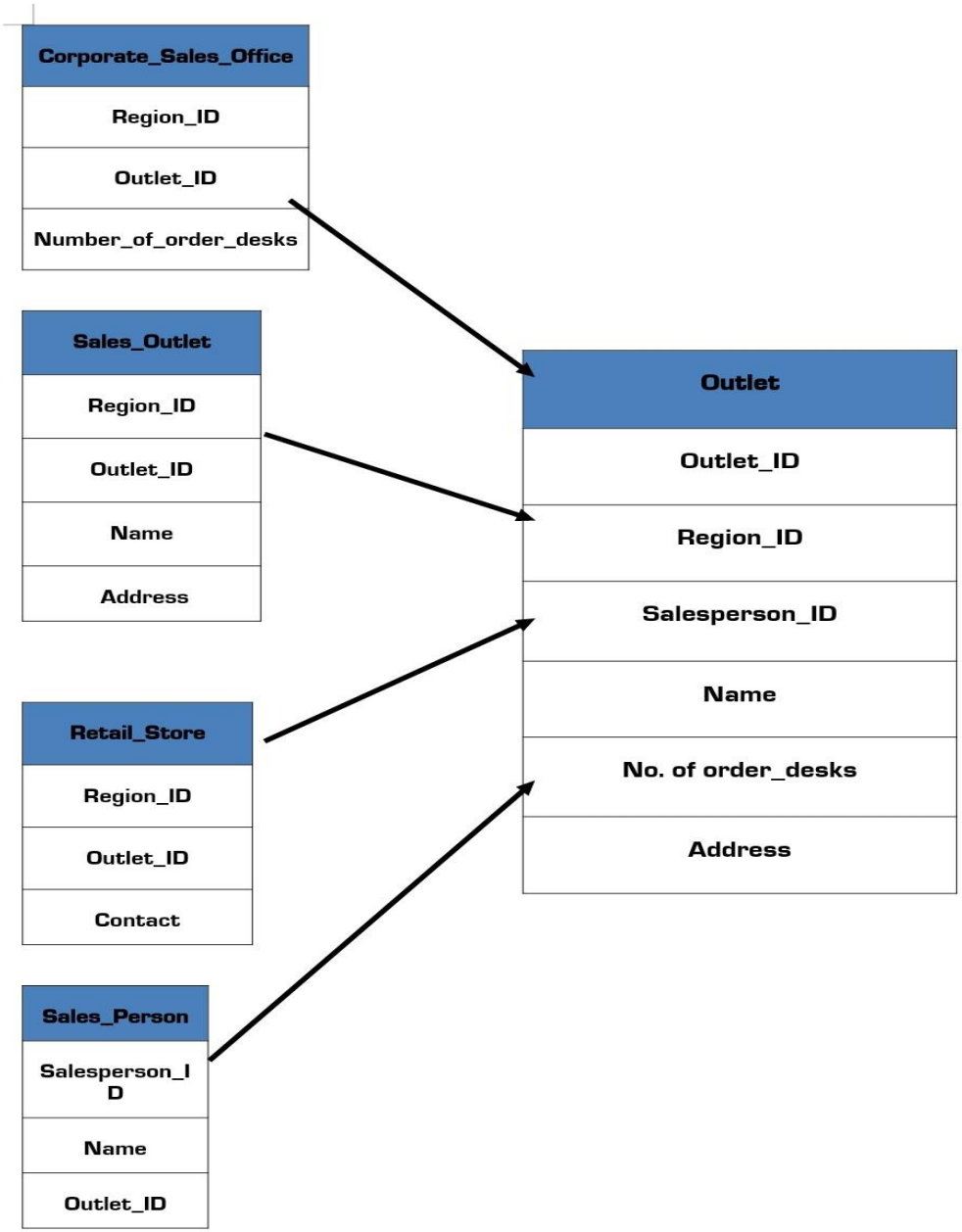
Outlet_ID
Order_ID
Order_Date
Order_Status
Customer_ID
Salesperson_ID
Order
Order_ID
Product_ID
Model_ID
Quantity
Order Details
Plant_ID
Outlet_ID
Order_ID
Product_ID
Model_ID
Quantity


Corporate_Sales_Office
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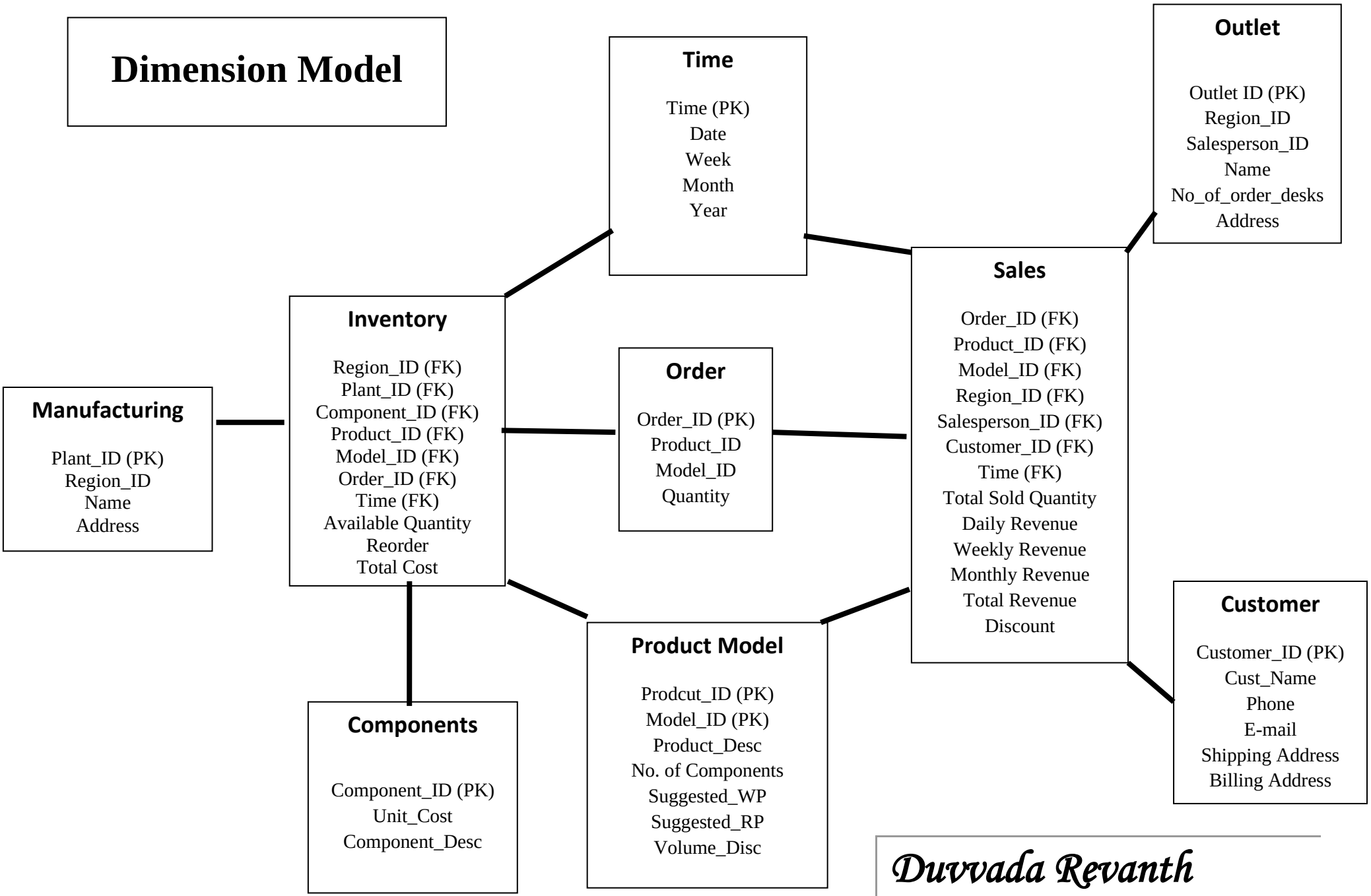
Outlet_ID
Number_of_order_desks
Sales_Outlet
Region_ID
Outlet_ID
Name
Address
Retail_Store
Region_ID
Outlet_ID
Contact
Sales_Person
Salesperson_ID
Name
Outlet_ID
Outlet
Outlet_ID
Region_ID
Salesperson_ID
Name
No. of order_desks
Address

Dimension Model



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