Jackie Gan

Professor Carl Williams

CIS 4360 Microservices Architecture

Domain Driven Design Written Homework

Let’s imagine our business is an electronics department store. It identifies the best niche electronics for sale, specific inventory for stock, and provide crucial customer service to trouble shoot technical difficulties and maintain customer satisfaction. At the same time, maintain a well-trained staff to provide excellent customer service and support your operations. Diagram

Description automatically generated

Figure 1

In figure 1, we see that the customer goes through store associate first to find the correct product that satisfies the requirements. Next, the data will be generated to the data analyst, if the customer is satisfied about the product, this will show the warehouse associate to buy more inventory from the manufacturer. If the customer has troubles about the item, they will reach out to technical support. If the problem is not resolved this might yield to dissatisfied customer, and data analyst will determine this is not the best product to restock.

Diagram

Description automatically generated

Figure 2

Our Sub team will be responsible for making maintain data and providing analytics to the warehouse associates. This will help store to restock in a more efficient and purposefully manner. Simultaneously, increase customer satisfaction and improve product supports.

First, the data will be published into catalog service with a cache behind to get quicker access of the relational database with key values storage. Next, we will have a load balancer where we get the sales data. The load balancer will help fetch the relational database to improve speed and efficiency. The Discovery Service will store everything into an index database for index query. At the same time, there is also a search service that will help search through the database that query from search key database. In this Domain Driven Design of Figure 2, we can see that the database is structured on each product and feature need. This will have further broken down into smaller pieces that increase modularity. We have separated each domain within different databases.

**Model Overview**

In the beginning customer will come in the store to buy electronics, if the customer does not return the item by a certain date, then we expect the customer to be satisfied. If the customer does return the item, the customer is not satisfied. In this database, it will store all the store info and customer info. Everything will be stored in key value database like the following below.

Data format:

* Date
* Time
* Index
* Person
* Sale
* Item
* Cost
* Satisfaction
* Return
* Technical support
* Store number
* Store location
* And etc

Next, the data engineers and the data analyst will analyze the data and send it off to warehouse associates and managers to decide items will be restocked. Also determine what will need to be restocked during the peak season.