Information Systems Engineering

COMP1304 Coursework

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Section A

A1 Rich Picture

This following Rich Picture shows problem situation of CBC Company after the time that CBS bought SAL Company.

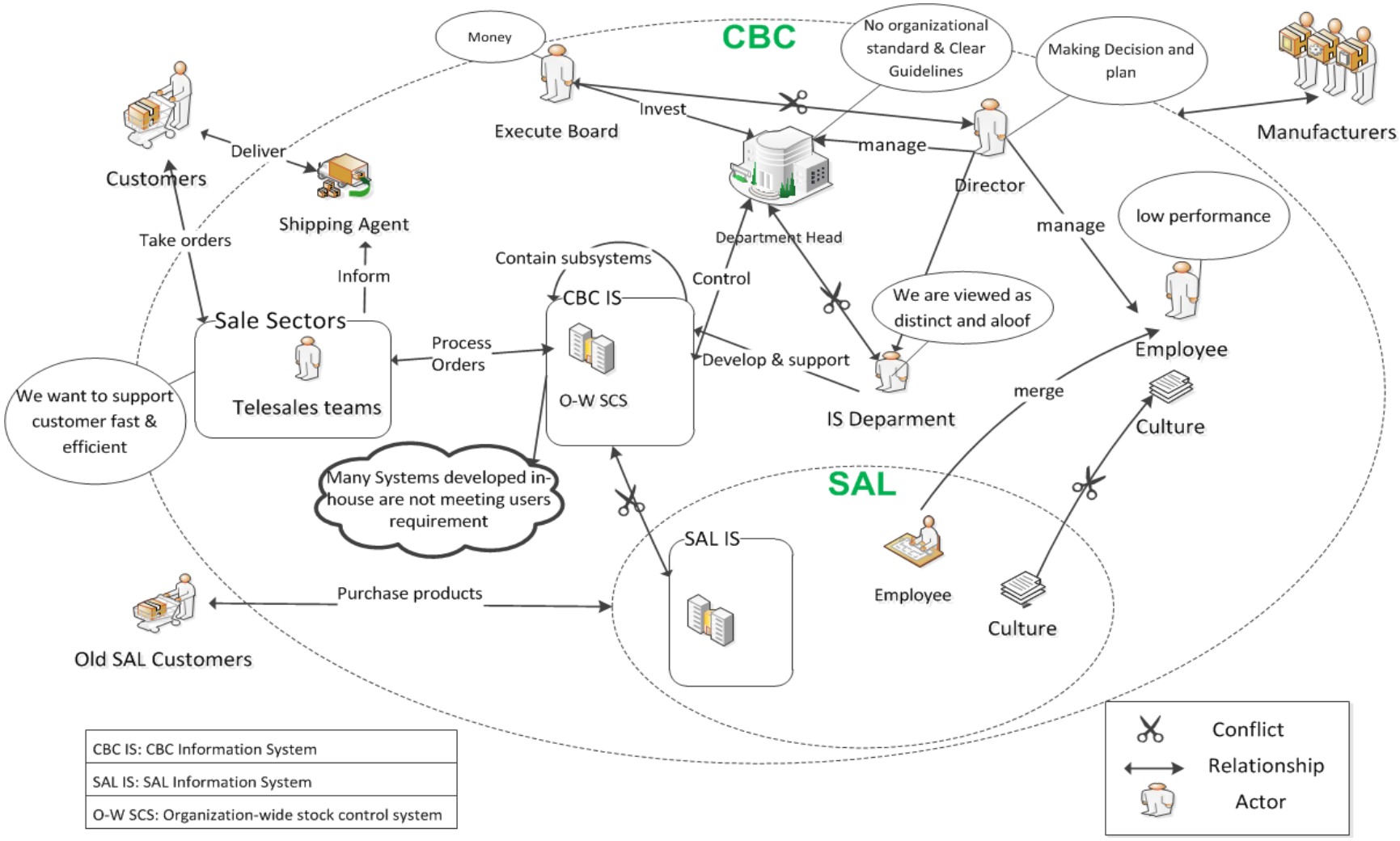

Figure 1: Rich Picture shows problem situation

A2 Process to get final Rich Picture

We develops rich picture by following some steeps:

1. Firstly, we have to determine the boundary of problem situation. In the rich picture above, the boundary here is the CBC environment after migration with SAL.
2. After that, we can identify all peoples, organization, structures involved in the environment.
3. Identify people's concerns, show relationships, conflicts by using bubble, shapes, images …
4. Analysis to identify main focus and key actors.

Main Focus

- **"What is the main focus of the environment shown in your picture?"**

The main focus in environment is the problems in the Information System of CBC Company and the most important is **Organisation-wide Stock Control System**. We determined this focus because most of problem here related to main purpose of CBS is *selling the product* to customers and get profit, money. The problems now are:

- After migration between CBC and SAL, there is two different IS which are supporting for both CBC customers and old SAL customers. This thing makes the management of CBC difficult.
- The IS just supports for Telesales Staff to take orders from customer and process order, so when the customers improve, the Telesales staff performance is lower and lost efficiency
- Systems developed in-house do not meet user's requirements, so it reduces performance also.

Key Actors:

- **"How did you identify the key actors in the environment?" (**ISE Coursework Specification,2011**)**

  In order to answer this question, firstly we have to know what actors are. Actors are people who affect the main problem in environment. They can be the cause of the main problem. They have ability to solve problem. So, in order to identify Key Actors in the environment, we have to find out the main problem, main focus in the environment. Key Actors are most affected /be affected to the main problem.in other word, Key Actors has closed relationship with the main focus in Rich Picture.

There are keys actors in rich picture who have closed relationship with main focus:

- **Telesales Teams**: the telesales team directly work with the Organisation-wide Stock Control System (O-W SCS); they take orders from customers and process orders. Their performance in supporting customers and selling product affects the profit of CBC Company.
- The **IS Department** develop and support O-W SCS. They have a lot experience and good skills. They will help the Information System in company work well, especially for the O-W SCS.
- The **Department Head** relate to the Organisation-wide Stock Control System because the Department Head have control in O-W SCS. In other hand, they Department Head have permission to decide upgrading IS or not. Of course, the better IS work the better telesales staff performances and support customers.

Key Issues & Area Conflict

- **"What led you to choose the key issues and areas of conflict affecting this environment you have included in your diagram? "**

Finding out the issues and conflict in the environment is also very important. In real life, the system analysis can find out the actor's issues by make an interview for them.

Control of Systems, Data and Processing

- **"Where does the control of systems, data, processing lie in the environment as shown in your picture?"**
  - **The data** in environment is Customer Order data. Because purpose of company is selling product to customers, so the company has to store all customer orders to process them for report or track customer or other goals. In other hand, the customers of company also want to query their order history.
  - **Control of system** lies in Department Head. The Department Head is controlling system. They have to direct the company. They need to know current situation of company business, it can be a report of selling product monthly, yearly and profit from that. Base on there, they will make decision to improve business. The Department Head includes Director and other important peoples.
  - **Processing Data** lie in Telesales Staff sectors: the telesales staff sectors take order from customers, process orders. They have to keep selling product function efficient.

Section B

Use Case Scenario

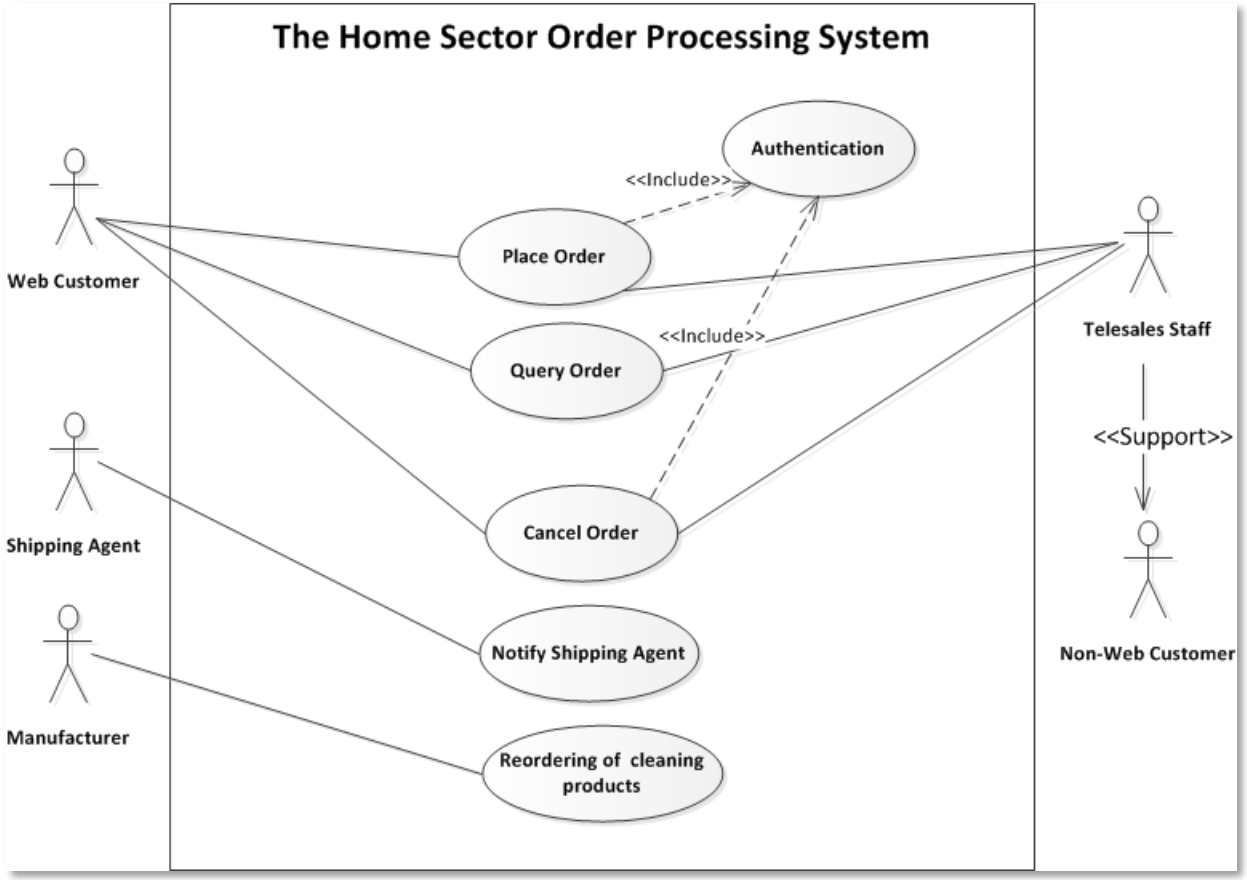

Figure 2: Use case Scenario of System

The Use Case Diagram above shows scenario functions of the System. The Web Customer and Non-Web customer are similar, but they are different in the ways to use system.

The Web Customer means: Users can interact with system via Web directly; they don't need to have the support from telesales staffs.

If customers cannot use web, they can interacts with system by supporting from telesales staffs.

Use case level 2

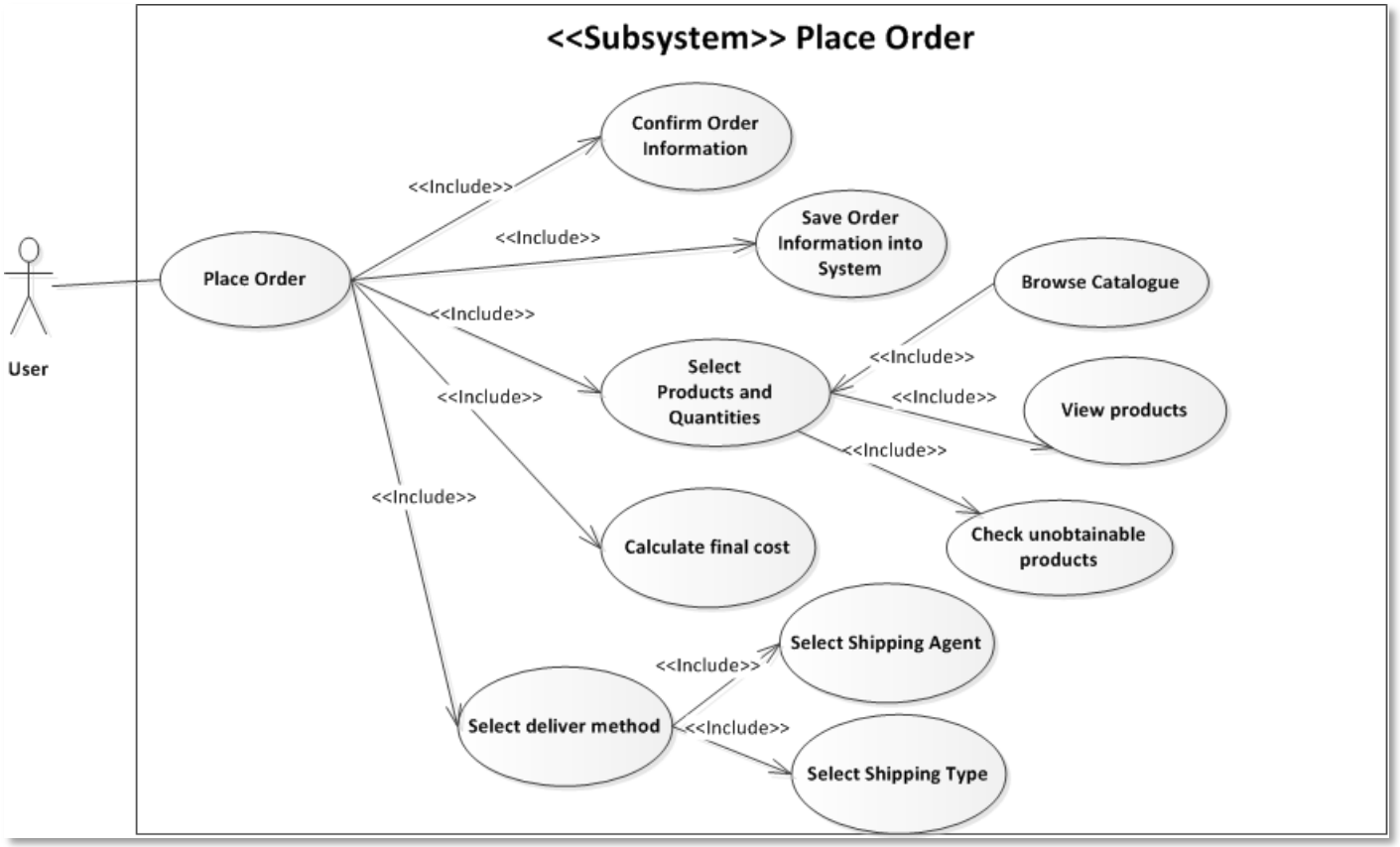

Figure 3: Place Order

User includes Web Customer and Telesales Staff (support for Non Web Customer)

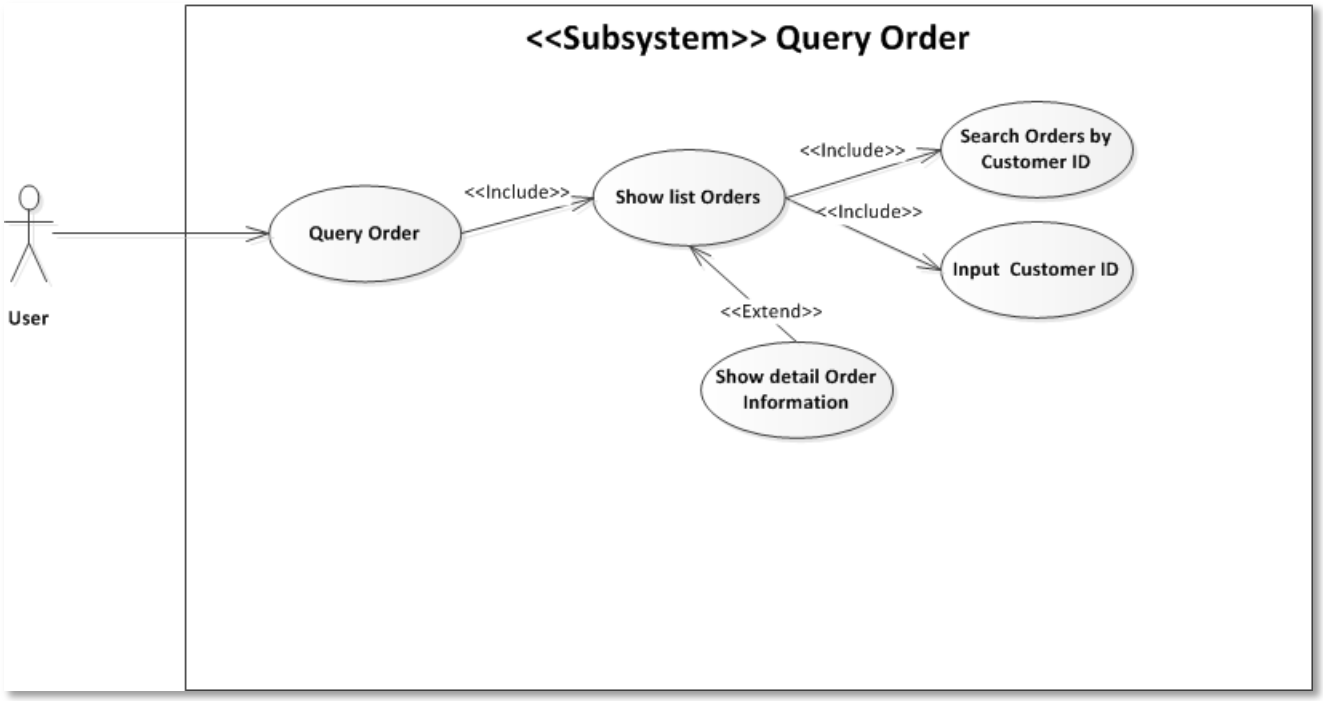

Figure 4: Query Order

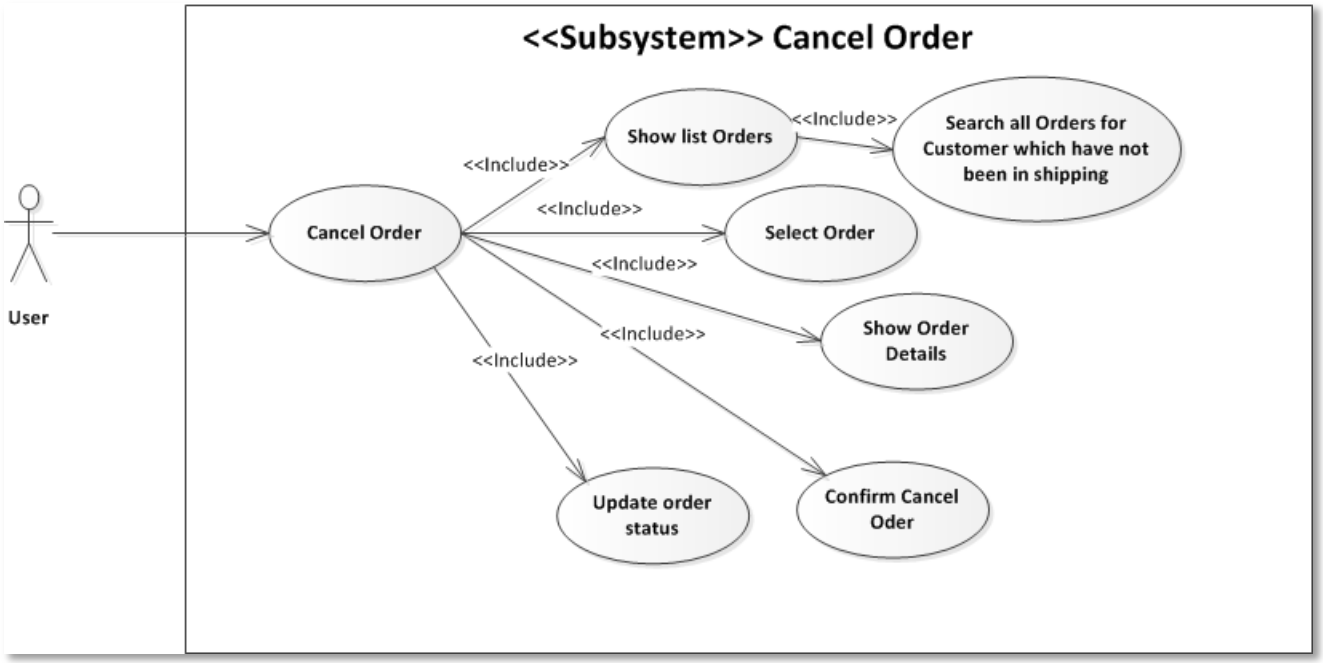

Figure 5: Cancel Order

User includes Web Customer and Telesales Staff (support for Non Web Customer)

Use Case Documentation

Use Case Name	Place Order	
Description	The system allows user customer to place an order via Web.	
Primary Scenario	Pre-condition	Customer must be logged in.
	Flow of Events	1. User can view of products grouped by catalogue 2. Use select an product to order 3. System check unobtainable product 4. User enter quantity of the product they want to buy 5. User select shipping agent 6. User select shipping Type 7. System show order information with calculation of final cost 8. User confirm the order information 9. Save order into system
	Post Condition	The Order has been saved into system, inform succeed

Secondary Scenario		• In step 3 if the product is unobtainable, user back to 2 to select other product.
		• In step 8 If user does not confirm the order , they are two choices:
		  ○ User can back to step 1 to edit order
		  ○ User exit this Place Order function
		• In step 9 If there is any error occurred, they system has to inform error to Customer then try again

Use Case Name	Query Order	
Description	The system allows user customer to query status or information of an order via Web.	
Primary Scenario	Pre-condition	Use case start when User click on Query Button (user don't need to have authentication)
	Flow of Events	1. Customer enter ID 2. System search all order of the Customer by ID 3. System show list of order 4. User can select an Order to view order details 5. System displays Order Details with all related information
	Post Condition	System displayed Order Details
Secondary Scenario		In step 2. System displays "Cannot find any orders" if the system cannot find any order. the user can back to step 1

Use Case Name	Cancel Order	
Description	The system allows customers to Cancel Order if the order has not yet been sent for shipping	
Primary Scenario	Pre-condition	Customer has to logged in
	Flow of Events	1. System shows list order which has not been shipping 2. User select an Order to cancel 3. System show details of Order 4. User cancel Order by click Cancel Button 5. User confirm cancel Order 6. System update order status
	Post Condition	Order has been updated status
Secondary Scenario		In step 1, if there is not any Order which has not been shipping then the use case stops. In step 5. If User does not confirm to cancel order, then the use case stops. In step 6. If there is any error occurs then the system has to inform to the customer.

Describe process

We understand that Use Case Diagram is used to shows actors that interact with system and what the actors can do with system.

The Actors here can be people or other system. There are many types of Actors:

- Actor interact directly with system by using functions of system
- Actor received information from system
- Actor provide information for System

So, in order to develop a Use Case Diagram, we need to do some steps:

- Identify all Actors interact with system
- Identify all functions will be develop in system based on expectation of users, actors

In the Home Sector Order Processing System here, we found that the system has actors, they are:

- The **Customers** who will buy product from company will interact directly with system
- The **Telesales** staff that will support customers if the customers does not have web access.
- The **Shipping Agent** that will receive information from system
- The **Manufacturers** that will receive information from system.

"Why have you chosen the actors you did and why are they key to the system?"(ISE Coursework Specification, 2011)

- They are the key actors because they are the most affective to the system. They are end users of system who will interact directly with system.

"Choose one scenario. How did you identify the key activities to include in it? "(ISE Coursework Specification, 2011)

- Key activities are the activities will be finished in order to complete primary scenario in normal way.

In order to identify key activities, we have to know the how user can interact with system to complete a function, what information the system need to process, how system get input, how the system process the input from user, What information(output) user need to know. After that, we list all steps the user and system has to do to complete the function.

- For example the **Place Order** scenario:
  - The information (input) the system need : order information
  - How the systems get input? User has to select products, select shipping agent, select shipping type…
  - How user select product, shipping agent, shipping type? System show list products, shipping agent, shipping type via user interface
  - What information users need to know? Order information, confirm
  - How system process information? System save Order Information into database

"How did identify alternative uses to produce the secondary scenarios?" (ISE Coursework Specification, 2011)

Firstly, we have to know activities in primary scenario. All activities do not in primary scenario is the **alternative.**

Usually, alternative activities happen when system has error, invalid input.

To identify alternative activities, we can usually examine some activities in primary scenario which need to have some input parameter.

For example in **Place Order** scenario, we can examine step 3 (System check unobtainable product) the question: what happen if the product is unobtainable? Then we can identify some alternative activities for secondary scenario.

"You will have needed to make some assumptions about the system. In real life what questions would you have asked to get the necessary information? Who would you have asked?" (ISE Coursework Specification, 2011)

In real life, when developing a system, the system designer has to find out all users related to system and all other system interact with system, especially the end-user who interacts directly with system.

After determine the actors, the designer has to know the expectation from users. Asking them:

What do you want from system?

What functions do you need from system?

What information (output) you want the systems provide?

How do you want to interact with system?

Section C

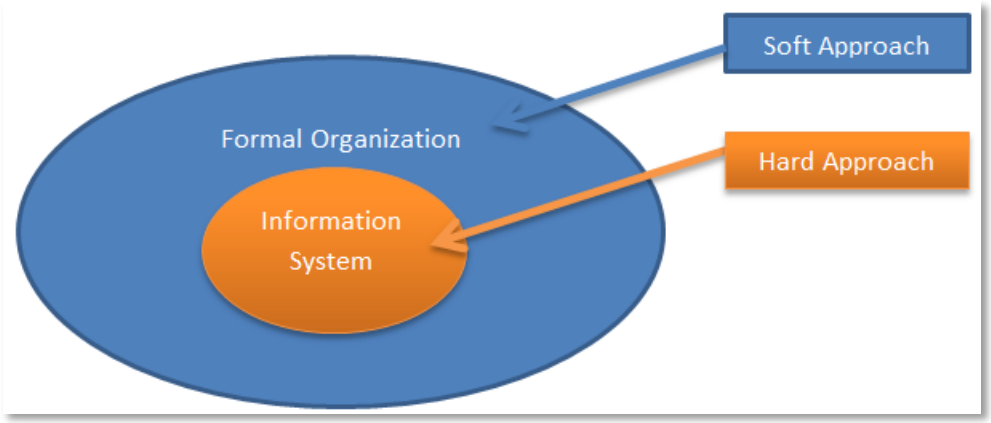

Figure 6: Boundary of Soft approach and Hard Approach

This picture depicts the boundary of hard approach and soft approach in order to analysis the system.

The Hard Approach will take care about technical solution, data model, system functions, and system behaviour.

The Hard Approach will take care about social, moral, ethical, human aspects of systems development, aspirations, needs, fears of people.

In order to get information system development successful, the organization needs to care both two approaches to analysis and design the information system. There are many project fail in system development because the organization just go into detail of system functionality, technical solution, they don't use soft approach when analysis the system.

By using both approaches, the organization can see the whole problem situation as well as full requirement of system.

When the analyser cares both soft and hard approach, it makes the system and organization work more efficient.

Rich Picture

Rich picture is a tool in Soft System Method which was developed by Peter Checkland.

The aim of Rich picture in system analysis is to express whole problem situation, "A picture is worth more than thousand words". There are two aspects from rich picture in analysis organization environment which are the primary task and issues. In fact, the rich picture is the expression of the whole problem situation unstructured via a picture. The rich picture depicts stakeholder, their relationships and their concern. In order to know all problems in organization, the analyser may do a research about organization environment.

Base in the Clean Brite company environment, the analyser find out the main problem in the company is about O-W Stock Control System. The problem is the system does not support customer directly in order to place order to by product.so, the telesales staff performance will reduce. That affects to selling product of company and therefore the profit will be affected. When the main problem is found out, the organization can determine the solution for problem.

Weakness of rich picture:

The weakness of Rich Picture is the Rich Picture just shows the problem rather than giving the solution.

The rich picture use shapes, icons, so when the number of them increases the rich picture becomes very messy.

The rich picture lack of standard symbols, each analyser may use his own way in to draw rich picture, so it is difficult for other one to understand the rich picture.

The rich picture need a large area to draw when the number of symbol increase, when there is not enough paper, it will be separated to many page. This one make rich picture more difficult to understand.

Use Case Diagram

Use case diagram is the communication between system designer and end-users. By using the UCD, the system designer easy to depict functions of system based on user requirements. UCD is very useful to check user's requirement, it is easy to understand for user also. UCD has standard symbol, it is easy to share between system designers in big system development project.

Weakness of Use Case Diagram

The use case diagram it has not meaning its own. A use case diagram needs a Use Case Documentation to describe each use case in UCD. So, in the big project, there many use case in UCD, so the designer has to write many documents for use case diagram. This will take very long time.

References

Coursework Requirement 2011: https://cms1.gre.ac.uk/collaborativeprogrammes/students/courseworks/coursework%202011-2012/Nov-Dec%202011/CW_COMP1304_190004_ver2_1011.pdf