AN INVENTORY SYSTEM FOR CRYSTAL TRADING COMPANY

By

MS. TONGSEN YANG

Final Report of the Three - Credit Course
CS 6998 System Development Project

Submitted in Partial Fulfillment
of the Requirement for the Degree of
Master of Science
in Computer Information Systems
Assumption University

April, 1998

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Project Title   :   An Inventory System for Crystal
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Name   :   Ms.Thongsen Yang

Project Advisor   :   Dr.Suphamit Chittayasotorn

Acadamic Year   :   April, 1998

The Graduate School of Assumption University had approved this final report of the three-credit course, CS 6998 System Development Project, submitted in partial fulfillment of the requirements for the degree of Master of Science in Computer Information Systems.
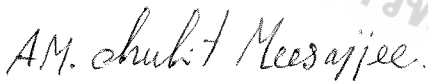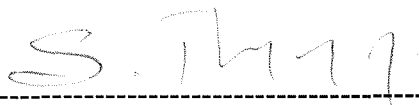
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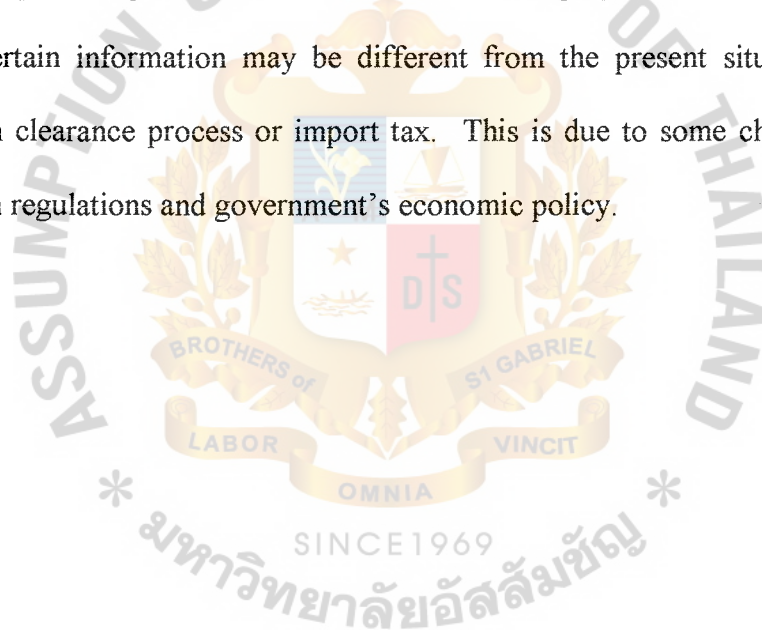MUA Representative

April, 1998

ABSTRACT

The work presented in this system development project is the new system for an expanding representative office in Thailand. The company is planning to have an inventory in its office; therefore, a suitable inventory system is needed to develop. Analyzing the existing system, understanding user's requirements and designing a suitable system are the fundamental steps of doing this project. Easy Case program is used as a designing case tool. Meanwhile, data flow, entity relationship diagram and data models are also the tools for designing database. And lastly Microsoft Access 97 is used to design the input and output screens.

With this new system, information is shared between the departments. The users can check for the delivery of stock order and payment of each customer. As a result, it helps increasing punctuality of stock delivery and payments. In addition, it also helps to reduce time in searching for the information and avoid redundancy of work.

ACKNOWLEDGEMENTS

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1.1 Background of the Project

This project is done under the requirement of the MIS course for CS 6998 System Development Project which includes the analysis of an organization existing system, analysis of users requirements, and design of the suitable system for an organization. The project is concerning about the development of an inventory system for the Crystal Trading Company. With the new inventory system, it will help to reduce the work redundancy among the users. Furthermore, users can search for the needed information faster.

1.2 Objectives of the Project

As crystal stones for setting costume jewelry are wide variety in sizes, shapes, and colors, a suitable inventory system is needed to control this large variety stock. Besides, a fast punctual delivery of the stock is another objective. With the new inventory system, the delivery date of each order item can be easily checked and followed up. In addition, the new system will help accounting department to know the exact amount of payment needed to be made to Singapore office (Crystal Singapore Trading Pte., Ltd.) and sales department would be able to know how much minimum selling prices they could offer to the customers. On the another, this new system enhances efficiency and productivity of the work for each department. It helps to reduce work redundancy among users. Users need not to key in the same data for several times.

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1.3 Scope of the Project

The area covered in this project is any activity that relates to the process of stock in and out of the inventory system. And it may include with the process of purchase order receiving from a customer until the process of cash payment to Singapore office. The business transaction here is starting from Crystal Trading Company in Bangkok buys the stock items from Crystal Singapore Trading Pte., Ltd. and then resells them to Thai customers.

For programming, Microsoft Access 97 is used to build the database file and report output screens.

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1.4 Deliverables

Output Reports

1.1   Bangkok Stock Report

1.2   Customer Order Report

1.3   Order Stock Report

1.4   Report of Custom Clearance

1.5   Report of Freight Charge

1.6   Statement of Account Report

1.7   Cost of Goods Report

1.8   Minimum Selling Price Report

1.9   Report of Customer's Payment Due Date

1.10   Report of Money Receive

1.11   Report of Total Cash Payable

1.12   Invoice

1.13   Future Stock Forecast Report

Input Files / Screens

2.1   Bangkok Stock List

2.2   Customer Order File

2.3   Order Stock List

2.4   Customer Clearance File

2.5   Freight Charge List

2.6   Statement of Account

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1.5 Project Plan

Table 1.1. Gantt Chart of Project Plan

Activities	February				March				April			
	1	2	3	4	1	2	3	4	1	2	3	4
1. Study existing system	▓											
2. Analysis of current needs	▓	▓										
3. Design the proposal system		▓	▓	▓								
4. Design the output					▓	▓						
5. Design the input					▓	▓	▓					
6. Design the database file					▓	▓	▓					
7. Testing and auditing the system					▓	▓	▓					
8. Users training										▓	▓	
9. Implementing the system												▓

II. EXISTING SYSTEM

2.1 Company Background

Crystal Trading Company was founded as Bangkok representative office in 1990. It is a representative office of Crystal Singapore Trading Pte., Ltd., a crystal trading company in Singapore.

The company's major business is selling crystal stones, which are used for setting costume jewelry. These crystal stones are wide variety in size, color, and shape. The manufacturers of costume jewelry use these crystal stones in decorating (setting) ear rings, pendants, necklaces and even in some silver jewelry. Since Thailand is the world largest exporter of both costume and fine jewelry businesses and with the high demand of crystal stones, Crystal Trading Company is set up as link between Thai customers and Crystal Singapore Trading Pte., Ltd. The duty of Crystal Trading Company is to provide services to Thai customers in which includes delivery advices, placing orders to Singapore office, developing new customers and marketing areas. Goods are selling in Singapore Dollars with FOB Singapore term which means customers are responsible for the import process of their goods order.

However, as the demand for faster delivery increases, Crystal Singapore Trading Pte., Ltd. finally decided that Crystal Trading Company should start to have crystal inventory in Bangkok and responsible for the import process in order to provide faster stock available to the customers and also relieve customer's burden in importing process.
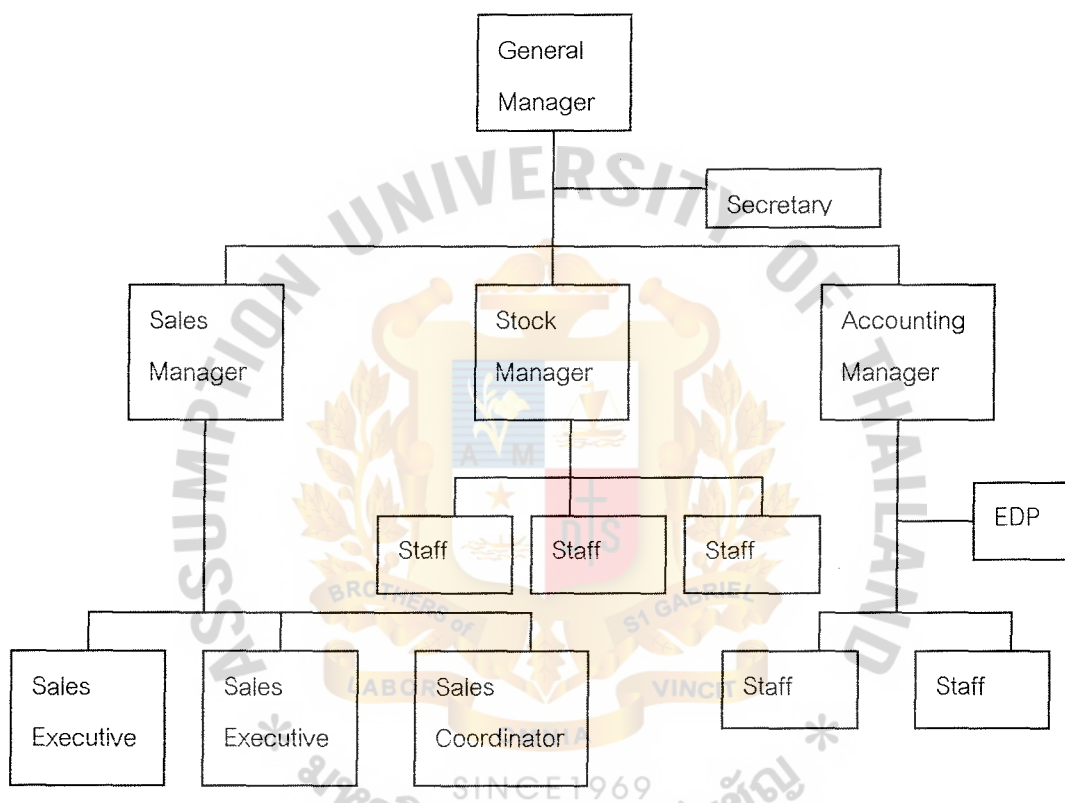
Figure 2.1. Organizational Chart

2.2 Summary of Existing System

2.2.1 Analysis of Existing System

The current operation of the Crystal Trading Company is only a representative office in Bangkok. There is no stock keeping in the representative office at the moment. Goods are ordering to Singapore office (Crystal Singapore Trading Pte., Ltd.) via Bangkok representative office (Crystal Trading Company) and sending directly from Singapore office to the Thai customers either by air parcel post (EMS) or courier. Prices quoted and sold to the customers in Thailand are in Singapore Dollars with FOB Singapore term, where the customers are responsible for the freight charge, import tax, and insurance cost from Singapore to Bangkok. The customers are requested to make the payment in Singapore Dollars and pay directly to the Singapore office either by draft or telex transfer.

The duties of the Crystal Trading Company as the representative office in Bangkok are:-

1. Receiving the order from the Thai customers and forwarding the orders to Singapore office.

2. Supporting the customer's enquiry for the inventory checking in Singapore stock.

3. Giving the advices for the shipping instructions and goods delivery between the Thai customers and Singapore office.

4. Advising the amount of payment to the customers and coordinating the transfer of cash payment between the Thai customers and Singapore office.

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5. Maintaining the existing customers in Thailand.

6. Searching for the new customers and markets in Thailand

7. Supporting customers with other technical advices.

2.2.2 Context Diagram of Existing System
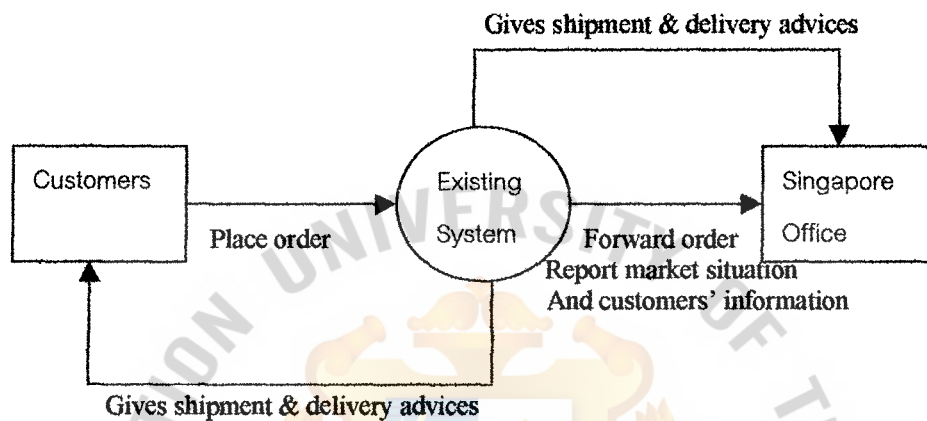
Figure 2.2. Context Diagram of Existing System

2.2.3 **Data Flow Diagram of Existing System**
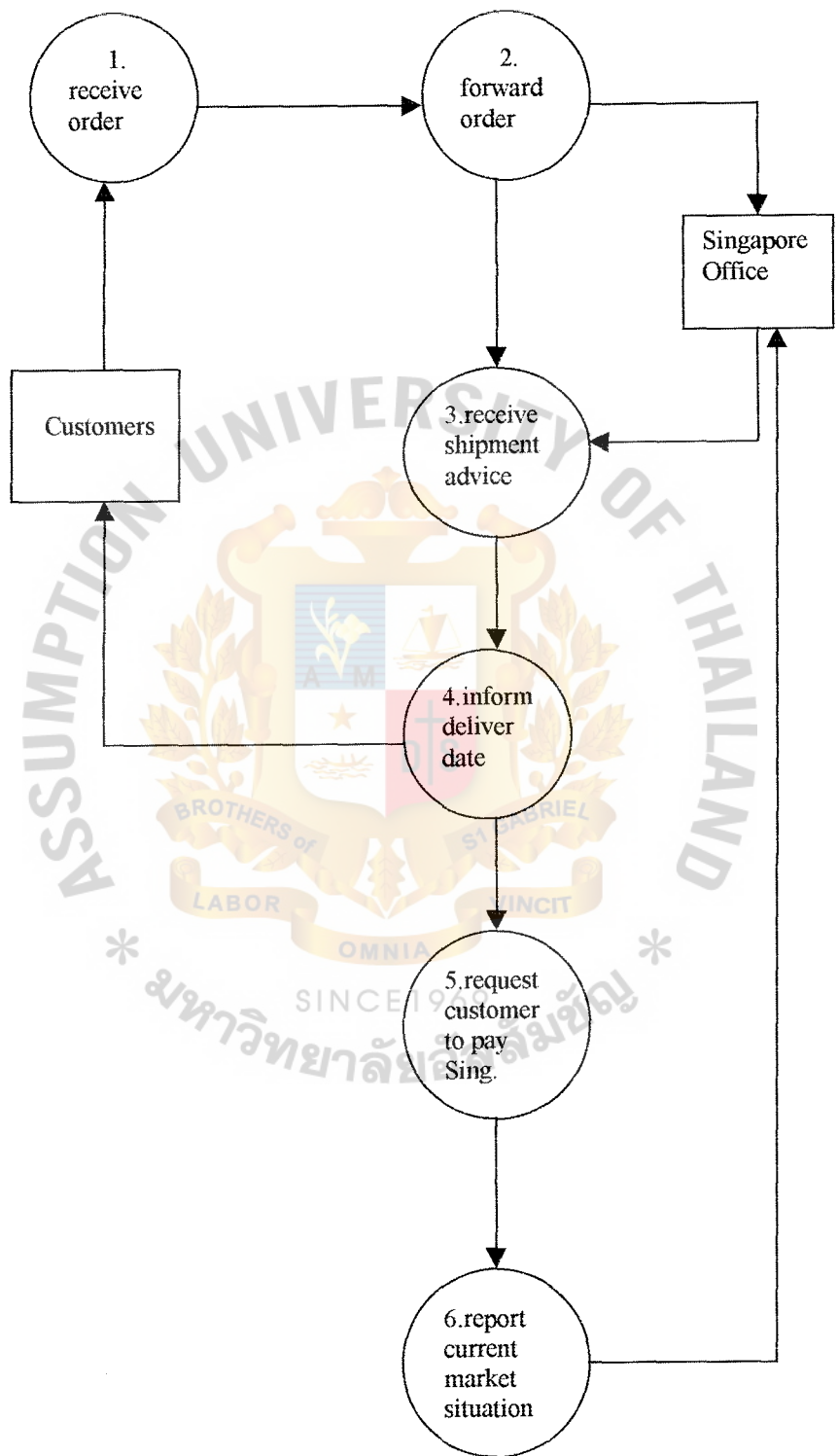
Figure 2.3. Data Flow of Existing System

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2.3 Current Problems or Needs

Because goods need to be imported directly from Singapore office to Bangkok, some customers are not convenient at importing goods. This may due to their lack of knowledge in importing process, and lack of manpower to do this job. Therefore, providing the stock available in Bangkok or taking responsible for the import process will be another way of helping the customers in the import problem.

Another problem is that goods are sold in Singapore Dollars and the customers are requested to make payment directly to Singapore in which exchange rate and currency fluctuation are involved. And this causes inconvenient cost calculation to the customers. In addition, some of the customers are not convenient in making draft or telex transfer payment to Singapore by their own. This even causes payment delay.

Meanwhile, there is highly increasing in demand of crystal stones and many requests for faster delivery from the customers. Therefore, the company is decided to expand the capacity of Bangkok Office by starting to have its own stock inventory. As a result, a suitable inventory system is needed for this expansion.

III. DESIGN OF THE PROPOSED SYSTEM

3.1 User Requirement

With the new system, users can check for the delivery date of the stock order to Singapore office and can trace the payment due date of each customers. Following is the reports that will help the users to check for the relevant information about payment and delivery status.

Bangkok Stock Report

When the sales department receives purchase order from the customers, they can immediately check for the stock available in Bangkok office through this report. If the items are not available in Bangkok stock, the items will be placed as stock order to Singapore office.

Customer Order Report

This report is the list of the customer's name and order items that are placing to Singapore office. Through this customer order report, the sales department and accounting department can check for its order item, order date and also the credit term. This report actually will be kept as statistic information for future stock order in Bangkok and also as a record in checking customer's frequency of goods ordering.

Order Stock Report

This is the report for the order items that are placing to Singapore office. From this report, the sales department and stock department can check the order items and its amount in Singapore Dollars.

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Report of Custom Clearance

It is the report of expenses for custom clearances in Thai Baht which later it will be used to calculate the cost of goods. On the another hand, this report helps the stock manager and accounting manager to be aware of import cost and process.

Report of Freight Charge

Freight charge report helps the accounting department to know how much freight charge in S$ that they need to pay back Singapore office. In this report, it will give the averaged freight charge of each item.

Statement of Account Report

This report shows the list of account payables of order items that need to be paid to Singapore office. Moreover, payment due date in the report helps to remind the accounting department for deadline of payment and how much S$ to be paid.

Cost of Goods Report

In calculation of minimum selling price for the sales department, this cost of goods report is one of the elements. The actual benefit of this report is to help the sales department and accounting department to be aware for the cost of goods.

Minimum Selling Price Report

Sales department refers to this report for the minimum selling price when they give quotation to its customers. This report helps the sales people to know at what price levels they can quote to the customers.

Report of Customer's Payment Due Date

This report helps the accounting department to check for the amount and due date payment of each customer's order according to their credit term and goods delivery date. Therefore, the accounting department can arrange cash collection at the right time. The report will be deleted or updated after cash is received.

Report of Money Receive

Each receipt of payment from customer will be recorded in report of money receive where later accounting department can check for the payment of each customer's order. This report is actually kept as record of customer's payment for future reference or trace back.

Report of Total Cash Payable

The total amount of S$ cash payment that needs to be paid to Singapore office can be checked by this report. The accounting department can know what is the total amount of payment in S$ for the freight charge and cost of goods that need to pay back Singapore office.

Invoice

Invoices are issued to sales department and accounting department for references. The another copy issues to customer for billing purpose.

Future Stock Forecast Report

This report shows the summary of total quantity of each order item that has been ordered to Singapore. As the future reference, the sales department and stock department can use this summary as a tool for deciding which item should be kept as stock in Bangkok.

The overall objective of the above reports is to help the company to have punctual cash payment and goods delivery.

3.2 System Design

After analysis of user requirement, the proposed system can be designed into 12 processes. The process begins with receiving order from the customers and checking for the available stock in Bangkok. If goods are not available in Bangkok, it will then be forwarded to Singapore office. If goods are available in Singapore, it will be immediately send out to Bangkok by EMS in which later goods need to go through custom clearance process. During these processes, information like list of customer's order, delivery date, or other expenses (such as custom clearance) is kept and updated. The users can check for this information at any time. After information of expenses is kept, goods will be released and delivery to customers. Money is collected from the customers based on their credit terms, then is converted into Singapore Dollars and transferred to Singapore Office.

During the designing of proposed system, both users and system analyst have to work together for some adjustments that may need to do in the system. This may include the choice of screen layout and software / hardware selection.
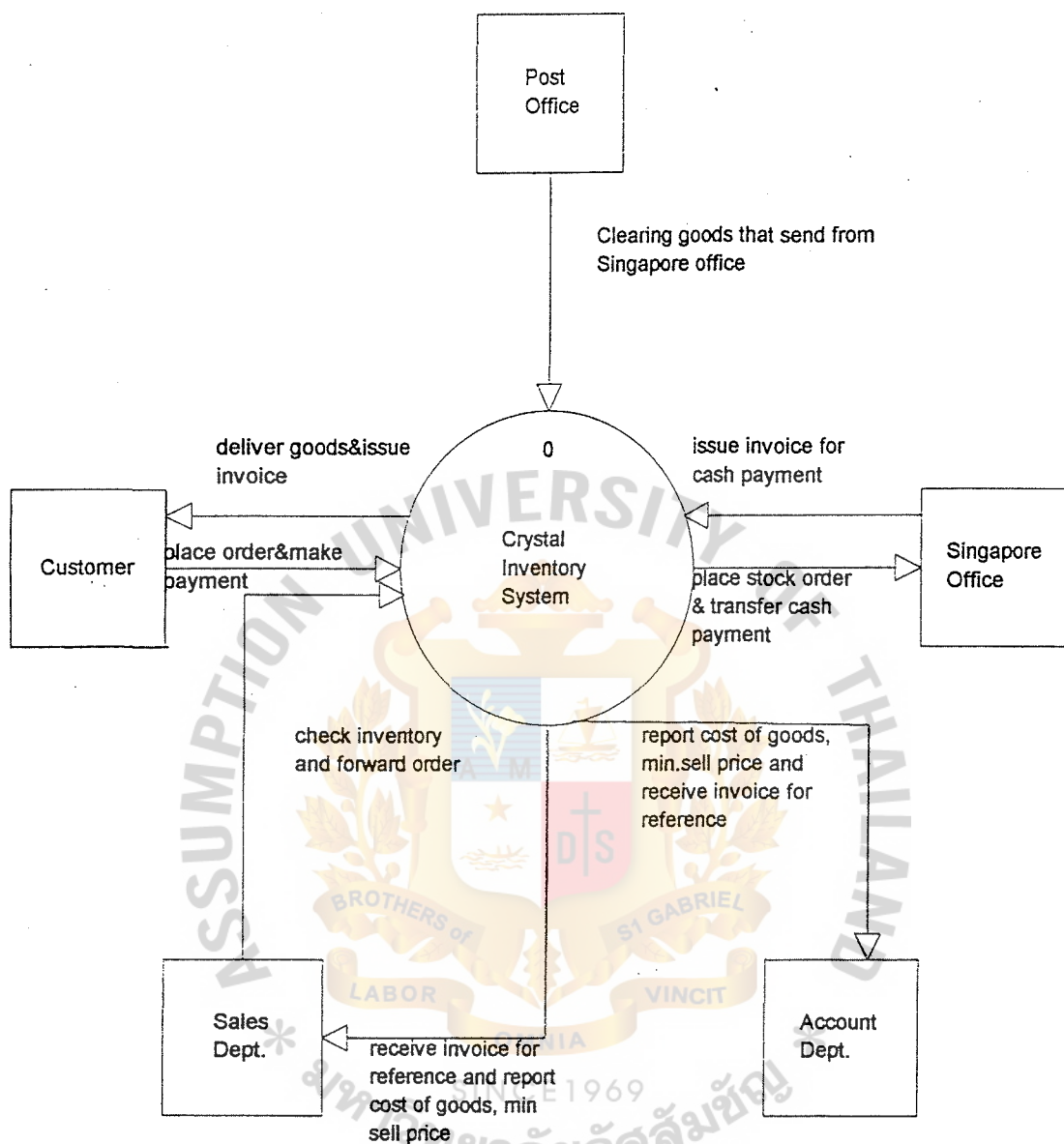
Figure 3.1. Context Diagram of Proposed System

Post Office

Clearing goods that send from Singapore office

deliver goods&issue invoice

0

issue invoice for cash payment

Customer

place order&make payment

Crystal Inventory System

Singapore Office

place stock order & transfer cash payment

check inventory and forward order

report cost of goods, min.sell price and receive invoice for reference

Sales Dept.

receive invoice for reference and report cost of goods, min sell price

Account Dept.

Figure 3.2. Data Flow of Proposed System (1st level)
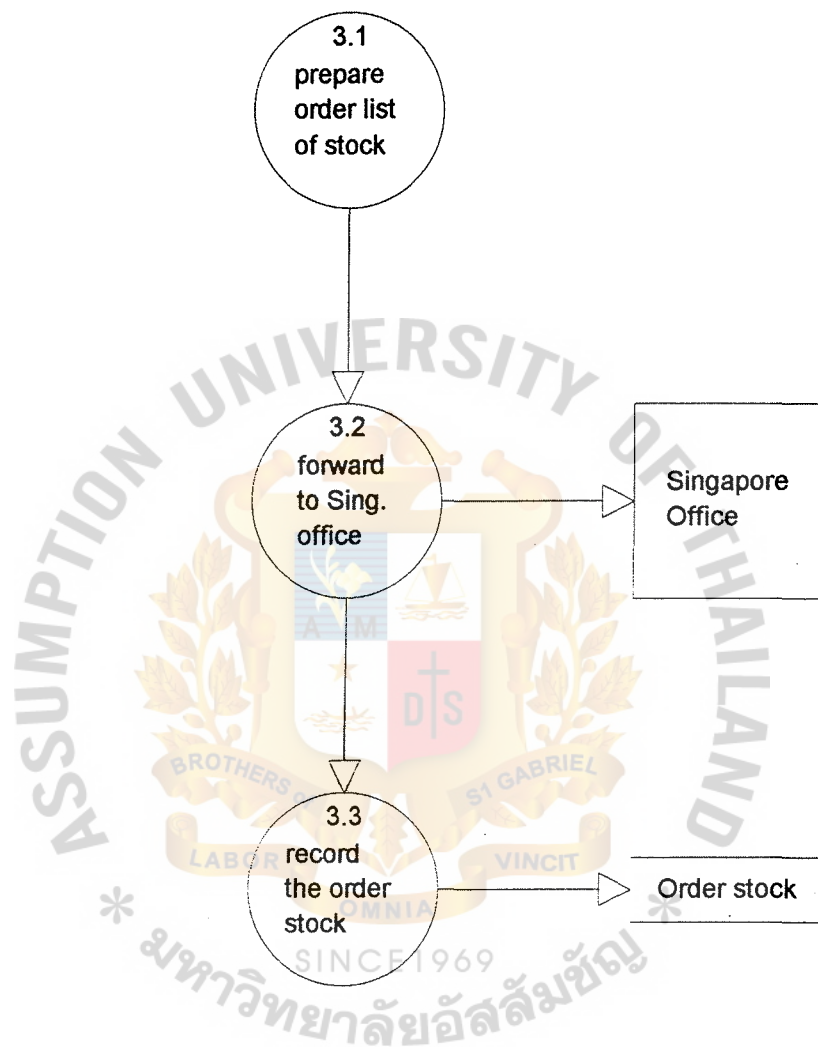
Figure 3.3. Data Flow of Process no. 3 (2nd level)
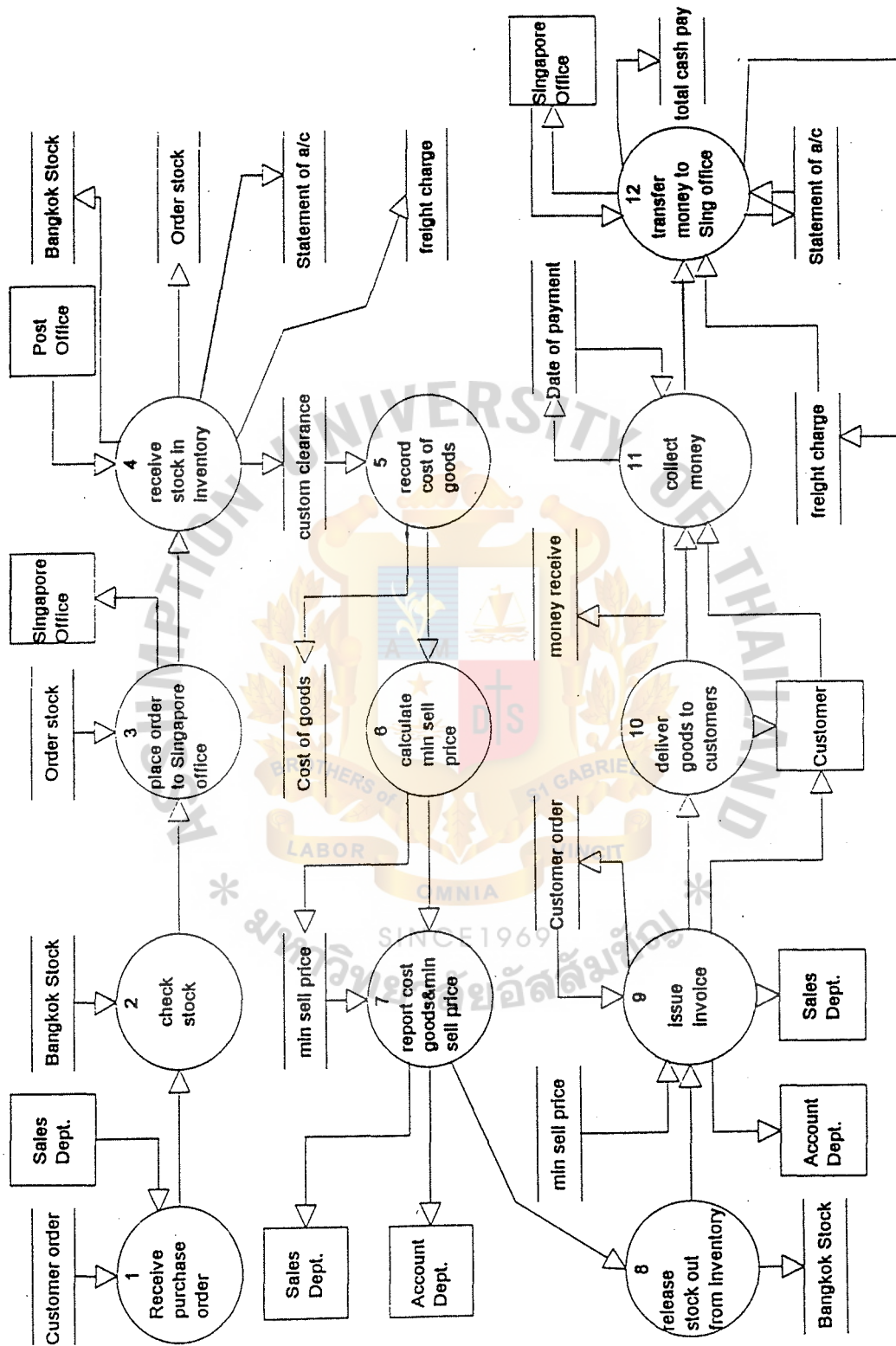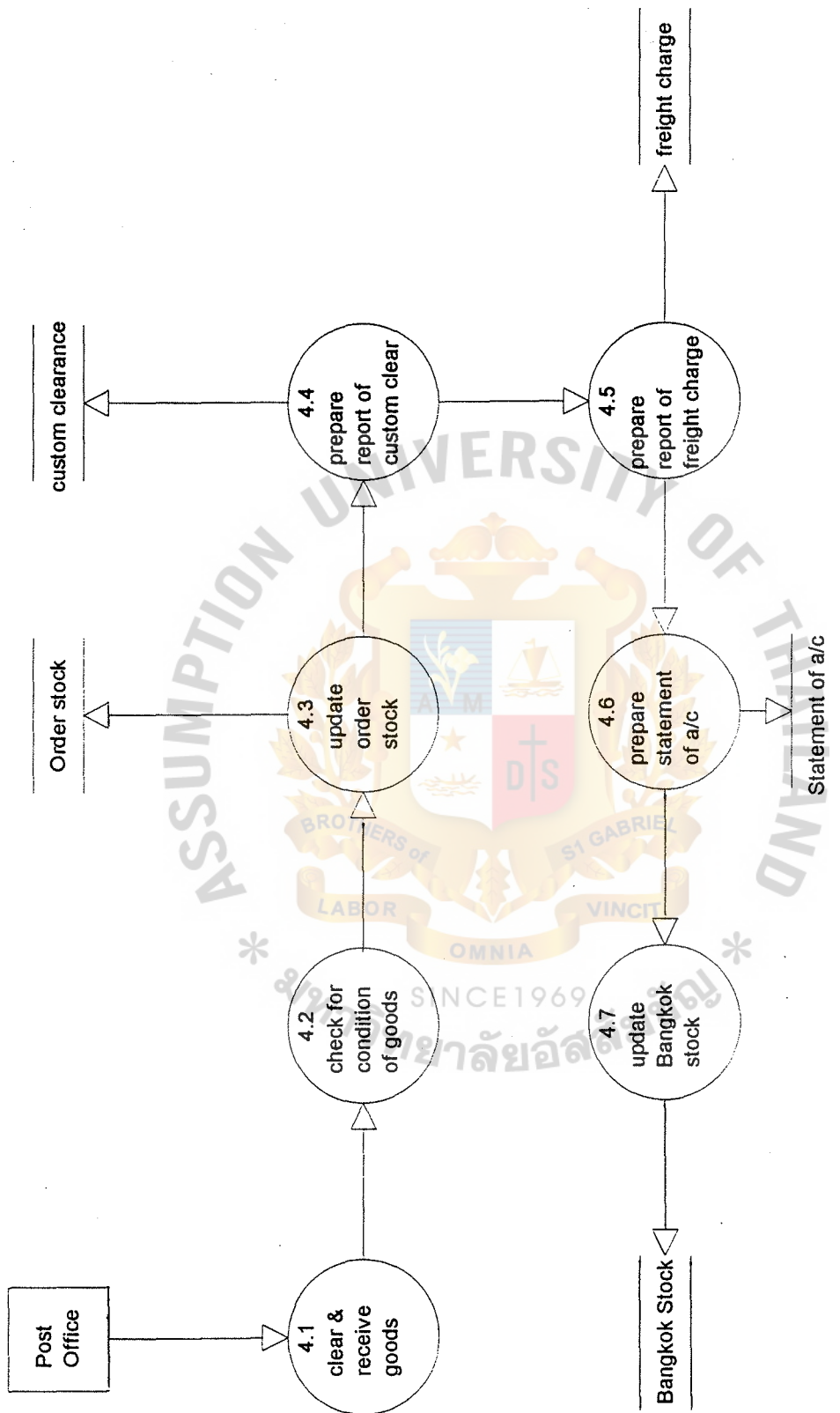
Figure 3.4. Data Flow of Process no. 4 (2nd level)
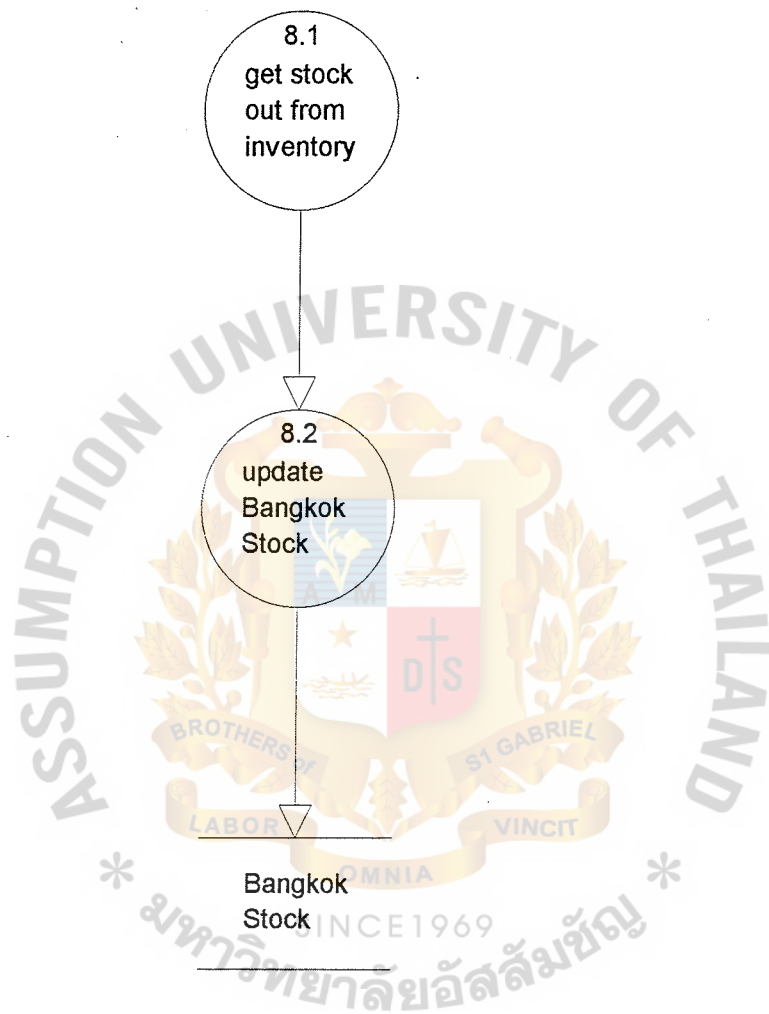
Figure 3.5. Data Flow of Process no. 8 (2nd level)
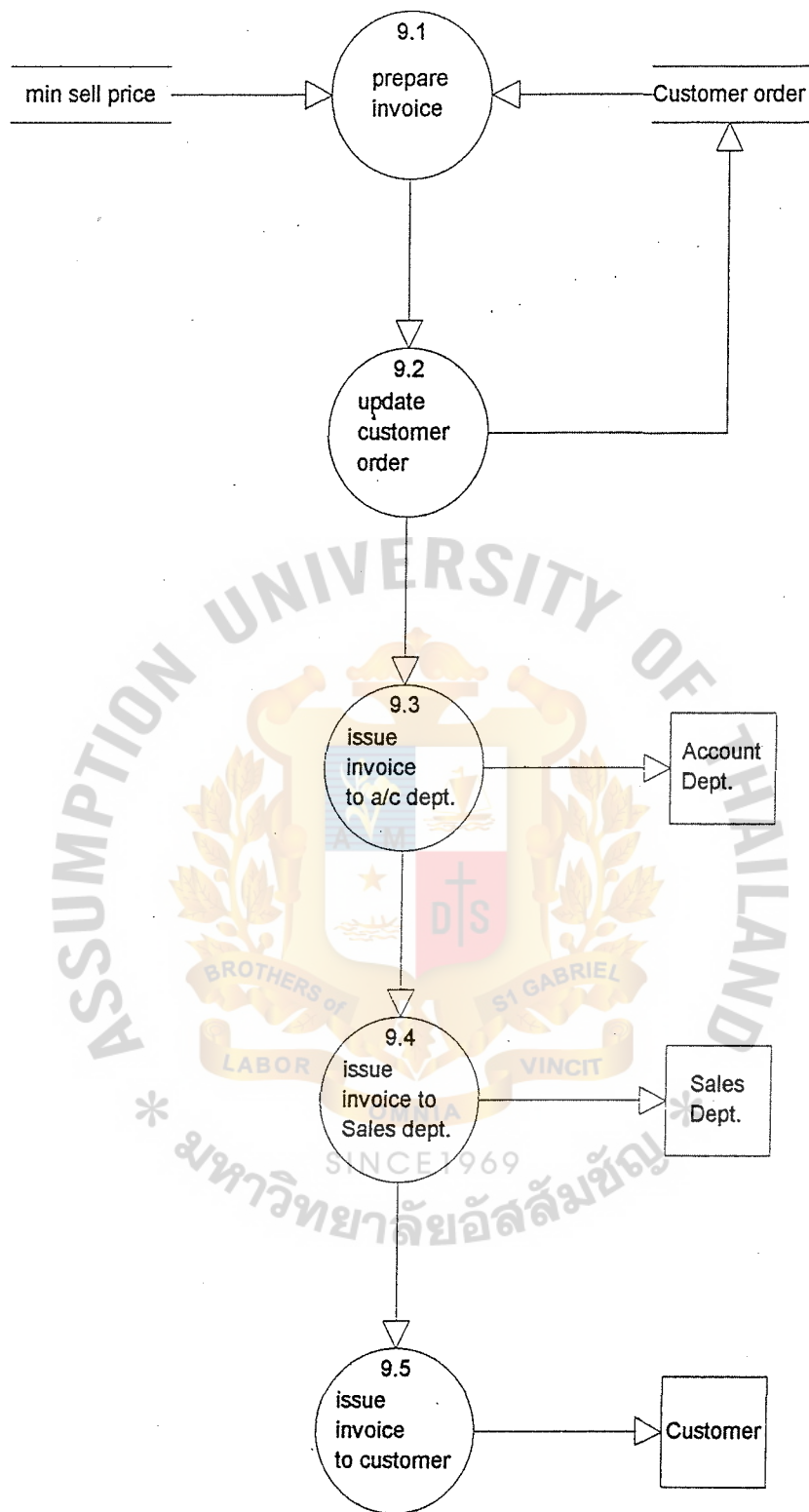
Figure 3.6. Data Flow of Process no. 9 (2nd level)
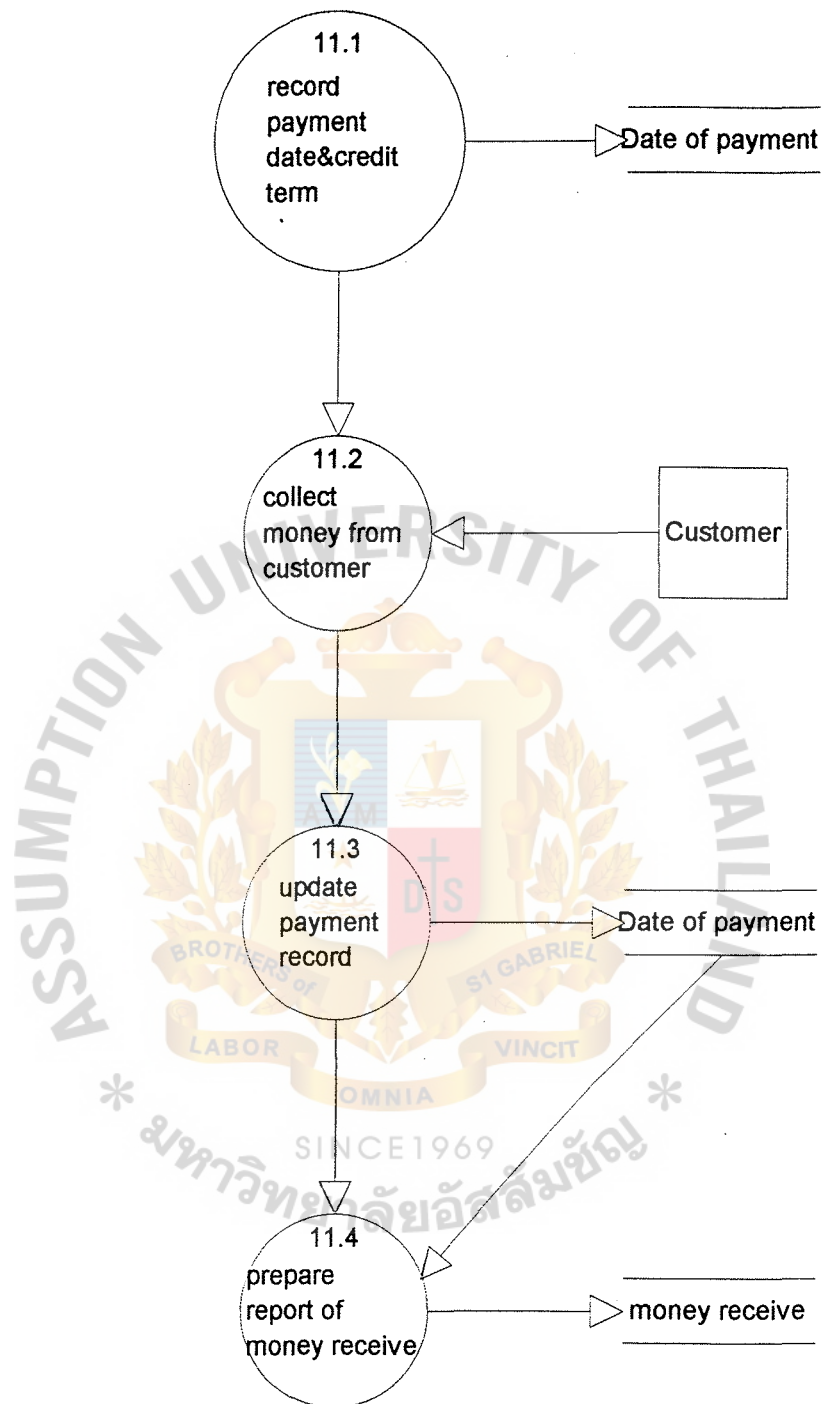
Figure 3.7. Data Flow of Process no. 11 (2nd level)
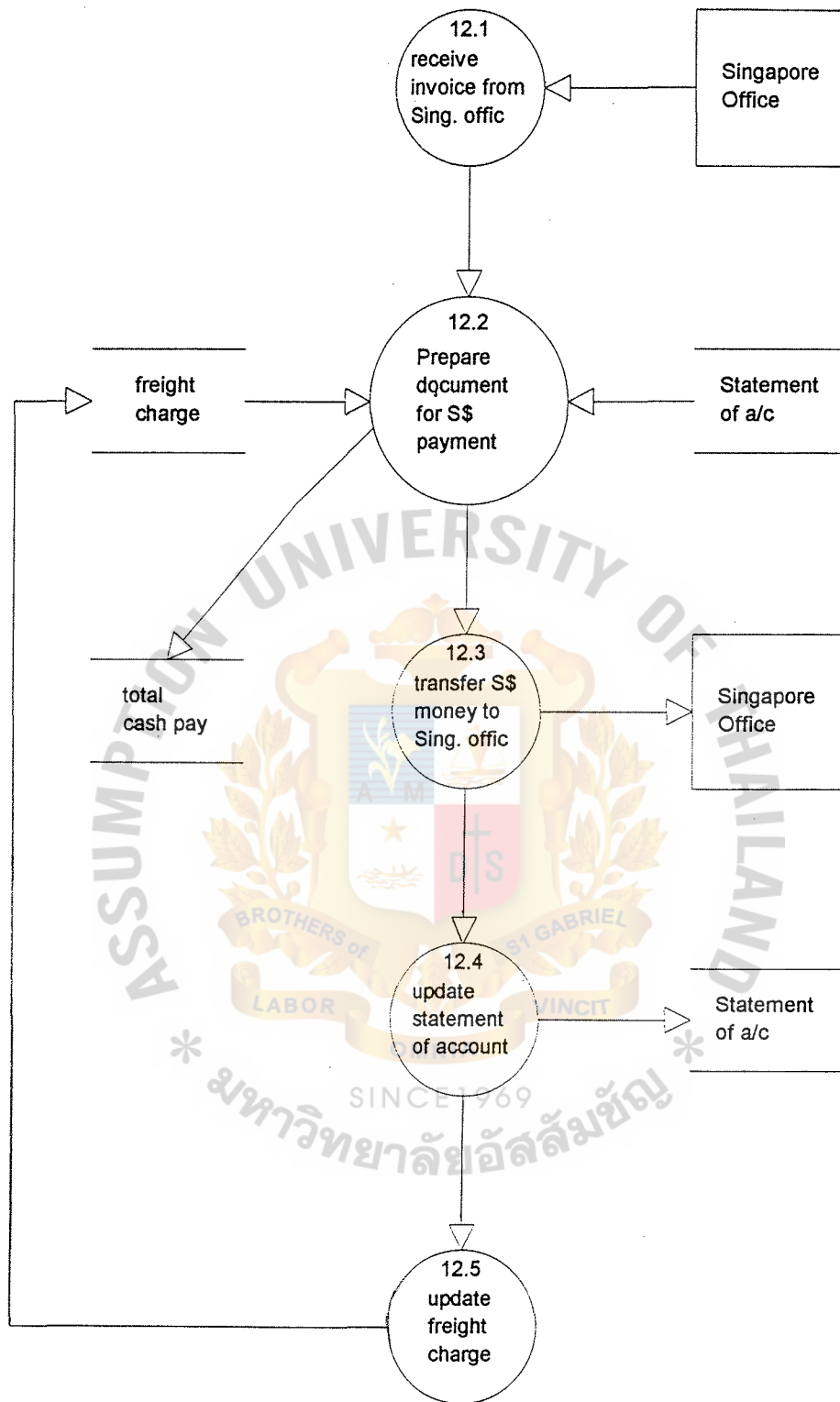
Figure 3.8. Data Flow of Process no. 12 (2nd level)

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3.5 Entity Relationship Diagram
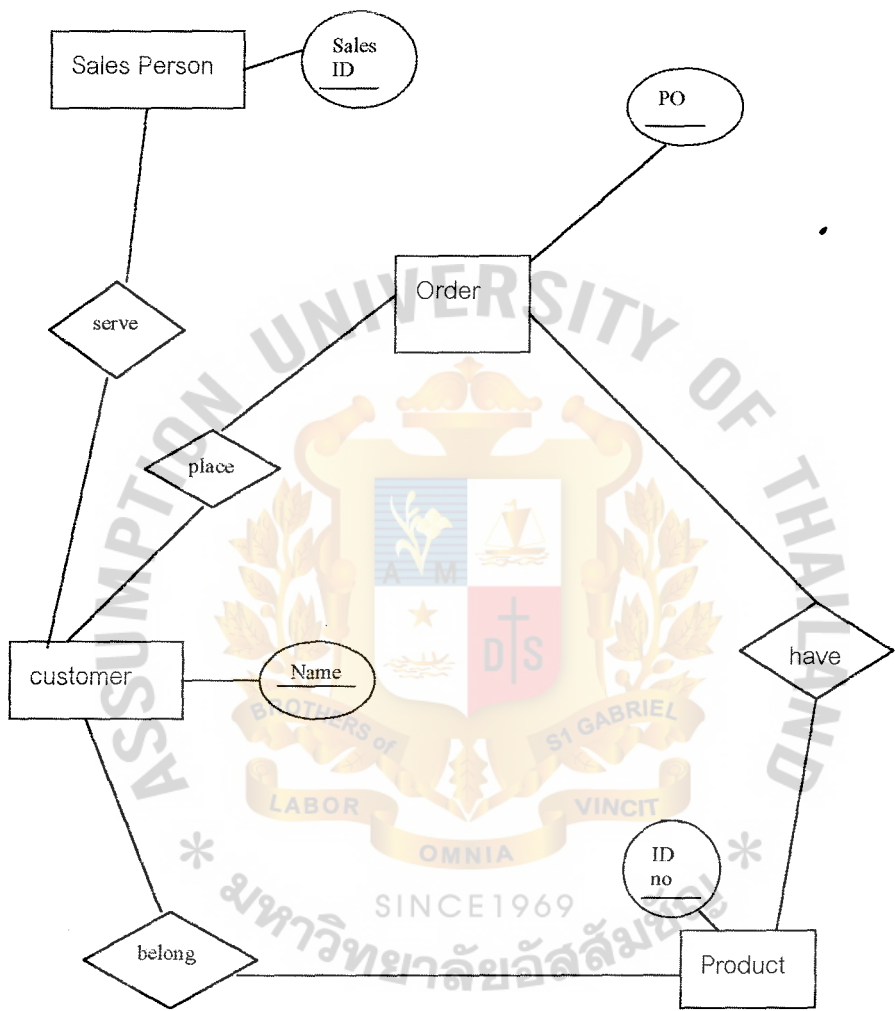
Figure 3.9. Entity Relationship Diagram of Proposed System

3.6 File Layouts

Below are the tables that mapped from the Entity Relationship Diagram for the input and output screens.

Table 3.1. Customer

Field Name	Description	Key Type	Size	Property
Name	Customer's name	Primary key	50	Character
Address	Customer's address	Attribute	50	Character
Credit	Customer's credit term	Attribute	10	Date

Table 3.2. Place Order

Field Name	Description	Key Type	Size	Property
Name	Customer's name	Primary key	50	Character
PO	Purchase order no.	Primary key	10	Number

Table 3.3. Order Item

Field Name	Description	Key Type	Size	Property
PO	Purchase order no.	Primary key	10	Number
Oitem_no	Order item no.	Attribute	4	Number
Osize	Size of the item	Attribute	4	Character
Ocolor	Color of the item	Attribute	12	Character
Oqty	Quantity order item in gross	Attribute	20	Number
Oprice_grBt	Price per gross in Bht	Attribute	15	Currency
Ototal_grBt	Total price in Bht	Attribute	20	Currency
Expect_deliv	Expected Delivery Date	Attribute	10	Date

Table 3.4. Order Due Date

Field Name	Description	Key Type	Size	Property
PO	Purchase order no.	Primary key	10	Number
Oprice_grS$	Price per gross in Sing.$	Attribute	15	Currency
Ototal_grS$	Total price in Sing.$	Attribute	20	Currency
D_deliver	Delivery Date	Attribute	10	Date
D_receive	Date receipt customer's payment	Attribute	10	Date
Due_date	Due date of payment	Attribute	10	Date

Table 3.5. Order Clear Custom

Field Name	Description	Key Type	Size	Property
PO	Purchase order no.	Primary key	10	Number
D_clear	Date of clearing custom	Attribute	10	Date
O_FOBS$	Price quoted in FOB S$	Attribute	15	Currency
O_exchange	Exchange rate used by custom	Attribute	15	Currency
10%_impt	Import tax on crystal stones in Thai Bht.	Attribute	15	Currency
15%excise	Tax for luxury product in Thai Bht	Attribute	15	Currency
1%_admin	Government's admin tax (1% from excise tax)	Attribute	15	Currency
Clear_Bt	Total clearance Charge(Bht)	Attribute	20	Currency
Dstockin	Date of stock in	Attribute	10	Date

Table 3.6. Order Freight Charge

Field Name	Description	Key Type	Size	Property
PO	Purchase order no.	Primary key	10	Number
Weight	Weight of the item that stock in	Attribute	10	Number
Freight_chr	Estimated S$ freight charge of an item	Attribute	20	Currency

Table 3.7. Order Cost of Goods

Field Name	Description	Key Type	Size	Property
PO	Purchase order no.	Primary key	10	Number
OCIF_Bt	Price estimated in CIF Bht	Attribute	20	Currency
20%mrk	20% profit mark up	Attribute	20	Currency
10%admin	10% mark up for admin.expenses	Attribute	20	Currency
Cost_goods	Total cost of goods or min. sell price	Attribute	20	Currency

Table 3.8. Order Payment Transfer

Field Name	Description	Key Type	Size	Property
PO	Purchase order no.	Primary key	10	Number
Ttotal	Total Bht payment to Sing.	Attribute	30	Currency
Texchange	Bank's exchange rate for S$	Attribute	15	Currency
Dtransfer	Date of transfer payment to Sing.	Attribute	10	Date

Table 3.9. Order Product

Field Name	Description	Key Type	Size	Property
PO	Purchase order no.	Primary key	10	Number
ID_no	Id no. of available stock item in Bangkok	Primary key	10	Number

Table 3.10. Product

Field Name	Description	Key Type	Size	Property
ID_no	Id no. of available stock item in Bangkok	Primary key	10	Number
Pitem_no	Item no of Stock in Bkk	Attribute	4	Number
Psize	Size of item in stock	Attribute	4	Character
Pcolor	Color of item in stock	Attribute	12	Character
Pprice_Bt	Price per gross (Bht) of stock	Attribute	15	Currency

Table 3.11. Product Customer

Field Name	Description	Key Type	Size	Property
Name	Customer's name	Primary key	50	Character
ID_no	Id no. of available stock item in Bangkok	Primary key	10	Number

Table 3.12. Sales Person

Field Name	Description	Key Type	Size	Property
Sales ID	Id no. of Sales Person	Primary key	10	Character
Sales Name	Name of Sales Person	Attribute	50	Number

Table 3.13. Customer Sales Person

Field Name	Description	Key Type	Size	Property
Name	Customer's name	Primary key	50	Character
Sales ID	Id no. of Sales Person	Primary key	10	Character

IV. COST AND BENEFITS

4.1 Hardware Specification

LAN system will be used as a system network for this new database system.

The type of LAN is bus topology. Below is the figure of the LAN system.
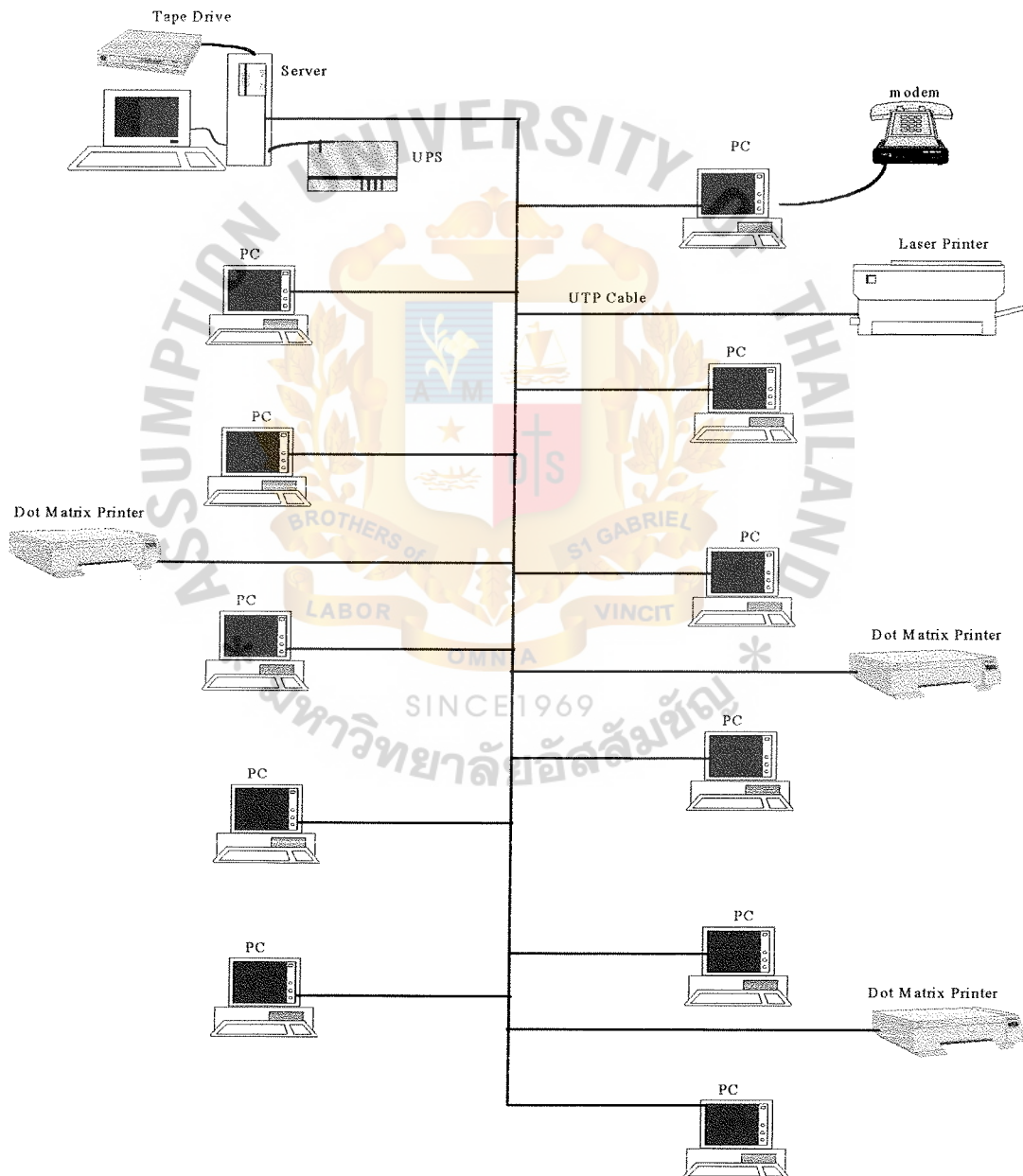
Figure 4.1. LAN System

Following is the list of hardware that composed in the system.

1. Server and terminal (1 set) – Bht. 350,000/set

   - Pentium Pro 200 MHz

   - External cache 512 KB

   - RAM 64 MB

   - (3.5") 1.44 MB – diskette drive

   - 3.2 GB harddisk

   - 15" SVGA monitor

   - Keyboard

   - Mouse

2. Network Interface Cards for the Server/terminal and each PC (Bht 2,800 / PC)

3. Unshielded Twisted Pair Cable – Bht. 18/meter

4. Personal Computer (11 sets) – Bht. 30,000/set

   - Pentium 120 MHz

   - External cache 256 KB

   - RAM 16 MB

   - (3.5") 1.44 MB – diskette drive

   - 632 MB harddisk

   - 14" SVGA monitor

   - Keyboard

   - Mouse

5. Urgent Power Supply (1 set) – Bht. 150,000/set

    - on line with power of 5000 VA

    - output 220 volt

    - operating time 15-20 minutes.

6. Secondary Storage Device (1 set)

    - internal tape disk drive – Bht. 30,000/set

    - 2 GB magnetic tape – Bht. 1,150/PC

7. Laser Printer (1 set) – Bht. 20,000/set

8. Dot Matrix Printer (3 sets) – Bht. 16,000/set

9. External Modem 33.6 Kbps, V.34 (1 set) – Bht. 10,000/set

10. Direct telephone line (1 line) – Bht. 6,000/line

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4.2 Software Specification

There are two types of software for this LAN system. One is software for the server and another is software for PC.

Software for Server

1. Novell Netware Version 4.1

2. Ccmail Lotus Version 6

3. Window 95 with Microsoft Office 97

Software for PC

1. Novell Netware Client 32

2. Window 95 with Microsoft Office 97

3. Ccmail Lotus Version 6

3.4

4.3 Cost / Benefits Analysis

Considering the new proposed system, there are many advantages and following is the list.

1. Helps to support users to work effectively and efficiency.

2. Reduces redundancy in work paper and process.

3. Helps to save spaces in keeping the recorded documents in which this is a result from computer storage capacity.

4. Reduces costs (paper, folders, stationary) both in maintenance those paper documents and human resources.

5. Provides better service to customers which includes faster stock checking, more punctual delivery, and reliable trace for the payment.

However, there are several disadvantages with the new system as well.

1. Employees may feel uncomfortable with the new system at the beginning of usage. However, this can be reduced by careful and patience advices from the trainer.

2. Large sum of money needs to invest with this new system.

At Singapore office, LAN system is connected as a hub where ccmail Lotus is used as a link for receiving order file transmission from Bangkok office. Everyday Crystal Trading Company is transmitted their order files and exchanging other ccmail messages with Singapore office. Transmission by the Lotus ccmail, the telephone line is temporary connected with Singapore office's Lotus ccmail. Users can only transmit the order files and other ccmail message during the connection of the telephone line.

Following is the cost analysis of the proposed system.

$$\text{Where Payback Period} = Y + \frac{C}{V} ;$$

Y = The last year that the cumulative benefits of the new system were negative.

C = The absolute value of the cummulative benefits of the new system for last year.

V = The absolute value of the cummulative benefits of the new system for:-

      i.   The last year that they were negative.

      ii.   The first year that they were positive.

Table 4.1. The Average Grand Total Cost

Items	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Costs of Hardware for LAN System (eg. Server, PCs, modem, printer)	980,000					
Cost of Software	70,000					
Implementation (eg. Training course)	100,000					
Maintenance (eg. Printer catridge)	100,000	100,000	100,000	100,000	100,000	100,000
Total	1,250,000	100,000	100,000	100,000	100,000	100,000

Table 4.2. The Tangible Benefits

Items	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Saving paper, stationary	0	100,000	100,000	100,000	100,000	100,000
Saving office spaces in keeping document	0	200,000	200,000	200,000	200,000	200,000
Saving communication cost (eg. Fax to Singapore office)	0	240,000	300,000	370,000	450,000	550,000
Saving an additional personnel (eg.OT)	0	300,000	350,000	400,000	450,000	500,000
Total	0	840,000	1,000,000	1,170,000	1,350,000	1,550,000

Table 4.3. Payback Analysis of Proposed System

Items	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Proposed System Benefits	0	840,000	1,000,000	1,170,000	1,350,000	1,550,000
Proposed System Costs	1,250,000	100,000	100,000	100,000	100,000	100,000
Net Cash Flow	1,250,000	940,000	1,100,000	1,250,000	1,450,000	1,660,000
Cumulative Benefits	1,250,000	410,000	60,000	70,000	100,000	100,000
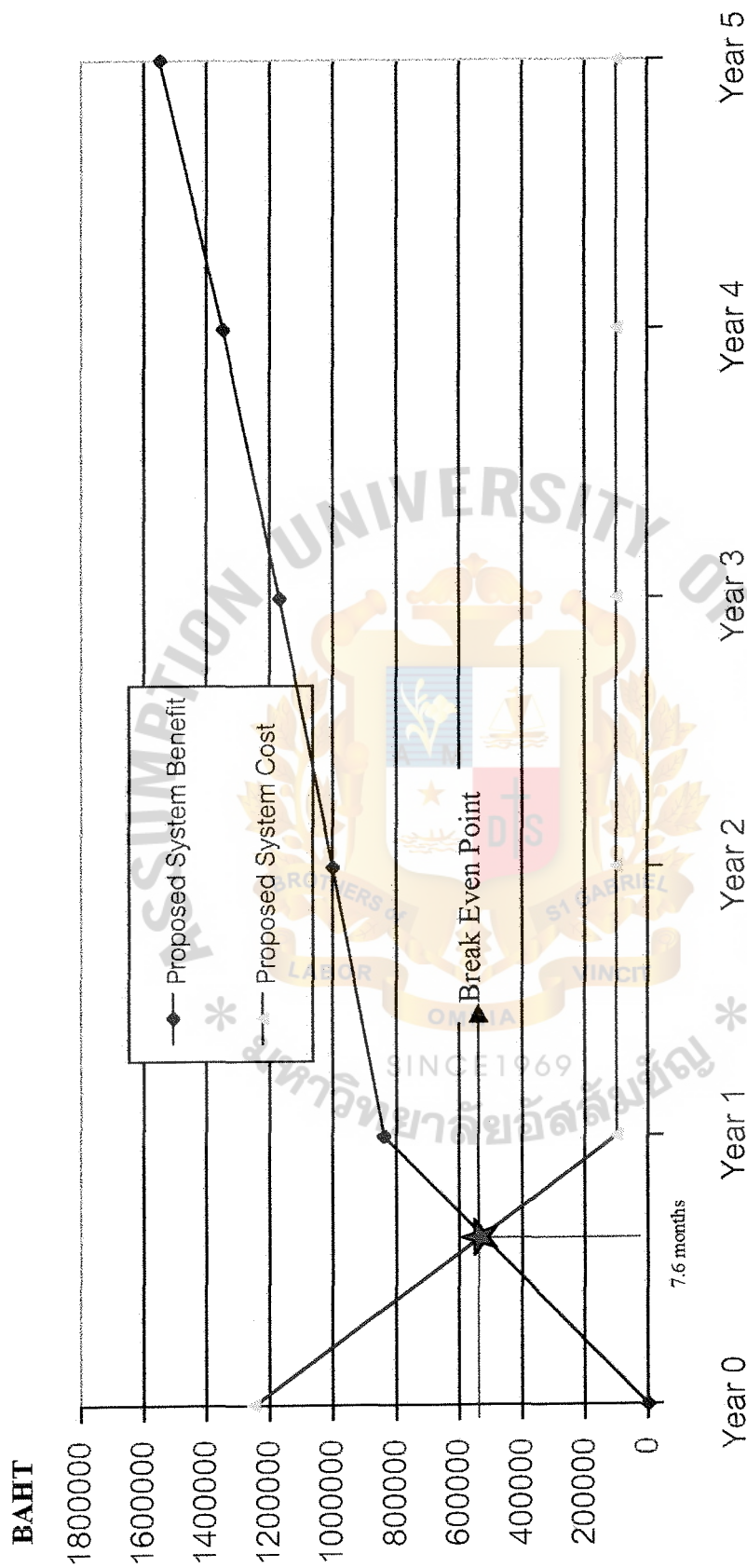
Figure 4.2. Graph of Cost / Benefit Payback Period

V. PROJECT IMPLEMENTATION

5.1 Program the System

Microsoft Access 97 is used to build the database and print out reports for the new inventory system, since this program is easy to install in the PC and less complexity for the employees to use. Ccmail Lotus is used to transfer order files via modem to Singapore office instead of using fax machine in which helps us to save cost of distance calls. Messages and files are typed in the ccmail, then export to Singapore office.

5.2 Test the Program

A set of old data will be used for procedure testing after the program is installed. A set of testing database will be entered into the system and transmit data to Singapore office as forwarding stock order in the real process. The testing will be done until cash transfer back to Singapore office. During these steps, the correction is made if nay errors occur.

5.3 Implementation

With the new inventory system, Crystal Trading Company has increased its efficiency in works. However, some users may feel reluctant to use this system, since it is a merely new process for them. To handle this problem, a seminar will be held in a resort to introduce the new users benefits that gain from this system. Activity such like casual discussion of benefits derived from the new system is expected to reduce user's rejection of new system.

Later a training course is given to the users before implementation of this new inventory system. The training course will be divided into three sections. First section is introduced the overall picture of this new system and what benefits do they get from this. Second section is the method of how to use the system. Every staff is requested to do the sample performance in order to test whether each is fully understood the application. Third section is technique for handling some easy trouble shooting such as printing error in page no, and other major mistakes that may occur during data key in.

After training course is provided, the system will be immediately in use. Every three months, a meeting would be held. Users from each department are requested to report problems that occur and to suggest any improvements that need to do.

VI. CONCLUSION AND RECOMMEDATIONS

6.1 Conclusion

With the proposed system, users can check for more reliable delivery and payment status. They can work faster and more effectively, since the new system helps to reduce work redundancy among the users. While the customers are receiving better services such as faster delivery and relief in burden of import process through the new proposed system. As for the company, it will enjoy the higher order volume and increasing number of new customers.

For the payback period of the new system, it will start from the 1st year of implementation (or as year 0 in the Table 17: Payback Analysis of Proposed System). As noticed that break even point is occurred in the 1st year only after a few of implementation of the new system, this is due to the high saving cost in communication cost and human resources. The company pays less for the distance calls and additional staff wages in the new system. However, large sum of captital is needed to invest for the new system in the first year.

6.2 Recommendations

Since orders that are not available in Bangkok, stock must be forwarded to Singapore Office; and there should be an on-line Singapore stock checking where the sales department or stock department can immediately check for the available in Singapore. If the desired order items are not available, the sales or stock department can check for other alternative crystal stone items that are available in Singapore stock and offer the alternative items to the customers. So the customers need not to wait long and it saves time for back and forth communication between Bangkok Office and Singapore if such case happens. This can be done with the Singapore stock file transfer to Bangkok everyday.

For stock inventory, bar code may be used to increase speed of stock checking.

In the long run, as cost of email account is expected to be cheaper, the users may communicate with the Singapore office through internet email account since applying for email account in Bangkok and Singapore is more convenient than before. As a result, it helps to save cost in communication via distance call.

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APPENDIX A

Process Specification

APPENDIX A

Process Specification

Process 1: Receive Purchase Order

Begin

If Read file = Customer Order

Then Go to process 2

Else   do nothing

End

Process 2: Check Stock

Begin

If Customer Order = Bangkok Stock

Then   Perform stock out

Jump   to process 8

Else   Go to Process 3

End

Process 3: Place Order to Singapore

Begin

If Get customer order

Then Read Customer Order

Perform Customer order = Stock order

Record Stock order

Go to Process 4

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Else   do nothing

End

Process 4: Receive Stock in Inventory

Begin

If goods arrive Bangkok

Then   Update stock order

Record custom clear

Record Freight charge

Record Statement of account

Update Bangkok Stock

Go to Process 5

Else do nothing

End

Process 5: Record Cost of Goods

Begin

Get Custom Clear

Read Custom Clear

If Custom clear > Bht.0

Then Cost of goods = Custom clear + customer order

Record cost of goods

Go to Process 6

Else do nothing

End

Process 6: Calculate Min.Sell Price

　　　Begin

　　　　　　Get Cost of goods

　　　　　　Read Cost of goods

　　　　　　If Cost of goods > Bht.0

　　　　　　Then Min.Sell Price = Cost of goods+20% mark up+10%VAT

　　　　　　　　Record Min.Sell Price

　　　　　　　　Go to Process 7

　　　　　　　　　　Else do nothing

　　　End

Process 7: Report Cost of Goods & Min. Sell Price

　　　Begin

　　　　　　If cost of goods and min.sell price = ready

　　　　　　Then Get cost of goods

　　　　　　　　Print cost of goods

　　　　　　　　Get min.sell price

　　　　　　　　Print min.sell price

　　　　　　　　Go to process 8

　　　　　　　　　　Else do nothing

　　　End

Process 8: Release Stock Out From Inventory

    Begin

        Get Bangkok Stock

        Perform stock out

        If Bangkok Stock > 0

        Then update Bangkok Stock

            Go to Process 9

                Else update Bangkok Stock

                  Go to process 9

    End

Process 9: Issue Invoice

    Begin

        If customer order and min. sell price = ready

        Then   Get customer order

            Read customer order

            Get min.sell price

            Read min.sell price

            Invoice = customer order + min.sell price

            Record invoice

            Update customer order

            Print invoice

            Go to Process 10

Else do nothing

End

Process 10: Deliver Goods to Customers

Begin

If goods = ready

Then Perform delivery

Go to process 11

Else do nothing

End

Process 11: Collect Money

Begin

If Goods is delivered

Then   Record date of payment

Begin

If date of payment = money receive

Then Update date of payment

Else wait until date of payment=money receive

End

Go to process 12

Else wait until goods is delivered

End

Process 12: Transfer Money to Singapore Office

Begin

    If Receive invoice from Singapore

    Then   Get statement of account

          Read statement of account

          Get freight charge

          Read freight charge

          Total cash payment = freight charge+statement of account
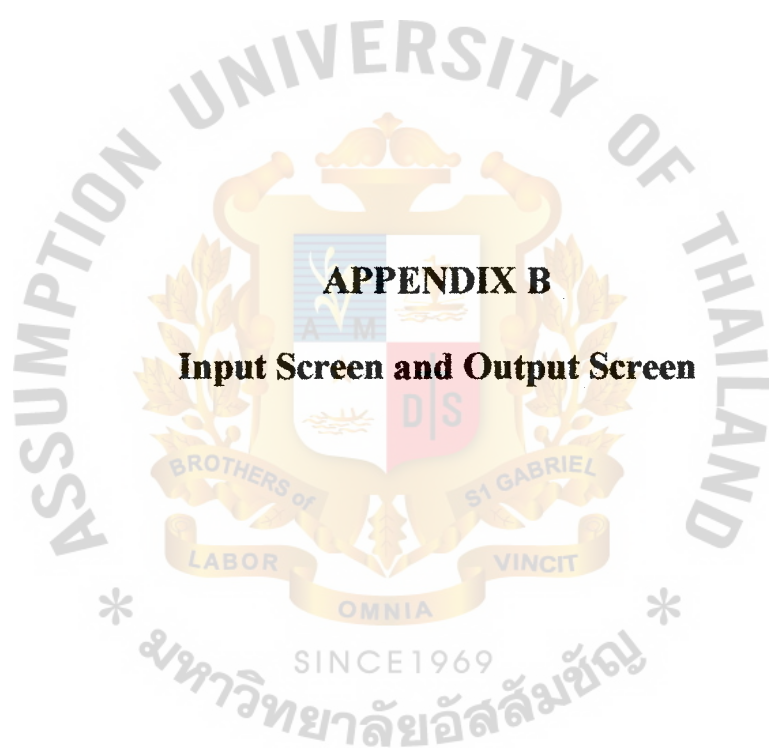
          Record total cash payment

          Update statement of account

          Update freight charge

          Stop process

               Else wait until receive invoice

End

APPENDIX B

Input Screen and Output Screen

APPENDIX B

Input Screens and Output Screens

Figure B.1. Input Screen of Bangkok Stock List

ID	Item_No	Size	Color	Quantity in Gross	Price / Gross (Bht)
2	1012	pp9	Crystal	50	๘๐.๗๐฿
3	1012	pp9	Siam	70	๙๔.๘๐฿
4	1012	pp10	Emerald	100	๙๕.๑๐฿
5	1012	pp11	Crystal	60	๘๑.๖๐฿
6	1012	pp11	Sapphire	25	๙๕.๔๐฿
7	1012	pp12	Montana	50	๙๕.๔๐฿
8	1012	pp20	Topaz	50	๑๑๑.๖๐฿
15	1012	pp24	Siam	50	๒๘๑.๑๐฿
16	1012	pp24	Sapphire	10	๒๘๑.๑๐฿
17	1012	pp24	Jet	5	๒๘๑.๑๐฿
18	1012	pp26	Crystal	80	๑๑๙.๑๐฿
19	1012	pp26	Sapphire	50	๑๓๙.๘๐฿
20	1012	pp30	Crystal	20	๑๗๖.๕๐฿
21	1012	pp30	Jonquil	10	๑๕๙.๐๐฿
22	1012	pp30	Aquamarine	10	๑๙๗.๐๐฿
23	1012	pp30	Light Siam	10	๑๙๗.๐๐฿
24	1012	pp30	Siam	10	๑๙๗.๐๐฿

Figure B.2. Output Report of Bangkok Stock List

Figure B.3. Input Screen Customer Order File

Name	Date of Order	Purchase order	Address	Credit Term	Item no	Size	Color	Quantity (gross)	Sales ID	Sales Name
Amy Jewelry	16/2/98	001	111 Silom Road,	30 days	1012	pp18	Crystal	100	1	Amorn
Amy Jewelry	22/2/98	008	111 Silom Road,	30 days	1012	pp24	Sapphir	80	1	Amorn
Amy Jewelry	22/2/98	009	111 Silom Road,	30 days	1012	pp24	Montana	80	1	Amorn
Booming Silv	17/2/98	002	222 Silom Road,	7 days	1012	pp19	Crystal	60	2	Burapa
Booming Silv	22/2/98	010	222 Silom Road,	7 days	1012	pp16	Crystal	80	2	Burapa
Booming Silv	22/2/98	011	222 Silom Road,	7 days	1012	pp16	Sapphir	80	2	Burapa
Hong Ma Jew	20/2/98	004	444 Silom Road,	30 days	1012	pp18	Crystal	80	3	Sunan

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Figure B.4. Output Report of Customer Order File

Figure B.5. Input Screen of Order Stock List

Name	Date of order	Purchase Order	Expected Delivery	Item_No	Size	Color	Price/gross (S$)	Quantity (gr)	Total S$
Amy Jewelry Co.	16/02/98	1	1/3/98	1012	pp18	Crystal	$3.00	100	$300.00
Amy Jewelry Co.	22/02/98	8	3/8/98	1012	pp24	Sapphire	$4.18	80	$334.40
Amy Jewelry Co.	22/02/98	9	3/8/98	1012	pp24	Montana	$4.18	80	$334.40
Booming Silver	17/02/98	2	3/3/98	1012	pp19	Crystal	$3.13	60	$187.80
Booming Silver	22/02/98	10	3/8/98	1012	pp16	Crystal	$2.90	80	$232.00
Booming Silver	22/02/98	11	8/3/98	1012	pp16	Sapphire	$3.39	80	$271.20
Hong Ma Jewelr	20/02/98	4	3/6/98	1012	pp18	Crystal	$3.00	80	$240.00

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Figure B.6. Output Report of Order Stock Lis

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Figure B.7. Input Screen of Custom Clearance List

Report of Custom Clearance

Order	Date of Order	Clear Date	Item_No	Size	Color	Quatity (gr)	FOB (S$)	Exchange	CIF (Bht)	10% Import	15% Excise	Admin Tax	10% VAT	Clear
1	16/2/98	2/3/98	1012	pp18	Crystal	100	$300.00	๒๗.๐๐฿	๘,๕๐๐.๐๐฿	๘๕๐.๐๐฿	๑,๓๓๗.๕๐฿	๑๓.๓๖฿	๑,๐๐๐๕.๐๘฿	๓,๓๔๕๕
2	17/2/98	3/3/98	1012	pp19	Crystal	60	$187.87	๒๗.๕๐฿	๕,๔๐๖.๖๓๘฿	๕๔๐.๖๘฿	๘๒๑.๔๒฿	๘.๒๒฿	๖๘๕.๓๓๒฿	๒,๐๖๒
3	20/2/98	7/3/98	1012	pp14	Crystal	70	$195.30	๒๗.๐๐฿	๕,๒๗๓.๒๒๖฿	๕๗๓.๒๒฿	๘๓๓.๒๖฿	๘.๓๓฿	๗๒๓.๖๐฿	๒,๐๖๒
4	20/2/98	7/3/98	1012	pp18	Crystal	80	$240.00	๒๗.๐๐฿	๗,๐๗๕.๕๐฿	๗๐๕.๔๔฿	๑,๐๗๓.๗๖฿	๑๐.๗๓฿	๕๕๕.๗๓฿	๒,๖๕๘
5	20/2/98	7/3/98	1012	pp8	Siam	60	$186.00	๒๗.๐๐฿	๕,๕๕๕.๖๖฿	๕๕๕.๕๖฿	๘๓๓.๖๕฿	๘.๓๓฿	๖๖๓.๖๕฿	๒,๐๖๘
6	20/2/98	7/3/98	1012	pp26	Siam	10	$46.60	๒๗.๐๐฿	๑,๓๓๕.๑๘฿	๑๓๕.๖๖฿	๒๐๑.๗๓฿	๒.๐๒฿	๑๖๒.๔๕฿	๕๒
8	22/2/98	9/3/98	1012	pp24	Sapphire	80	$334.40	๒๖.๕๐฿	๙,๓๔๗.๗๒฿	๙๓๔.๗๒฿	๑,๔๒๗.๒๖฿	๑๔.๒๗฿	๑,๓๓๖๕.๕๓฿	๓,๖๓๒

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Figure B.8. Output Report of Custom Clearance List

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Figure B.9. Input Screen of Freight Charge List

Report of Freight Charge

Purchase Order	Date order	Date Stock in	Item_No	Size	Color	Quantity (gr)	Weight (kg)	Freight charge (S$)
1	16/2/98	2/3/98	1012	pp18	Crystal	100	0.2	$15.00
2	17/2/98	3/3/98	1012	pp19	Crystal	60	0.13	$12.00
3	20/2/98	7/3/98	1012	pp14	Crystal	70	0.17	$15.00
4	20/2/98	7/3/98	1012	pp18	Crystal	80	0.17	$15.00
5	20/2/98	7/3/98	1012	pp8	Siam	60	0.11	$10.00
6	20/2/98	7/3/98	1012	pp26	Siam	10	0.08	$5.00
8	22/2/98	9/3/98	1012	pp24	Sapphire	80	0.8	$22.00
9	22/2/98	9/3/98	1012	pp24	Montana	80	0.8	$22.00

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Figure B.10. Output Report of Freight Charge Lis

Figure B.11. Input Screen of Statement of Account

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Due Date Payment	Purchase order	Date order	Item_no	Size	Color	Quantity (gr)	Price/gr (S$)	Total S$	Date stock in
2/4/98	1	16/2/98	1012	pp18	Crystal	100	$3.00	$300.00	2/3/98
3/4/98	2	17/2/98	1012	pp19	Crystal	60	$3.13	$187.80	3/3/98
7/4/98	3	20/2/98	1012	pp14	Crystal	70	$2.79	$195.30	7/3/98
7/4/98	4	20/2/98	1012	pp18	Crystal	80	$3.00	$240.00	7/3/98
7/4/98	5	20/2/98	1012	pp8	Siam	60	$3.10	$186.00	7/3/98
7/4/98	6	20/2/98	1012	pp26	Siam	10	$4.66	$46.60	7/3/98
7/4/98	17	20/2/98	1012	pp24	Crystal	40	$3.56	$142.00	7/3/98
9/4/98	8	22/2/98	1012	pp24	Sapphire	80	$4.18	$334.40	9/3/98

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Figure B.12. Output Report of Statement of Account

Figure B.13. Input Screen of Cost of Goods

Item no	Size	Color	Purchase Order	Qty (gr)	Date stock in	FOB (S$)	Exchange rate	CIF(Bht)	Custom	10% admin	Cost of goods
1012	pp14	Crystal	3	70	7/3/98	$195.30	๒๗.๑๐฿	5821.89	2192.79	219.27	2412.06
1012	pp16	Crystal	10	80	9/3/98	$232.00	๒๖.๕๙฿	6762.8	2547.2	254.72	2801.92
1012	pp16	Sapphire	11	80	9/3/98	$271.20	๒๖.๕๙฿	7905.48	2977.58	297.75	3275.33
1012	pp18	Crystal	1	100	2/3/98	$300.00	๒๗.๐๐฿	8910	3355.88	335.58	3691.46
1012	pp18	Crystal	4	80	8/3/98	$240.00	๒๗.๑๐฿	7154.4	2694.7	269.47	2964.17
1012	pp19	Crystal	2	60	3/3/98	$187.87	๒๖.๕๙฿	5476.41	2062.68	206.26	2268.94
1012	pp24	Montana	9	80	9/3/98	$334.40	๒๖.๕๙฿	9747.76	3671.47	367.14	4038.62

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Figure B.14. Output Report for Cost of Good

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Figure B.15. Input Screen of Minimum Selling Price

Item no	Size	Color	Date stock in	Purchase order	Qty (gr)	Cost of goods	20%markup	10%VAT	Price (Bht)	Price/gr
1012	pp14	Crystal	7/3/98	3	70	2412.06	482.41	289.44	3183.91	45.48
1012	pp16	Crystal	9/3/98	10	80	2801.92	560.38	336.23	3698.53	46.23
1012	pp16	Sapphire	9/3/98	11	80	3275.33	655.06	393.03	4323.42	54.04
1012	pp18	Crystal	2/3/98	1	100	3691.46	738.29	442.97	4872.42	48.72
1012	pp18	Crystal	8/3/98	4	80	2964.17	592.83	355.70	3912.7	48.9
1012	pp19	Crystal	3/3/98	2	60	2268.94	453.78	272.27	2994.99	49.91
1012	pp24	Montana	9/3/98	9	80	4038.62	807.72	484.63	5330.97	66.63

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Figure B.16. Output Report of Minimum Selling Price

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Figure B.17. Input Screen of Date of Payment

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Report of Customers Payment Due Date

Due Date	Customer Name	Purchase order	Deliver Date	Item_no	Size	Color	Qty (gr)	Price/gr	Total (Bht)	10%VAT
10/3/98	Booming Silver	2	3/3/98	1012	pp19	Crystal	60	49.91	5444.92	272.22
10/3/98	Booming Silver	10	9/3/98	1012	pp16	Crystal	80	46.23	3698.53	336.23
10/3/98	Booming Silver	11	9/3/98	1012	pp16	Sapphire	80	54.04	4323.42	393.03
21/3/98	Mainly Crystal	3	7/3/98	1012	pp14	Crystal	70	45.48	3183.91	289.44
23/3/98	Mainly Crystal	17	9/3/98	1012	pp24	Crystal	40	63.8	2552	232
4/4/98	Amy Jewelry Co., Lt	1	4/3/98	1012	pp18	Crystal	100	48.72	4872.72	442.97
7/4/98	Hong Ma Jewelry	5	7/3/98	1012	pp8	Siam	60	50.53	3032.3	275.66

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Figure B.18. Output Report for Date of Payment

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Figure B.19. Input Screen of Money Receive

Money Receive Report

Date receive	Customer name	Purchase order	Due Date	Item no	Size	Color	Qty (gr)	Price/gr	Total (Bht)	10%VAT
10/3/98	Booming Silver	2	10/3/98	1012	pp19	Crytal	60	49.94	5444.92	272.22
10/3/98	Booming Silver	10	10/3/98	1012	pp16	Crystal	80	46.23	3698.53	336.23
10/3/98	Booming Silver	11	10/3/98	1012	pp16	Crystal	80	54.04	4323.42	393.03
21/3/98	Mainly Crystal	3	21/3/98	1012	pp14	Crystal	70	45.48	3183.91	289.44
23/3/98	Mainly Crystal	17	23/3/98	1012	pp24	Crystal	40	63.8	2552	232
4/4/98	Amy Jewelry Co., Ltd	1	4/4/98	1012	pp18	Crystal	100	48.72	4872.72	442.97
7/4/98	Hong Ma Jewelry	5	7/4/98	1012	pp8	Siam	60	50.53	3032.3	275.66

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Figure B.20. Output Report of Money Receive

Figure B.21. Input Screen of Total Cash Payment

Report of Total Cash Payable

Due Date	Date transfer	Purchase Order	Date order	Date stock in	Statement of A/c	Freight Charge	Exchange	Total (Bht)
2/4/98	2/4/98	1	16/2/98	2/3/98	$300.00	$15.00	๒๖.๐๐฿	8190
3/4/98	3/4/98	2	17/2/98	3/3/98	$187.80	$12.00	๒๗.๐๐฿	5373
7/4/98	7/4/98	3	20/2/98	7/3/98	$195.30	$15.00	๒๕.๑๐฿	5278.53
7/4/98	7/4/98	4	20/2/98	7/3/98	$240.00	$15.00	๒๕.๑๐฿	6400.5
7/4/98	7/4/98	5	20/2/98	7/3/98	$186.00	$10.00	๒๕.๑๐฿	4919.6
7/4/98	7/4/98	6	20/2/98	7/3/98	$46.60	$5.00	๒๕.๑๐฿	1295.16
7/4/98	7/4/98	17	20/2/98	7/3/98	$142.00	$10.00	๒๕.๑๐฿	3815.2

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Figure B.22. Output Report of Total Cash Payment

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SWAN CRYSTAL

919/1 Jewlery Trade Centre, Bangrak, Bangkok 10500, Thailand

CUSTOMER NAME:- Amy Jewelry Co., Ltd.

CUSTOMER ADDRESS:- 111 Silom Road, Bangkok 10500

CREDIT TERM:- 30 days   DATE:- April 4, 1998.

PO NO.	ITEM NO	SIZE	COLOR	QTY(GR)	PRICE/GR	10% VAT	TOTAL
1	1012	PP18	Crystal	100	44.29	442.97	4,872.72
8	1012	PP24	Sapphire	80	60.57	484.63	5,330.97
9	1012	PP24	Sapphire	80	60.57	484.63	5,330.97
						TOTAL	15,534.66

Figure B.23. Invoice

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Item_No	Size	Color	Name	Quantity (gr)
1012				
	pp10			
		Crystal		
			Silver World	50
	pp12			
		Crystal		
			Silver World	50
	pp14			
		Crystal		
			Mainly Crystal Co., L	70
		Light Siam		
			Mainly Crystal Co., L	70
		Montana		
			Mainly Crystal Co., L	90
	pp16			
		Crystal		
			Booming Silver Ltd.,	80
		Sapphire		
			Booming Silver Ltd.,	80

Figure B.24. Output Report for Future Stock Forecas

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