Practical Development of Information System in Business Context: Buccaneer Sales System for Buccaneer (Thailand).

PROJECT WRITE-UP

Prepared by

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Submitted in Partial Fulfillment
of the Course BIS 4995 Information System Development
Bachelor's Degree of Business Administration
in Business Information Systems Program
Assumption University

February, 2005

Project Name:	Buccaneer Sales System	
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Advisor: A. Krisee Vipulakom

Academic Year: 2004

The Department of Business Information Systems, ABAC School of Management has approved the aforementioned project, which includes complete Project Write-up and System submitted in fulfillment of the 3-credit course BIS 4995 Information System Development towards the requirements for the Bachelor's Degree of Business Administration in Business Information Systems

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Acknowledgement

The Buccaneer Sale System project started on the October 2004. We started from capturing the user requirement on the system by interviewing the Operation manager of the Buccaneer (Thailand). The interviewing helps us in many aspects, we got many ideas relate on how the system should be from it.

After interviewing and defending our proposal, we consult A.Krisee Vipulakom, our adviser, to shape up the system. His opinions on our designer system are very helpful for us to improve the system. He could see many missing part that we missed out and notice ones that appears where it should not be.

Toward the process of doing project, we got many help from many friends in the BIS. They share their knowledge and skill on how thing should be done. Also, the defending of the proposal, which the committees pointed out some part that missing, and helping us to improve on our project.

After all, we would like to thank to every people that help us to finish this project. Without your helps, we would face much more difficulty and the finish would be harder to reach.

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I. INTRODUCTION

1.1 Organization's Profile

Buccaneer (Thailand) is a small company that produces jelly and custard, which served in many restaurants in Bangkok and Metropolitan area. The company established in 2001. The size of the company is very small, there are 10 employees working in the organization.

1.2 Organization's Location

The company located on the side skirt of Bangkok area, on the Srinakarin Road. Every business activities, from production to transportation, occurred at the same facility .The contact address is: 344/4 Moo.10 Srinakarin Road Bangna Bangkok

1.3 Organization's Structure

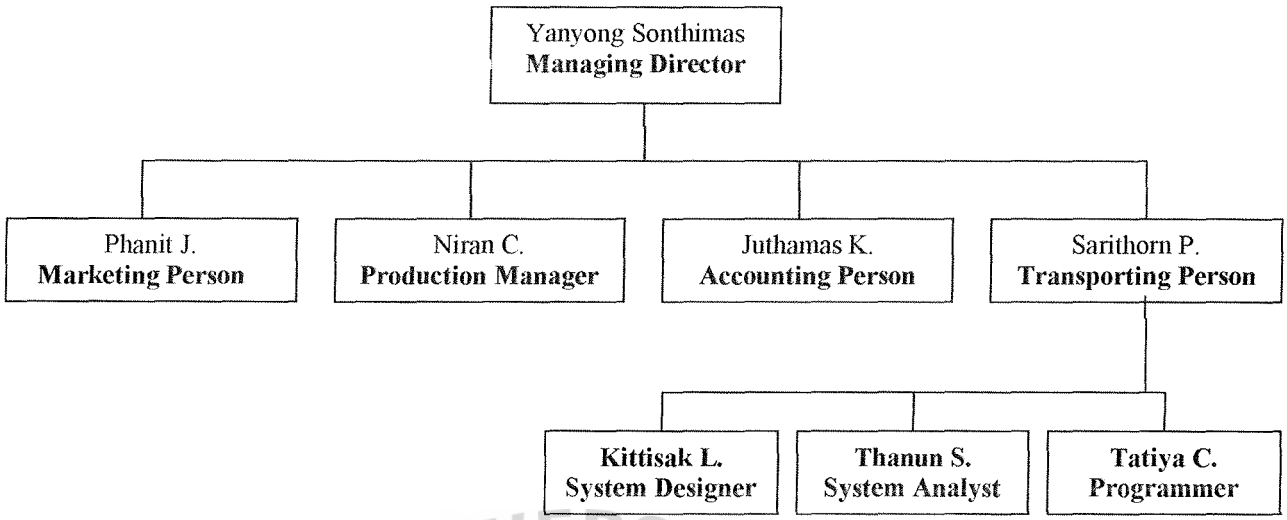

Figure 1-1 Organization Chart of Buccaneer (Thailand)

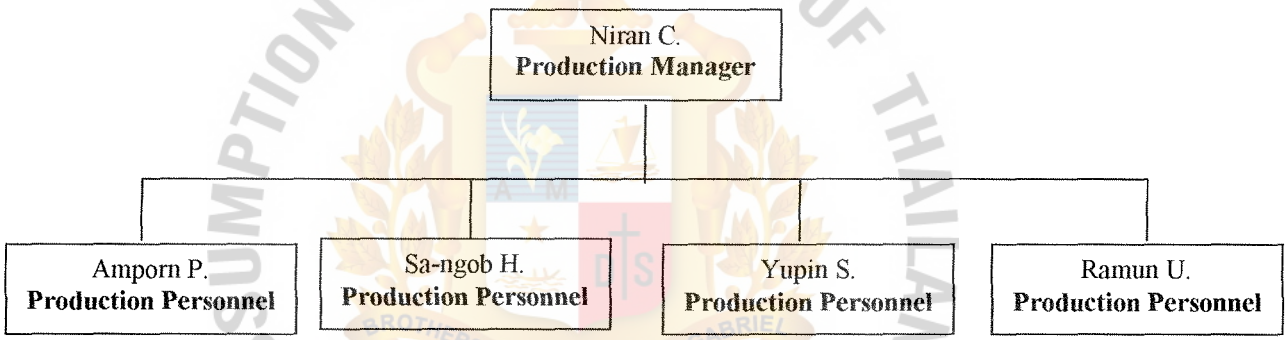

Figure 1-2 Department Chart of Production Department

1.4 Project Plan

ID	Task Name	Duration	Start	Finish
1	**Analysis of Existing System**	**9 days?**	**Wed 13/10/04**	**Mon 25/10/04**
2	Study the Existing System	7 days?	Wed 13/10/04	Thu 21/10/04
3	Identify the Existing Problems	1 day?	Fri 22/10/04	Fri 22/10/04
4	Existing Context Diagram	1 day?	Mon 25/10/04	Mon 25/10/04
5	**Feasiblity Study**	**4 days?**	**Tue 26/10/04**	**Fri 29/10/04**
6	Define the objectives and scope	2 days?	Tue 26/10/04	Wed 27/10/04
7	Hardware and Software Requirements	1 day?	Thu 28/10/04	Thu 28/10/04
8	Cost Analysis	1 day?	Fri 29/10/04	Fri 29/10/04
9	**Project Proposal**	**8 days?**	**Mon 01/11/04**	**Thu 11/11/04**
10	Project Proposal Preparation	6 days?	Mon 01/11/04	Mon 08/11/04
11	Project Proposal Submission	0 days	Thu 11/11/04	Thu 11/11/04
12	Project Proposal Defense	0 days	Sun 21/11/04	Sun 21/11/04
13	**Design of the Proposed System**	**28 days?**	**Sun 21/11/04**	**Tue 28/12/04**
14	Data Flow Diagram	21 days?	Sun 21/11/04	Fri 17/12/04
15	Entity-Relationship Diagram	21 days?	Sun 21/11/04	Fri 17/12/04
16	Database Design	21 days?	Sun 21/11/04	Fri 17/12/04
17	Process Specification	2 days?	Mon 20/12/04	Tue 21/12/04
18	Data Dictionary	2 days?	Wed 22/12/04	Thu 23/12/04
19	Functional Description	2 days?	Mon 20/12/04	Tue 21/12/04
20	Interface Design	7 days?	Mon 20/12/04	Tue 28/12/04
21	**Implementation of the Proposed System**	**44 days?**	**Mon 20/12/04**	**Thu 17/02/05**
22	Coding	30 days?	Mon 20/12/04	Fri 28/01/05
23	Testing	44 days?	Mon 20/12/04	Thu 17/02/05
24	Documentation	44 days?	Mon 20/12/04	Thu 17/02/05
25	Progress Evaluation	0 days	Mon 20/12/04	Mon 20/12/04
26	System Evaluation (System)	0 days	Mon 31/01/05	Mon 31/01/05
27	Final Evaluation(System + Write-up)	0 days	Mon 21/02/05	Mon 21/02/05
28	Project Defense	0 days	Wed 16/03/05	Wed 16/03/05

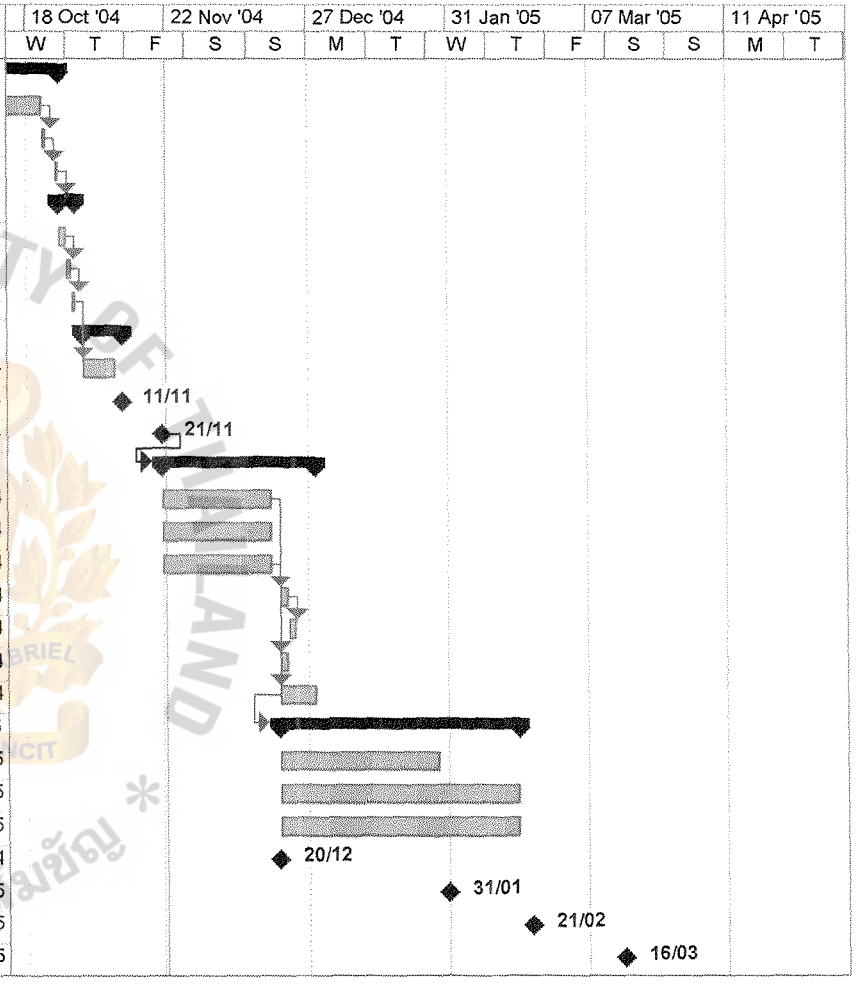

Figure 1-3 Project Plan for Buccaneer Sale System

II. THE EXISTING SYSTEM

2.1 Background of Existing System

Currently, the sale person will go out and visit many restaurants to ask them to put the company products in their menus. When the restaurant accepts to sell the products, the sale person will collect the data about the customer. The information of the new customer would be the location of the restaurant, contacting person, telephone number, and also the name of that restaurant.

When the restaurant wants to take new order, they would call to the company or the sale person to order the new lot of product. After that, the transporting persons would do the delivery within 2 consecutive days, and the restaurant would receive the invoice on the delivering.

The production of the product would be done on daily basis. Every day Production department would produce the new lot, which variable in size of it. The product can last for 15 day in cool storage.

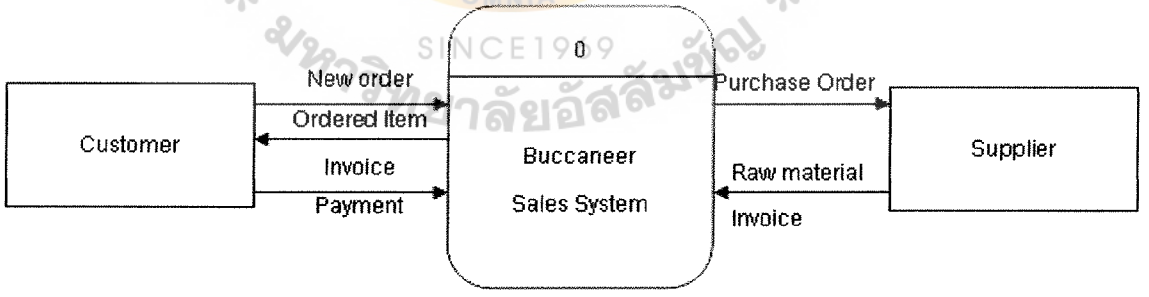

Figure 2-1 Context Diagram of Existing System

2.2 Problem Definition

(1) Order mismatch

Currently, most of orders taking are informally done. So, there are a lot of times that the order sizes are incorrectly taken. When the customers call for ordering, any one on the company may take that order. He or she might mistakenly take it or forget about the detail of the order, which failed the request from the customer

(2) Data redundancy

From the same source of above problem, occasionally, it might lead to the data redundancy. Sometimes, the customer might want to change the detail of the order, but the first person who take the order did not make a written note about it, the second person who receives the updated order might be confused by the order from the first person

(3) Lost of Document

The most of the document that used for tracking the inventory or the order are based on the spread sheet software. So, there is a chance to lose some of the document due to the separation of the data. Also, the Purchasing Order is currently kept without any soft copy for keeping track of it.

(4) Inefficient Raw material management

Sometimes, the raw material on hand might not equal to the number on the stock control document. This occurred from the miscommunication between the production person and the stock controller.

(5) Allocation of Transportation

The existing delivery schedules are mostly done on orally work and the vehicles are not fully utilized. For example, the vehicle could work 2 round each they, but most of the time most of it are not being used. Also, some of the orders have been delivered late because it missed the delivery routine of that day.

(6) Unable to Identify Customer Need

On the current situation, there are times that the finish goods turnover rates are dropping. They occurred from the cancellation to be the reseller of the product or some of the customer might reduce size of the order, but there is no method to identify and pin point the cause of problems.

III. THE PROPOSED SYSTEM

3.1 Feasibility Study

(1) Objectives of the System

(a) To maintain good relation and the information of the customer.

(b) To minimize the possible problem that might occurred from the order processing.

(c) To manage the schedule of delivery in order to reduce the order waiting time.

(d) To keep track of the Raw material used in the production and also the finished goods inventory.

(e) To maintain the information of the supplier and the raw material related to them.

(f) To propose the more efficient control over the raw material and Inventory.

(2) Scope of the System

(a) Customer Maintenance Subsystem

- Enter new customer data when new customer makes business with the company.
- Update and maintain existing customers' information in case that any customers change some information such as delivery address etc.
- View customer information.

- At the end of month, system generates report to show the name of the current customers that does not place any order on the ending month.
- Keep feedbacks from existing customer on the case that they stop buying our products.

(b) Order Subsystem

- Record order information when orders are placed.
- Set priority of the received orders if needed (Only possible for large quantity order).
- Update order status such as cancelled order (order must be cancel the day before the delivery date), delivered order, high priority order.

(c) Finished Product Subsystem

- Enter new finished product information in case that the company produces new product.
- Update and maintain finished product information in case of change.
- Update inventory quantity when new products are produced and when products in stock are delivered or products are expired.
- Keep production date for new batch of production as well as print expire date to be placed on the container of each batch.
- Notify the user if any products in stock are expired and keep record of those expired products.
- View products information

- Record the quantity in case that defected product is returned or replaced (Product is replaced on the next consecutive day).
- In case of expired product, the expired quantity is deducted from finished product data and added to wasted products.

(d) Delivery Schedule Subsystem

- Specify delivery date for each order by matching customer delivery zone with zone delivery date (customer delivery zone is set according to delivery address and record along with other information on the first time customer information is recorded.)
- Set quantity of products that each delivery vehicle will contain.
- Notify user of express order by give it high priority status.
- Notify user of urgent order that need to be delivered with in that day and arrange the delivery if a delivery vehicle is available.
- View delivery information.

(e) Return/Defect Product Maintenance Subsystem

- Record information about product defect that is a result from production process.
- Record information about product defect that is a result from the accident in delivery.
- View information about defected product and delivery.

(f) Raw Material Control Subsystem

- Update and maintain raw material quantity in case of used raw material, arrival of raw material and raw material that needs to be returned.

- The produced product quantity is used to estimate the used raw material with added margin in order to control the used of raw material. Incorrect usage of raw material is kept with reason if available.
- Update the standard cost of each material in case of change in price or change of supplier.
- Keep expire date of each lot of raw material if needed.
- Alert user when raw material quantity is lower than a specific amount.
- Show a list of available suppliers, raw material supplied and price to be selected when user chooses to make raw material purchasing order.
- Generate raw material purchasing order to be forward to supplier after supplier is selected.

(g) Supplier Subsystem

- Enter new supplier data when order is placed with new supplier including prices and raw material supplied.
- Update existing supplier data in case of change.
- Keep information about defect raw material such as type and supplier name.
- View supplier data.

(h) Report Subsystem

Customer Related Report

- Generate Invoice for each delivery.
- Generate order report on daily, monthly and yearly basis or on request categorized by date and customer name.
- Best Seller Report on monthly and yearly basis or on request categorized by product name.
- Best Seller Zone Report on request categorized by zone name.

Production Activity Report

- Generate production report on daily, monthly and yearly basis or on request categorized by date.
- Generate finished product report on daily basis or on request categorized by product name.
- Generate production vs. delivery vs. expired report on monthly and yearly basis or on request categorized by product name.
- Product Defection Report on monthly and yearly basis or on request categorized by delivery person name.

Raw Material Related Report

- Generate raw material report on daily basis or on request categorized by raw material name.
- Generate supplier report on request categorized by supplier name.

- Best Standard Price Report on request categorized by raw material name and price.
- Incorrect Raw Material Usage Report on monthly and yearly basis or on request categorized by product name.

Delivery related report

- Generate daily delivery schedule and post delivery record for Delivery person.
- Delivery report on monthly basis categorized by Date, Customer Name.

(3) Hardware and Software Requirements

Table 3-1 Hardware Requirements – Client Workstation

HARDWARE	**SPECIFICATION**
CPU	Intel Pentium IV 3.0 GHz
MEMORY	512 MB of RAM
HARD DISK	Dual 80 GB Ultra ATA - 100 – With Raid 0
CD-ROM DRIVE	48x40x50 Combo Drive
FLOPPY DRIVE	1.44MB 3.5" Floppy Disk
DISPLAY ADAPTER	nVidia MX400 chipset with 32MB of RAM
DISPLAY	17" CRT monitor
UPS	APC BACK-UPS RS 800VA 230V - Provide 8 minutes for back up during the light out

Table 3-2 Software Requirements – Client Workstation

SOFTWARE	**SPECIFICATION**
Operating System	Microsoft Windows 2000 Professional Edition
Application	- Microsoft Visual Studio 6.0 - Microsoft Access 2000 - Crystal Report 9.2 for creating report from the Database

(4) Cost Analysis

Cost analysis focuses on the cost of the system derived from non-operating and operating costs.

(a) System Costs of Existing System

Table 3-3 Cost of Existing System, Baht

Cost	Year				
	1	2	3	4	5
Fixed Costs:					
Hardware					
Workstation					
Celeron 600 MHz	3000	3000	3000	3000	3000
Sony 15" Monitor	1500	1500	1500	1500	1500
HP OfficeJet 7000 Series	5000	5000	5000	5000	5000
Epson Dot-matrix Printer	2000	2000	2000	2000	2000
Software					
Microsoft Windows 98 SE	1000	1000	1000	1000	1000
Microsoft Office 2000	3200	3200	3200	3200	3200
Total Fixed costs	**15700**	**15700**	**15700**	**15700**	**15700**
Operating Costs:					
Staff					
Manager @ 25000 Baht/Month	300000	330000	363000	399300	439230
Transportation Manager @ 20000 Baht/Month	240000	264000	290400	319440	351384
7 Operation level workers @ 7000 Baht/Month	588000	617400	648270	680683.5	714717.7
Accounting Officer @ 10000 Baht / Month	120000	126000	132300	138915	145860.8
Paper (500 Baht / Month)	6000	6000	6000	6000	6000
Utility (Water and Electricity in Average @ 6000 Baht)	72000	72000	72000	72000	72000
Building Rental Fee	240000	240000	240000	240000	240000
Total Operating Cost	**1566000**	**1655400**	**1751970**	**1856339**	**1969192**
Total Cost of Existing System	**1581700**	**1671100**	**1767670**	**1872039**	**1984892**

Manager and Transportation Manager salary are increase 10% each year.

The Accountant and operational workers salary are increase at 5% each year.

(b) System Costs of Proposed System

Table 3-4 Cost of Proposed System, Baht

Cost	Year				
	1	2	3	4	5
Fixed Costs:					
Hardware					
Workstation					
Pentium IV 3.0 GHz with 512 MB RAM	32000	32000	32000	32000	32000
MAG 17" Monitor	5000	5000	5000	5000	5000
APC BACK-UPS RS 800VA 230V	6000	6000	6000	6000	6000
HP OfficeJet 7000 Series	5000	5000	5000	5000	5000
Epson Dotmatrix Printer	2000	2000	2000	2000	2000
Software					
Microsoft Windows 2000	9000	9000	9000	9000	9000
Microsoft Access 2000	3200	3200	3200	3200	3200
Microsoft Visual Studio 6.0	24000	24000	24000	24000	24000
Crystal Report 9.2	16000	16000	16000	16000	16000
Implementation Cost					
Development Cost (450 Hrs @ 550 Baht)	247500				
Training Cost	2000				
Total Fixed costs	**351700**	**102200**	**102200**	**102200**	**102200**
Operating Costs:					
Staff					
Manager @ 25000 Baht/Month	300000	330000	363000	399300	439230
Transportation Manager @ 20000 Baht/Month	240000	264000	290400	319440	351384
6 Operation level workers @ 7000 Baht/Month	504000	529200	555660	583443	612615.2
Paper (300 Baht / Month)	3600	3600	3600	3600	3600
Utility (Water and Electricity in Average @ 6000 Baht)	72000	72000	72000	72000	72000
Building Rental Fee	240000	240000	240000	240000	240000
Total Operating Cost	**1359600**	**1438800**	**1524660**	**1617783**	**1718829**
Total Cost of Proposed System	**1711300**	**1541000**	**1626860**	**1719983**	**1821029**

Manager and Transportation Manager salary are increase 10% each year.

The Accountant and operational workers salary are increase at 5% each year.

(c) The Comparison of Accumulated System Costs between Existing System and Proposed System

Table 3-5 Accumulated System Costs of Existing System for 5 Years, Baht.

Year	Total Annual Cost	Accumulated Cost
1	1,581,700	1,581,700
2	1,671,100	3,252,800
3	1,767,670	5,020,470
4	1,872,039	6,892,509
5	1,984,892	8,877,401

Table 3-6 Accumulated System Costs of Proposed System for 5 Years, Baht.

Year	Total Annual Cost	Accumulated Cost
1	1,711,300	1,711,300
2	1,541,000	3,252,300
3	1,626,860	4,879,160
4	1,719,983	6,599,143
5	1,821,029	8,420,172

Table 3-7 The Comparison of Accumulated System Costs, Baht.

Year	Accumulated Existing System Cost	Accumulated Proposed System Cost
1	1,581,700	1,711,300
2	3,252,800	3,252,300
3	5,020,470	4,879,160
4	6,892,509	6,599,143
5	8,877,401	8,420,172

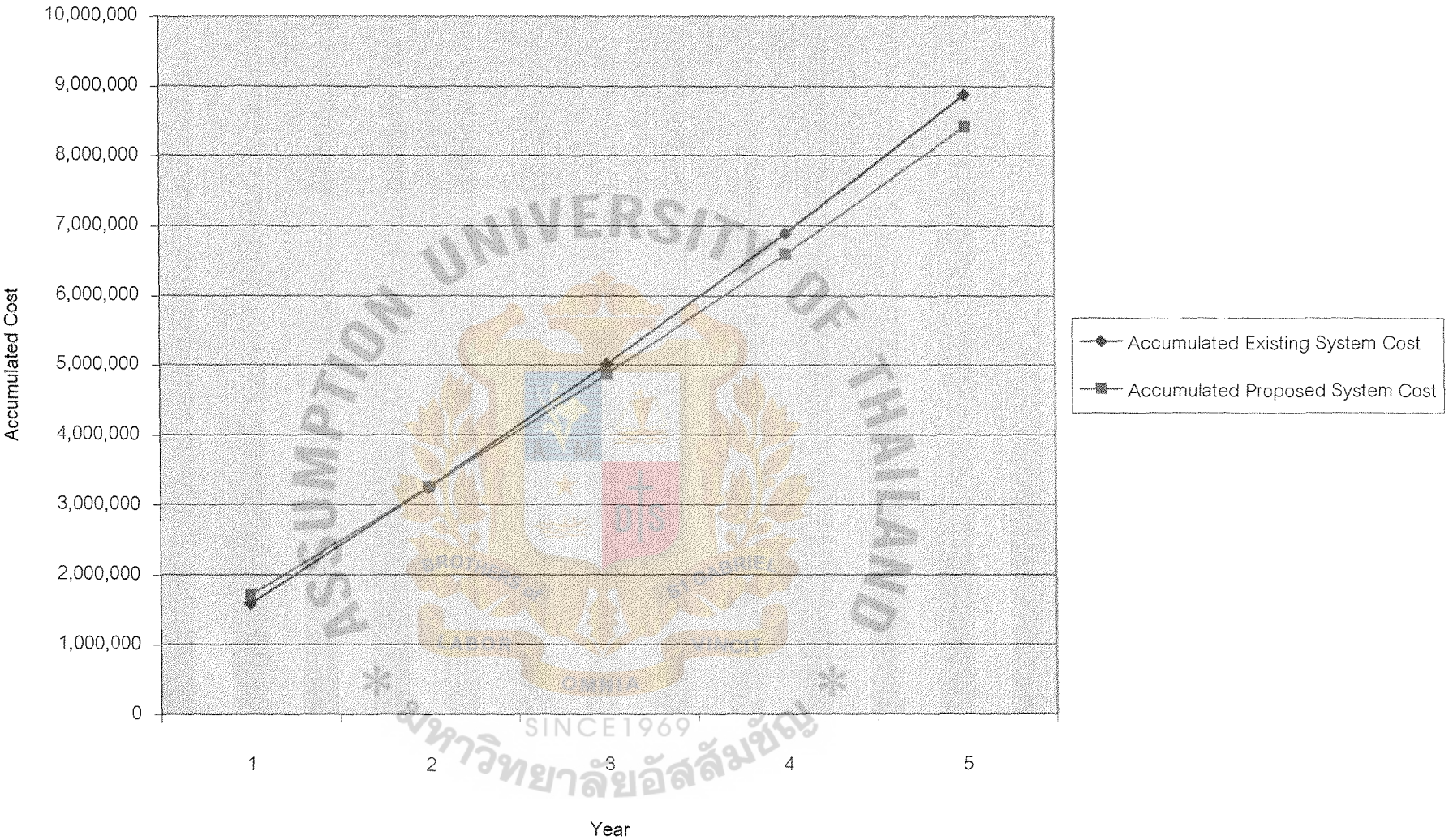

Figure 3-1 Break-even Analysis

From the Break-even analysis, you could see that the Proposed System Accumulated Cost would be slightly higher than the existing system in the first year. Later on, in the second year the accumulated cost of two systems will become equal. And after that, the accumulated cost of the proposed system will be lower than the existing system

3.2 System Design

(1) Data Flow Diagram

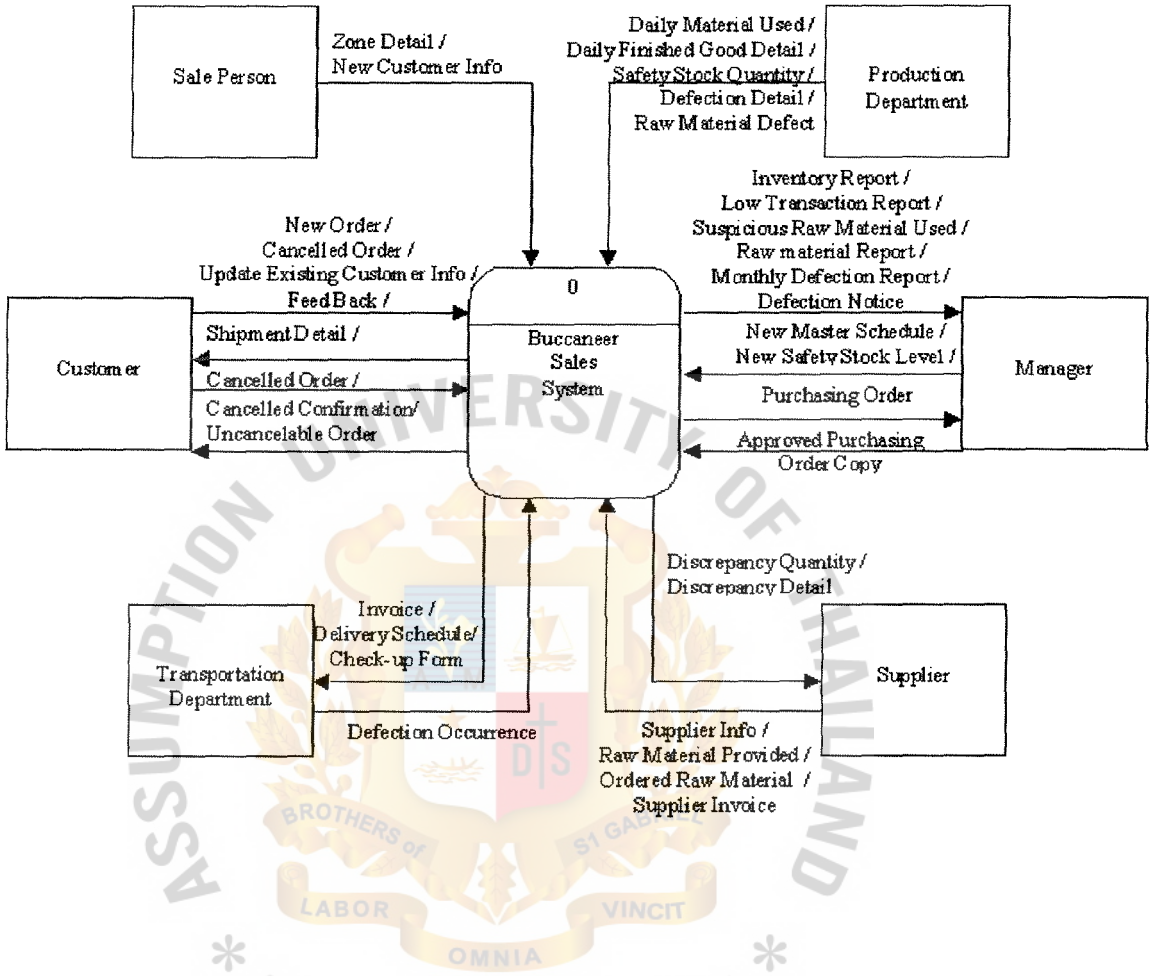

Figure 3-2 Context Diagram

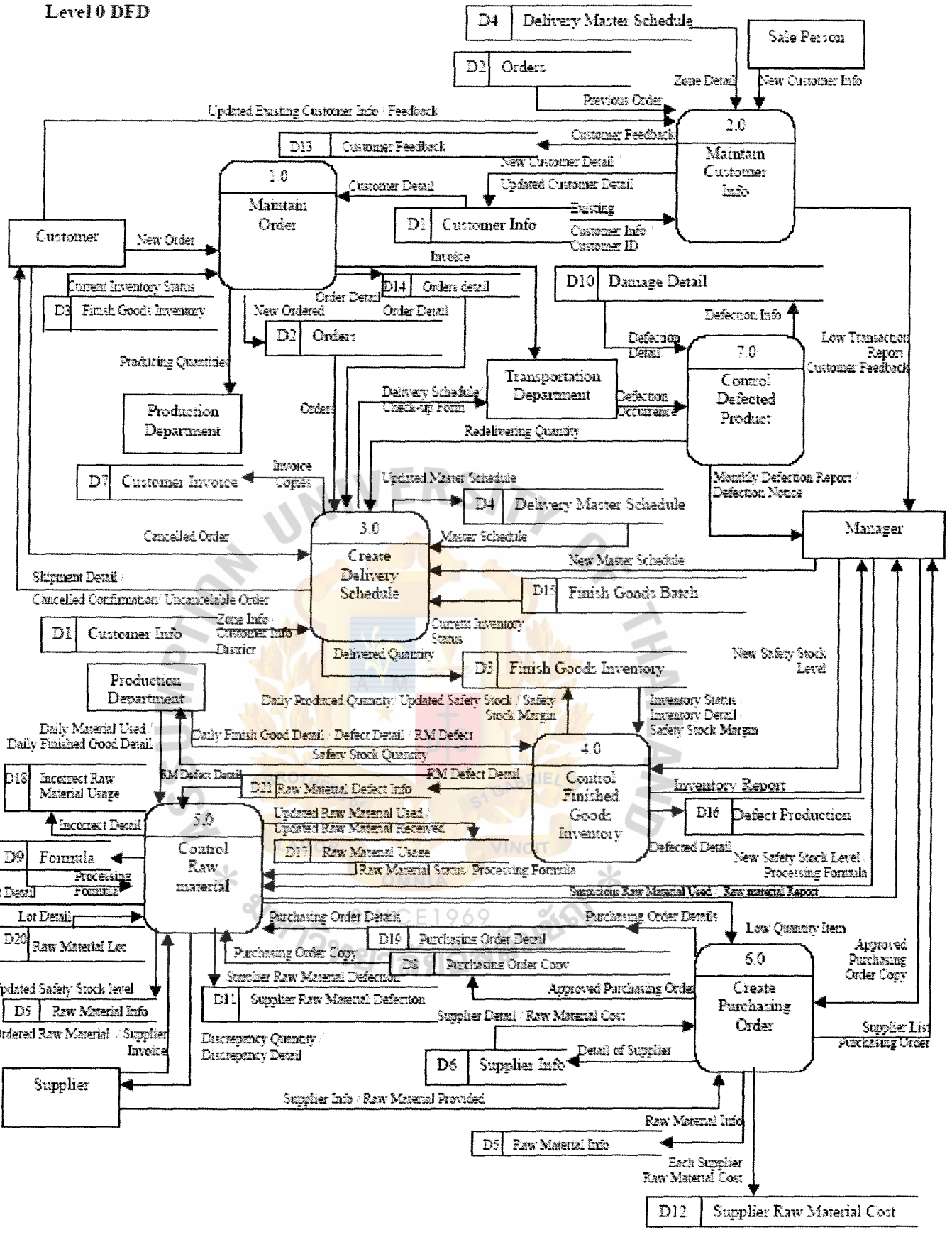

Figure 3-3 Data Flow Diagram – Level 0

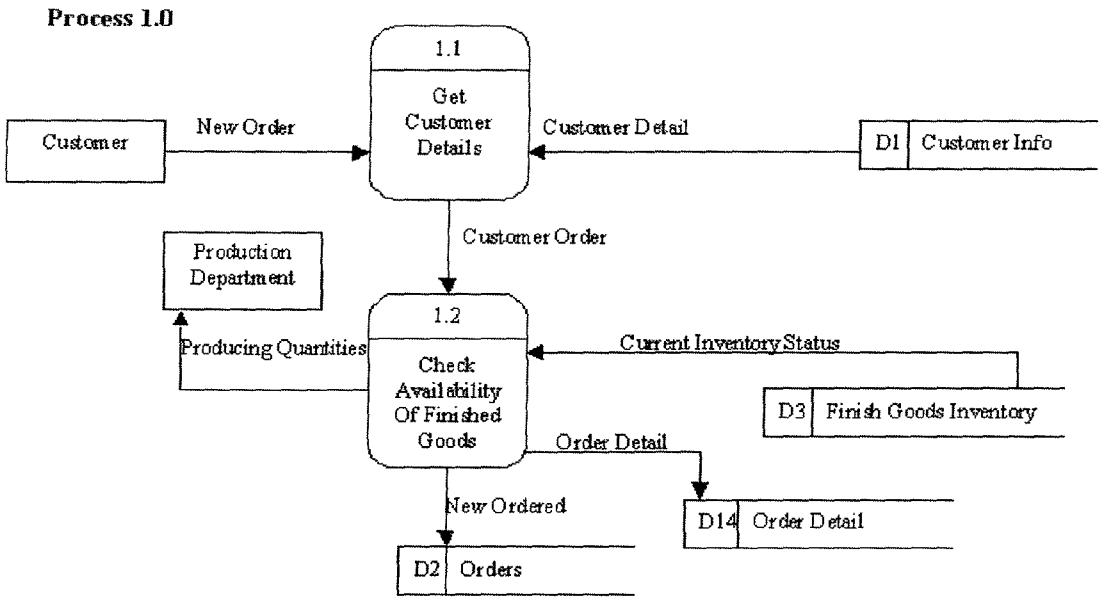

Figure 3-4 Data Flow Diagram – Level 1 for Process 1

Process 2.0

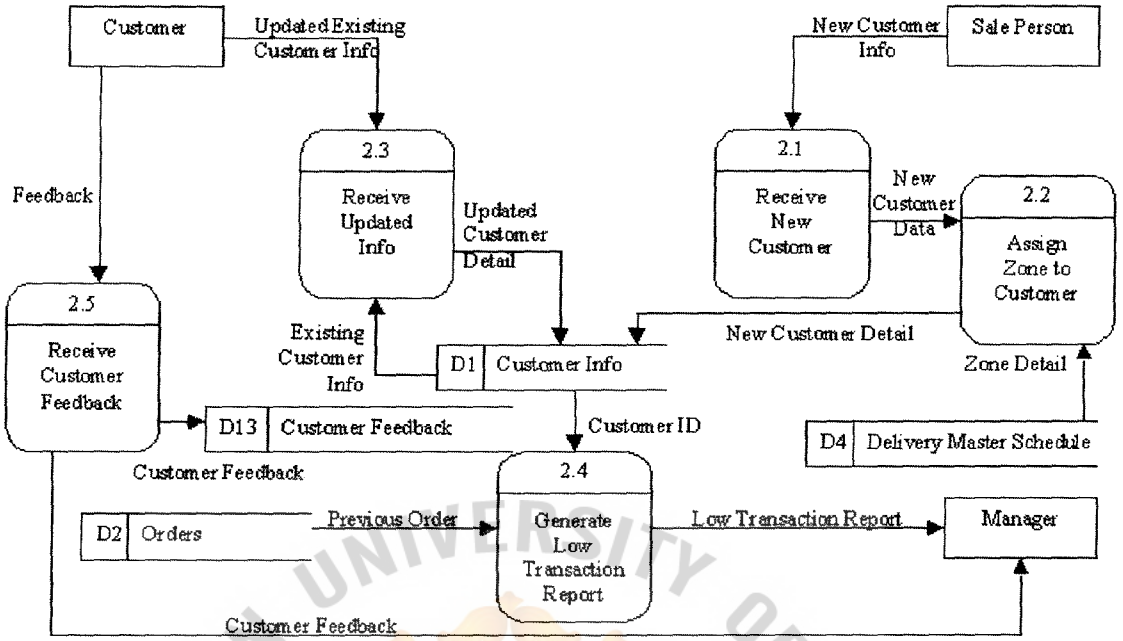

Figure 3-5 Data Flow Diagram – Level 1 for Process 2

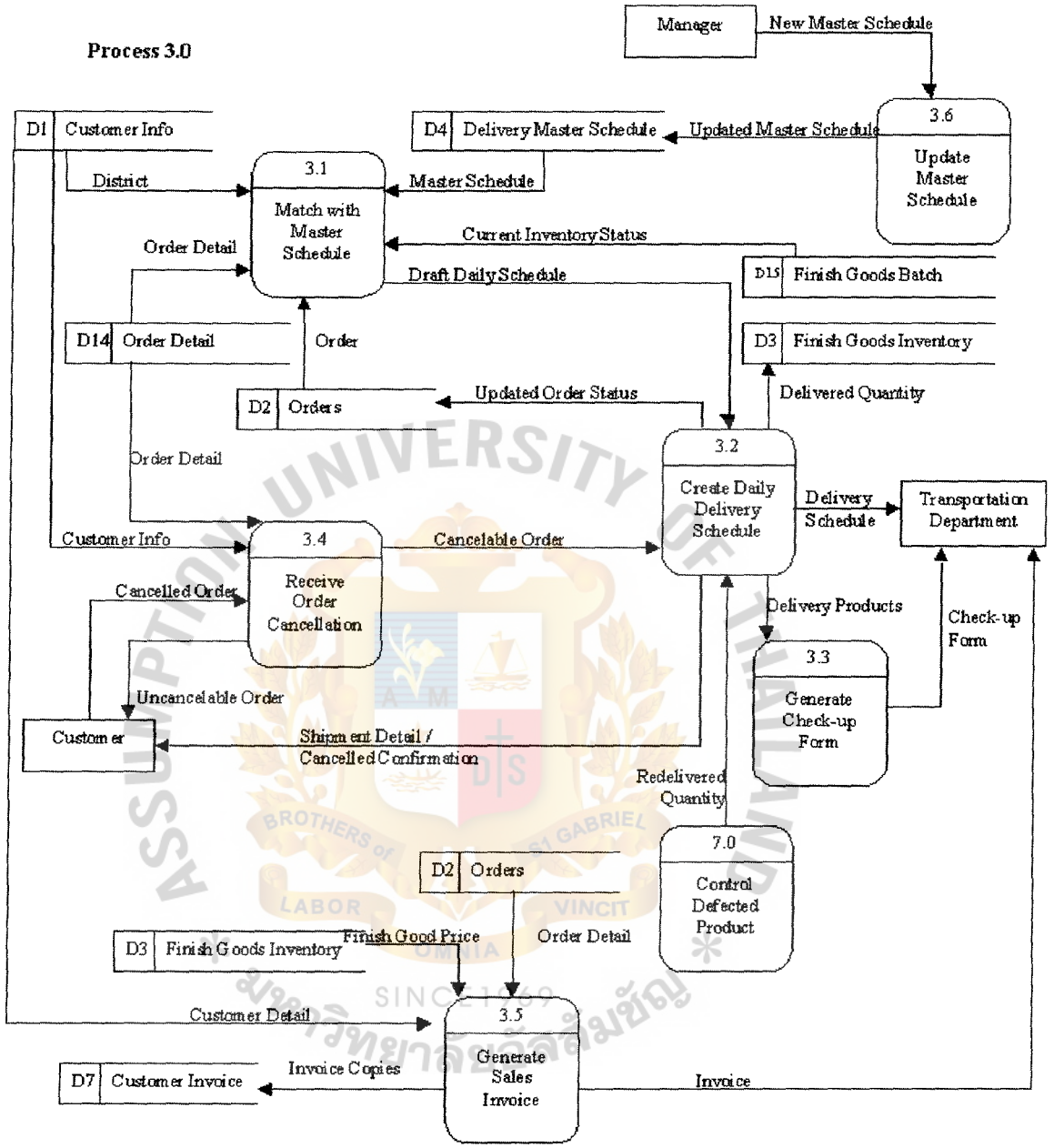

Figure 3-6 Data Flow Diagram – Level 1 for Process 3

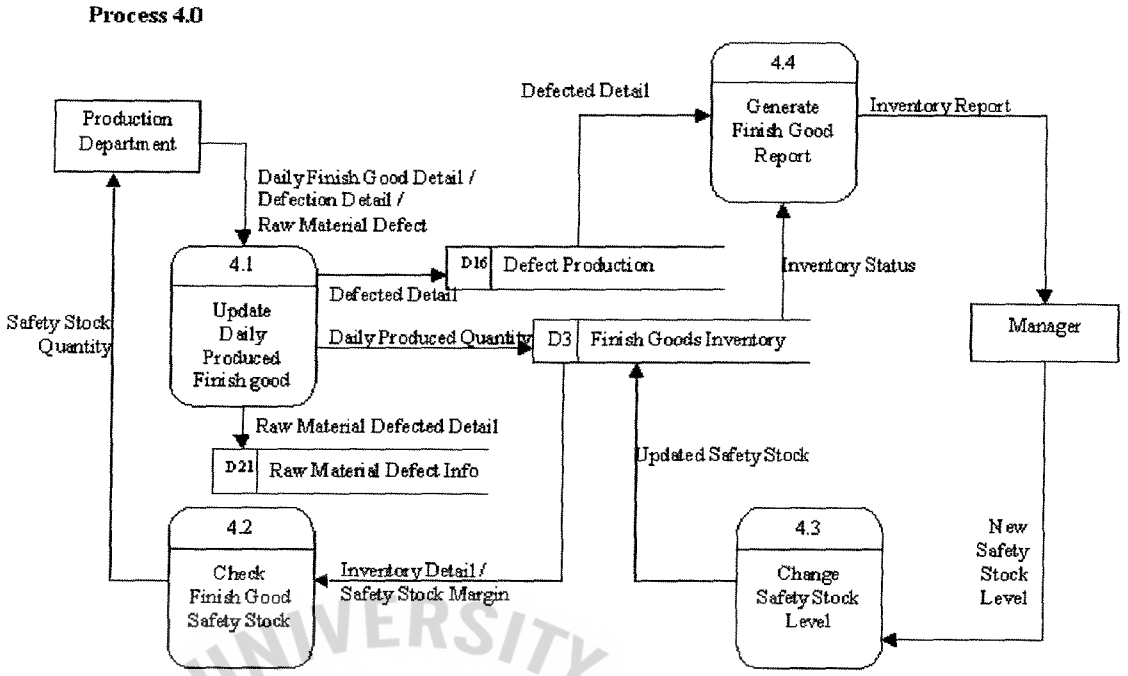

Figure 3-7 Data Flow Diagram – Level 1 for Process 4

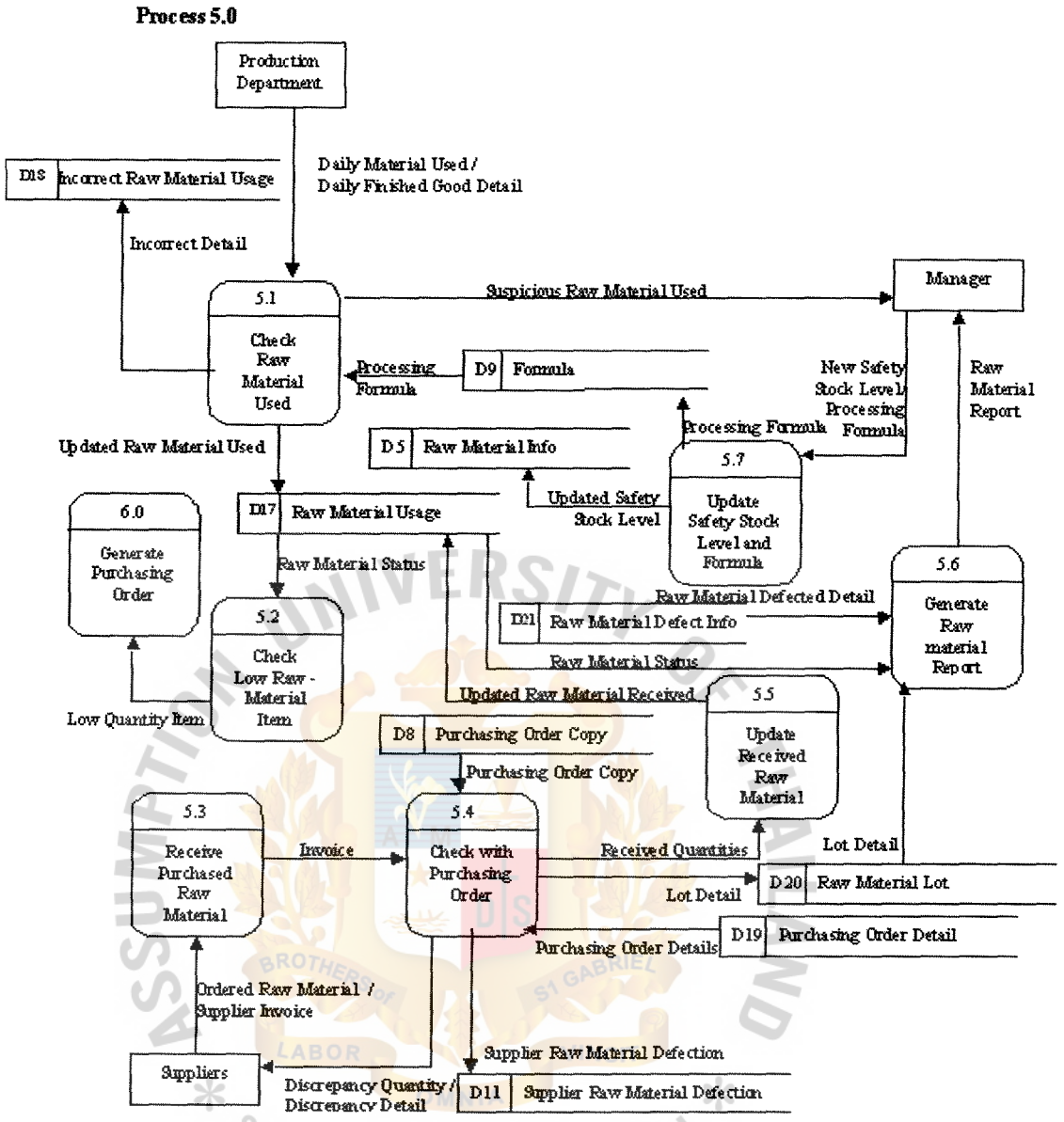

Figure 3-8 Data Flow Diagram – Level 1 for Process 5

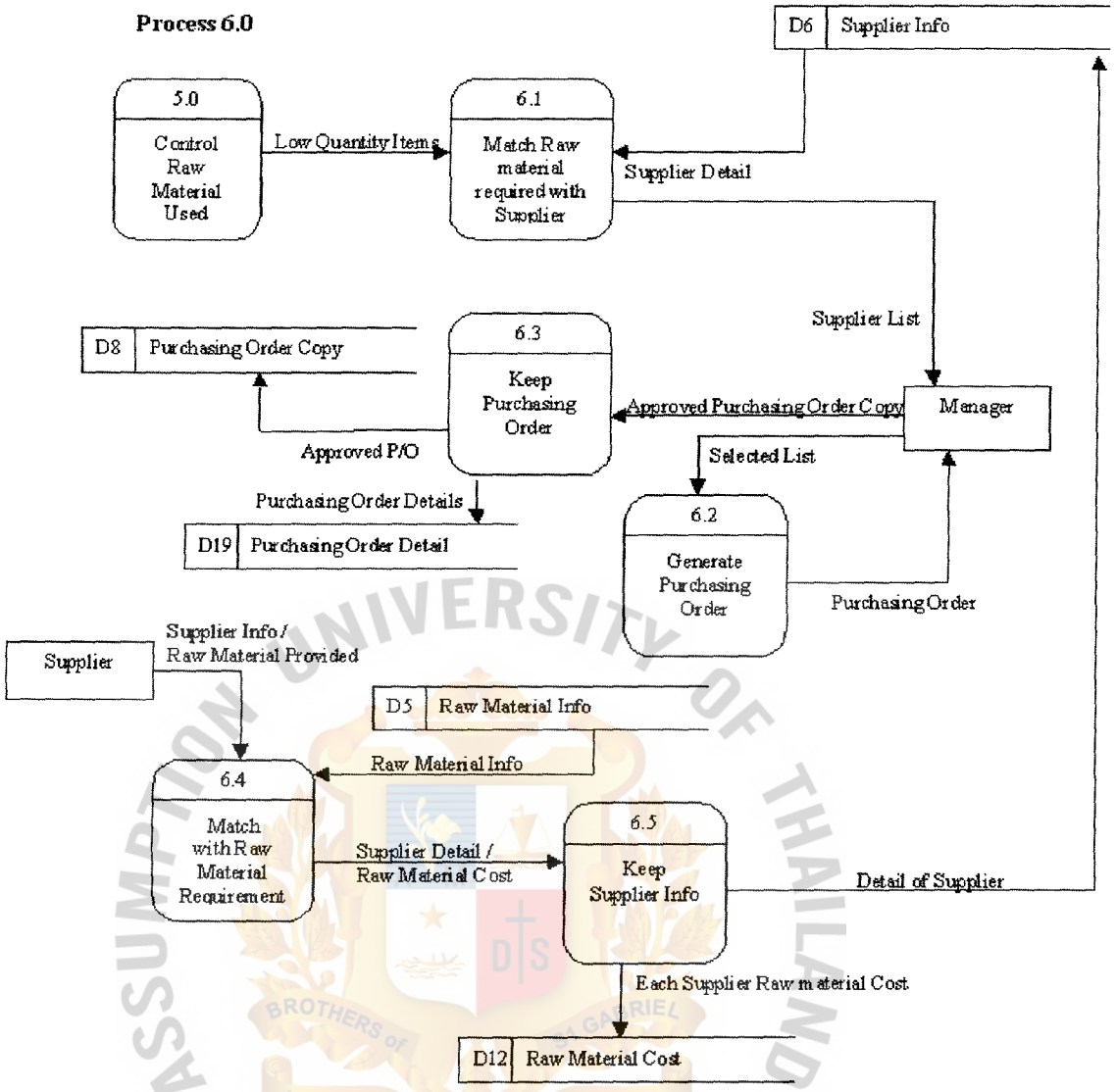

Figure 3-9 Data Flow Diagram – Level 1 for Process 6

Process 7.0

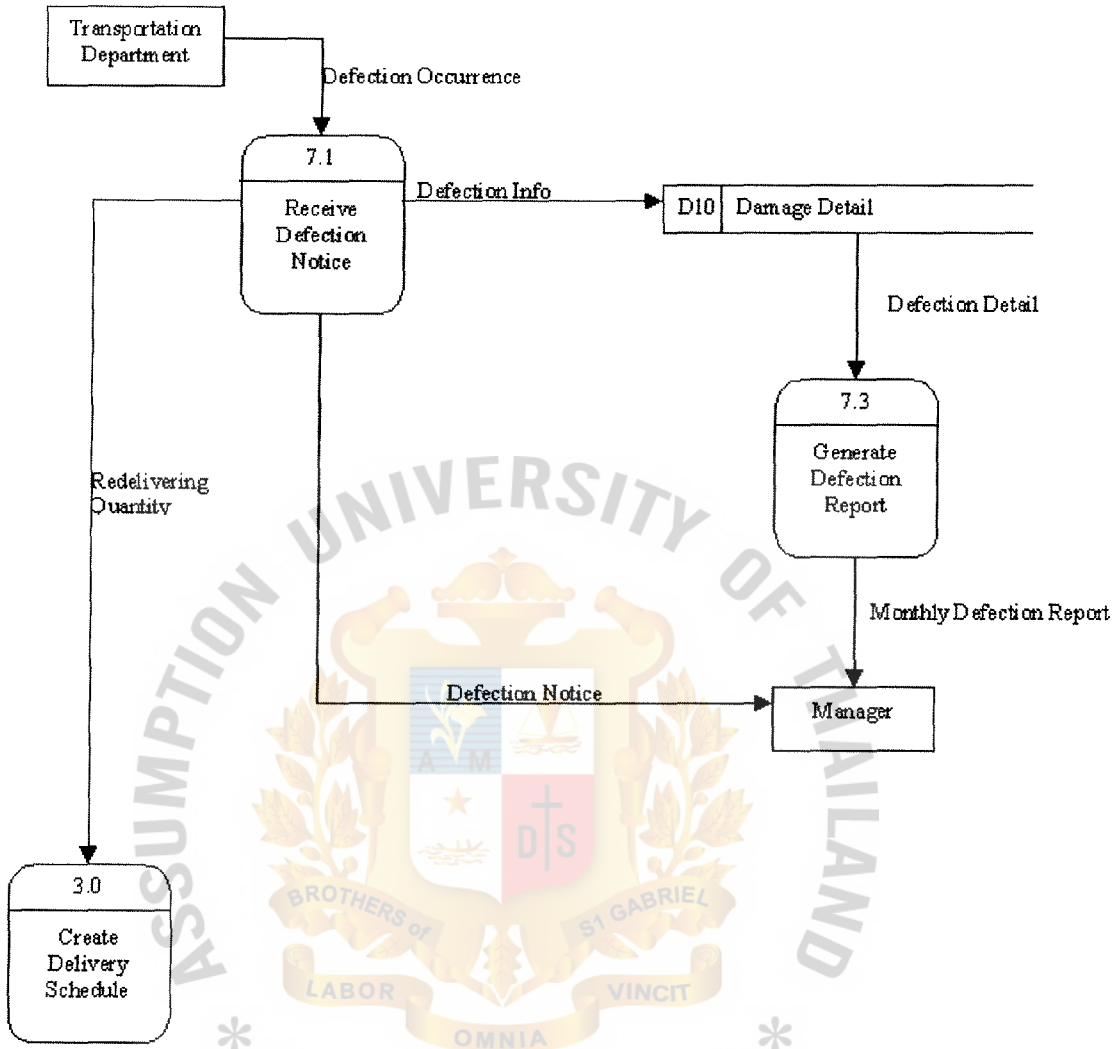

Figure 3-10 Data Flow Diagram – Level 1 for Process 7

(2) Entity-Relationship Diagram

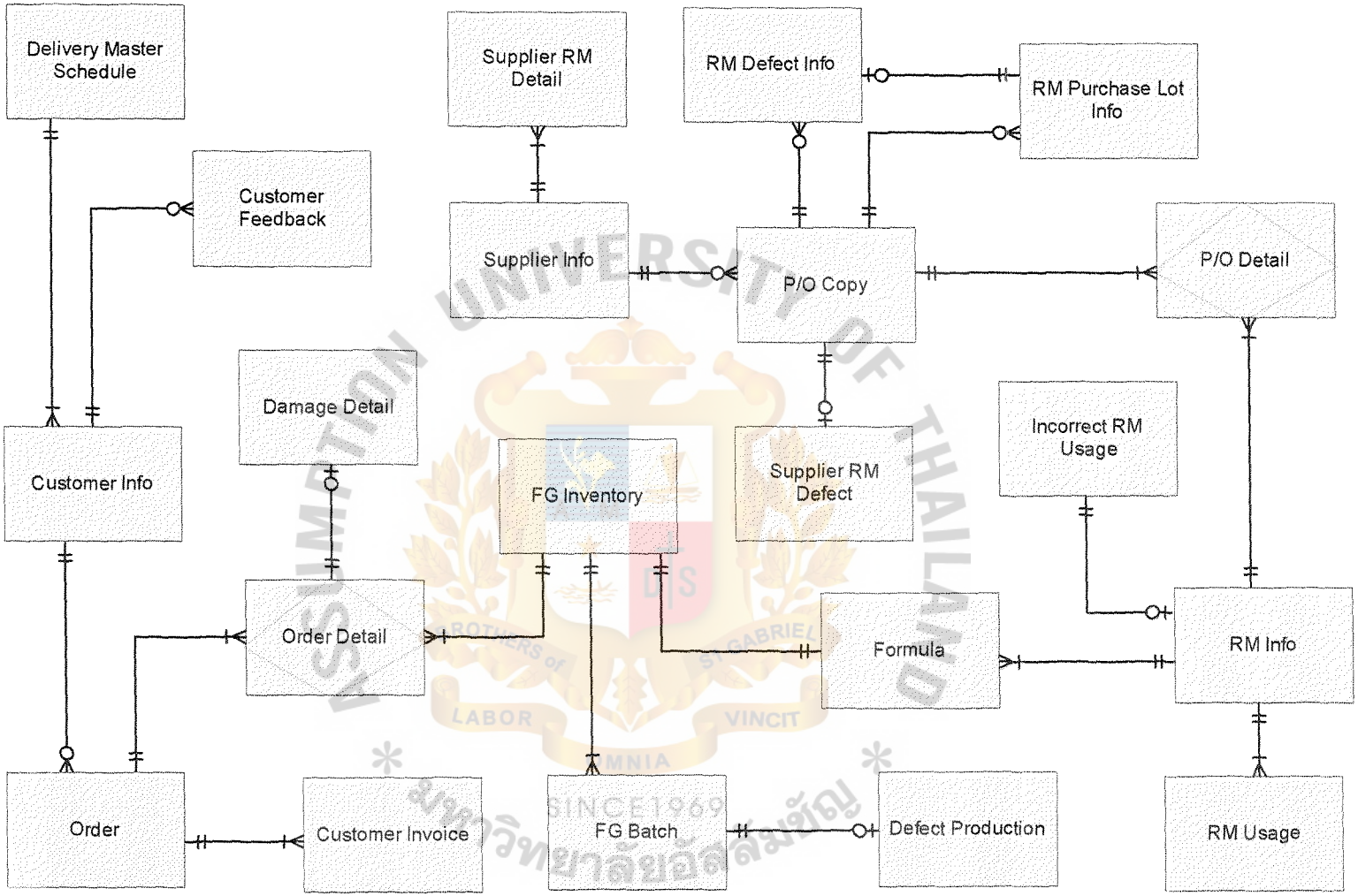

Figure 3-11 Entity-Relationship Diagram

(3) Database Design

(a) Customer Information

This database is designed to keep the information of customer which are ID, contact name, address, name of restaurant, telephone number, and feedback. Contact name is the name of person whom we will refer as a customer and use this name to contact that person. Feedback is the information about the reason of stop buying our product and also other feedback from the customer.

(b) Customer Invoice

This database is designed to keep the information of invoice, which will be given to customer along with the delivery of the customer's product. The information which will be kept are invoice ID, quantity of product being deliver to customer, the date of issuing invoice, and the total price of the product being deliver.

(c) Damage Detail

This database is designed to keep the information about Damage of the product occur from delivery. The information which will be kept in the database are Damage ID (the ID is given to state the occurrence), the quantity of the defect product, the name of delivery person in the case that the defection occur by delivery, the date that the defection occur, and the type of the defection (production or delivery)

(d) Delivery Master Schedule

This database is designed to keep the delivery information. This database will keep the information of what is the zone area for each district, and what is the delivery day (Monday-Friday) for each zone.

(e) FG Batch

This database is designed to keep the information of finish products. The data will be kept in Batch form because the production will produce the product in batch. This database will let us know when these batches are

produced, how many the items are available in each batch and are these batch expire already. The data that will be kept are Batch ID, quantity on hand, producing date, and the batch status.

(f) FG Inventory

This database is designed to keep the information of the finish products also but will be kept the information in product type category. This database will let us know how many the products are available for sale for each product type, are there enough product to maintain the safety stock level to prevent the lack of product, and what is the price of each type of product. The data which will be kept are name of the product, the quantity of each type of product available, safety stock quantity and the price of each type of product.

(g) Formula

This database is designed to keep the information of the formula of how to produce the product. The data which will be kept are the raw material require to produce the product also the quantity of each raw material, and the "How to" or production process.

(h) Incorrect RM Usage

This database is designed to keep the information about the usage of the raw material whether it is more or less than the estimated. The data which will be kept are the estimated amount of each raw material usage within a day, and the different amount of actual raw material usage within a day and the estimated amount of each raw material usage within a day.

(i) Order

This database is designed to keep the information of the order placed by customer. The information or the data which will be kept are the order ID, order status (cancelled, delivered), the date when the order is placed, the id of the customer who place the order, and the order priority (high priority: means that order is need to deliver as soon as possible, urgent: means that

order is need to be deliver immediately or within the day that the order is stated to be urgent order)

(j) Order Detail

This database is designed to keep the information of what product and how many of those products are ordered.

(k) P/O Copy

This database is designed to keep the information of purchase order which generated to purchase the raw material from the supplier. The data which will be kept are the generated date of the purchase order, the type of raw material and amount to be purchased, and the name of supplier who we will purchase from.

(l) Supplier RM Detail

This database is designed to keep the information of the raw material cost. This data base will store the information of the cost of each raw material from each supplier.

(m) Supplier RM Defection

This database is designed to keep the information of defected raw material which we purchase from supplier. These raw materials are needed to return and we will ask for the replacement. The data which will be kept are the name of defected raw materials, the quantity of defected raw materials, what purchase lot do these defected raw material belong to, and the detail of where we buy these raw materials from (P/O ID, Supplier ID).

(n) RM Information

This database is designed to keep the information of each raw material type. The data which will be kept are the name of each raw material type, the ID of each raw material type, the quantity on hand, the amount of raw material to maintain the safety stock level, and the standard cost of each raw material type.

(o) RM Purchase Lot

This database is designed to keep the information of each lot of raw material which we purchased from supplier. The data which will be kept in the database are number of purchase lot, the id of P/O which issued to purchase each lot of raw material, the expire date of each raw material lot purchased, and the raw material ID of each type of raw material in each lot.

(p) RM Usage

This database is designed to keep the information of the actual usage of raw material within each day. The database will keep the amount used of each raw material in each day.

(q) Supplier Information

This database is designed to keep the information of the supplier. The information which will be kept are the ID given to stated each supplier, address, telephone number, name of supplier, the items which selling by each supplier, and the information of how good the supplier are (does the item that we purchased from them usually defected or not).

(r) Customer Feedback

This database is designed to keep the Feedback from the customer, which will help the company to improve its quality. The data are the Date that feedback is given, Cust_ID of the customer, the Feedback itself, and the Order_ID for the reference.

(s) RM Defect Info

This database is designed to keep the defection of Raw material from production. The data are RM_Purchase_Lot_ID of the defected raw material, Defect Quantity, the ID of Responsible person, and the date of the occurance

(t) P/O Detail

This database is designed to keep the detail of the Purchasing Order, which each of it would contain many Raw materials on it. The data are each raw material Quantity, Purchase Order Status.

(u) Defect Production

This database is designed to keep the information of the defection of product from the production department. The main data are the Quantity of defection, and the note(detail) of it.

For the reference the Database Design is exhibited in Appendix A.

(4) Interface Design

(a) Customer Management Forms

This contains 3 sub forms, which are:

a. Add New Customer Information

This form is used for add the new customer into the system. The user has to enter the customer information and the Customer ID will be automatically assigned

b. Search and Edit Customer Information

On this form, the user can search for the particular customer by searching from their Customer ID or Restaurant name. After that, the user could edit the updated information of the customer and store them on the database.

c. View Customer Information

(b) Raw Material Information Form

This contains 3 sub forms, which are:

a. Add New Raw Material

If the user wants to add new type of raw materials into the system, he or she has to enter the detail of them into this form. And when the entering is finished, the Raw material ID would be automatically assigned

b. Update Raw Material Information

On this form, the user can search for each raw material by searching from the Raw material ID or its name. Then, the user could edit the updated information of the raw material and store them on the database.

c. View Raw Material Information

(c) Customer Order Form

a. New Order Information

This form is used when new order is received. Order ID will be generated by system but user must input customer ID before input any order information. High Priority means the order must be delivered as soon as possible and Urgent means the order must be delivered on that day.

b. Update Order status and Priority

This form is used for update the status of the order, for example, if the customer wants to cancel the order, then the user has to use this form to search for that particular order by using its Order ID or browsing through the order database and update the status of that order.

(d) Supplier Form

This contains 3 sub forms, which are:

a. Add Supplier

If the user wants to add new supplier into the system, he or she has to enter the detail of them into this form. And when the entering is finished, the Supplier ID would be automatically assigned

b. Edit Supplier Information

On this form, the user can search for each supplier by searching from the Supplier ID, the raw material it's provided, or its name. Then, the

user could edit the updated information of the supplier and store them on the database.

c. View Supplier Information

(e) Finish Goods (Product) Management Form

This contains 3 sub forms, which are:

a. Add New Product

If the company comes up with the new products, the user has to add them with this form. The user has to type in the detail of the product, including its formula, price and safety stock.

b. Edit Product Information

On this form, the user can search for product by searching from the Product ID, or browse through the product database. Then, the user could edit the updated information of the product, including it's formula, and store them on the database.

c. View Product Information

(f) Purchasing Order Form

This contains 3 sub forms, which are:

a. New Purchase Order

If the inventory level of some raw material went low, the user has to use this form to create the new Purchasing Order to order them from the suppliers. The user could add in the needed inventory by browsing through the Raw material list, or searching by typing the Raw material ID.

b. Confirm received Purchase Order

On this form, the user can search for the Purchasing Order of the received raw material from the supplier. The user has to key in the Purchasing Order ID for searching in the database or else, he or she could browse through the list of the Purchasing Order.

c. Record Raw material defect resulting from Supplier

If there is a case of defect raw material from the supplier, the user could use this form to enter the detail of the defection of the raw material with the use of this form.

(g) Record Defect from Delivery Form

This contains 2 sub forms, which are:

a. Report Product Defect

This form is used when there is any defect product. Delivery person name is used when product is defect from delivery only. Defect ID will be generated by system. Note section is used if the reason of defect is available.

b. View Defect Information

The user could select to view the defect, either by production department or the delivery person.

(h) Daily Raw Material Usage and Production Report

This form is used to compare the quantity of raw material used and the quantity of finished product in order to find the incorrect usage of raw material. This form will also update the quantity of raw material in stock.

(i) Delivery Schedule Form

This contains 4 sub forms, which are:

a. Auto Delivery Schedule

When user select "Automatic Scheduling", the program would automatically assigned the order to each transportation vehicle. The user does not require assigning anything, just confirming the schedule.

b. Manual Delivery Schedule

On Manual Scheduling, the user has to assign each order to the transportation vehicle, which would provide more flexibility to the system.

c. Confirm Delivered Order

This form is designed for confirming the delivered order. The user has to enter the Order ID and confirm it.

d. View Delivery Information

For your reference the example of Form Design is exhibited in Appendix D.

(5) Management Report Design

(a) Invoice

Invoice is for customer when the order is delivered.

(b) Order Report

Order Report is to show the quantity of products that each customer bought from the company.

(c) Best Seller Report

Best Seller Report shows the total sale quantity of each product.

(d) Best Seller Zone Report

Best Seller Zone Report shows the total sale quantity of each zone.

(e) Production Report

Production Report shows the total quantity of each product that is products each day.

(f) Finished Product Report

Finished Product Report shows the quantity of each finished product and its expire date separated by Batch ID.

(g) Production vs. Delivery vs. Expired Report

This report shows the total quantity of products produced, delivered and expired.

(h) Product Defection Report

This report shows the quantity of product defected from delivery and shows the name of the delivery person responsible.

(i) Raw Material Report

This report shows the quantity-on-hand of each raw material and its expire date separated by Lot ID.

(j) Supplier Report

Supplier report lists the suppliers of the company and shows their information.

(k) Best Standard Price Report

This report shows the lowest price of each raw material and its supplier.

(l) Incorrect Raw Material Report

In case that there is incorrect usage of raw material this report shows the quantity calculated from the formula and the actual quantity used to produce products.

(m) Daily Delivery Schedule

Daily Delivery Schedule is used by the delivery person. It will provide order ID and the delivery address for deliver person. It also has some space in case that some notes need to be taken.

(n) Delivery Report

Delivery Report shows the products and their quantity delivered to customer on specific date.

For your reference the example of the Management Report Design is exhibited in Appendix E.

IV. SYSTEM IMPLEMENTATION

4.1 System Implementation

The Buccaneer Company is small size company which has employees less than 20 so the new system will be applied using phased operation method in which each subsystem will be implemented using direct cutover method to prevent the unnecessary cost and reduce risk of system implement failure. Since we have divided the systems into subsystems which are:

(a) Customer Maintenance Subsystem

(b) Order Subsystem

(c) Finished Product Subsystem

(d) Delivery Schedule Subsystem

(e) Return/Defect Product Maintenance Subsystem

(f) Raw Material Control Subsystem

(g) Supplier Subsystem

(h) Report Subsystem

The new system will be implemented by divided into subsystems and then implement one by one not all at once (phased operation). The board of the company will decide which subsystem will be implemented and the next to be implemented by using criteria that the departments that will cause the less damage when the new subsystem is fail will be the first one and so on.

The advantage of using this implementation method is that the risk of error is limited only to the implemented subsystems not the entire system. If the implemented subsystem is error, it may not cause the company to stop operating their business and may recover faster than implemented the whole system at once which may stunt the

business process. This method is suitable for small size company in which to save the money while acquire the best performance of the new system.

The another advantage is that while only subsystem is implemented, it will allow the employee from other departments to learn a little bit of the new system even though that system is not for their department but this will prepare them to be ready and not get excited when the new system is implemented in their department. This will help the business process going on smoothly.

While implement the new system the training program will also provide to the employee. Since there are not many employee in the company the training will be perform to those in each department because of all participant which come from each department will have similar skills and job requirements which make them easier to understand the system of their department better than the other from different department.

4.2 Test Plan

After the new system is implemented for some time, the post-implement evaluation will start. The post – implement evaluation will start from assesses the overall quality of the new system and then verify that the new system meets specified requirements, complies with user objective and archives anticipated benefits. This will help the IT development practices by providing feedback. The typical evaluation will be:

(a) Accuracy, Completeness, and timeliness of information system output

(b) User satisfaction

(c) System reliability and maintainability

(d) Adequacy of system controls and security measures

(e) Hardware efficiency and platform performance

(f) Effectiveness of database implementation

(g) Performance of the IT team

(h) Completeness and the quality of documentation

(i) Quality and effectiveness of training

(j) Accuracy of cost-benefit estimates and development schedules

To acquire this information there will be:

(a) An interview the members of management and key users

(b) Observe users and computer operations personnel which working with new system

(c) Read all document and training material

(d) Examine all source document, output reports, and screen displays

(e) Using questionnaire

(f) Analyze maintenance and help desk logs

After doing the post – implement evaluation, next is the final report management which includes:

(a) Final version of all system documentation

(b) The plan for modifications and enhancements to the system that have been identified

(c) A recap of all system development cost and schedules

(d) A comparison of actual costs and schedule to the original estimates

(e) A post – implement evaluation

This test will help to improve the quality and the skill of the IT department and help the developer to not commit the same mistake again in another project. The person who

will perform this test will be someone who was not involved the developing process. If the new system has the problem stated above, the system will be corrected.

V. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

With the implementation of new system, the company can achieve the major benefits planned.

With the integration of the new system with the working process of the company, the company has better control over the working process. This result in reducing the error in the working process thus increases the efficiency of the working process of the company.

The new system helps in managing the schedule of delivery in order to reduce the order waiting time. So, the new system results in more efficiency and more customer satisfaction. It also help in reducing product defect resulted from delivery since new system store the name of delivery person responsible for defect delivery thus enable more control over delivery process.

The new system can keep track of the raw material used in the production by calculating the standard quantity of raw material and compare with actual usage to obtain the information of incorrect usage. This results in more control over raw material usage and reduces raw material lost.

The information about customer and supplier and others is now store systematically in database. So, it is easier and faster to obtain any information needed. It also results in better control over information and reduce incorrect, redundant and lost of information.

5.2 Recommendations

Since this new system cover the work of many departments in the company, it can help in increasing the efficiency of many process. However, it can help only partially

because the system does not truly integrate all the working processes of all department together. Even if most data can flow through the system with the current integration some data is still needed to be input into the system by the users which can result in error. However, the limitation of time and budget make the development of system that can cover all company impossible.

In the future, if the system is developed to completely cover all department of the company it can result in even more efficiency. Since Buccaneer is not a big company, developing the system to cover all departments can be done relatively easy with not very high cost. With the integration of all departments, the flow of information in the company can easily be controlled by the system result in minimum error and redundancy.

APPENDIX A
DATABASE DESIGN

Table A-1 Customer Information

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	Cust_ID	Char (6)	Y	Y		CU-9999	PK	
2	Contact_Name	Varchar (30)						
3	Cust_Address	Varchar (50)						
4	Restaurant_Name	Varchar(30)						
5	Cust_Tel	Varchar (9)				(99)-999-9999		
6	Branch_Name	Varchar(30)						
7	District	Varchar (20)		Y			FK	Delivery Master Schedule

Table A-2 Customer Invoice

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	Cust_Invoice_ID	Char (6)	Y	Y		CI-9999	PK	
2	Quantity_Delivered	Int (5)				99999		
3	Date	Date/Time	Y			DD-MM_YYYY		
4	Total_Price	Currency				#,###,###.00		
5	Order_ID	Char (6)	Y	Y		OR-9999	FK	Order

Table A-3 Damage Detail

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	Damage_NO	Char (6)	Y	Y		DE-9999	PK	
2	Damage_Quantity	Int (5)				99999		
3	Damage_Note	Varchar (50)			Y			
4	Delivery_Person	Varchar (30)			Y			
5	Date	Date/Time	Y			DD-MM-YYYY		
6	Order_ID	Char (6)	Y	Y		OR-9999	FK	Order
7	Product_ID	Char (6)	Y	Y		PR-9999	FK	FG Inventory

Table A-4 Defect Production

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	Defect_Batch_No	Char (6)	Y	Y		DE-9999	PK/FK	Defect Data
2	Batch_ID	Char (6)	Y	Y		PR-9999	PK/FK	FG Batch
3	Defect_Quantity	Int (5)				99999		
4	Defect_Note	Varchar (50)			Y			

Table A-5 Customer Feedback

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	Date	Date/Time	Y			DD-MM-YYYY	PK	
2	Cust_ID	Char (6)	Y	Y		CU-9999	PK/FK	Customer Info
3	Feedback	Varchar (50)			Y			

Table A-6 Delivery Master Schedule

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	District	Varchar (20)		Y			PK	
2	Delivery_Day	Date/Time	Y			DD-MM_YYYY		
3	Zone_ID	Char (4)	Y	Y		ZO-99		

Table A-7 FG Batch

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	Batch_ID	Char (6)	Y	Y		BA-9999	PK	
2	Quantity_On_Hand	Int (5)				99999		
3	Producing_Date	Date/Time	Y			DD-MM-YYYY		
4	Batch_Status	Varchar (10)			Y			
5	Produced_Quantity	Int (5)				99999		
6	Product_ID	Char (6)	Y	Y		PR-9999	FK	FG Inventory

Table A-8 FG Inventory

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	Product_ID	Char (6)	Y	Y		PR-9999	PK	
2	Safety_Stock_Quantity	Int (5)				99999		
3	Product_Name	Varchar (20)						
4	Product_Price	Currency				#,###,###.00		

Table A-9 Formula

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	Product_ID	Char (6)	Y	Y		FO-9999	PK/FK	FG Inventory
2	RM_ID	Char (6)	Y	Y		RM-9999	PK/FK	RM Information
3	RM_Quantity	Int (5)				99999		

Table A-10 Raw Material Usage

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	Date	Date/Time	Y			DD-MM-YYYY	PK/FK	RM Usage
2	RM_ID	Char (6)	Y	Y		RM-9999	PK/FK	RM Information
3	RM_Usage_Amount	Int(5)			Y	99999		

Table A-11 Incorrect RM Usage

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	Date	Date/Time	Y			DD-MM-YYYY	PK/FK	RM Usage
2	RM_ID	Char (6)	Y	Y		RM-9999	PK/FK	RM Information
3	Actual_Usage	Int (5)				99999		
4	Standard_Usage	Int (5)				99999		

Table A-12 Order

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	Order_ID	Char (6)	Y	Y		OR-9999	PK	
2	Order_Status	Varchar (10)			Y			
3	Ordar_Date	Date/Time	Y			DD-MM-YYYY		
4	Order_Priority	Varchar (10)			Y			
5	Cust_ID	Char (6)	Y	Y		CU-9999	FK	Customer Information

Table A-13 Order Detail

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	Order_ID	Char (6)	Y	Y		OR-9999	PK/FK	Order
2	Product_ID	Char (6)	Y	Y		PR-9999	PK	
3	Quantity_Ordered	Int (5)				99999		

Table A-14 P/O Copy

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	P/O_ID	Char (6)	Y	Y		PO-9999	PK	
2	Purchase_Date	Date/Time	Y			DD-MM-YYYY		
3	P/O_Status	Varchar (10)			Y			
4	Sup_ID	Char (6)	Y	Y		SU-9999	FK	Supplier Information

Table A-15 Supplier Raw Material Defect

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	RM_ID	Char (6)	Y	Y		RM-9999	PK/FK	RM Information
2	P/O_ID	Char (6)	Y	Y		PO-9999	PK/FK	P/O Copy
3	Defect_Quantity	Int(5)			Y	99999		

Table A-16 Supplier RM Detail

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	RM_ID	Char (6)	Y	Y		RM-9999	PK/FK	RM Information
2	Sup_ID	Char (6)	Y	Y		SU-9999	PK/FK	Supplier Information
3	RM_Cost	Currency				#,###,###.00		

Table A-17 RM Defect Information

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	RM_Purchase_Lot_ID	Char (6)	Y	Y		RP-9999	PK/FK	RM Purchase Lot
2	Defect_Date	Date/Time	Y			DD-MM-YYYY		
3	Responsible_Person_ID	Char (6)	Y	Y		SU-9999	PK/FK	Supplier information
4	Defect_Quantity	Int (5)				99999		

Table A-18 RM Information

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	RM_ID	Char (6)	Y	Y		RM-9999	PK	
2	Safety_Stock_Quantity	Int (5)				99999		
3	RM_Name	Varchar (20)		Y				
4	RM_Standard_Cost	Currency				#,###,###.00		

Table A-19 RM Purchase Lot

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	RM_Purchase_Lot_No	Char (6)	Y	Y		RP-9999	PK	
2	P/O_ID	Char (6)	Y	Y		PO-9999	PK/FK	P/O Copy
3	Expire_Date	Date/Time	Y			DD-MM-YYYY		
4	RM_ID	Char (6)	Y	Y			FK	
5	Quantity_On_Hand	Int (5)				99999		

Table A-20 P/O Detail

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	P/O_ID	Char (6)	Y	Y		PO-9999	PK/FK	P/O Copy
2	RM_ID	Char (6)	Y	Y		RM-9999	PK/FK	RM Info
3	Quantity Purchased	Int (5)				99999		
4	P/O_Status	Varchar (10)			Y			

Table A-21 Supplier Information

No.	Field Name	Field Type	Index	Unique	Nullable	Validity Check	Key	FK Referenced Table
1	Sup_ID	Char (6)	Y	Y		SU-9999	PK	
2	Sup_Address	Varchar (50)						
3	Sup_Tel	Varchar (9)				(99)-999-9999		
4	Sup_Name	Varchar (30)						
5	Sup_Note	Varchar (80)						

APPENDIX B
PROCESS SPECIFICATION

Process Name:	Maintain Order
Data in:	(1) New Order (2) Customer Detail (3) Order Detail
Data Out:	(1) New Ordered (2) Producing Quantities (3) Invoice
Process:	(1) Get Customer Details (2) Check Availability of Finished Goods
Attachment:	(1) Customer (2) Production Department (3) Transportation Department (4) Data Store D1 (5) Data Store D2 (6) Data Store D3 (7) Data Store D14

Table B –0 Process Specification for Process 1.0

Process Name:	Get Customer Details
Data in:	(1) New Order (2) Customer Detail
Data Out:	(1) Customer Order
Process:	(1) Receive New Order (2) Get Customer Info (3) Send Customer Order
Attachment:	(1) Customer (2) Data Store D1 (3) Process 1.2

Table B –1 Process Specification for Process 1.1

Process Name:	Check Availability of Finished Goods
Data in:	(1) Customer Order (2) Current Inventory Status
Data Out:	(1) Producing Quantities (2) New Ordered
Process:	(1) Receive Customer Order (2) Check the Finished Goods Inventory availability (3) Send Producing Quantities to Production Department (4) Store New Ordered and Details of its
Attachment:	(1) Production Department (2) Data Store D2 (3) Data Store D3 (4) Data Store D14 (5) Process 1.1

Table B –2 Process Specification for Process 1.2

Process Name:	Maintain Customer Info
Data in:	(1) New Customer Info (2) Updated Existing Customer Info (3) Previous Order (4) Zone Detail (5) Existing Customer Info (6) Customer ID (7) Feedback
Data Out:	(1) New Customer Detail (2) Updated Customer Detail (3) Low Transaction Report (4) Customer Feedback
Process:	(1) Receive New Customer (2) Assign Zone to Customer (3) Receive Updated Info (4) Generate Low Transaction Report (5) Receive Customer Feedback
Attachment:	(1) Customer (2) Sale Person (3) Manager (4) Data Store D1 (5) Data Store D2 (6) Data Store D4 (7) Data Store D13

Table B –3 Process Specification for Process 2.0

Process Name:	Receive New Customer
Data in:	(1) New Customer Info
Data Out:	(1) New Customer Data
Process:	(1) Receive New Customer Info (2) Format Customer Info (3) Send Customer Data
Attachment:	(1) Sale Person (2) Process 2.2

Table B –4 Process Specification for Process 2.1

Process Name:	Assign Zone to Customer
Data in:	(1) New Customer Data (2) Zone Detail
Data Out:	(1) New Customer Detail
Process:	(1) Receive New Customer Data (2) Match District of New Customer to Zone of Delivery (3) Keep New Customer Detail
Attachment:	(1) Data Store D1 (2) Data Store D4 (3) Process 2.1

Table B –5 Process Specification for Process 2.2

Process Name:	Receive Updated Info
Data in:	(1) Updated Existing Customer Info (2) Existing Customer Info
Data Out:	(1) Updated Customer Detail
Process:	(1) Receive Updated Existing Customer Info (2) Get Existing Customer Info (3) Update Existing Customer Detail
Attachment:	(1) Customer (2) Data Store D1

Table B –6 Process Specification for Process 2.3

Process Name:	Generate Low Transaction Report
Data in:	(1) Customer ID (2) Previous Order
Data Out:	(1) Low Transaction Report
Process:	(1) Get Customer ID (2) Get Previous Order (3) Check Latest order (4) Create Customer low turn-over list
Attachment:	(1) Manager (2) Data Store D1 (3) Data Store D2

Table B –7 Process Specification for Process 2.4

Process Name:	Receive Customer Feedback
Data in:	(1) Feedback
Data Out:	(1) Customer Feedback
Process:	(1) Receive Customer Feedback (2) Store the Feedback (3) Report the Feedback to Manager
Attachment:	(1) Customer (2) Manager (3) Data Store D13

Table B –8 Process Specification for Process 2.5

Process Name:	Create Delivery Schedule
Data in:	(1) Orders (2) Order Detail (3) Redelivering Quantity (4) Master Schedule (5) New Master Schedule (6) Current Inventory Status (7) Zone Info (8) Customer Info (9) District (10) Cancelled Order (11) Finish Good price
Data Out:	(1) Delivery Schedule (2) Check-up form (3) Updated Master Schedule (4) Delivered Quantity (5) Shipment Detail (6) Cancelled Confirmation (7) Uncancellable Order (8) Invoice Copies
Process:	(1) Match with Master Schedule (2) Create Daily Delivery Schedule (3) Generate Check-up Form (4) Receive Order Cancellation (5) Generate Sales Invoice (6) Update Master Schedule
Attachment:	(1) Customer (2) Transportation Department (3) Manager (4) Data Store D1 (5) Data Store D2 (6) Data Store D3 (7) Data Store D4 (8) Data Store D7 (9) Data Store D14 (10) Data Store D15 (11) Process 7.0

Table B –9 Process Specification for Process 3.0

Process Name:	Match with Master Schedule
Data in:	(1) District (2) Master Schedule (3) Current Inventory Status (4) Order (5) Order Detail
Data Out:	(1) Draft Daily Schedule
Process:	(1) Receive Customer Order (2) Get Customer District (3) Check with Master Schedule (4) Check Current Inventory Status (5) Create Draft Daily Schedule
Attachment:	(1) Data Store D1 (2) Data Store D2 (3) Data Store D3 (4) Data Store D4 (5) Data Store D14 (6) Data Store D15 (7) Process 3.2

Table B –10 Process Specification for Process 3.1

Process Name:	Create Daily Delivery Schedule
Data in:	(1) Draft Daily Schedule (2) Cancelable Order (3) Redelivered Quantity
Data Out:	(1) Delivered Quantity (2) Updated Order Status (3) Shipment Detail (4) Cancelled Confirmation (5) Delivery Products (6) Delivery Schedule
Process:	(1) Receive Draft Schedule (2) Receive Cancelable Order (3) Receive Redelivered Quantity (4) Create Delivery Schedule (5) Update Delivered Quantity (6) Notify Customer about Shipment or Cancellation
Attachment:	(1) Customer (2) Transportation Department (3) Data Store D2 (4) Data Store D3 (5) Process 3.1 (6) Process 3.3 (7) Process 3.4 (8) Process 7.0

Table B –11 Process Specification for Process 3.2

Process Name:	Generate Check-up Form
Data in:	(1) Delivery Products
Data Out:	(1) Check-up form
Process:	(1) Receive Delivery Products (2) Create Check-up form
Attachment:	(1) Transportation Department (2) Process 3.2

Table B –12 Process Specification for Process 3.3

Process Name:	Receive Order Cancellation
Data in:	(1) Cancelled Order (2) Customer Info (3) Order Detail
Data Out:	(1) Cancelable Order (2) Uncancelable Order
Process:	(1) Receive Cancelled Order (2) Get Customer Info (3) Get Order Detail (4) Check Delivery Date of Order (5) Send Cancelable Status
Attachment:	(1) Customer (2) Data Store D1 (3) Data Store D2 (4) Process 3.2

Table B –13 Process Specification for Process 3.4

Process Name:	Generate Sales Invoice
Data in:	(1) Order Detail (2) Customer Detail (3) Finish Good Price
Data Out:	(1) Invoice Copies (2) Invoice
Process:	(1) Get Order Detail (2) Get Customer Detail (3) Generate Invoice (4) Send Invoice to Transportation Department
Attachment:	(1) Transportation Department (2) Data Store D2 (3) Data Store D3 (4) Data Store D7

Table B –14 Process Specification for Process 3.5

Process Name:	Update Master Schedule
Data in:	(1) New Master Schedule
Data Out:	(1) Updated Master Schedule
Process:	(1) Receive New Master Schedule (2) Update New Master Schedule
Attachment:	(1) Manager (2) Data Store D4

Table B –15 Process Specification for Process 3.6

Process Name:	Control Finished Goods Inventory
Data in:	(1) Inventory Status (2) Inventory Detail (3) Safety Stock Margin (4) New Safety Stock Level (5) Daily Finish Good Detail (6) Defection Detail (7) Raw material Defect
Data Out:	(1) Daily Produced Quantity (2) Updated Safety Stock (3) Safety Stock Margin (4) Inventory Report (5) Defected Detail (6) Raw Material Defected Detail
Process:	(1) Update Daily Produced Finish good (2) Check Finish Good Safety Stock (3) Change Safety Stock Level (4) Generate Finish Good Report
Attachment:	(1) Production Department (2) Manager (3) Data Store D3 (4) Data Store D16 (5) Data Store D21

Table B –16 Process Specification for Process 4.0

Process Name:	Update Daily Produced Finish good
Data in:	(1) Daily Finish Good Detail (2) Defection Detail (3) Raw material Defect
Data Out:	(1) Daily Produced Quantity (2) Defected Detail (3) Raw Material Defected Detail
Process:	(1) Receive Daily Finish Good Detail (2) Update Produced Quantity (3) Receive Defection Detail (4) Store the Defection Detail (5) Receive Raw material Defect (6) Store Raw material Defect Detail
Attachment:	(1) Production Department (2) Data Store D3 (3) Data Store D16 (4) Data Store D21

Table B –17 Process Specification for Process 4.1

Process Name:	Check Finish Good Safety Stock
Data in:	(1) Inventory Detail (2) Safety Stock Margin
Data Out:	(1) Safety Stock Quantity
Process:	(1) Get Inventory Detail (2) Get Safety Stock Margin (3) Check Quantity with Margin (4) Send the needed Quantity
Attachment:	(1) Production Department (2) Data Store D3

Table B –18 Process Specification for Process 4.2

Process Name:	Change Safety Stock Level
Data in:	(1) New Safety Stock Level
Data Out:	(1) Updated Safety Stock
Process:	(1) Receive New Level of Safety Stock (2) Update Safety Stock Quantity
Attachment:	(1) Manager (2) Data Store D3

Table B –19 Process Specification for Process 4.3

Process Name:	Generate Finish Good Report
Data in:	(1) Inventory Status
Data Out:	(1) Inventory Report
Process:	(1) Get Inventory Status (2) Generate Inventory Report
Attachment:	(1) Manager (2) Data Store D3

Table B –20 Process Specification for Process 4.4

Process Name:	Control Raw Material
Data in:	(1) Daily Raw Material Used (2) Daily Finished Good Detail (3) Processing Formula (4) Ordered Raw Material (5) Supplier Invoice (6) Raw Material Status (7) New Safety Stock Level (8) Purchase Order Details (9) Lot Detail
Data Out:	(1) Updated Raw Material Used (2) Updated Safety Stock Level (3) Updated Raw Material Received (4) Suspicious Raw Material Used (5) Raw Material Report (6) Purchasing Order Copy (7) Supplier Invoice (8) Discrepancy Detail (9) Discrepancy Quantity (10) Incorrect Detail (11) Lot Detail (12) Raw Material Defection Detail
Process:	(1) Check Raw Material Used (2) Check Low Raw Material Item (3) Receive Purchased Raw Material (4) Check with Purchasing Order (5) Update Received Raw Material (6) Generate Raw Material Report (7) Update Safety Stock Level
Attachment:	(1) Production Department (2) Manager (3) Supplier (4) Data Store D5 (5) Data Store D8 (6) Data Store D9 (7) Data Store D11 (8) Data Store D17 (9) Data Store D18 (10) Data Store D19 (11) Data Store D20 (12) Data Store D21 (13) Data Store D22 (14) Process 6.0

Table B –21 Process Specification for Process 5.0

Process Name:	Check Raw Material Used
Data in:	(1) Daily Material Used (2) Daily Finished Good Detail (3) Processing Formula
Data Out:	(1) Updated Raw Material Used (2) Suspicious Raw Material Used (3) Incorrect Detail
Process:	(1) Receive Raw Material Used and Finished Goods Detail (2) Get the Processing Formula (3) Check with Processing Formula (4) Update the Raw Material used (5) Notify Suspicious used of Raw Material
Attachment:	(1) Production Department (2) Manager (3) Data Store D5 (4) Data Store D9 (5) Data Store D17 (6) Data Store D18

Table B –22 Process Specification for Process 5.1

Process Name:	Check Low Raw Material Item
Data in:	(1) Raw Material Status
Data Out:	(1) Low Quantity Item
Process:	(1) Get the Raw Material Status (2) Check with the Safety Stock (3) Send Low Level list to Generate Purchasing Order
Attachment:	(1) Data Store D17 (2) Process 6.0

Table B –23 Process Specification for Process 5.2

Process Name:	Receive Purchased Raw Material
Data in:	(1) Ordered Raw Material (2) Supplier Invoice
Data Out:	(1) Invoice
Process:	(1) Receive Order raw material (2) Send Invoice to Check with Purchasing Order
Attachment:	(1) Supplier (2) Process 5.4

Table B –24 Process Specification for Process 5.3

Process Name:	Check with Purchasing Order
Data in:	(1) Invoice (2) Purchasing Order Copy (3) Purchasing Order Detail
Data Out:	(1) Supplier Invoice (2) Received Quantities (3) Lot Detail (4) Supplier Raw Material Defection
Process:	(1) Receive Invoice (2) Get Purchasing Order Copy (3) Check with the Purchasing Order (4) Keep Supplier Invoice (5) Send Discrepancy Quantity and Detail to Supplier
Attachment:	(1) Supplier (2) Data Store D8 (3) Data Store D11 (4) Data Store D19 (5) Data Store D20 (6) Data Store D22 (7) Process 5.3 (8) Process 5.5

Table B –25 Process Specification for Process 5.4

Process Name:	Update Received Raw Material
Data in:	(1) Received Quantities
Data Out:	(1) Updated Raw Material Received
Process:	(1) Receive Raw Material Quantity (2) Keep Updated Quantity
Attachment:	(1) Data Store D5 (2) Process 5.4

Table B –26 Process Specification for Process 5.5

Process Name:	Generate Raw Material Report
Data in:	(1) Raw Material Status (2) Lot Detail (3) Raw Material Defected Detail
Data Out:	(1) Raw Material Report
Process:	(1) Get Raw Material Status (2) Generate Raw Material Report
Attachment:	(1) Manager (2) Data Store D5 (3) Data Store D20 (4) Data Store D21

Table B –27 Process Specification for Process 5.6

Process Name:	Update Safety Stock Level
Data in:	(1) New Safety Stock Level (2) Processing Formula
Data Out:	(1) Updated Safety Stock Level (2) Processing Formula
Process:	(1) Receive New Safety Stock Level (2) Update level of safety stock (3) Receive Processing Formula (4) Update the formula
Attachment:	(1) Manager (2) Data Store D5 (3) Data Store D9

Table B –28 Process Specification for Process 5.7

Process Name:	Create Purchasing Order
Data in:	(1) Low Quantity Item (2) Supplier Detail (3) Raw Material Cost (4) Supplier Info (5) Raw Material Provided (6) Approved Purchasing Order Copy
Data Out:	(1) Detail of Supplier (2) Raw Material Info (3) Each Supplier Raw Material Cost (4) Purchasing Order (5) Approved Purchasing Order (6) Purchasing Order Details
Process:	(1) Match Raw Material Required with Supplier (2) Generate Supplier List (3) Generate Purchasing Order (4) Keep Purchasing Order (5) Match with Raw Material Requirement (6) Keep Supplier info
Attachment:	(1) Supplier (2) Manager (3) Data Store D5 (4) Data Store D6 (5) Data Store D8 (6) Data Store D12 (7) Data Store D19 (8) Process 5.0

Table B –29 Process Specification for Process 6.0

Process Name:	Match Raw Material Required with Supplier
Data in:	(1) Low Quantity Item (2) Supplier Detail
Data Out:	(1) Supplier List
Process:	(1) Receive Low Quantity items list (2) Get Supplier list that provide the raw material required (3) Generate Supplier List
Attachment:	(1) Data Store D6 (2) Process 5.0 (3) Manager

Table B –30 Process Specification for Process 6.1

Process Name:	Generate Purchasing Order
Data in:	(1) Selected List
Data Out:	(1) Purchasing Order
Process:	(1) Receive the selected supplier (2) Create Purchasing Order
Attachment:	(1) Manager

Table B –31 Process Specification for Process 6.2

Process Name:	Keep Purchasing Order
Data in:	(1) Approved Purchasing Order Copy
Data Out:	(1) Approved Purchasing Order (2) Purchasing Order Details
Process:	(1) Received Approved Purchasing Order (2) Keep Approved Purchasing Order
Attachment:	(1) Manager (2) Data Store D8 (3) Purchasing Order19

Table B –32 Process Specification for Process 6.3

Process Name:	Match with Raw Material Requirement
Data in:	(1) Supplier Info (2) Raw Material Provided (3) Raw Material Info
Data Out:	(1) Supplier detail (2) Raw Material Cost
Process:	(1) Receive Supplier info and Raw material Provided (2) Get Raw Material Info (3) Match with Raw Material Required
Attachment:	(1) Supplier (2) Data Store D5 (3) Process 6.5

Table B –33 Process Specification for Process 6.4

Process Name:	Keep Supplier info
Data in:	(1) Supplier detail (2) Raw Material Cost
Data Out:	(1) Detail of Supplier (2) Each Supplier Raw Material Cost
Process:	(1) Receive Supplier Detail and Raw Material Cost (2) Keep Supplier Detail (3) Keep Supplier's Raw Material cost
Attachment:	(1) Data Store D6 (2) Data Store D12 (3) Process 6.4

Table B –34 Process Specification for Process 6.5

Process Name:	Control Defected Product
Data in:	(1) Defection Occurrence (2) Defection Detail
Data Out:	(1) Redelivering Quantity (2) Defection Info (3) Monthly Defection Report (4) Defection Notice
Process:	(1) Receive Defection Notice (2) Generate Defection Report
Attachment:	(1) Transportation Department (2) Manager (3) Data Store D10 (4) Process 3.0

Table B –35 Process Specification for Process 7.0

Process Name:	Receive Defection Notice
Data in:	(1) Defection Occurrence
Data Out:	(1) Defection Info (2) Defection Notice (3) Redelivering Quantity
Process:	(1) Receive the occurrence of defection (2) Check the quantity of defection (3) Send the Defection Notice to Manager (4) Send Redelivery Quantity to Transportation Department
Attachment:	(1) Transportation Department (2) Manager (3) Data Store D10 (4) Process 3.0

Table B –36 Process Specification for Process 7.1

Process Name:	Generate Defection Report
Data in:	(1) Defection Detail
Data Out:	(1) Monthly Defection Report
Process:	(1) Get Defection Detail (2) Generate Monthly Report
Attachment:	(1) Manager (2) Data Store D10

Table B –37 Process Specification for Process 7.2

APPENDIX C
DATA DICTIONARY

Table C-1 Data Dictionary of Buccaneer Sale System

Actual Usage =	* The Quantity of raw material that actually used * * Values: 1{Numuric}8 *
Approved P/O =	* Alias to Approved Purchasing Order copy *
Approved Purchasing Order Copy =	* Purchasing Order that Manager approved * * P/O_ID + RM_ID + Quantity + Sup_ID *
Batch_ID =	* * * Values: 1{Numuric}8 *
Cancelable Order =	* Order that can be cancelled * * Order_ID *
Cancelled Order =	* Cancelation of Order * * Restaurant Name *
Check-up form =	* Alias to Delivery Products *
Current Inventory Status =	* Current Quantity of Each Product * * Product_ID + Quantity *
Cust_Address =	* The Address of the customer * * Values: 1{legal-character}80 *
Cust_ID =	* Identification Number of Each Customer * * Values: 1{Numuric}7 *
Cust_Name =	* Contact Person Name * * Values: 1{Legal-character}50 *
Cust_Tel =	* Customer telephone number * * Values: 1{Numuric}10 *
Customer Detail =	* Detail of Each Customer * * Cust_ID + Cust_Address + Restaurant Name *
Customer Feedback =	* * * Cust_ID + Date + Feedback + Order_ID *
Customer ID =	* Alias to Cust_ID *
Customer Order =	* * * Customer Detail + Order *

Customer_Info =	* Alias to Customer Detail *
Daily Finish Good Detail =	* Detail of each day Finished products * * Product_ID + Quantity *
Daily Material Used =	* List of Raw Material use daily * * RM_ID + RM_Name + Quantity *
Daily Produced Quantity =	* Alias to Daily Finish Good Detail *
Date =	* * * Values: 8{Numuric}8 *
Defect Note =	* * * Values: 1{Legal-character}200 *
Defect Quantity =	* * * Values: 1{Numuric}8 *
Defect_Batch_No =	* * * Values: 1{Numuric}8 *
Defect_ID =	* Identification Number of each Defection * * Values: 1{Numuric}7 *
Defected Detail =	* * * Defect_Batch_No + Defect Quantity + Defect Note *
Defection Detail =	* Alias to Defection Info *
Defection Detail =	* Defection of Finish good from Production * * Batch_ID + Defect Quantity + Defect Note *
Defection Info =	* Information of Each Defection * * Defect_ID + Delivery Person + Order_ID + Product_ID + Quantity *
Defection Notice =	* Notice to Manager about Defected Product occurance * * Defect_ID + Delivery Person + Order_ID + Product_ID + Quantity *
Defection Occurance =	* Defected Product occurred * * Delivery Person + Order_ID + Product_ID + Quantity *
Delivered Quantity =	* * * Product_ID + Quantity *
Delivery Person =	* Name of Delivery Person * * Values: 1{Legal-character}50 *

Delivery Products =	* * * Cust_ID + Restaurant_Name + Product_ID + Quantity *
Delivery Schedule =	* List of Restaurant to deliver* * Cust_ID + Restaurant_Name + Cust_Name + Cust_Address + Cust_Tel + District *
Delivery_Day =	* * * Values: 1{Legal-character}20 *
Detail of Supplier =	* Alias to Supplier Detail *
Discrepancy Detail =	* Detail of mismatch quantity of Raw material * * RM_ID + Quantity Mismatch *
Discrepancy Quantity =	* Excess Quantity of Raw Material Received * * RM_Name + Quantity *
District =	* District of Customer Restaurant * * Values: 1{Legal-character}50 *
Draft Daily Schedule =	* List of Delivery each day * * Order_ID + District *
Each Supplier Raw Material Cost =	* Alias to Raw Material Cost *
Existing Customer Info =	* Current Information about each Customer * * Restaurant_Name + Cust_Name + Cust_Address + Cust_Tel + District *
Expire_Date =	* Date of Expiration * * Values: 8{Numuric}8 *
Feedback =	* * * Values: 1{Legal-character}50 *
Finish Good Price =	* * * Product_ID + Price *
Incorrect Detail =	* The detail of Incorrect used of Raw Material in Production * * RM_ID + Date + Standard Usage + Actual Usage + Note *
Inventory Detail =	* Detail of Each products * * Product_ID + Quantity *
Inventory Report =	* Report of Inventory * * Product_ID + Quantity *
Inventory Status =	* Alias to Inventory Detail *

Invoice =	* Invoice for each sales * * Invoice_ID + Customer_ID + Restaurant name + Cust_Address + Product_ID + Quantity *
Invoice Copies=	* Alias to Invoice *
Invoice_ID =	* Identification Number of Each Invoice * * Values: 1{Numuric}7 *
Legal-Character =	* The Character that can be used in the system * *Values: [a-z | A-Z | 0-9 | ' | - | _ | @ | / | \ |] *
Lot Detail =	* * * RM_Purchase_Lot_ID + Expire_Date + Quantity *
Low Quantity Item =	* No. of unit to order to meet with Safety Stock Quantity* * RM_ID + Quantity *
Low Transaction Report =	* Report of Low Turn-over Customer * * Cust_ID + Number of days *
Master Schedule =	* Schedule of Delivery * * Zone_ID + Delivery_Day *
Monthly Defection Report =	* Defection Report at the end of the month * * Defect_ID + Delivery Person + Order_ID + Product_ID + Quantity + Date*
New Customer Data =	* * * Cust_ID + Restaurant_Name + Cust_Name + Cust_Address + Cust_Tel + District *
New Customer Detail =	* * * Cust_ID + Restaurant_Name + Cust_Name + Cust_Address + Cust_Tel + District *
New Customer Info =	* Information of New Customer * * Restaurant_Name + Cust_Name + Cust_Address + Cust_Tel + District *
New Master Schedule =	* New Delivery Schedule * * Zone_ID + Delivery_Day + District *
New Order =	* New order received from existing Customer * * Restaurant Name + Order *
New Ordered =	* Processed order * * Order_ID + Customer_ID + Product_ID + Quantity *
New Safety Stock level =	* New Level of Safety stock for each products * * Product_ID + Product Name + Safety Stock level *

Number of Days =	* Number of day from latest order * * Values: 1{Numuric}3 *
Numuric =	* The Number that allowed in the system * * Values: [0-9 | - | / | + |] *
Order =	* * * Product Name + Quantity *
Order Detail =	* Detail of Each Order * * Order_ID + Order_Date *
Order Status =	* * * Values: 1{Legal-character}20 *
Order_date =	* Date of Order * * Values: 8{Numuric}8 *
Order_ID =	* Identification Number of each Order * * Values: 1{Numuric}7 *
Ordered Raw Material =	* Raw material receive from supplier * * RM_ID + Quantity Received *
P/O Status =	* Status of the Purchasing Order * * Values: 5{Legal-Character}10}
P/O_ID =	* Identification Number of each Raw material Purchasing Order* * Values: 1{Numuric}7 *
Previous Order =	* Latest Order that have been order * * Order_ID + Cust_ID + Order_date *
Price =	* * * Values: 1{Numuric}8 *
Processing Formular =	* Quantity of Raw material use to produce 1 unit of products * * RM_ID + Quantity *
Producing Quantities =	* Number of Unit to produce in case of insufficient Finished Goods * * Product_ID + Quantity *
Product Name =	* * * Values: 1{Legal-character}50 *
Product_ID =	* Identification Number of Each Product * * Values: 1{Numuric}7 *
Purchasing Order =	* Raw material purchasing order * * P/O_ID + RM_ID + Quantity + Sup_ID *

Purchasing Order Copy =	* Copy of Raw material purchasing order * * P/O_ID + RM_ID + Quantity *
Purchasing Order Details =	* * * P/O_ID + RM_ID + Quantity + P/O Status *
Quantity =	* * * Values: 1{Numuric}5 *
Quantity excess=	* Excessive use of Raw Material * * Values: 1{Numuric}7 *
Quantity Mismatch =	* * * Values: 1{Numuric}5 *
Quantity Received =	* Actual number of Raw Material Received * * Values: 1{Numuric}5 *
Raw Material Cost =	* Cost of each Raw material from each supplier * * RM_ID + RM_Cost + Sup_ID*
Raw Material Defect =	* Defection of Raw Material from Production * * Defect Quantity + Date + Resposible Person *
Raw Material Defected Detail =	* Defection of Raw Material from Production * * RM_Purchase_Lot_ID + Defect Quantity + Date + Resposible Person *
Raw Material Info =	* * * RM_ID + RM_Name *
Raw Material Provided =	* List of Raw Material Provided * * RM_ID + RM_Name + RM_Cost *
Raw Material Report =	* Report of Raw material * * RM_ID + Quantity *
Raw Material Status =	* * * RM_ID + Quantity + Safety Stock Level*
Reason =	* The reason of incancelable * * Values: 1{Legal-character}20 *
Received Quantity =	* Alias to Ordered Raw Material
Redelivered Quantity =	* Quantity to redelivered from defection * * Order_ID + Product_ID + Quantity *
Responsible Person =	* * * Values: 1{Legal-character}200 *

Restaurant Name =	* The Name of Customer Restaurant including branch name * * Values: 1{Legal-character}50 *
RM_Cost =	* * * Values: 1{Numuric}5 *
RM_ID =	* Identification Number of each Raw material * * Values: 1{Numuric}7 *
RM_Name =	* Name of Each Raw material * * Values: 1{Legal-character}50 *
RM_Purchase_Lot_ID =	* * * Values: 1{Numuric}8 *
Safety Stock level =	* * * Values: 1{Numuric}5 *
Safety Stock Margin =	* Level of Safety stock for each products * * Product_ID + Safety Stock level *
Safety Stock Quantity =	* No. of unit to produce to meet with Safety Stock Quantity* * Product_ID + Quantity *
Selected List =	* List of Supplier that Manager Selected * * Sup_ID + Sup_Name + Sup_Address + Sup_Tel + RM_ID *
Standard Usage =	* The Quantity of raw material that should be used * * Values: 1{Numuric}8 *
Sup_ID =	* Identification Number of each Supplier * * Values: 1{Numuric}7 *
Sup_Name =	* Name of Each Supplier * * Values: 1{Legal-character}50 *
Sup_Tel =	* Supplier telephone number * * Values: 1{Numuric}10 *
Supplier Detail =	* Detail of each Supplier * * Sup_ID + Sup_Name + Sup_Address + Sup_Tel + RM_ID *
Supplier Info =	* * * Sup_ID + Sup_Name + Sup_Address + Sup_Tel *
Supplier Invoice =	* Invoice issued by supplier * * Sup_invoice_ID + RM_Name + Quantity *
Supplier List =	* List of Supplier that provide needed Raw Material * * Sup_ID + Sup_Name + Sup_Address + Sup_Tel + RM_ID + RM_Cost *

Supplier Raw Material Defection =	* * * RM_ID + P/O_ID + Quantity *
Supplier_Address =	* The Address of the Supplier * * Values: 1{legal-character}80 *
Suspicious Raw Material Used =	* Notice to Manager about excessing use of Raw material * * RM_ID + RM_Name + Quantity excess *
Uncancelable Order =	* The Order that could not be cancelled * * Restaurant Name + Order_ID + Reason *
Updated Customer Detail =	* Alias to Updated Existing Customer Info *
Updated Existing Customer Info =	* The Updated Data of Existing Customer * * Restaurant_Name + Cust_Name + Cust_Address + Cust_Tel + District *
Updated Master Schedule =	* Alias to New Master Schedule *
Updated Order Status =	* * * Order_ID + Order_Status *
Updated Raw Material Received =	* * * RM_ID + Quantity *
Updated Raw Material Used =	* * * RM_ID + Quantity *
Updated Safety Stock =	* Alias to New Safety Stock *
Zone Detail =	* Alias to Zone_ID *
Zone_ID =	* Identification Number of Each Zone* * Values: 1{Numuric}2 *

APPENDIX D
INTERFACE DESIGN

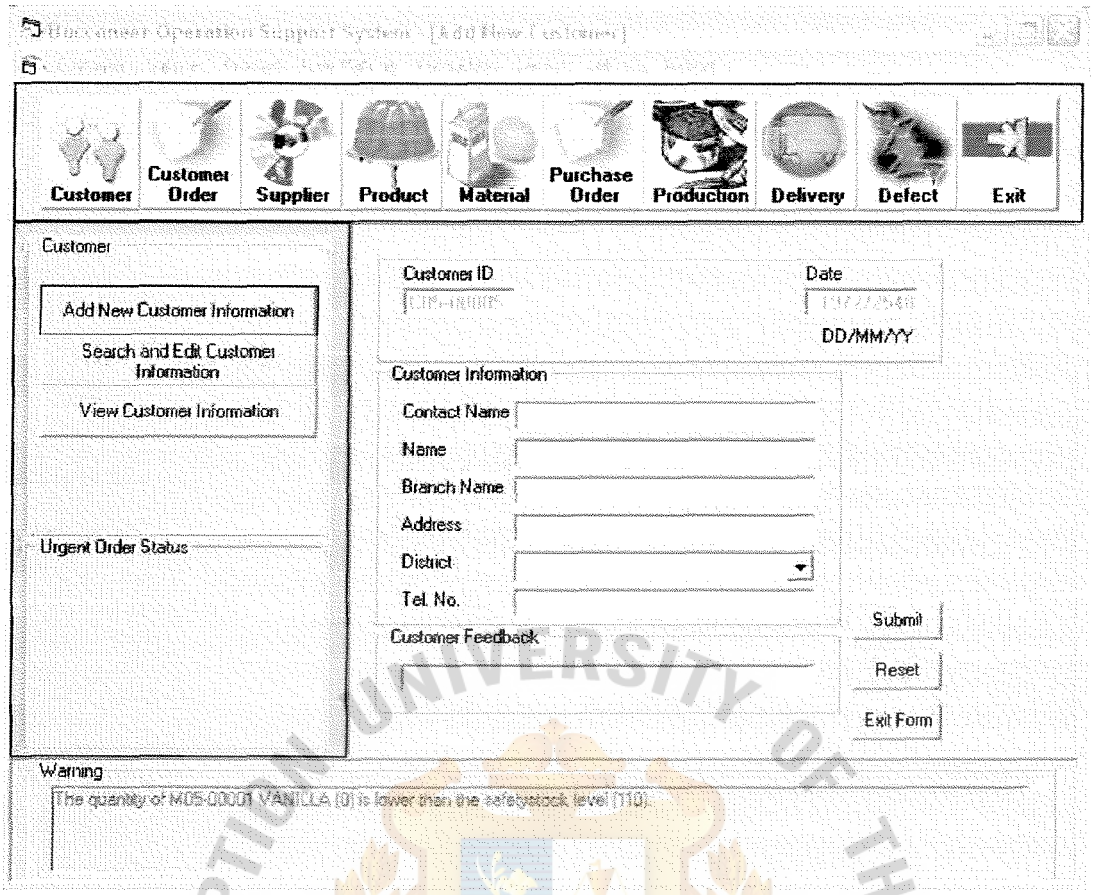

Figure D-1 Add New Customer Form

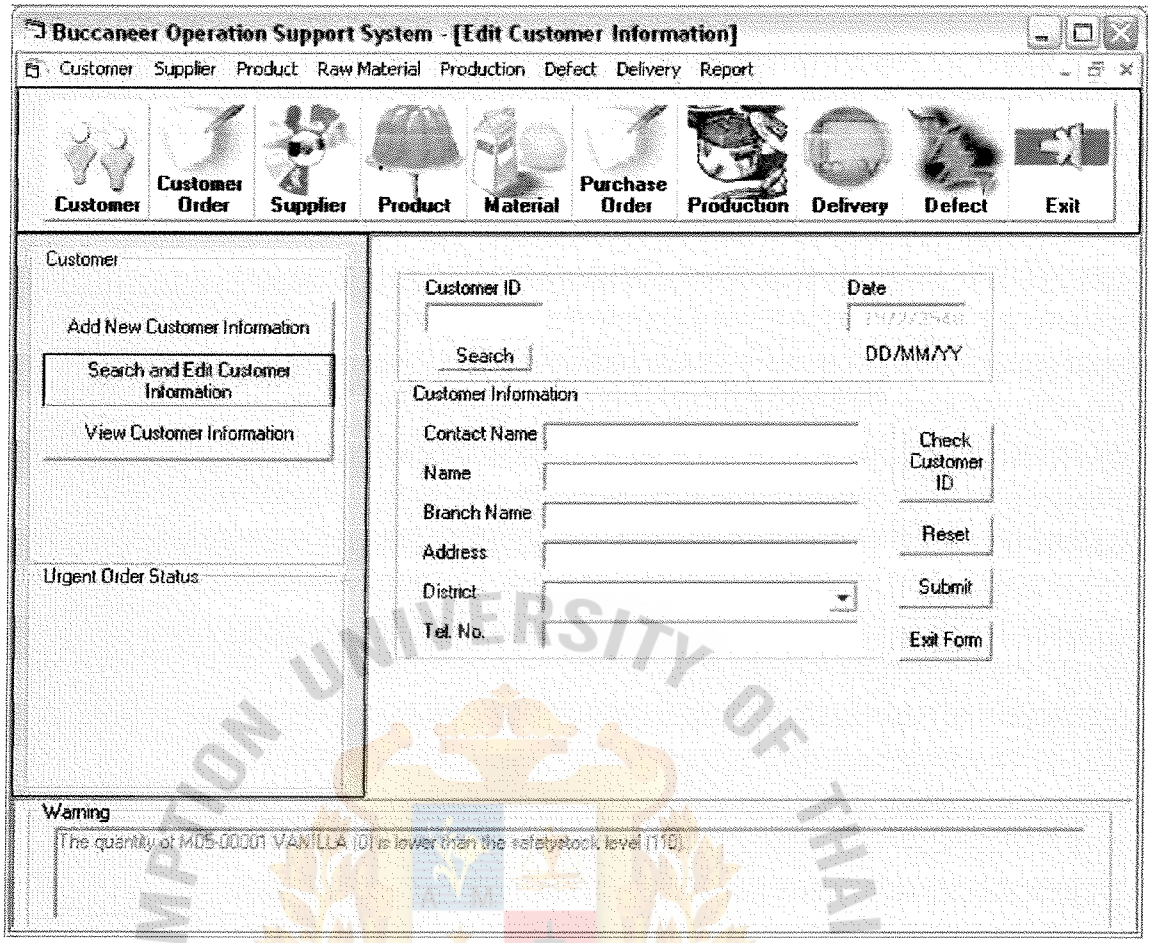

Figure D-2 Search and Edit Customer Information

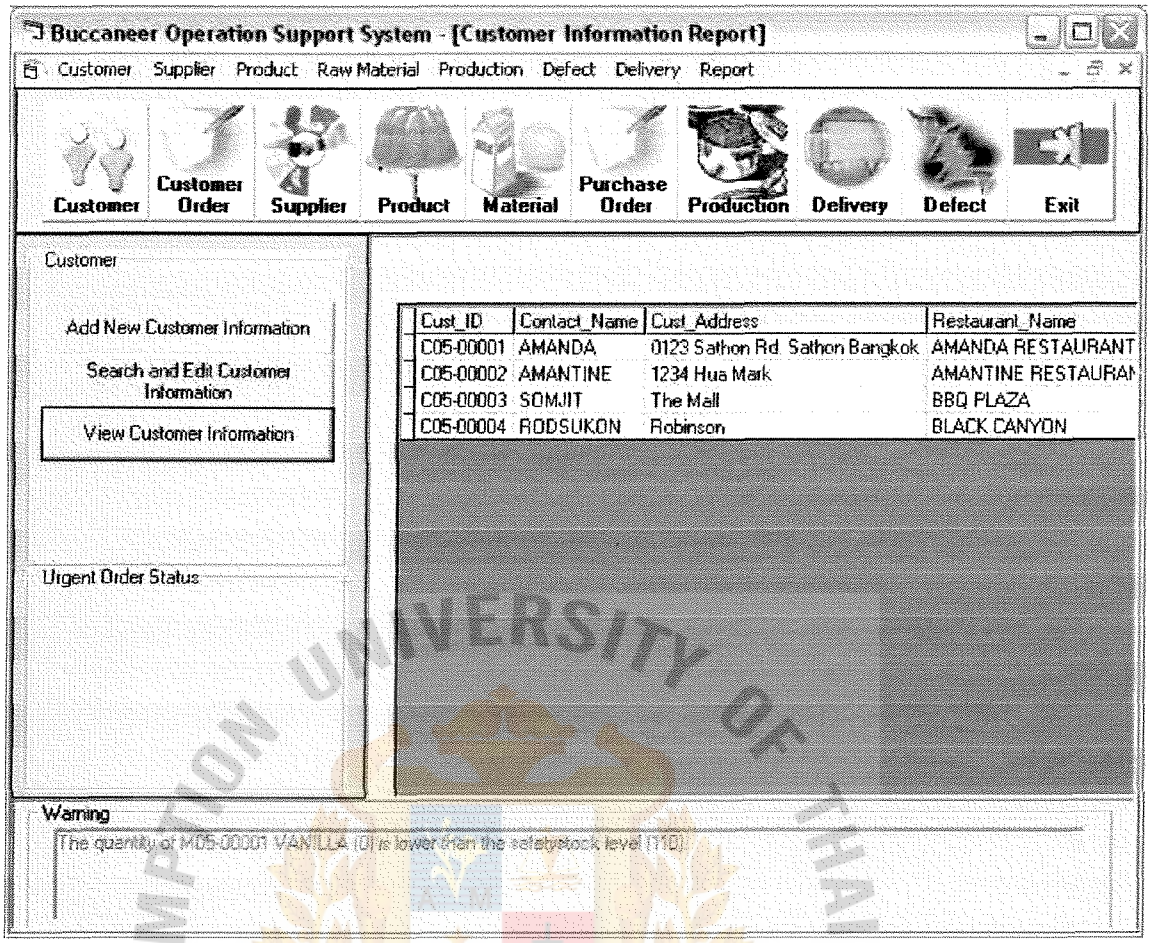

Figure D-3 View Customer Information

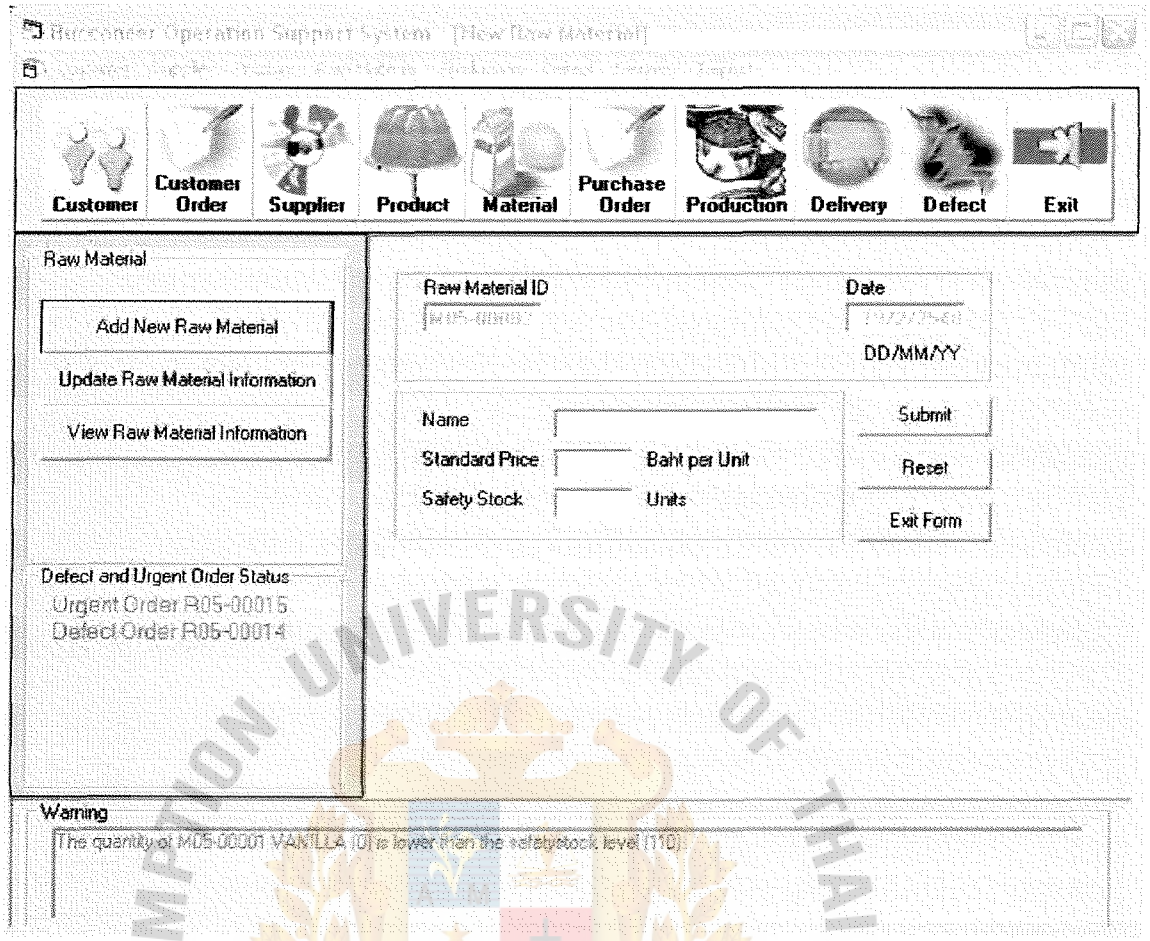

Figure D-4 Add New Raw Material

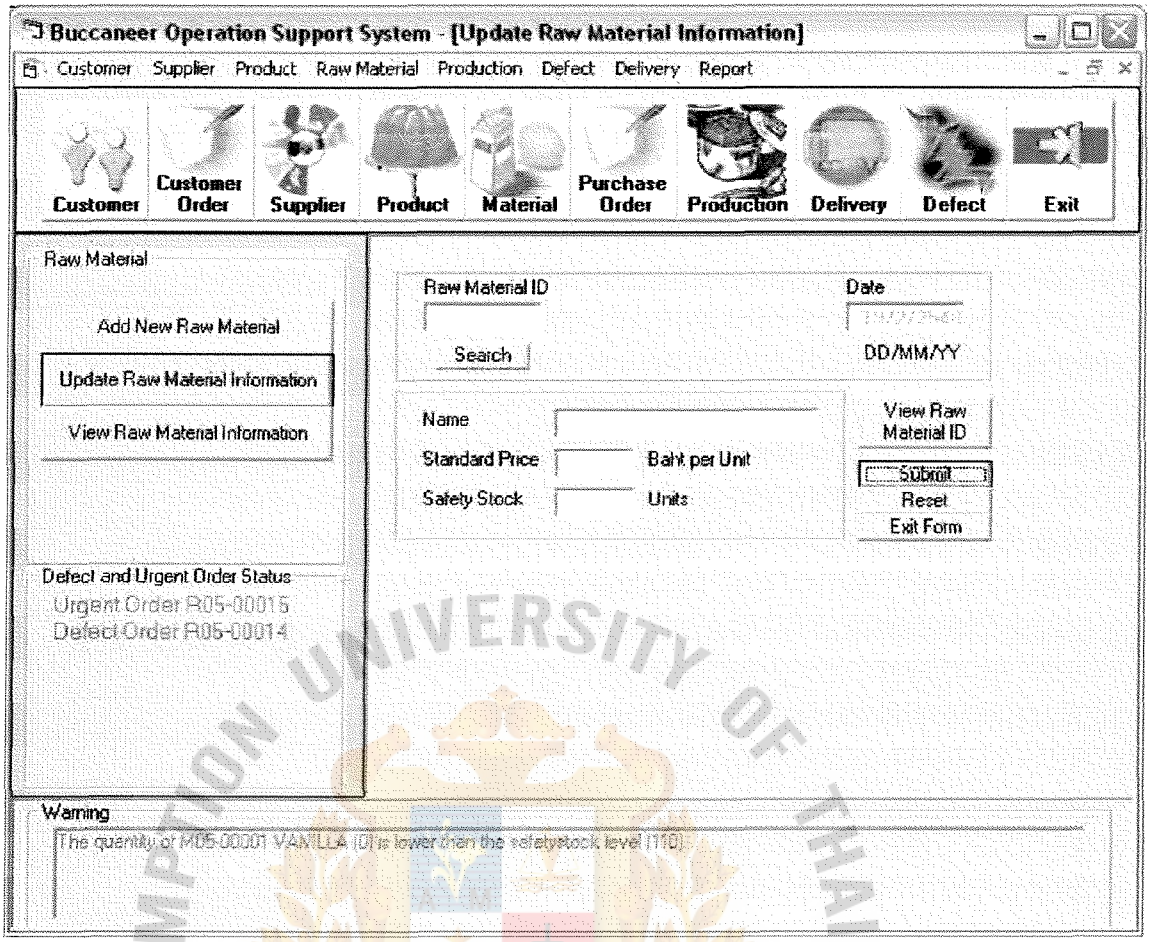

Figure D-5 Update Raw material Information

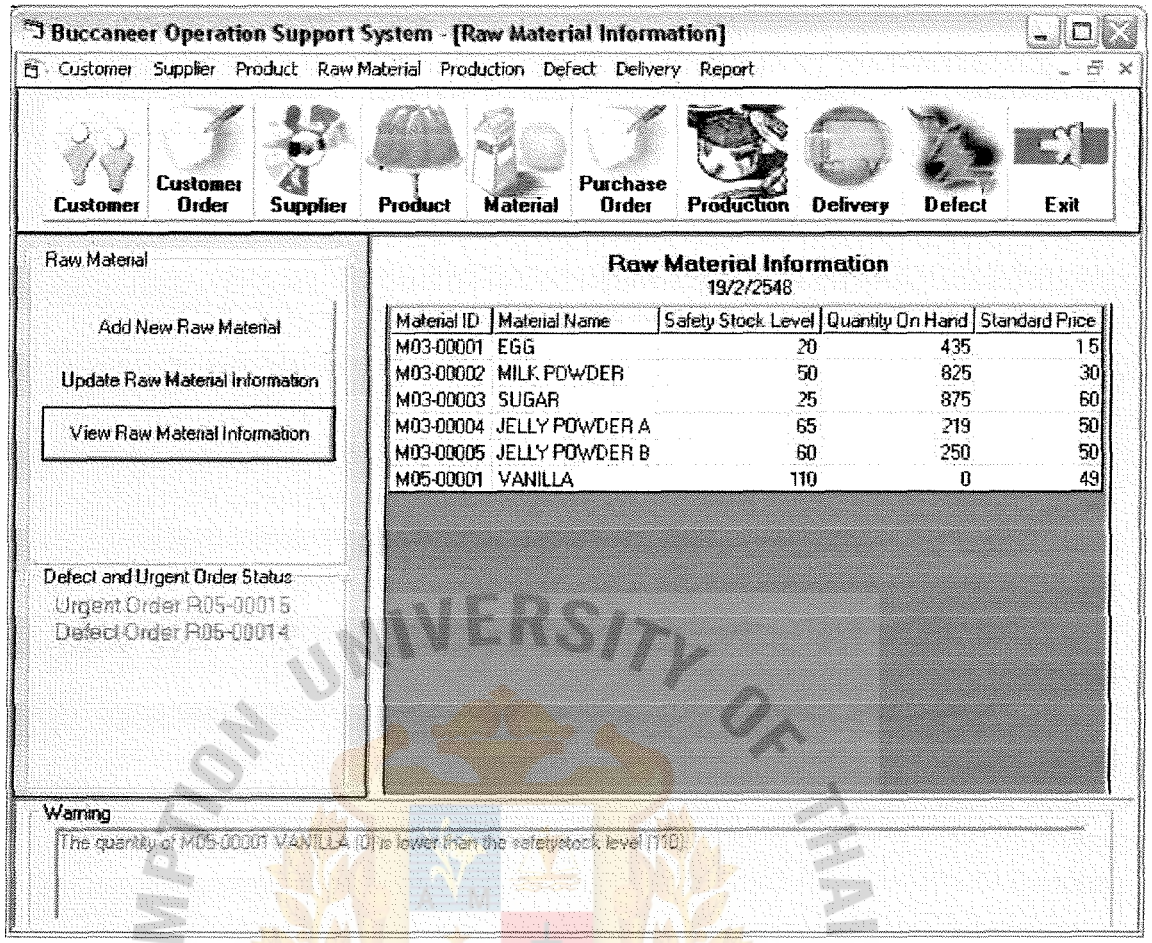

Figure D-6 View Raw Material Information

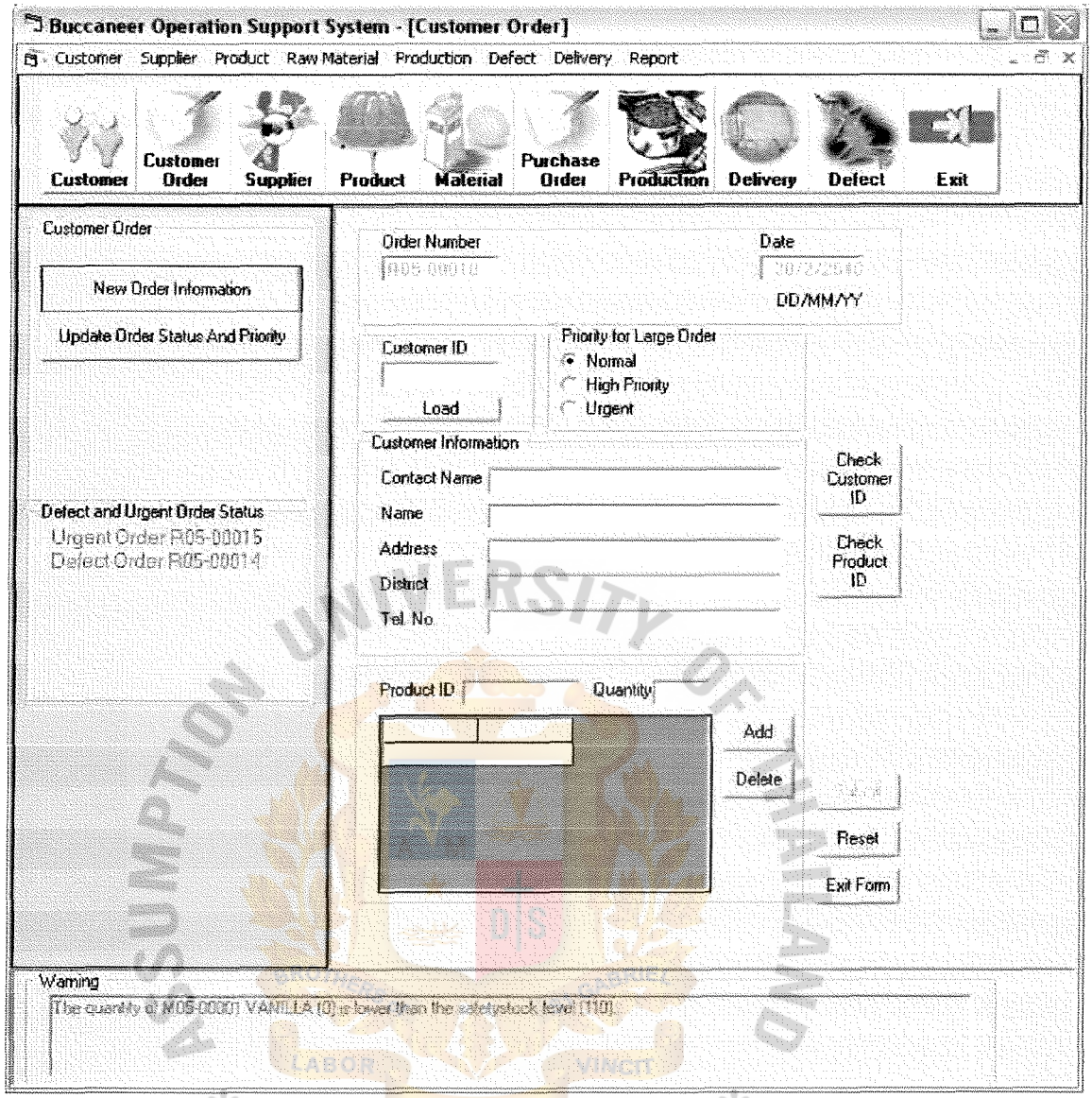

Figure D-7 New Customer Order

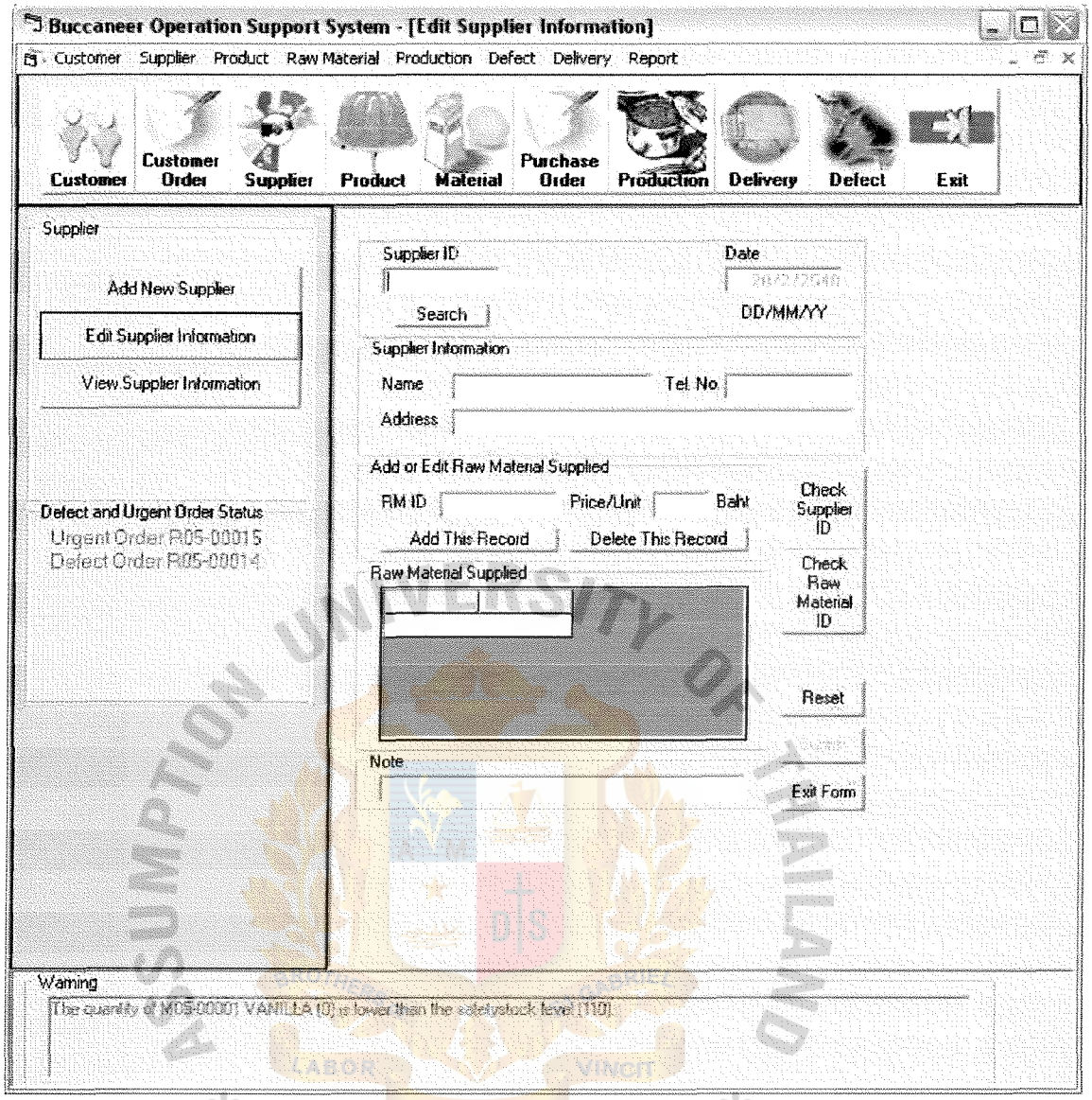

Figure D-8 Edit Supplier Information

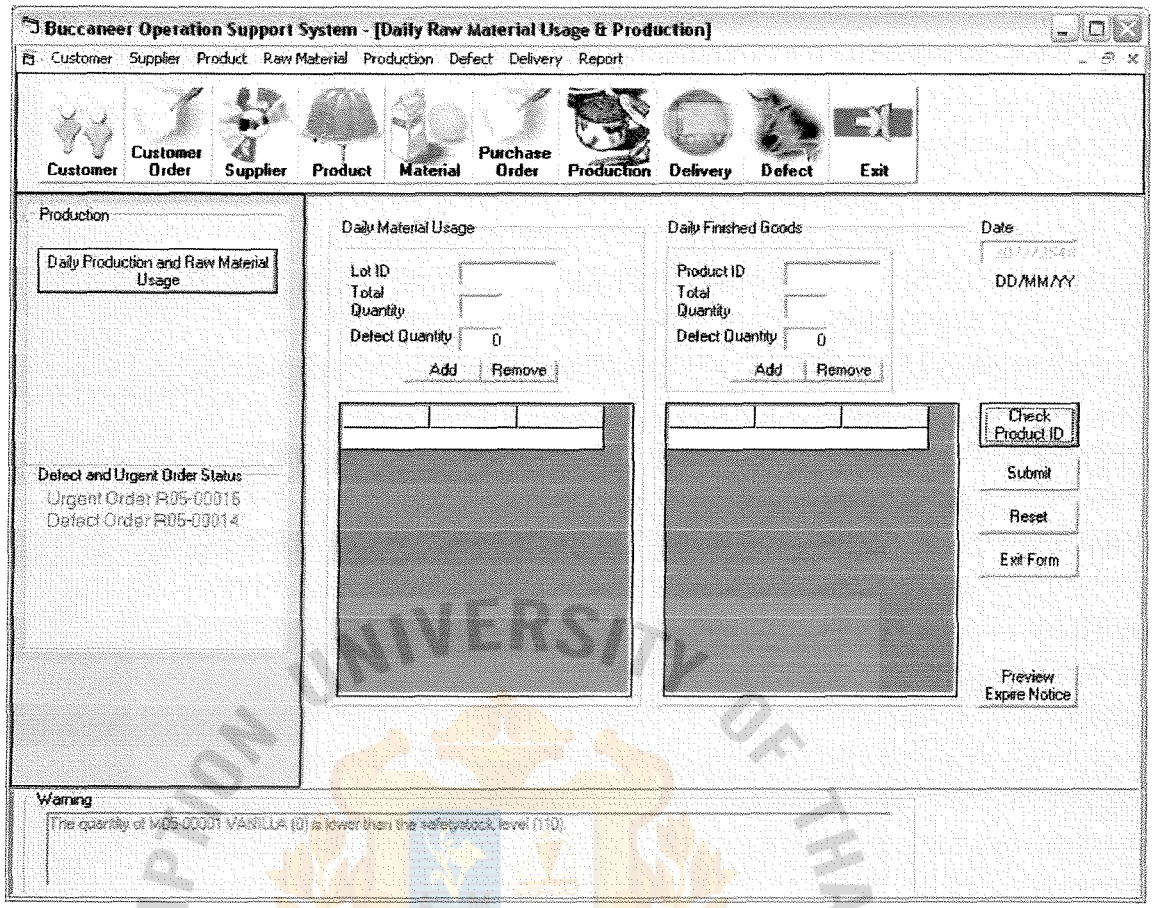

Figure D-9 Daily Production and Raw material usage

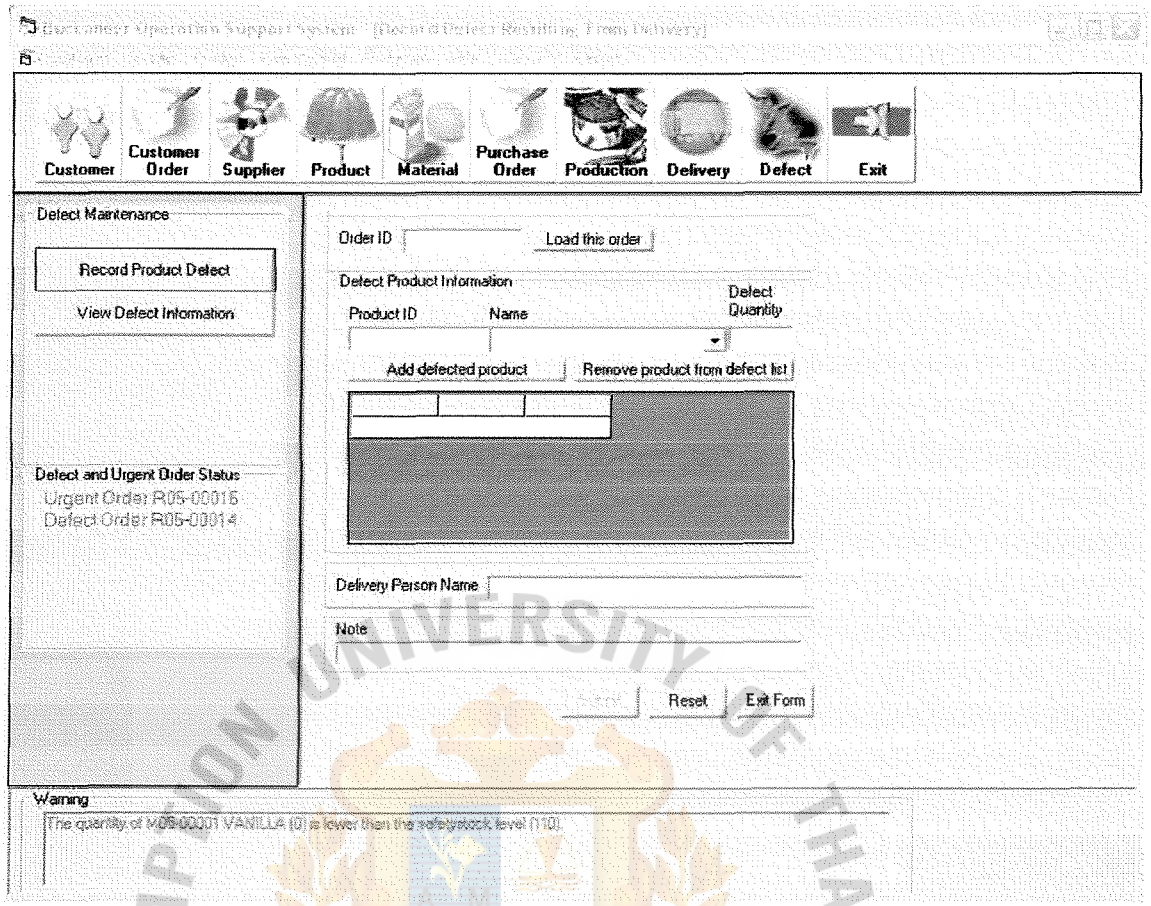

Figure D-10 Record Defect form Delivery

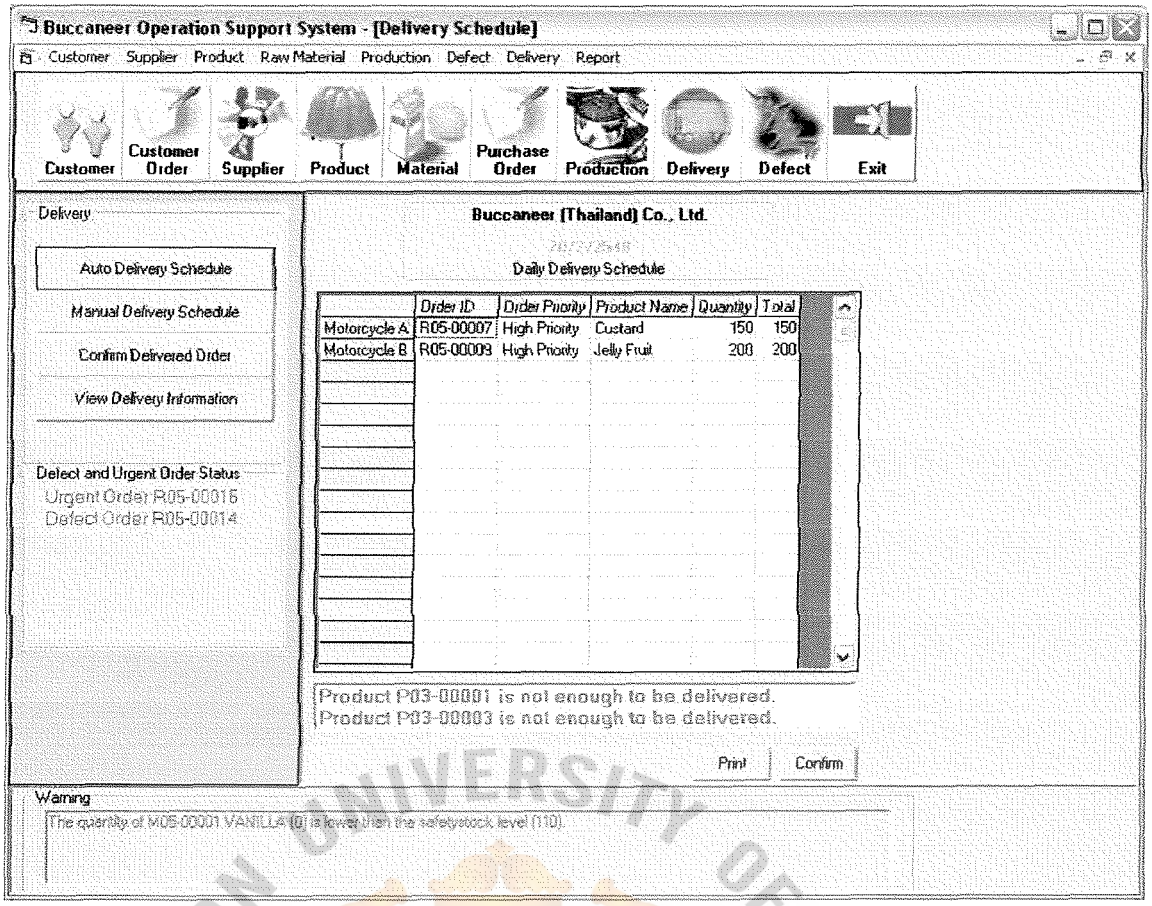

Figure D-11 Automatic Delivery Scheduling

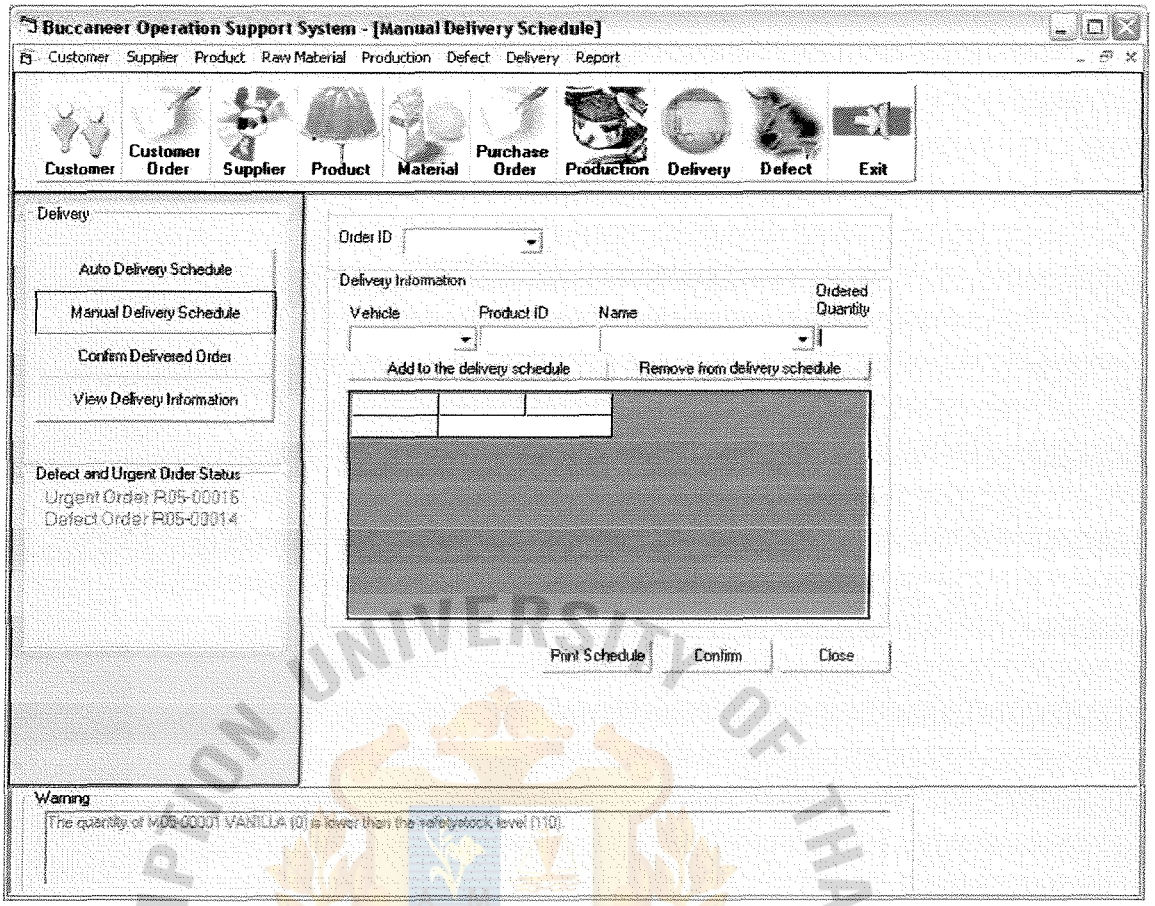

Figure D-12 Manual Delivery Scheduling

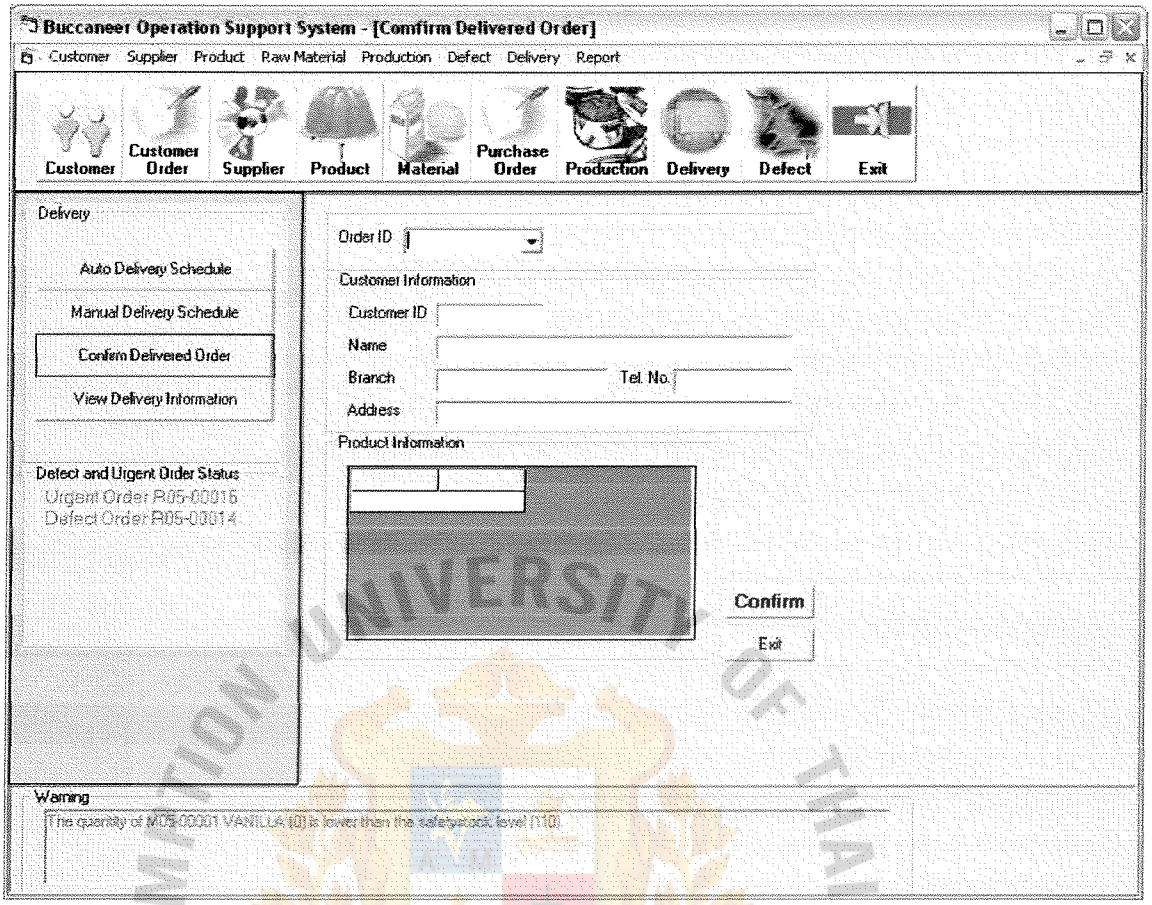

Figure D-13 Confirm Delivered Order

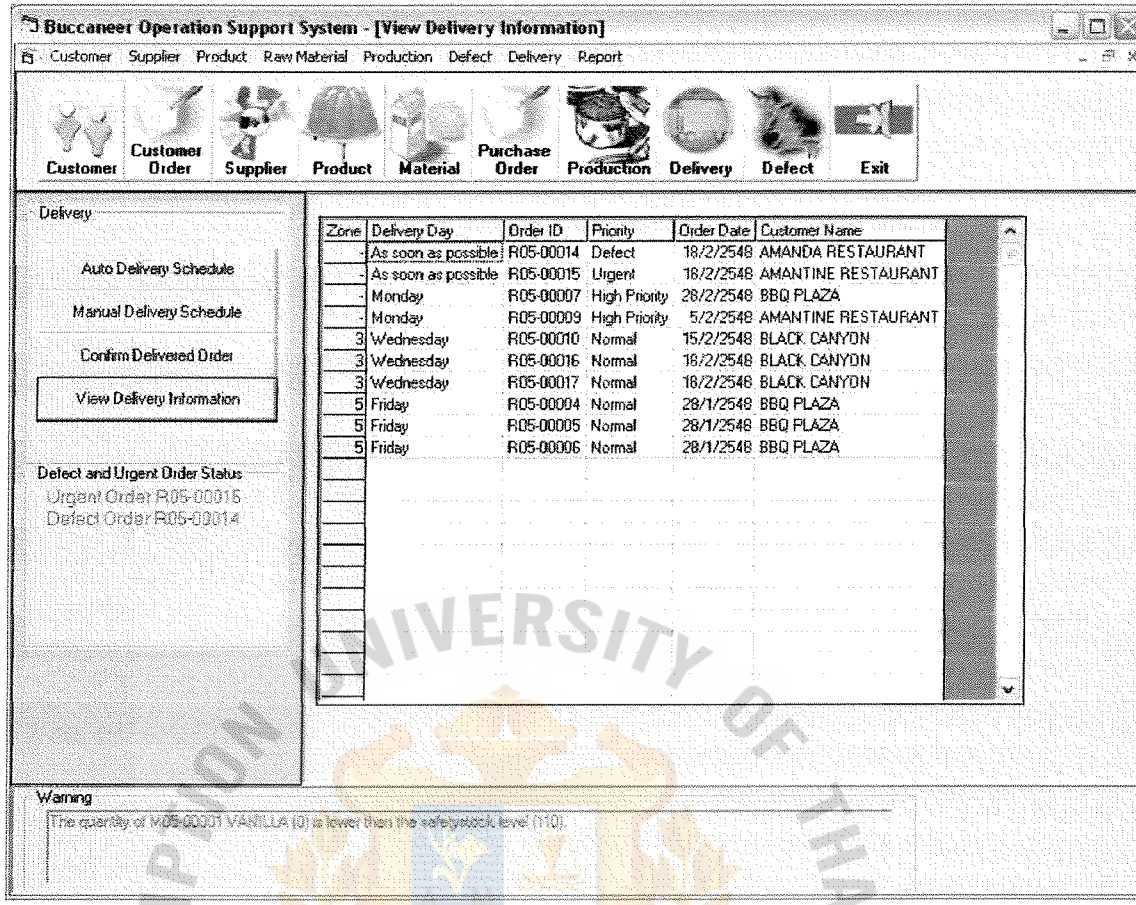

Figure D-14 View Delivery Information

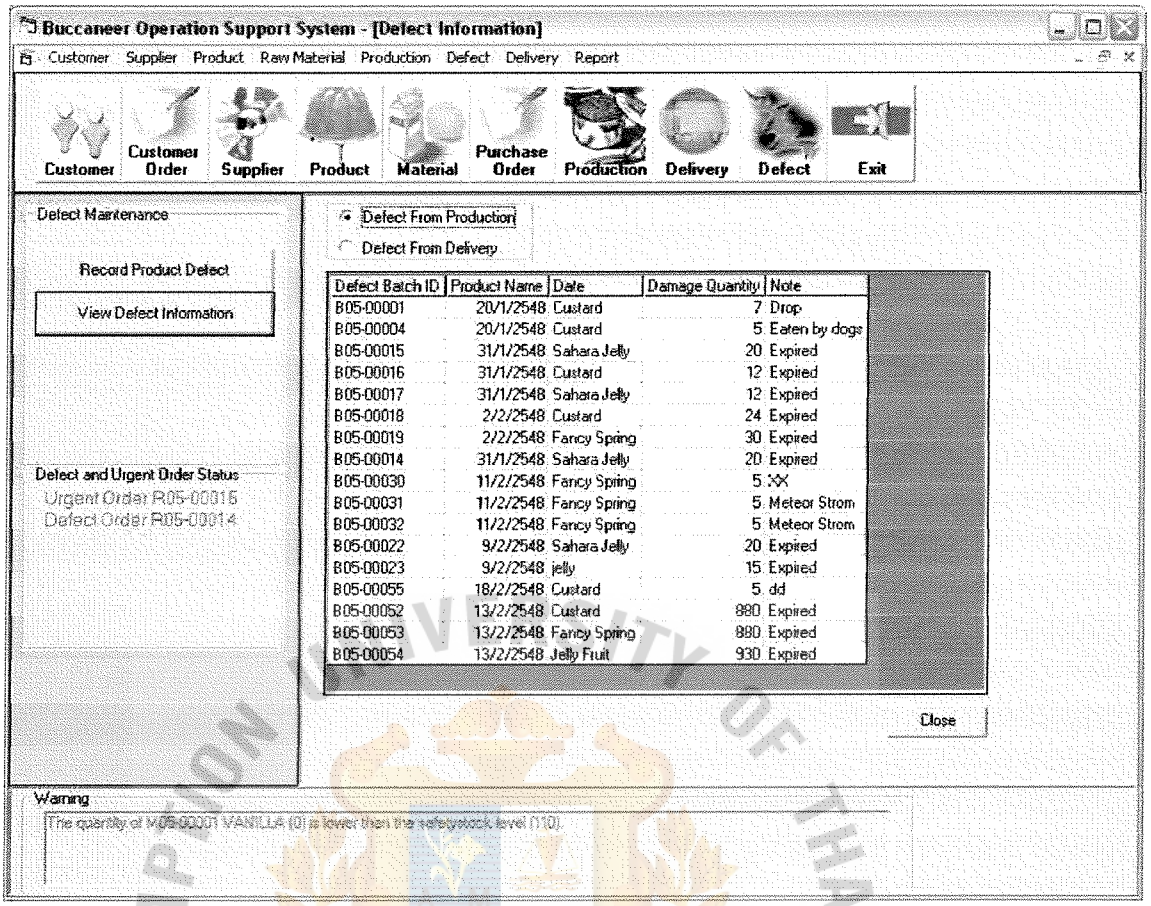

Figure D-15 View Defect Information

APPENDIX E
MANAGEMENT REPORT DESIGN

Buccaneer (Thailand) Co., Ltd.
Invoice
December 24, 2004

Order No. D04-05154 Invoice No. I04-00145

Product Name	Quantity	Price
Custard	50	20
Fancy Spring	50	25
Jelly Fruit	50	25
		3500

Customer Signature _____

Figure E-1 Invoice

Buccaneer (Thailand) Co., Ltd.
Order Report
December 31, 2004

Date	Customer Name	Order ID	Product Name	Quantity
1-Dec-04	Black Canyon	D04-05154	Custard	50
			Fancy Spring	50
			Jelly Fruit	50
	BBQ Plaza Central Rama3	D04-05155	Custard	30
			Fancy Spring	50
			Jelly Fruit	30
2-Dec-04	BBQ Plaza The Mall Bangkapi	D04-05156	Custard	30
			Fancy Spring	50
			Jelly Fruit	30

Page 1 of 1

Figure E-2 Order Report

Buccaneer (Thailand) Co., Ltd.
Best Seller Report
For the month ended December 31,2004

Product Name	Quantity Sold
Custard	800
Fancy Spring	750
Jelly Fruit	300

Page 1 of 1

Figure E-3 Best Seller Report

Buccaneer (Thailand) Co., Ltd.
Best Seller Zone Report
For the month ended December 31,2004

Zone Name	Quantity Sold
Ramkumhang, Ramintra	850
Sathon, Banglak	1025
Buengkum	350

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Figure E-4 Best Seller Zone Report

Buccaneer (Thailand) Co., Ltd.
Production Report
December 31, 2004

Date	Product Name	Quantity
1-Dec-04	Custard	100
	Fancy Spring	50
	Jelly Fruit	100
2-Dec-04	Custard	50
	Fancy Spring	150
	Jelly Fruit	100
3-Dec-04	Custard	150
	Fancy Spring	150
	Jelly Fruit	100

Page 1 of 1

Figure E-5 Production Report

Buccaneer (Thailand) Co., Ltd.
Finished Product Report
December 31, 2004

Product Name	Batch ID	Quantity-On-Hand	Expire Date
Custard	B04-00132	50	10-Jan-04
	B04-00135	100	13-Jan-04
Fancy Spring	B04-00133	30	10-Jan-04
	B04-00134	100	11-Jan-04
Jelly Fruit	B04-00131	20	9-Jan-04
	B04-00136	50	14-Jan-04
	B04-00137	150	15-Jan-04

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Figure E-6 Finished Product Report

Buccaneer (Thailand) Co., Ltd.
Production vs. Delivery vs. Expired Report
December 31, 2004

Product Name	Produced	Delivered	Expired
Custard	350	350	0
Fancy Spring	425	400	25
Jelly Fruit	350	340	10

Page 1 of 1

Figure E-7 Production vs. Delivery vs. Expired Report

Buccaneer (Thailand) Co., Ltd.
Product Defection Report
For the year ended December 31, 2004

Delivery Person	Date	Product Name	Defect Quantity
Sompol Poonsub	5-May-04	Custard	4
		Fancy Spring	8
	10-Oct-04	Custard	5
	11-Nov-04	Custard	2
		Jelly Fruit	3
Jaree Meesook	1-Mar-04	Custard	1
		Fancy Spring	5
	8-Aug-04	Custard	17
		Fancy Spring	32
		Jelly Fruit	24
	3-Sep-04	Custard	1
		Jelly Fruit	1

Page 1 of 1

Figure E-8 Product Defection Report

Buccaneer (Thailand) Co., Ltd.
Raw Material Report
December 18, 2004

Raw Material Name	Lot No.	Quantity-On-Hand	Expire Date
Jelly Powder A	L04-00157	50	5-Oct-05
	L04-00201	200	1-Jan-06
Jelly Powder B	L04-00160	30	5-May-05
	L04-00202	100	1-Jan-06
Milk Powder	L04-00250	132	6-Jun-05
Egg	L04-00310	112	23-Dec-04

Page 1 of 1

Figure E-9 Raw Material Report

Buccaneer (Thailand) Co., Ltd.
Supplier report
December 20, 2004

Supplier Name	Address	Tel. No.	Raw Material Supplied
Bestfood Co., Ltd	607/242 Jalearnkrung Rd. Bangklo Bangkok 10120	26899100	Jelly Powder A Jelly Powder B

Page 1 of 1

Figure E-10 Supplier Report

Buccaneer (Thailand) Co., Ltd.
Best Standard Price report
December 18, 2004

Raw Material Name	Price per unit	Supplier Name
Milk Powder	135	CP-Meji Co Ltd. Nestle Co Ltd.
Jelly Powder A	259	Bestfood Co., Ltd
Jelly Powder B	239	Bestfood., Ltd

Page 1 of 1

Figure E-11 Best Standard Price Report

Buccaneer (Thailand) Co., Ltd.
Incorrect Raw Material Report
October 31, 2004

Product Name	Raw Material	Date	Standard Use	Actual Use
Custard	Milk Powder	2-Oct-04	50	51
		28-Oct-04	38	40
	Jelly Powder A	8-Oct-04	35	36
Fancy Spring	Jelly Powder B	20-Oct-04	35	36
		26-Oct-04	15	14
	Sugar	16-Oct-04	25	23

Page 1 of 1

Figure E-12 Incorrect Raw Material Report

Buccaneer (Thailand) Co., Ltd.
Daily Delivery Schedule
December 10, 2004

Order ID	Customer	Delivery Address	Note
D04-05154	Black Canyon	Robinson Bangrak 4th Floor	
D04-05162	BBQ Plaza	Central Rama 5th Floor	
D04-05173	Bua	Central Rama 5th Floor	

Page 1 of 1

Figure E-13 Daily Delivery Schedule

Buccaneer (Thailand) Co., Ltd.
Delivery Report
December 31, 2004

Date	Customer Name	Order ID	Product Name	Quantity
1-Dec-04	Black Canyon	D04-05154	Custard	50
			Fancy Spring	50
			Jelly Fruit	50
	BBQ Plaza Central Rama3	D04-05155	Custard	30
			Fancy Spring	50
			Jelly Fruit	30
2-Dec-04	BBQ Plaza The Mall Bangkapi	D04-05156	Custard	30
			Fancy Spring	50
			Jelly Fruit	30

Page 1 of 1

Figure E-14 Delivery Report

REFENRENCES

1. Sarithorn P. . Transporting Person, Buccaneer (Thailand) Co., Ltd. Interview, 25 October 2004,