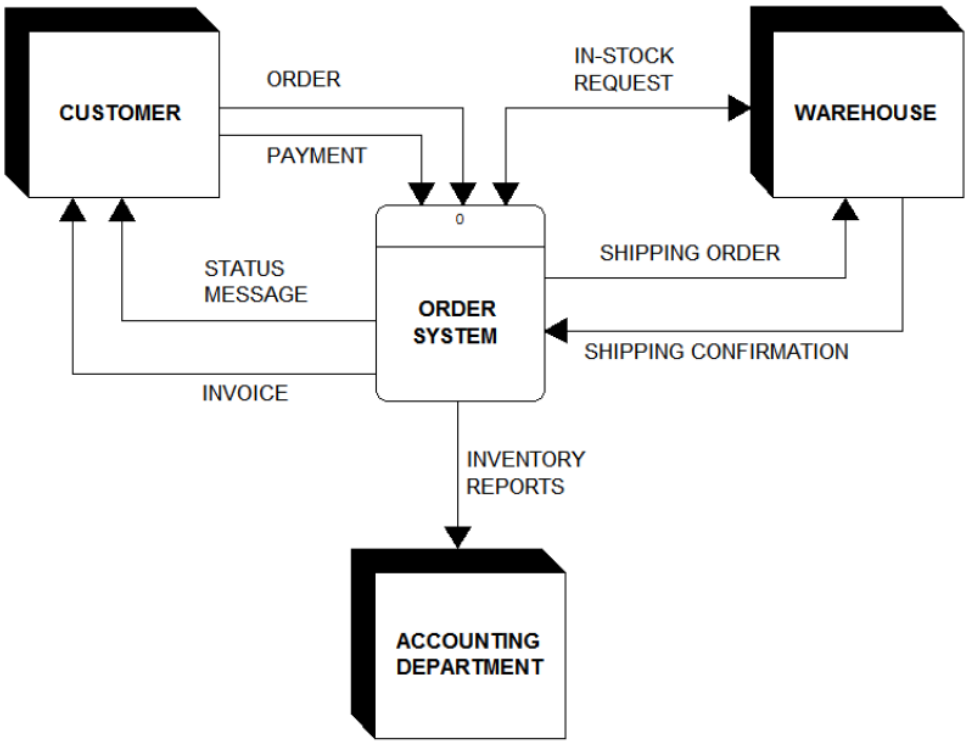
School of Electrical Engineering & Computing
University of Newcastle
COMP1010 –Computing Fundamentals
Workshop Week 7

Data and Process Modelling

Case Study:

Kitchen Gadgets sells a line of high-quality kitchen utensils and gadgets. When customers place orders on the company's Web site or through electronic data interchange (EDI), the system checks to see if the items are in stock, issues a status message to the customer, and generates a shipping order to the warehouse, which fills the order. When the order is shipped, the customer is billed. The system also produces various reports.

Context Diagram



Based on the context diagram above, draw a Diagram 0 for the system.

How to draw diagrams with MS Word and MS Visio?

Data Dictionary

FOR PROCESSES:

Process name/label	Description	Process Number	Process Description

FOR ENTITY TYPES:

Entity Name	Description	Aliases (Alternate Names)	Input Data Flows	Output Data Flows

FOR DATA FLOWS:

Data Flow name/label	Description	Aliases (Alternate Names)	Origin	Destination	Records	Volume and Frequency

FOR DATA ELEMENTS

Entity Name	Attributes	Alias	Data Type & Length	Default Value	Acceptable Values	Source	Security	Responsible Users	Description and Comments

Case in Point 5.2: Rock Solid Outfitters (Part 1)

Leah Jones is the IT manager at Rock Solid Outfitters, a medium-sized supplier of outdoor climbing and camping gear. Steve Allen, the marketing director, has asked Leah to develop a special web-based promotion. As Steve described it to Leah, Rock Solid will provide free shipping for any customer who either completes an online survey form or signs up for the Rock Solid online newsletter. Additionally, if a customer completes the survey and signs up for the newsletter, Rock Solid will provide a $10 merchandise credit for orders of $100 or more. Leah has asked you to develop a decision table that will reflect the promotional rules that a programmer will use. She wants you to show all possibilities, and then to simplify the results to eliminate any combinations that would be unrealistic or redundant.

Case in Point 5.3: Rock Solid Outfitters (Part 2)

Leah Jones, the IT manager at Rock Solid Outfitters, thinks you did a good job on the decision table task she assigned to you. Now she wants you to use the same data to develop a decision tree that will show all the possibilities for the web-based promotion described in Part 1 of the case. She also wants you to discuss the pros and cons of decisions tables versus decision trees.

Discussion Questions

- Describe data and process modelling concepts and tools.
- What is the difference between a context diagram and diagram 0? Which symbol is not used in a context diagram?
- How would you level and balance DFDs?
- Describe a data dictionary and list the types of information it contains.
- What is the purpose of decision tables? How do you create them?