Data Warehousing

Practical Task # 03

Task 3B

1. Consider a service provider like BSNL who wants to maintain and query the customer billing data in their warehouse Each month, the operational billing system generates a bill for each phone number also known as service line. Since the wireless company has millions of service lines, thus represents a significant amount of data. Each service line is associated with a single customer. However, a customer can have multiple wireless service lines, which appear as separate line items on the same bill, each service line has its own set of billing metrics, such as the number of minutes used and monthly service charge. There is a single rate plan associated with each service line on a given bill; this plan can change as customers usage habits evolve. Finally, a sales rep (and his or her respective sales organization and channel) is associated with each service line in order to evaluate the ongoing billing revenue stream generated by each rep and channel partner.

   Identify various fact and dimension tables needed for this scenario and Draw a **fact constellation schema**. Also identify the various attributes and measures that are to be populated into the fact tables and dimension tables of schema.

2. A data cube, C, has 4 dimensions, TIME, LOCATION, CUSTOMER, PRODUCT and each dimension has exactly 50 distinct values in the base

cuboid. Assume that there are no concept hierarchies associated with the dimensions.

(a) What is the maximum number of cells possible in the base cuboid?

(b) What is the minimum number of cells possible in the base cuboid?

(c) What is the maximum number of cells possible (including both base cells and aggregate cells) in the data cube, C?

(d) What is the minimum number of cells possible in the data cube, C?