

## CHAPTER 3

### DISCUSSION OF THE SYSTEM UNDER STUDY

#### 3.1 Overall View of the Company

The company understudied is a distributor of construction and decorative materials. It is located in the city of Buriram since 1939. That is a kind of a family business. The materials have several types and sizes. The distributor orders a wide variety of items from many suppliers. Several items are ordered and transported by truck. The products of distributor can be classified below.

Product	Supplier
1. Roman Tile	1. Siam Fiber Cement
2. Small Corrugated Sheet	2. Siam Fiber Cement
3. Flat Sheet	3. Siam Fiber Cement
4. Gypsum Board	4. Siam Gypsum Industry
5. Round Bar and Deformed Bar	5. Siam Iron and Steel
6. CPAC Monier and Round-Ridge Collection	6. CPAC Roof Tile
7. CPAC Paving Block	7. Siam CPAC Block
8. PVC Pipe and Fittings	8. Nawaplastic Industries (Saraburi)
9. Cotto Ceramic tile	9. Thai Ceramic
10. Sanitary Ware	10. Siam Sanitary Ware Industry
11. Steel Door and PVC Door	11. Siam Nawaphan
12. Grey Cement and White Cement	12. Siam Cement
13. Paints	13. JBP, TOA, Captain
14. Screwdriver, wrench, pliers, electric drill, etc.	14. Hardware
15. Hammer, vise, wire, nail, etc.	15. Tools

### **3.2 Inventory Control and Transportation**

The distributor does not have a systematic in inventory control. Everyday the clerk has duty to check stocks and calculate order quantities. When stock of any item decreases level that it is expected to order, the clerk will estimate a quantity to order by using past ordering experiences. For example, stock of roman tile uncolor 1.20 cm. is decreased level to about 25 per cent. The distributor will order this item along with other items that have less available stock levels. Decreasing stock level of items is not a certain estimation for ordering. Ordered items are derived from both the same supplier and different supplier. Ordered items are combined by the different suppliers that have manufacturing plants in the same area. Ordered items are often combined by the different suppliers.

For transportation, ordered items are considered a unit weight of each items for truck loading capacity. There are two 10-wheel trucks used. Maximum loading capacity of 10-wheel truck is 13 tons or 13,000 kgs. Ordered items are calculated the total weights that should not exceed the maximum loading capacity. If the loading capacity is available, the items from the same supplier or different supplier are considered by available stock levels. Ordered items from the same supplier are considered before the items from the different suppliers. If total weight of ordered items exceeds the maximum loading capacity, there are two ways to choose.

1. If loading capacity exceeds approximately 1 ton (14 ton), all ordered items are defined for transportation. Otherwise, available stock levels from ordered items that are still greater than other ordered items are cut off an order quantity in order to decreasing loading of truck to 13-14 ton.
2. If loading capacity exceeds the maximum loading capacity approximately a half of another 10-wheel truck ( $\approx 6$  ton), another 10-wheel truck is used. It means that a number of trips for transportation is increased. Available loading capacity of another truck is considered again. The less available stock level of items that are ordered by order quantities that are not exceed the maximum loading capacity.

The ordered items are transported from the manufacturing plant of supplier to the distributor. Transportation cost is fixed per trip from the manufacturing plant to the distributor.

#### **Examples of inventory control and transportation**

The following cases are examples of inventory control and transportation of construction materials of actual system.

- In case of the same ordered items supplier and not exceeding loading capacity, roman tile uncolor 1.20cm. is checked stock level and estimated to order by order quantity 1,000 pieces (6,200 kgs.). At the same time, other items are checked. Roman tile uncolor 1.50cm. is ordered by order quantity 200 pieces (1,540 kgs.). Total weights of these two items are 7,740 kgs. (2,600+1,540). There is available loading capacity of 10-wheel truck. Then roman tile dark blue 1.20cm. is ordered by order quantity 400 pieces (2,480 kgs.). So total weights of three items are 10,220 kgs. That is not exceed the maximum loading capacity of truck. These three items derive from the same supplier: Siam fiber-cement.
- In case of the different ordered items suppliers and not exceeding loading capacity, stock levels of items are checked. Roman tile uncolor 1.20cm. and roman tile cocoa of Siam fiber-cement supplier are order by order quantity 600 and 490 pieces respectively. Total weights of these two items are 6,758 kgs. The distributor checks other items in this supplier, but there are available stocks levels that are enough to sale. The items of Siam gypsum industry supplier that the manufacturing plant is located nearby are considered. Gypsum board standard type 120x240cm.square-edge and tapered edge are considered by decreasing stocks levels and customer demands, so these two type of gypsum board are ordered by equal quantity 100 pieces. Total weights of two types of gypsum board are 4000 kgs. So the total weights of four items of two suppliers are 10,758 kgs.
- In case of the different ordered items suppliers and exceeding loading capacity, stock levels of items are checked. Roman tile uncolor 1.20 cm. and roman tile cocoa are ordered by order quantity 600 and 490 pieces respectively. Total weights of these two items are 6,758 kgs. Flat sheet 60x240x0.4 cm. is ordered by order quantity 300 pieces or 3020 kgs. Total weights of these three items of Siam fiber-cement group are 9,778 kgs. Concrete CPAC roof tile oyster grey centurion and red centurion are ordered by order quantities 200 and 300 pieces respectively. Concrete CPAC roof tile tawny brick elabana and tropical tan elabana are ordered by order quantities 200 pieces. Total weights of these four items of CPAC roof tile group are 3,780 kgs. All total weights of seven items of two suppliers are 13,568 kgs.
- In case of only one ordered item and exceeding loading capacity, roman tile red is ordered by order quantity 4,160 pieces (25,792 kgs). The weight is exceeding the maximum loading capacity of truck. Two trips of transportation are considered. Order quantity 2080 pieces (12,896 kgs) is ordered for first trip. Second trip is the same order quantity and weight of first trip.