

CelDial: Case Study Analysis

INTRODUCTION

CelDial Corporation, which started as a cellular phone manufacturer has expanded its product line into telecommunications products. As their corporation grew, they expanded their presence into having its own sales outlets. Furthermore, CelDial has opened new plants, sales offices and stores with respect to its growing demands. As the expansion was emphasized by the corporation, the effectiveness of the expansion was not thought of. As the CelDial's growth has started to level off, they started to focus on the performance of the organization. CelDial has proposed the IT department to implement a data warehouse. Even though CelDial has their cost and revenue figures available for the company as a whole, little data is available at the manufacturing plant or sales outlet level regarding cost revenue, and the relationship between them.

OBJECTIVE

The two systems are defined as

1. Operational System

The operational system in CelDial, does not have any means to calculate the cost of the unit model of the product. The actual value of the model is calculated by the financial system with no reference to the quantity manufactured. The cost the product is calculated by the number of the components it contains. The value of all the components added together is calculated as the value of the product

2. Data warehouse System

The proposed Data Warehouse System provides an up-to-date copy of the organization structure because of the Importance of the organizational understanding. This system is used to efficiently analyze the cost and revenue of CelDial. The IT team has requested the operational systems be changed to start recording the actual cost of a manufactured model. Data Warehouse System efficiently integrates the otherwise divided parts of manufacture and supply. Whenever any product goes below the marked quantity, it emphasizes to increase in production as to maintain supply chain efficiency. Data Warehouse will enable CelDial to escalate their operational functionality as its expandable to new changes.

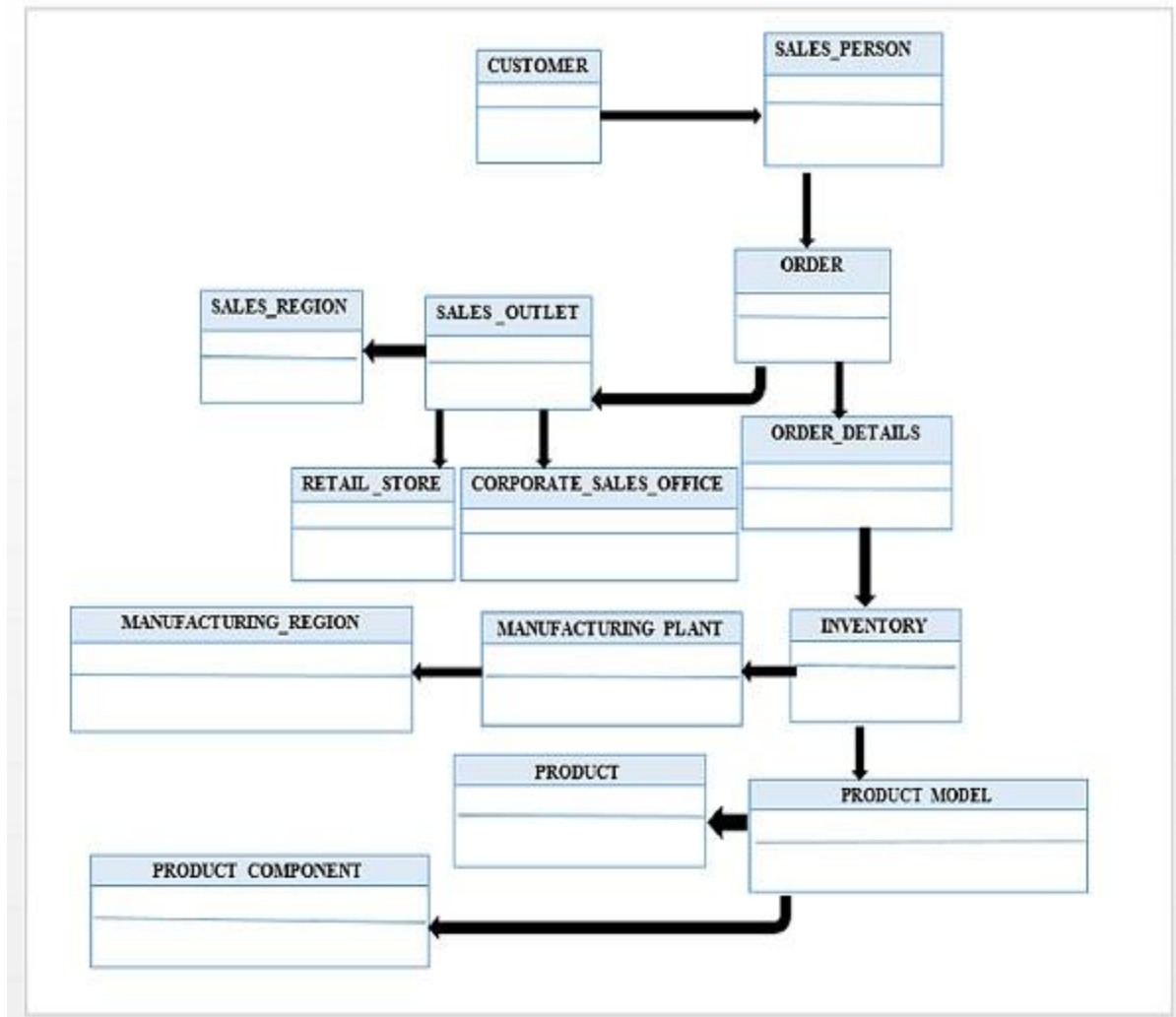
SCOPE OF THE PROJECT

The Scope of the project is entirely limited to the direct costs and revenues associated with products. Currently, as CelDial does not have any method to calculate manufacturing costs, they cannot be

allocated at the product level. Only Component costs can be included. Expendability of the Data Warehouse is expected to accommodate the future changes and additions which might include manufacturing and overhead costs. IT created a team consisting of one data analyst, one process analyst, one manufacturing plant manager and one sales region manager for the project.

UNDERSTANDING & ANALYZING REQUIREMENTS – Design Approach:

Conceptual Model Design:



Entity Details

ENTITY	FACT/DIMENSION
CUSTOMER	DIMENSION
SALES_PERSON	DIMENSION
SALES_REGION	DIMENSION
SALES_OUTLET	DIMENSION
ORDER	DIMENSION
RETAIL_STORE	DIMENSION
CORPORATE_SALES_OFFICE	DIMENSION
ORDER_DETAILS	DIMENSION
MANUFACTURING_REGION	DIMENSION
MANUFACTURING_PLANT	DIMENSION
INVENTORY	FACT
PRODUCT	DIMENSION
PRODUCT_COMPONENT	DIMENSION
PRODUCT_MODEL	DIMENSION
SALES	FACT

ENTITY	NUMBER OF ATTRIBUTES
CUSTOMER	6
SALES_PERSON	4
SALES_REGION	3
SALES_OUTLET	5
ORDER	9
RETAIL_STORE	3
CORPORATE_SALES_OFFICE	3
ORDER_DETAILS	10
MANUFACTURING_REGION	3
MANUFACTURING_PLANT	4
PRODUCT	2
PRODUCT_COMPONENT	7
PRODUCT_MODEL	6
INVENTORY	6
SALES	8

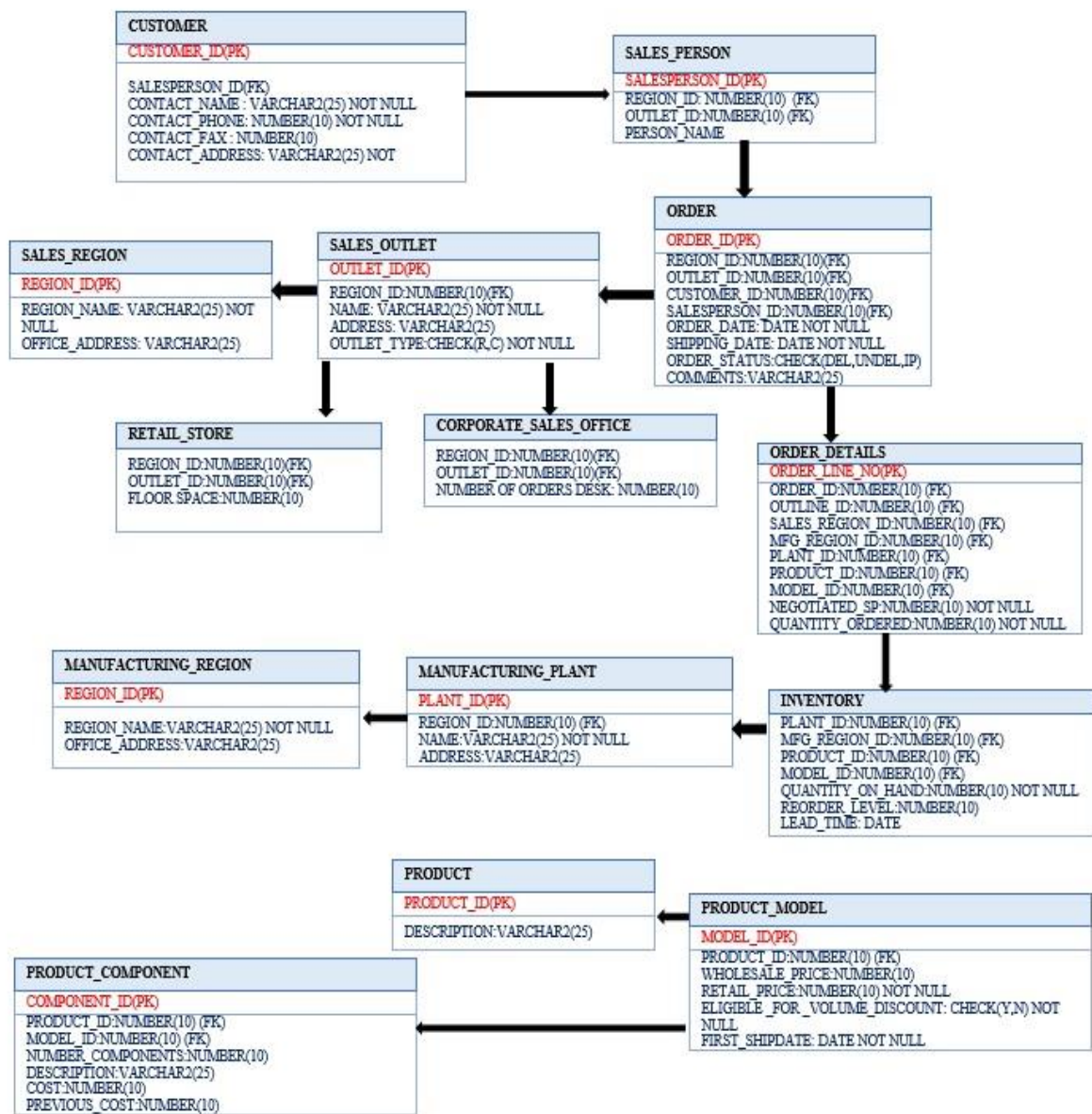
Required Trace Ability Matrix

SUBJECT AREA	KEY BUSINESS MEASURES	GRANULARITY	DIFFERENT KIND OF ANALYSIS	DIMENSIONS INVOLVED IN ANALYSIS
SALES	Total revenue Total quantity sold Discount	Week, month Outlet type: retail, corporate Product type, model	<ul style="list-style-type: none">• Total revenue for each model, for each region• Percentage of products eligible for discounting• Products not sold this week, month• Top five products/models by revenue, by cost, by quantity• Number of employees with no sales last month	Time Customer Product Orders Employees
INVENTORY	Total cost Reorder_level	Week, month Product type, model	<ul style="list-style-type: none">• Average quantity on hand and reorder level by manufacturing plant• Total cost for each model type, for each region	Product Manufacturing Time

Physical Design

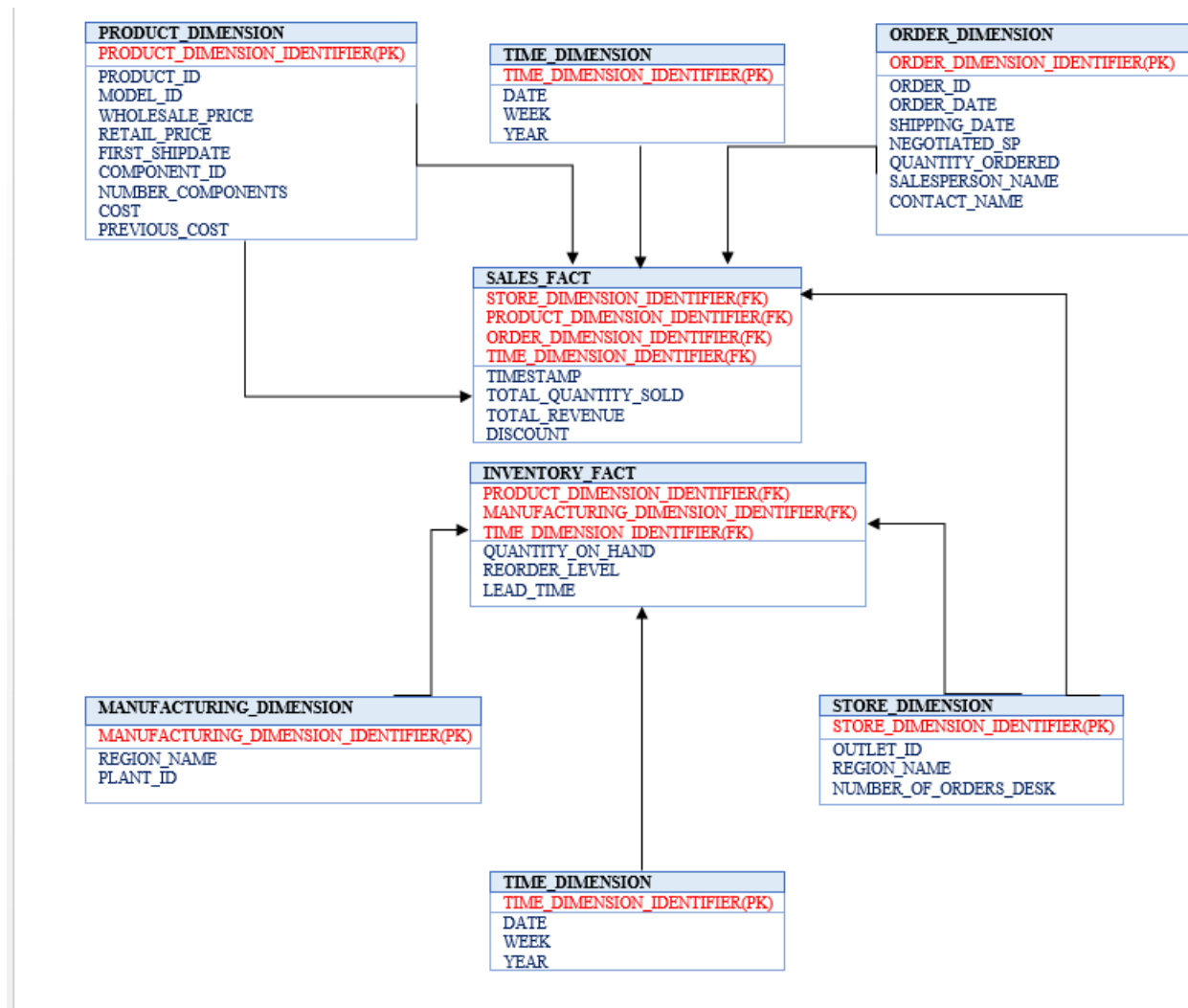
Data Usage	Standard
Timestamp	Date
Total_Quantity_Sold	Number(8)
Total_Revenue	Number(8)
Discount	Number(8)
Quantity_on_hand	Number(8)
Reorder_level	Number(8)
Lead_time	Date
Outlet_id	Number(8)
Order_id	Number(8)
Customer_id	Number(8)
Product_id	Number(8)
Model_id	Number(8)

Plant_id	Number(8)
Wholesale_price	Number(8)
Retail_Price	Number(8)
Component_id	Number(8)
Shipping_date	Date
First_Shipdate	Date
Order_date	Date
Region_name	Varchar2(20)
Customer_name	Varchar2(20)
Salesperson_name	Varchar2(20)

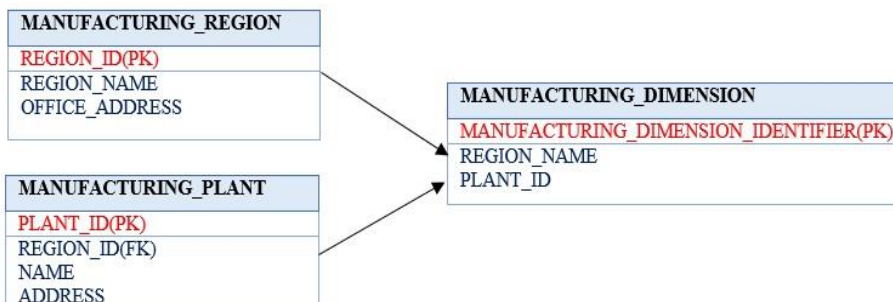


Operational to Dimensional Model - Map:

Dimension Model:



Map:



SALES_OUTLET
OUTLET_ID(PK)
REGION_ID(FK)
NAME
ADDRESS
OUTLET_TYPE

SALES_REGION
REGION_ID(PK)
REGION_NAME
OFFICE_ADDRESS

CORPORATE_SALES_OFFICE
REGION_ID(FK)
OUTLET_ID(FK)
NUMBER OF ORDERS DESK

STORE_DIMENSION
STORE_DIMENSION_IDENTIFIER(PK)
OUTLET_ID
REGION_NAME
NUMBER_OF_ORDERS_DESK

ORDER
ORDER_ID(PK)
REGION_ID(FK)
OUTLET_ID(FK)
CUSTOMER_ID(FK)
SALESPERSON_ID(FK)
ORDER DATE
SHIPPING DATE
ORDER STATUS
COMMENTS

ORDER DETAILS
ORDER_LINE_NO(PK)
ORDER_ID(FK)
OUTLINE_ID(FK)
SALES_REGION_ID(FK)
MFG_REGION_ID(FK)
PLANT_ID(FK)
PRODUCT_ID(FK)
MODEL_ID(FK)
NEGOTIATED SP
QUANTITY ORDERED

SALES PERSON
SALESPERSON_ID(PK)
REGION_ID(FK)
OUTLET_ID(FK)
SALESPERSON NAME

CUSTOMER
CUSTOMER_ID(PK)
SALESPERSON_ID(FK)
CONTACT NAME
CONTACT PHONE
CONTACT FAX
CONTACT ADDRESS

ORDER_DIMENSION
ORDER_DIMENSION_IDENTIFIER(PK)
ORDER_ID
ORDER DATE
SHIPPING DATE
NEGOTIATED SP
QUANTITY ORDERED
SALESPERSON NAME
CONTACT NAME

PRODUCT
PRODUCT_ID(PK)
DESCRIPTION

PRODUCT_MODEL
MODEL_ID(PK)
PRODUCT_ID(FK)
WHOLESALE PRICE
RETAIL PRICE
ELIGIBLE_FOR_VOLUME_DISCOUNT
FIRST_SHIPDATE

PRODUCT_COMPONENT
COMPONENT_ID(PK)
PRODUCT_ID(FK)
MODEL_ID(FK)
NUMBER_COMPONENTS
DESCRIPTION
COST
PREVIOUS_COST

PRODUCT_DIMENSION
PRODUCT_DIMENSION_IDENTIFIER(PK)
PRODUCT_ID
MODEL_ID
WHOLESALE PRICE
RETAIL PRICE
FIRST_SHIPDATE
COMPONENT_ID
NUMBER_COMPONENTS
COST
PREVIOUS_COST

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