Portfolio Milestone 1

Austin Brown

Colorado State University

MIS541

Dr. Goodwin

6/19/2022

**Business Process**

The business process in question for this portfolio project is that of Regional Sales Analysis. Using the Northwind database as a data source, we aim to create a table suitable for the aggregation and analysis of sales information by Region. More specifically, we are looking to see total sales revenue by product within each region to allow us to pinpoint where products are driving the most revenue. Process deliverables are in the form of a stakeholder report which provides desired visibility in sales performance by region.

The fact table design is a Transactional Fact table meant to be aggregated and analyzed in a BI tool such as Power BI – keeping it transactional maintains the lowest grain necessary for a wide array of analysis though it does technically not meet the proper rules of grain selection. In these cases I am more concerned with creating a reusable and dynamic bus.

Business Questions:

1. What region grosses the highest revenue?
2. What product grosses the highest revenue?
3. We can no longer operate in region X. Based on current revenue, what is our anticipated loss?

**Fact Table Grain**

The grain of the fact table is the unit and dollar value associated with every product sold in every order within all regions. As such, foreign keys will be designated as follows:

* Region\_ID, Order\_ID, Product\_ID

These will be used to separate and aggregate factual sale records (i.e. unit\_price, unit\_quanity) for revenue amounts.

**Dimension Tables**

1. **Products**
   * Product\_id
     1. Integer
   * Product\_name
     1. Text
   * Unit\_price
     1. Numeric / Money
2. **Order**
   * Order\_id
     1. Primary Key
   * Employee\_id
     1. Foreign Key
3. **Order Details**
   * Order\_id
     1. Integer
     2. Foreign Key
   * Product\_id
     1. Integer
     2. Foreign Key
   * Unit\_price
     1. Numeric / Money
   * Quantity
     1. Numeric
   * Discount
     1. Numeric
4. **Employee**
   * Employee\_id
     1. Integer
     2. Primary Key
5. **Employee**\_**Territory**
   * Employee\_id
     1. Integer
   * Territory\_id
     1. Integer
6. **Territories**
   * Territory\_id
     1. Integer
     2. Primary Key
   * Region\_id
     1. Integer
     2. Foreign Key
7. **Region**
   * Region\_id
     1. Integer
     2. Primary Key
   * Region\_description
     1. Text

**Fact Table**

1. **Regional Sales**
   * Region\_id
     1. Integer
     2. Primary Key
   * Product\_id
     1. Integer
     2. Foreign Key
   * Order\_id
     1. Integer
     2. Foreign Key
   * Employee\_id
     1. Integer
     2. Foreign Key
   * Unit\_sale\_price
     1. Numeric / Money
   * Unit\_quantity
     1. Numeric
   * Product\_name
     1. Text
   * Region\_description
     1. Text

Figure - Star Schema w/ Cardinality

Graphical user interface, application

Description automatically generated

**References**

*Chapter 8: Data Types – Part II. The SQL Language*. Postgres. Retrieved on June 19th, 2022 from https://www.postgresql.org/docs/current/datatype.html

Ross, Margy; Kimball, Ralph. (2013). *The Data Warehouse Toolkit: The Definitive Guide to Dimensional Modeling*. Wiley