Thomas Tran

SNHU CS-255: System Analysis and Design

Professor Denise Washington

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**Module 3-2 Assignment: Evaluate a Process Model**

**Interpret Hamp Crafts’ current purchase and supply process Data Flow Diagram (DFD). What does it show? What does the current purchase and supply process entail?**

The diagram displays the flow of information and actions involved in the buying and shipment process for Hamp Craft’s local store. The process begins in this order:

1. Customer orders are placed and paid for, then orders are sent to the receiving order services of the store.
2. The services employees then check the order and review the inventory stock items in the warehouse database and follow the Two-Steps.
   * 1. If inventory stock is available, then fill in the order and prepare the shipment to be sent out.
     2. If inventory stock is unavailable, then warehouse employees contact supplier to purchase the inventory needed and prepare the shipment for the delivery.

The data flow of the current purchase and supply process shows where the order begins with the customer placing the order in the local store, and information is sent to the warehouse employees. Where they verify if the inventory items are available to ship out or need to outsource to another supplier, who then prepare the shipment for the orders.

**What are the data sources involved in the current process?**

The data sources that are involved in the current process are:

* 1. **Customer and Merchant orders:** this source contains information about the order, including customer contact details, address, payment information
  2. **Warehouse Inventory and orders**: this source contains information about inventory stock items, which items are available, and which need to be resupplied.
  3. **Shipment and Carriers:** this source contains information related to shipment, like when it is scheduled to send, who is the carrier, what items inside the shipment, and how to track the delivery process.
  4. **Supplier Contracts**: these data sources relate to the suppliers who Hamp Craft purchased their inventory from. The information like the quantity, quality, acquisition cost, and shipment of stocks from each supplier.

**What additional processes are necessary to integrate an online storefront?**

**1. Additional Processes Necessary for Online Integration:** I would like to list these processes below:

* **Online Product Display and Management:** this process will allow Hamp Craft authorized employees to manage and update the online product including item image, details, and availability.
* **Oline Order and Payment Processing:** this process to handle online orders form customer, which includes confirming orders, processing payments, and display of order status.
* **Oline-Inventory Synchronization with physical storefront:** A real-time inventory tracking system that syncs with both the online and local stores to prevent overselling and manage stock levels more efficiently.
* **Customer Services and Communication:** this automated process will send notification like emails and text to customers regarding the order status. Also allow the customer to contact assigned staff to help with questions and order services.
* **Shipping and delivery status:** This process allows the customer to be notified and track the delivery status of their order.

**What additional data sources would the system need to access the products and inventory?**

**Additional Data Sources Needed:** The online storefront will need access:

* **Product Database:** contains product details, including descriptions, prices, images, and inventory status.
* **Customer Database:** contains customer account information, including customer contact information, like name, address, phone, email, payment details, and items purchased.
* **Order-fulfillment Database:** This contains the details of each shipment order by the store, and the tracking number for each shipment. Allow both the store employees and customers to track their respective shipments.

**What additional databases, if any, are needed to support the online storefront?**

**Additional Databases Needed:**

* **Customer Database:** A dedicated database to store and manage both online and local customer information. This is recommended with the open for the online storefront.
* **Inventory and Order Database:** This separate inventory database may be necessary to manage real-time stock levels for both online and in-store sales, and checks on what orders were shipped out or received by the warehouse.

**Would you recommend creating a separate new system for the online storefront or incorporating elements of the online storefront into the current process model? Explain your reasoning.**

I would recommend incorporating elements of the online storefront into the current process model instead of creating a separate system for the online storefront. The reason behind this choice is because of these benefits.

* **Efficiency:** Integrating the online storefront with current process model minimizes redundancy of creating a new system. This created an efficient operation as both online and in-store sales can utilize the same models.
* **Consistency:** By maintaining a single system, there will be a consistent approach to managing products, orders, and customer interactions. Consistency allow the store to keep track of the online and physical inventory status, and manage customer services like orders and communication in coherent.
* **Cost-Effectiveness:** Building new features on an existing system can reduce development costs and implementation time.
* **Scalability:** a unified system can be more easily adapted to accommodate future needs, rather than making updates for two separate systems when needed to scale the business.

This approach ensures efficiency, avoids duplicate work, and provides a seamless experience for customers and staff