Sam Peckinpah

Professor Zhan

GSB 520

1. Identify the Business Process/Activity that would serve to source data of interest. What portion of the organization would have accurate information about the entities you need to gather information from? This allows you to focus on the systems that support this process/activity for data gathering:

For the clothing retailer, they want to focus on products and the dates sold. The portion of the organization we will focus on are the time and item dimension tables within the Star Schema. Therefore our dimensional model will provide one fact table with a combination of the different dimensions to better understand which products can be used in promos as a mix and forecast demand based on quarterly standings.

2. Describe the Grain that will serve the purposes described above. What is the level of detail that is contained within one entry of the fact table you are designing? Notice there are two different questions. Also, note that you can always aggregate (i.e. produce weekly information from daily data), but disaggregation is not possible (i.e. determine what happened on Monday from weekly data).

In order to identify when specific items are selling the best to forecast demand and which products sell together we will use a transactional grain. The transactional grain will allow our retailer to gather a database of receipts with one or several items from a specific date. The time of the purchases can be utilized too in the development of promotions for products. Based on what time/date a product sells best can help the retailer understand where to place promotions. With a transactional grain data analytics can be done on any kind of level as well from orders placed at certain hours in the store to which products together sell best at certain times throughout the year.

3. Identify the Dimensions based on the chosen grain.

Given the chosen grain, the dimensions will include Employees, Date, Time, Stores (chain of stores), Items, and a dimension for the Promotions of underperforming products. All of the dimensions will link to a sales fact table that will provide the time, item, store, promotion, and sales quantities/dollar amounts. From the fact table our clothing retailer will be able to identify promotion opportunities for the underperforming products as well as forecast demand.

4. Add to the dimensions attributes that you would want to store about each of these dimensions in order to add context for “slicing and dicing” the quantitative measures you may collect. Identify the attributes per dimension.

Date

* Date\_ID
* Date
* Fiscal\_Quarter
* Year
* Holiday (Can be used for promotions)

Time

* Time\_ID
* Hour
* AM\_PM
* M\_A\_N (Identify morning afternoon night for promotions)

Customers

* Cust\_ID
* Cust\_Name
* Cust\_Address
* Cust\_City
* Cust\_State
* Cust\_ZIP
* Cust\_Telephone
* Cust\_Email

Items

* Item\_ID
* Item\_Name
* SKU\_Number (Number combination underneath product names on receipt)
* Item\_Category
* Item\_Price

Stores

* Store\_ID
* Store\_Name
* Store\_Address
* Store\_City
* Store\_State
* Store\_ZIP
* Store\_Manager

Promotions

* Promo\_ID
* Promo\_Title
* Promo\_Start\_Date
* Promo\_End\_Date
* Promo\_Category (Online, newspaper, television ad, etc.)

Employees

* Employee\_ID
* Employee\_Name
* Employee\_Title
* Employee\_Supervisor
* Employee\_Address
* Emp\_Hire\_Date
* Emp\_End\_Date (Can identify if employees quit around the same time to identify employee issues)

5. Identify the Facts that would quantitatively describe your chosen grain. What numeric measures (if any) do you want to collect in the fact table that will serve to inform decision making?

Sales\_Record

* Sales\_ID
* Time\_ID
* Date\_ID
* Employee\_ID
* Customer\_ID
* Item\_ID
* Store\_ID
* Promo\_ID
* Quantity\_Sold
* Sale\_Total
* Sale\_Category (Cash, credit, debit, apple pay, etc.)
* Cost\_of\_Sale (Dollar amount to products sold)
* Total\_Profit
* Promo\_Dollar\_Amount

6. Draw the Dimensional Model that you described above. Make sure to include the fact table, dimensions, and cardinalities.

