**Activities 2.1**

1. The business model for Amy’s Candles is shown in Figure 2.13. Identify the information that Amy may need to capture from customers in the market.

**Customer Information:**

Personal Details: Name, contact information (phone number, email address, and mailing address).

Enquiries: Specific questions or clarifications customers have about the products.

Orders: What products they've ordered, the quantity, any special requests or customizations, delivery preferences, and delivery addresses.

Payments: Payment method, transaction details, any discount or loyalty codes used.

Feedback: Reviews on products purchased, suggestions for improvements, or new product ideas.

Purchase History: Products previously bought, frequency of purchases, and any returns or exchanges.

Preferences: Favourite scents, sizes, types of candles, or any seasonal preferences (like holiday-specific candles).

Loyalty Programs or Newsletter Signups: If Amy has a loyalty program or newsletter, capture customer signups, and track engagement.

**Additional Market Insight:**

While the primary focus is on customer information, it's also valuable for Amy to gather data from:

Consumers: General feedback about candles in the market, even if they're not direct customers yet.

Competitors: Monitoring competitors can give insights into popular products, pricing strategies, and market gaps that Amy could exploit.

This answer provides a more direct response to the question, emphasizing the specific types of information Amy should capture from her customers.

1. Section 2.1.1 lists a range of characteristics of information. Use the list to specify the characteristics of information that Amy needs about customer orders to inform material purchasing decisions relating to the purchasing of materials.

A close-up of a form

Description automatically generated

Figure 2.11 deﬁnes the length and type of the attributes for a computer-based form to capture information about suppliers. X is used to indicate an alphanumeric character and 9 is used to indicate a numerical character. The organization’s account number is deﬁned as 9(10); this means that the account number can comprise a maximum of 10 numerical characters.

An attribute describes an aspect, a characteristic of the entity, providing more information about the entity. For the entity supplier, attributes may include:

Supplier name.

Supplier address.

Supplier telephone number.

Supplier fax number.

Supplier website address.

Supplier email address.

Supplier sales contact name.

Organization’s account number.

Payment terms.

Each of the attributes identified has to be defined; this includes a brief description of the attributes shown in Table 2.2

A list of information on a computer

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Each attribute is further defined in terms of its:

Length: The maximum number of characters needed to capture the attribute.

Type: The range of alphabetical, numerical, and special characters that may be used in the attribute.

Structure: The arrangement of alphabetical, numerical, and special characters that may be used in the attribute. (refer to Figure 2.11 above)

**Draw the lifecycle for the entity *customer order*.**

**Customer Order Lifecycle**

This represents the customer initiating an order.

Order Creation

This is where the order details are verified and

Order Confirmation

the availability of items is checked.

This involves preparing the order for shipment.

Processing

Payment

This is the phase where payment is collected from the customer.

The order is sent out for delivery.

Shipping/Dispatch

This indicates that the order has been delivered to the customer

Delivery

Post Delivery Support

Any after-sales service or inquiries are addressed here

Completion/Closure

The order is officially marked as completed.

Feedback/Review

The final stage where the customer is asked for their feedback or review.

**Draw a system model, to support the life cycle of the entity Customer Order**

System Model for "Customer Order" Lifecycle:

1. Order Creation

- Component: Order Entry Module

- 📥 Input: Product selection, Quantity

- ➡️ Process: Customers select products and specify quantities.

- 📤 Output: Order ID, Confirmation Message

2. Order Confirmation

- Component: Verification Module

- 📥 Input: Order ID

- ➡️ Process: Verification of item availability and order confirmation.

- 📤 Output: Order status (Confirmed, Pending, Out of stock)

3. Processing

- Component: Order Processing Module

- 📥 Input: Confirmed Order Details

- ➡️ Process: Preparation of items per order, including custom specifications.

- 📤 Output: Ready-to-ship notification

4. Payment

- Component: Payment Gateway

- 📥 Input: Order total, Payment method details

- ➡️ Process: Secure payment processing.

- 📤 Output: Payment receipt, Transaction status

5. Shipping/Dispatch

- Component: Logistics Module

- 📥 Input: Shipping address, Package details

- ➡️ Process: Arrangement for dispatch, provision of tracking details.

- 📤 Output: Tracking ID

6. Delivery

- Component: Delivery Verification Module

- 📥 Input: Tracking ID, Customer's signature (if applicable)

- ➡️ Process: Confirmation of successful delivery.

- 📤 Output: Delivery status (Delivered, Pending, Failed)

7. Post-Delivery Support

- Component: Customer Support Module

- 📥 Input: Customer queries, Order ID

- ➡️ Process: Addressing customer concerns or queries.

- 📤 Output: Resolutions, Return/Refund status

8. Completion/Closure

- Component: Order Management Module

- 📥 Input: Delivery status, Support ticket status

- ➡️ Process: Officially closing the order.

- 📤 Output: Order closure confirmation

9. Feedback/Review

- Component: Feedback Collection Module

- 📥 Input: Customer feedback, Ratings

- ➡️ Process: Collecting customer feedback and reviews.

- 📤 Output: Feedback acknowledgment

1. **Deﬁne the entity customer order.**

In the provided notes for the Amy's Candles case study, there isn't a detailed breakdown or definition of the "customer order" entity. However, based on general business practices and the context given, here is a suggested definition:

Entity: Customer Order

Definition: The "customer order" represents a formal request or instruction from a customer to Amy's Candles to supply a specified quantity of candles, potentially of various types, sizes, and fragrances, under defined terms and conditions.

Attributes of the "Customer Order" entity might include:

1. Order ID: A unique identifier for the order.

2. Customer Name/ID: The name or identifier of the customer placing the order.

3. Order Date: The date when the order was placed.

4. Delivery Address: Where the candles should be shipped to.

5. Order Details: A list or description of the products ordered, including types, sizes, fragrances, and quantities.

6. Total Amount: The total cost of the order.

7. Payment Status: Whether the order has been paid for, is pending payment, or is on some credit terms.

8. Delivery Date: Expected or promised date of delivery.

9. Order Status: Indicates if the order is pending, processing, shipped, completed, or cancelled.

1. Deﬁne the name, length, and type of attributes for the entity customer order.

For the entity "Customer Order" in Amy's Candles case study, we can define a set of attributes with their respective names, lengths, and types.

1. Order ID

- Length: 10 characters

- Type: Alphanumeric (Allows for a combination of numbers and letters. E.g., CO12345ABC)

2. Customer Name/ID

- Length: 50 characters

- Type: Alphanumeric (E.g., JohnDoe001)

3. Order Date

- Length: 10 characters

- Type: Date (Formatted as YYYY-MM-DD)

4. Delivery Address

- Length: 255 characters

- Type: String (Text)

5. Order Details

- Length: Variable (Depends on the number of items and their details)

- Type: Text/String or could be a reference to another table/entity detailing the items.

6. Total Amount

- Length: 10 characters (Assuming a format like 999,999.99)

- Type: Numeric/Decimal

7. Payment Status

- Length: 10 characters

- Type: String (Values might include "Paid", "Pending", "Credit", etc.)

8. Delivery Date

- Length: 10 characters

- Type: Date (Formatted as YYYY-MM-DD)

9. Order Status

- Length: 15 characters

- Type: String (Values might include "Pending", "Processing", "Shipped", "Completed", "Canceled")

These attributes provide a foundational structure for managing customer orders. They can be further refined or expanded based on additional details from the case study or specific needs of the business. The lengths are also suggested values and can be adjusted as per the software or database requirements and real-world use cases.

1. Develop a form for Amy to capture order details from her customers.

Below is a basic form layout for Amy to capture order details from her customers:

A screenshot of a form

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A screenshot of a computer

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A screenshot of a computer

Description automatically generated

Once filled out, the customer can submit the form to Amy. Amy might want to have this form in both physical (for in-person orders) and digital formats (for online orders). The form can also be adjusted based on feedback from customers or as Amy identifies more specific needs for her business