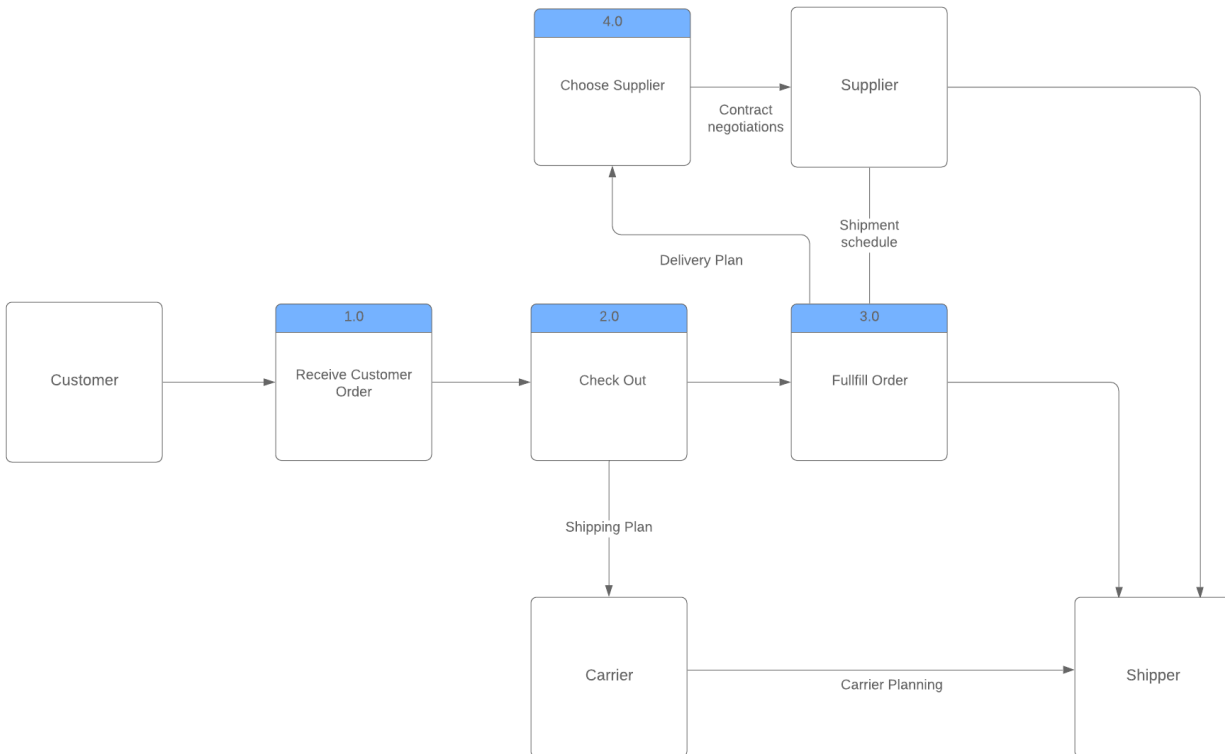# Southern New Hampshire University

CS 255 Module Three: Hamp Crafts' Online Ordering System

Current In-Store Purchase and Supply Process

PROMPT: *Interpret the provided data flow diagram. What does it show? What does the current purchase and supply process entail? What are the data sources involved in the current process?*

The Hamp Crafts' current Purchase and Supply process for in-store purchases. The Customer is the primary source for the System, starting with their purchase. The System is composed of several steps, listed below, that end with the shipping of inventory to the store:

1. The order is processed by Process 1.0, 'Receive Customer Order'
2. The processed order is processed by Process 2.0, 'Checkout,' which creates a Shipping Plan.
3. The Shipping Plan is sent to a Carrier sink, and the order details are processed by Process 3.0, 'Fulfill Order,' which creates a Delivery Plan with Shipment Schedule provided by the Supplier source
4. The Delivery Plan is processed by Process 4.0, 'Choose Supplier,' engaging in Contract Negotiations with the Supplier Sink to provide inventory to the store
5. Information from the fulfilled order process is forwarded to the Shipper sink, which receives Carrier Planning data from the Carrier source and inventory from the Supplier, the endpoint of the System, and the final sink.

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PROMPT: *What additional processes are necessary to integrate an online storefront? What additional data sources would the system need to access the products and inventory? What additional databases, if any, are needed to support the online storefront?*

Hamp Crafts' want to ensure that customers can view products, place an order, and receive confirmation. To accomplish this, the following processes will need to be added:
1. Register New Customer (Optional)
2. Display & Search current Inventory (1st process)
3. Select Items for Purchase (2nd process - before the current Process 1.0)
4. Select Shipping Method (between current Process 1.0 and Process 2.0)

In addition to these processes, these additional Sources will be needed:
1. Admin Source to provide pricing information
2. Warehouse Source to provide current inventory information

The above sources will also act as sinks to perform tasks separate from this process model.
To facilitate transactions, the following data stores may be optimal:
1. Registered Customers to allow customers to save default shipping and payment information, and opt-in for e-mail or SMS communications
2. Shopping Cart to keep track of items selected for purchase until Checkout
3. Product Pricing to manage current prices on items available for purchase
4. Shipping Methods to keep track of currently available shipment methods
5. Purchase History to record a customer's purchases for customer and internal purposes
6. Inventory to record current inventory levels of products

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PROMPT: *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 recommend incorporating these new processes into the current process model. Many of the core functions of the in-store system are mirrored closely in the online system and can be conceptualized as one system quite easily. Indeed, many of the new processes and sources proposed above have in-store counterparts:
- Current inventory is "displayed" in the store on shelves, cases, bins, etc. The store is laid out with signage to make finding an item easier
- Items are selected and placed into a physical Shopping Cart - even if that "cart" is just in-hand.
- An In-store purchase can be considered a Shipping Method - albeit very simple
- Inventory is managed in-store by keeping shelves stocked and could be considered a Warehouse, even if there isn't a physical warehouse

Some of the additional processes could also enhance the in-store experience:
- Registering as a Customer may provide special "VIP" access to deals and special events (Black, 2020)
- Converting to an electronic Point of Sale System (POS) in-store could tie the POS to a shared Product Pricing data store that automatically updates inventory from in-store purchases. (Entrepreneur: Point of Sale (POS) System - Entrepreneur Small Business Encyclopedia, 2023)

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