



AN INFORMATION SYSTEM FOR A TRADING FIRM

by

Mr. Narin Thaiyachuwonggul

A Final Report of the Six-Credit Course  
CE 6998 - CE 6999 Project

Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Master of Science  
in Computer and Engineering Management  
Assumption University

July 2003

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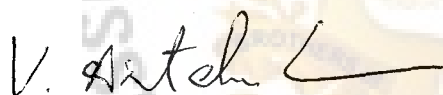


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Academic Year	July 2003

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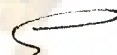
The Graduate School of Assumption University has approved this final report of the six-credit course, CE 6998 — CE 6999 PROJECT, submitted in partial fulfillment of the requirements for the degree of Master of Science in Computer and Engineering Management.

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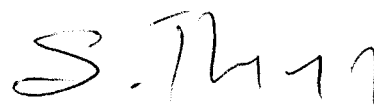


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July 2003

## ABSTRACT

TMA is one of the foreign trading firm's subsidiary located in Thailand for servicing local customers in Thailand and South Asian countries. Due to the continuous growth in the business cycle, TMA currently faces the problem of over load work force capacity and information system inside the company, such as data redundancy, data inaccuracy, work duplication, loss of data and etc. Even though the company has considered various ways to improve the condition of such problems by employing more workers for assisting in office administrative tasks, it still can not solve the problem completely.

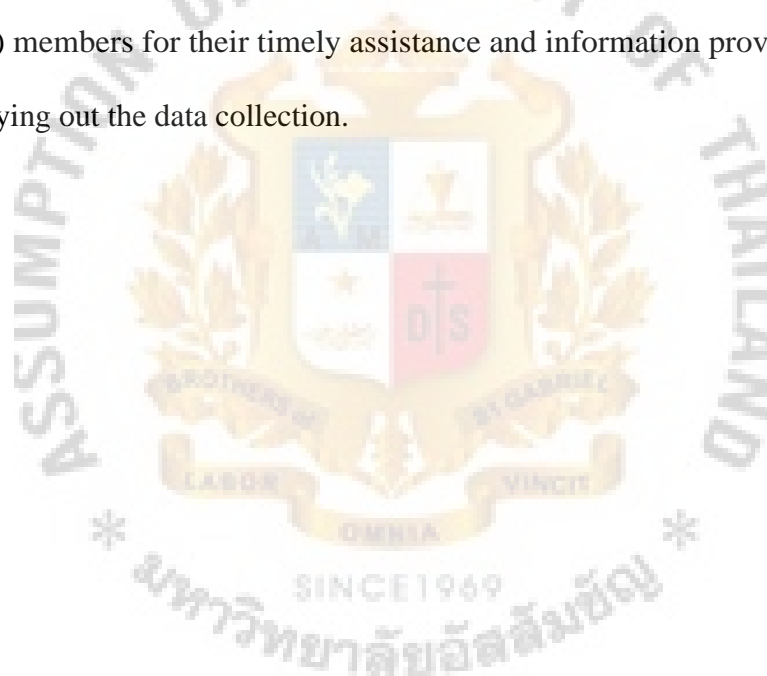
Launching a new computer network is the best way to solve TMA's current problems more effectively and efficiently. In other words, a new computer will not only solve the current problems, but it would also save costs in the long term compared to employment of new staffs. TMA currently possesses some computer components already; these devices are ready to be used with the new system, which will reduce the budget from the actual cost of investment.

From the feasibility study, a new proposed computer system creates various benefits both tangible and intangible to the company. The tangible benefit is saving costs to the company in the long run or equal to extra employees for about 2 years. The proposed system will create a lot of intangible benefits to the organization such as improve workers' productivity and moral, provide quick and accurate data for decision making in the management level, offer quick response to customers for customer satisfaction, reduce data errors and offer a more systematic way in business operation management.

## ACKNOWLEDGEMENTS

This project would not have materialized without the efforts and contributions of many individuals. The author would like to express his appreciation to Asst.Prof.Dr. Vichit Avatchanakorn for his kind guidance contributed throughout the period of the project preparation.

The writer extends his sincere thanks to Mr. Noppadol Tilokavichai — the experienced System Analysis for his valuable suggestions and guidelines, and all TMA (Thailand) members for their timely assistance and information provided to the writer while carrying out the data collection.



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## **I. INTRODUCTION**

### **1.1 Background of the Project**

(At the present, business is rapidly changing the environment of computer applications which has important roles in operations. It helps business in process planning, data transaction, data redundancy, data inaccuracy, data management analysis and numerical control. And also, it can do automated storage and retrieval systems that help us in flexible systems.

Top management should realize that an organization has a more flexible system and control system of cooperation that needs to be effectively managed to achieve the desired results. Mostly the purpose of an organization is to produce and deliver the services and goods demanded by customers. All workers need to deliver the services to their clients as quickly as they desire, but due to lack of effective plans, the projects were lost.

(In the information technology section, the application of knowledge — in the form of developed tools, processes, and procedures — to solve problems is very significant for the organization. Computer technology will have a tremendous impact on shaping the future of organization; thus, using advanced technology will help to make an effective plan in purchasing and ordering system by avoiding the amount of capital that has been tied up in inventory as well as interchange of data among departments and create various business reports. In addition, the current use of technology can save the time in calculation which formerly used the manual system'.'

(\Not only will operations be influenced by this evolutionary change, but the entire organization will also change in response to the new competitors presented by these technologies. If any organization, lack developed technologies cannot cope with others.

In other words, if they are behind the recently developed technologies, they will be threatened with a slow procurement process and data inaccuracy.

Thus, new systems should be implemented as fast as the evolution changes, since the new system will help integrate all information to support all departments' needs and decision makings in management level of the organization. The objective of this system is helping managers to make better decisions, in turn, that is the most critical task that the organization performs. All information helps the organization members to cope with routine business activities effectively and support managers to analyze the business cycle and outcomes.

If the implementation of a new system is proceeded immediately, it will be an effective management of operations to become a leader in competitive markets. They will accomplish this by lowering business operation costs, reducing lead time in issuing business documents such as sales quotation, sales invoice and other financial documents, reducing data redundancy and repeated tasks, improving database system in supporting precise data to be available at any time needed, and responding to customer requirements with high-quality designs.

The advantages of this system comprise of updated inventory information that salesman could quickly respond to customers' request which will cause customers to be satisfied, strictly control financial activities such as account receivable, automatically calculate function in generating sales quotation which could reduce mistake in calculation under manual method, effective database system to support all information needed in each department and create up-to-date various business reports immediately

## 12 Objectives of the Project

Trading business is seriously concerned with a great deal of database information for interchange among sales, purchase, inventory control and account departments. The objectives of studying TMA business operation system are described as follows:

- (1) To study and analyse the existing manual system and to design new computer based information system.
- (2) To analyze the problems and users' requirements.
- (3) To design a better system and provide more accurate information in order to provide better information as a result.
- (4) To reduce error in data manipulation. For example: There is a human error for data calculation such as billing error, or inventory checking with the manual system for any operation that may cause error due to double counting.
- (5) To reduce unnecessary loss from the traditional system such as loss of inventory from ineffective management system, account receivable from non stricter control.
- (6) To replace some manual processes in the system with the computerized system process instead.
- (7) To reduce paper works. For example: Some information we may need to just only display on the screen for error checking, editing and printing at the time of need only.
- (8) To minimize the company cost and make use of human resource more effectively through the use of a proposed computerized information system.
- (9) To produce the variety of report forms from the computerized system that are valuable to the management decision making process.

(10) To implement, develop and test the database management system for the computer information system.

(11) To improve the business operation with the computer based system.

### **1.3 Scope of the Project**

This project is emphasized on generating an effective computer system to support TMA's operation system, in which the project will cover major parts of the computer information system as follows:

#### **(1) Sales Information**

- (a) Customer information
- (b) Quotation to customer
- (c) Order from customer
- (d) Temporary delivery note
- (e) Documentations between the company and customers

#### **(2) Purchasing Information**

- (a) Supplier information
- (b) Order to supplier
- (c) Documentations between the company and supplier

#### **(3) Inventory Controlling**

- (a) Inventory inflow
- (b) Inventory outflow
- (c) Balance inventory computation
- (d) Inventory adjustment
- (e) Safety stock control

#### **(4) Accounting System**

- (a) Issuing invoice and receipt



- (b) Issuing credit note
- (c) Managing suppliers' invoice and documents
- (d) Account receivable control
- (e) Account payable control
- (f) Money transaction control

#### (5) Creating Reports

- (a) Tax report to Revenue Dept
- (b) Management reports to manager

### **1.4 Constraints**

TMA's business covers a wide range of operation activities, the system will have to be considered in terms of feasibility and the convenience of application both designer and end users as well as end users' computer application skills and economic concerns. Therefore, the system would not include all business activities parts because it would bring the system to be over designed and with more complexity to understand. The following are the circumstances that is limited the computerized system.

- (1) Importing activities such as custom clearance, import insurance, L/C, and B/L.
- (2) Accounting activities such as payroll system, depreciation, interest, miscellaneous expenses, notes payable, prepaid expenses, capital control, making income statement, balance sheet and computing financial ratios.
- (3) There is no sales commission for sales persons.
- (4) There is no credit limit for both customers and suppliers.
- (5) Payment terms to regular suppliers is the end of following month after the date of supplier's invoice.
- (6) Payment to irregular supplier can be paid on cash after delivery.

- (7) Payment term offers to regular customers is 30 days.
- (8) Payment term offers to irregular customers is cash on delivery.
- (9) There is no down payment to suppliers or get down payment from customers.
- (10) Tax report to Revenue Dept is limited to only sales and purchase for submission of VAT, as the other tax reports to government is not concerned.
- (11) Markup margin is calculated based on selling price method (percentage of profit is earned from the selling price).

### **1.5 Project Plan**

- (1) Initial study on the organization structure, and the problems related to each department. The next study defines the area under study and develop the Context Diagrams.
- (2) Interviews and observations are made to provide understanding of the Existing system and problems that occurred.
- (3) Conclusions of the Existing System are made and the development of the new system is settled to solve the problems. This will be included in the Data Flow Diagrams, and Data Dictionary for the newly developed system.
- (4) New system requirements are defined including inputs, outputs and operation.
- (5) Budgeting consideration for the analysis, design and implementation. Cost and benefit analysis for the proposed system is evaluated.
- (6) After conclusion, implementation phase is done to develop the programs, test and implementing the new system.

**IL Int EXLSITNG SYSTEM**

**2.1 Background of the Organization**

TMA (Thailand) Co., Ltd. was established in 1995, and its main business activity is selling imported machines, machine tools and other industrial instruments. The company's business situation has improved since the recovery of Thai economy, and it currently hires 14 employees.

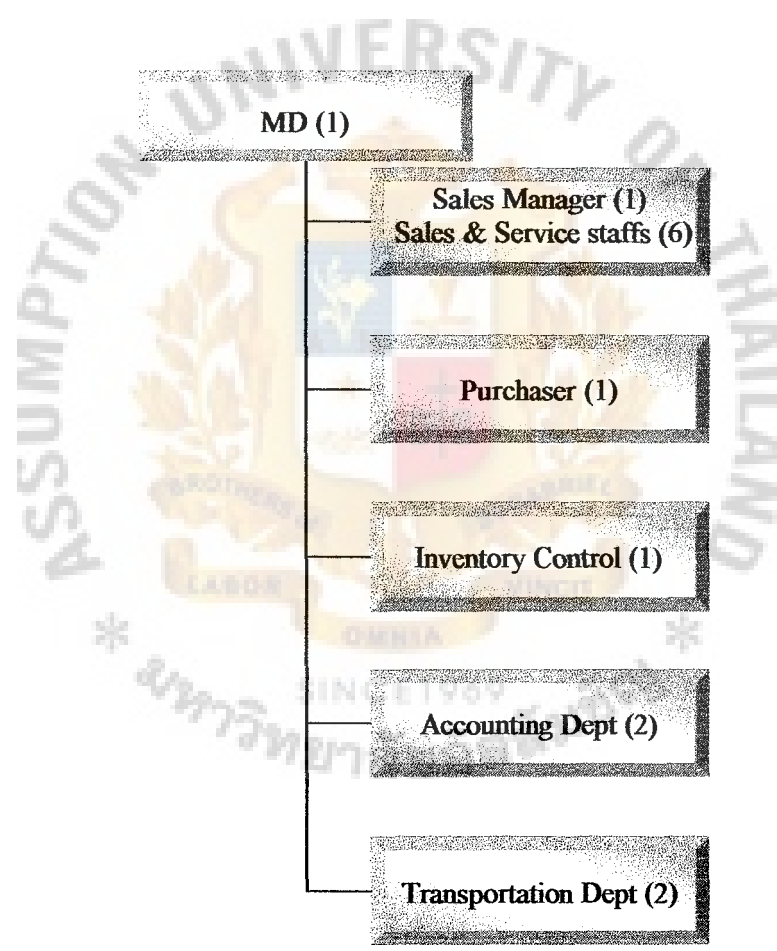


Figure 2.1. Organization Chart of TMA (Thailand) Co., Ltd.

TMA (Thailand) Co., Ltd. is one of foreign trading company's subsidiaries established in Thailand for servicing local industrial business. Most of TMA's imported products are machines, measurement equipments and many types of industrial machine equipments. TMA possesses the right to be the sales agent of many brands of industrial machine tools in Thailand, in which TMA must keep inventory of these brands of machine tools or it is considered as a common product line of the company. Moreover, TMA also handles industrial machines and other imported industrial use products; but TMA. would not keep stock of these product, it would be ordered to manufacturers once it has got a confirmed order from customers or it is considered as uncommon product line. Therefore, TMA classifies its product line into two main parts which are common product and uncommon product.

In the trading business, most tasks are concerned with selling and purchasing of products or services. The business process cycle is done manually include receiving inquiry and sales order from customer, purchasing activities, inventory controlling, transportation activities, and financial operation activities of billing controlling, credit collection, recording and maintaining customer file and filling out many supported documents. Business operation analysis is also useful for management's decision making in the business

Nowadays, the business routine operation work is manually handled. These activities are inconvenient and time consuming. In order to facilitate the day-to-day operation in the area and increase the efficiency and productivity of this business, computer information system is considered. Consequently, a compatible information system is a strategic tool to achieve competitive advantage against competitors in the market.

Of this project, the existing system is analyzed and the new system is designed not only to solve the current problems but also to serve further expansion. That aim is to integrate the business application to increase efficiency and support accurate information for the management. The management needs solid information and database management system to provide precise information that fits in period of time. The right information for right period's need is a key strategic weapon in the competitive market.

## **2.2 Current Problems and Areas for Improvement**

Due to increasing in job activities currently, there are many problems found in every department of TMA's existing system such as data is recorded ineffectively, duplicate tasks are done in more than one department, errors occur due to duplicate working, loss of information from mistakes in keeping documents in different locations, waste too much time in searching historical information, a lot of paper work that causes confusion in data keeping and checking historic information in the future and etc.

Details are specified by process of each department as follows:

### **Ordering Process**

It is the process of corresponding between sales department and customers, sales person will receive product inquiry from customer both in common product and uncommon product, and then sales person will make a quotation to customer with the consideration of different discount rates for each customer. In the mean time, sales person will inform purchaser that is done by himself to search out relevant suppliers for uncommon products. After receiving confirmed purchase orders from customer, sales person will have to coordinate with purchaser to make a purchase of uncommon products of customer's order and arranging the delivery to transportation department. Following problems are found in the sales department:



- (1) TNIA quotation (database is not kept systematically, it wastes much time in searching historical data such as receiving uncommon product order from customer, but faces difficulty in searching TMA quotation and the supplier who supplies such product.
- (2) Sometimes receives a delivery order from customers that the goods is delivered to customer already, but sales person uses such customer order for arranging the delivery again.
- (3) ,Salesmen must calculate selling price manually, and often meet the problem of mistake in selling price calculation; especially when the sales quotation consists of a lot of product items.
- (4) Temporary delivery note that is kept in the database still lacks of strict control. After a period of time, it is confused with the delivery note status.
- (5) Customer may use to buy many types of similar products from sales person in the past, once sales person receives a product order from customer again, sales person may be confused which product customer actually needs.
- (6) Waste too much time in issuing quotations to customer as all information)of customer name, address, telephone number, fax telephone and detail product description are needed to be input into the quotation form.
- (7) Quotation form is not standardized, because it often changes in customer name, product description or is even used by different sales person.
- (8) Inconvenience in checking stock position if stock keeper is not available. Sometimes, customer needs a quick response by telephone, it would cause customer dissatisfaction action if customer waits for the response for a long time.

### **Purchasing Process**

Purchaser has coordination with sales department for searching uncommon products by customers' request, and monitoring information on product shortage from store department. In addition, purchaser also has to correspond with various suppliers to search for uncommon product request by sales department and controlling issue of purchase orders for on time delivery as well as price negotiation with suppliers.

Following are the problems found in purchasing department:

- (1) Order database is not kept systematically, 'purchaser is often confused in issuing purchase order status whether all product items in the purchase order are received from supplier already or not, and sometime receive duplicate delivery from suppliers.
- (2) Purchasers spend too much time in issuing each purchase order) especially, if the purchase order consists of a lot of product items. ;
- (3) Purchaser could not control on time delivery from supplier effectively due to lack of sufficient information of issued purchase orders.
- (4) Supplier quotation is kept and attached to TMA quotation together, it is not convenient to search suppliers' historical quotation from TMA quotation.
- (5) One supplier used to quote a lot of product items to TMA previously. Purchaser will cause supplier's dissatisfaction if purchaser requests quotation of same product items from supplier often.
- (6) Lack of information support purchaser in terms of frequency of product item sold, inventory turn over rate, and forecast future sales, which causes ineffectiveness in considering purchase request from store department.
- (7) There is duplicate tasks between purchasing and store departments, because supplier will send product items to purchaser directly, purchaser will initially

check the product condition and description, and then store department will check the product again once received the goods from purchaser. Somehow, purchaser doesn't know detailed specification of all products, purchaser may accept supplier's delivery but the product may be rejected by store department.

### **Inventory Controlling Process**

The main activities of store department is controlling the inflow and outflow of inventory in the stock to minimize the stock level as well as prevent the shortage of stock. , Store department has to coordinate activities with every department, such as inform and discuss with purchaser for product shortage information and purchase request with sales department for current stock positioning, arrange products to be delivered according to sales invoice from accounting department. Following are the problems found in the store department:

- (1) Store department receives goods from purchaser and also has to return goods to purchaser, it causes duplicate activities inside the company.
- (2) Store department records add and use product quantity in the inventory card, as accounting department inputs the purchase into record for issuing sales invoice later. It causes duplicates in two department for recording the inflow and out flow of inventory.
- (3) Not systematic in controlling delivery note; inventory sometimes just record delivery note information and doesn't update once the delivery note is issued in sales invoice.
- (4) Store keepers don't know all details of inventory information such as some product items are kept in safety stock for a specific customer, these safety

stock product would also be sold to other customers if store department receives a sales invoice without acknowledgement of additional information.

- (5) (Lack of inaccurate data in inventory movement, which affect decisions making from store department for issuing purchase request.

### **Financial Process**

Accounting departments takes control of supplier documents, and then evaluate supplier documents for issuing payment bill to suppliers. Moreover, accounting department also has to control generating sales invoice, sales credit note and related documents to other departments as well as collect payment from customers. In addition, accounting department would have to generate tax report from sales documents and supplier documents and arrange the payment to Revenue Department. Following are the problems found in the accounting process:

- (1) Accounting department has input purchased product items into system that has duplicate with store department.
- (2) 'Product code is not generated systematically due to accountants who still lack experience in the produce title. Sometime accountants still generate a new product code even though the product exists already, because accountants don't find it out or a little change in product description. Generating a new product code also consumed too much time.
- (3) Product code is not widely used because of lack of a complete system within the organization, normally accountants are confused with customer's orders that don't have product code when issuing text invoices.
- (4) j The rapid increasing of nonsystematic new product codes due to the uncommon product orders varies and less repeated, as many product codes

are confusing and will cause accountants to search correct product items for issuing financial documents.

- (5) Accountants don't realize the customer's payment period, it causes less strict control to collect customer's payments.
- (6) Accountants don't make a detailed record of customer's payment. Sometime, it will face trouble for checking customer' historical payments in the future.

### **Generating Management Reports**

Actually, the generated management reports from the current system can support the existing need for the business operation analysis. However, the generated reports from accounting department is still not easy to operate; especially for other departments' staffs. Suppose sales department wishes to know a particular sales record for sales analysis, it will need to request and wait from accounting department. The generated reports from accounting department or stock position report from store department still do not vary to support specific needs of management level.

### **Summarized Problems in TMA Current System**

The current problems and areas for improvement of the existing systems can be summarized as follows:

- (1) The number of transaction of items contains the number and descriptions that still lack routine sales jobs and update all transactions completely everyday.
- (2) Data Redundancy: Some transactions maybe operated more than one time by different officers. This situation will cause trouble in updating when customers want to change some transaction details..
- (3) Data Inaccuracy: The most serious problem of manual jobs are mistakes made by the officer (human error). 1-high workload and limitation of time can



cause data inaccuracy, which affects management decision making and company profit. Occasionally, TMA faces the problem of losing the original document that may cause inaccurate input transactions.

- (4) Time consumption and less accurate information: Information is in the form of paper. Collect and prepare information into the required format for either management decision making or timely basis reports that are time consuming and do not prevent human error and inaccuracy.
- (5) Insufficient data for management analysis: Information gathered from the manual operation is not sufficient for management to plan, forecast, determine market trend, and generate sales and marketing activities to serve the customers' need at the proper time.

## **2.2 Existing Computer System**

TMA's business concerns only the purchasing and selling activities, no products are reproduced or repackaged in domestic market. Therefore, the purchased product items are sold to customers in the same condition, even though the company might buy some product items from one or more suppliers to sell as a single product to customer in some cases. The company now possesses 10 units of computers without a network and other necessary computer peripherals, a packet software is used to record purchased inventory from supplier invoice and then the inventory balance will be automatically reduced once the company issues sales invoice to customers. As Sales and Purchasing departments cope with their routine job manually, computer is useful only in generating business documents such as sales quotation, purchase order and etc. It lacks a well organized database system to manipulate a great deal data that occurred each day, in which historical information is difficult to find out when it is needed. Data could not be

shared with other computer units due to each person creating their job separately on individual computers.

The company currently has 14 workers that is divided into 4 main departments which are sales department, purchasing department, inventory control department, accounting department and 1 small section of transportation. Due to rapid business expansion, the company achieves a sales target over 140 million Bahts in the recent year, the increase in sales orders would also automatically increase in other business activities in every department of the company. The company is dealing with a lot of paper work and over its current work force capacity.



### **III. THE PROPOSED SYSTEM**

#### **3.1 User Requirements**

The new computer system is planned to solve all problems that occurred in the existing system. The followings are the requirements that are found from users in order to support them in their particular tasks.

- (1) System must be able to support the request from every department and can keep records of all transactions.
- (2) System must be able to monitor and trace current status of all transactions.
- (3) System must allow the manager and other members to search additional historical information and generate a specific purpose report.
- (4) Data is always updated and available once it is needed.
- (5) System must be able to trace the transaction status of delivery note sent to customers.
- (6) System must be able to trace the transaction status of account receivable and account payable for easy control of accounting officers.
- (7) System must be able to record and display all transactions completed.
- (8) System must be able to automatically calculate the selling price for generating sales quotation once user inputs request margin, exchange rate and import tariff.
- (9) Product code, supplier and customer code are generated systematically and automatically.
- (10) Product information of sales quotation or supplier quotation could be applied to issue purchase order, sales invoice or other related documents.

- (11) System could generate basic business analysis to manager such as inventory turnover rate, target sales evaluation, sales comparison and other financial ratio.
- (12) Database Migration to any DBMS must be supported.
- (13) Login-Password system must be provided to setup authorization restrict.
- (14) Automatically generate report and calculate the total cost of each transaction.

### **3.2 System Design**

The computer information system is introduced to improve the efficiency of all sales, purchasing, inventory control and additional financial activities. All information must be recorded and manipulated in a productive and effective manner. Especially, the product information system will be developed to enhance the quality of the business to increase the efficiency by automating existing operation such as searching issued quotation data, existing uncommon product selling price and date, issuing delivery order and receiving goods, creating account statements, producing receipt payment slips, cash bill slips, payment checking, and zero-inventory management. Establish a management information base, improving the decision making process concerning sales revenue. All related documents should be generated immediately without any errors. The information must be reliable and up-to-date.

#### **Sales Department**

Once salesmen receive a common product inquiry of customer, salesmen can check the stock position of such product by entering the product code or product description, many product items should be allowed to be searched in the same screen in order to reduce time of program's procedure. If the inquiry from customer is uncommon product, sales can inform this inquiry to Purchasing Department or contact relevant suppliers directly by themselves. Once salesmen receive a quotation from

supplier, the system could be able to trace supplier's quotation information and then convert this information to generate sales quotation to customer in various methods, such as automatic calculation, it means that user just inputs desired profit margin, current exchange rate and import tariff in case the product is imported, then the system could calculate the selling price automatically, and various decimal formats are provided. Manual method is also available in case users want to manipulate the system by themselves.

Customer information should be recorded systematically by using customer code, the customer code is the primary key of customer being the representative of other customer information.

Temporary delivery note will be generated under Sales Department; the delivery note should comprise of customer information, product information and trace its status for issuing sales invoices later on.

The system could also offer revision option of issued documents and quickly search historical data.

### **Purchasing Department**

Main responsibility of purchaser is controlling of purchase order, so purchase order should be easily generated under manual method. User could also import supplier quotation information or product shortage information that is already kept in the system to issue purchase order in case the purchase order consists of a lot of product items, this method will save time to purchaser in typing a lot of product description.

Database of purchase order consists of supplier information, product information and its requested delivery date. So the system could periodically report its delivery status.

### **Inventory Department**

Product code could be automatically generated once users just select the product category of the first two digits. Moreover, the system could offer simple methods to user for input combination of product items into inventory and the sell out as one single item.

Inventory Department has responsibility for controlling the inflow and outflow of inventory. Inventory will be automatically reduced from the system once Financial Department issues sales invoice: therefore, Inventory Department must control and adjust inventory level depending on supplier invoice, supplier credit note and the company's credit note in case the credit note is issued due to the returning of commodity. The system could calculate the cost of goods sold under FIFO method.

User can assign safety stock level of each common product item, then the system could compute its current stock positioning in a specific period and report its excess or lower than safety stock quantity.

### **Accounting Department**

Sales invoice is issued under Account Department once it receives a request from Sales Department for issuing sales invoice. User could directly input or search customer code, and other relative customer information will be automatically displayed on the screen. Then, user can input product information by direct input of the product code or select the product brand, product name, and product model consequently which is already recorded in the system. Moreover, user could also import the product information from issued sales quotation in case the sales quotations exist in the system, this method will save time to user if a lot of product items from previous issued sales quotation are applied to generate tax invoice. However, product description in the sales quotation and inventory record might not exactly be the same; in case of this reason,

the system could not understand the correct product code, it is necessary for user to recheck again.

User has to manipulate supplier documents such as supplier invoice and credit note. Supplier invoice of inventory purchase will be recorded under Inventory Department, as supplier invoice of non-inventory purchase will be recorded under Accounting Department. Supplier credit note will also be recorded under Accounting Department to adjust correct account payable to supplier, because some cases of the reason of issuing credit note is adjusting selling price only. Therefore, if the credit note is issued due to return of goods, after recording the information in Accounting Department, then it should inform this information to Inventory Department to adjust correct inventory level.

The system can automatically generate billing note to customer at the end of each accounting period, and follow its receiving status from customer.

The system can generate sales report, purchase report and tax report automatically from its sales and purchase information in the database.

The system can automatically separate the payment to each supplier and issue payment sheet at the end of each accounting period from its purchase information in the database. The payment number will be kept in record for issuing payment bill.

### **Manager Level**

It is the manager's responsibility in changing the common product price list. The system could display its current product cost, selling price and its markup margin to manage to evaluate the current market situation. User can directly change the price level or use automatic calculation method by inputting desired markup margin, decimal format is also available under this menu.



Salesman menu is also under manager's control to assign each salesman's code and sales target; however, the company doesn't offer commission to salesman in the current business. It could be applied and expanded if the future business strategy is changed.

Various reports are generated to manager for specific needs such as sales performance, sales comparison, sales evaluation, purchase summary, and other financial and inventory reports.

### **3.3 Hardware and Software Requirement**

The company currently possesses 10 units of computers and enough additional computer accessories such as printer, UPS and etc. But some computers are of old version and have been used for a long period of time. If a new computer information system is implemented, there are only 5 units of existing computers that are suitable to implement the new system; therefore, the company would have to buy 5 additional units of client computers, as printers are currently possessed by the company.

The new system will provide a computer network for all users in the system. Networking system is a system of computer linked together a number of computers along with other peripheral equipment via communication lines.

In the proposed new system, our data processing system is a centralized system. This is to use one computer file server to serve the data processing needs of the entire organization, as local area network are to link workstations within the facility so that it may share peripherals and a database and to allow the network workstations to communicate each other.

The followings are the components that are needed to invest to support the proposed system:

(1) New computer Hardware

- (a) File Server 1 unit

CPU Pentium 4 2.1Ghz

Memory DDR-RAM 256 MB

RA in-5 with redundant factor 80 G1-1

15" Monitor

CD-writer (for data backup)

Internet Connection (for remote maintenance)

Network card

- (b) Workstation client 5 Units (use the existence 5 Units)

CPU Pentium 4 1.5Ghz

DDR-RAM 128 MB

IDE 20 GB HDD

CD-ROM 52x

15" Monitor

Network card

- (c) Printer

Laser printer 1 Unit (possessed)

Ink Jet Printer 5 Units (possessed)

Dot Metric Printer 1 Unit (possessed)

(2) New Software

Microsoft Windows 2000 Server Edition (x1)

Microsoft Windows 2000 professional (x10)

(5 units for new computers, 5 units for existing ones)

Microsoft Office 97 (x1)

Microsoft .NET framework (free download)

(3) Network components

12 ports 100base Switch (x1)

CAT-5e UTP cable (x 1 box)

RJ-45 connector (x 1 box)

RJ-45 outlet for wiring (x 3)

(4) Backup component

UPS (x 5)

Blank CD (x 1 box)

New system will work with 1 file server and 10 clients to share the work load of the operation officer. Clients and Server will be connected over 100base Ethernet network that provide real time update of data and interactive report generating.

The server computer will be installed with Microsoft windows 2000 Server edition and NET framework. The file server will provide data holding and real time redundant backup on RAID HDD. The file server will also be armed with CD-writer that provides the permanent backup of data. The UPS will protect the server from lightning strike affect.

The clients will contain Windows 2000 professional edition and the client application of new system software. They have a duty to update data on the server and query the report from database, and print the report on the printer.

## Cost Estimating

Table 3.1. Cost Estimating of Proposed System.

DeScription	Cost
1. New server computer (1 unit)	40,000
2. New client computer (5 units)	100,000
3. New software	60,000
4. Network component	35,000
5. UPS	15,000
6. New software implementation	120,000
7. Implementing cost (installation)	50,000
Total	420,000

### 3.4 Security and Control

#### Software Security:

- (a) the server will be secured in the room with the rack server box locked down. Only authorized officers will have the key to the server and the password will be kept by one other officer to be used to login.
- (b) The client application will have user level control system to allow each user to do their job. The operation employees will be specific in their right to access or modify other departments' tasks, or other department officers are allowed to view read-only file.
- (c) Database will encrypt RC-6 encryption provided as database plug-in from RSA security.
- (d) Network will be set as VPN on the switch that allows only 11 computers in the system to see each other to prevent the outsider from plugging their PC to the system and steal the data.

#### Physical Security:

- (a) Intrusion will be blocked by the key card system on accessing the office room.

- (b) Natural Disaster might be able to damage the client but the server will be safe in the Server rack box.
- (c) UPS will protect all clients and server from lightning and hazardous electrical events.

### **3.5 Cost and Benefit Analysis**

This computer information system needs an allowance budget from the company on purchase of new hardware, new software, software implementation and implementation cost. However, the company doesn't need to newly buy everything, because some computers and computer accessories possessed by the company is able to be used with the new system. Totally, the company also has to invest approximately an additional 400,000 Bahts to complete the new computer system.

Considering the company's current financial situation, the company doesn't face any financial troubles. One time investment of 400,000 Bahts would not cause difficulty for the company to decide for this investment. This amount is considered as a petty investment comparing with the sales amount of 140,000,000 Bahts per year.

The new computer system is designed to solve the current problem of work overload, according to the company's current activities that normally consume too much time for searching historical documents, operate duplicative and unnecessary tasks.

Due to the overload of work force capacity, the company is deciding to employ one extra staff for assistance in all office administrative tasks which would cost about 10,000 Bahts per month. Recently, all members are committed to hard work and the company has to pay overtime to its employees about 8,000 Bahts each month. It is expected that the employment of an extra staff will reduce over time cost by 3,000 Bahts per month as 5,000 Bahts will still remain.

In comparing cost of existing system and proposed system, it is considered that office equipment and computer maintenance expenses would not cause too much differentiation. The comparison is based on employment of an extra staff and reducing in overtime expense with the new proposed system.

### Cost of Existing System

Table 3.2. Accumulation Cost of Existing System.

Cost	Year 1	Year 2	Year 1 .	Year 4
New employee(10,000x12+bonus) + 5% increase per year	150,000	157,500	165,375	173,643
Over Time Expense (5,000x12) reduce 3000 after employment of new staff	60,000	60,000	60,000	60,000
Total	210,000	217,500	215,375	223,643
Accumulate	210,000	427,500	642,875	866,518

The proposed system needs a big amount for the initial investment approximately 420,000 Bahts. The proposed system could support users to perform their tasks with more accuracy and time saving once it is completely implemented, it is expected that over time cost will be reduced by 5,000 Bahts per month as 3,000 Bahts still remain.

**Cost of Proposed System**

**Table 3.3. Accumulation** Cost of Proposed System.

Cost	Year 1	Year 2	Year 3	Year 4
Proposed system cost	420,000	0	0	0
Over Time Expense (3,000x12) reduce 5000 after implementation of new system	36,000	36,000	36,000	36,000
Total	456,000	36,000	36,000	36,000
Accumulate	456,000	492,000	528,000	564,000

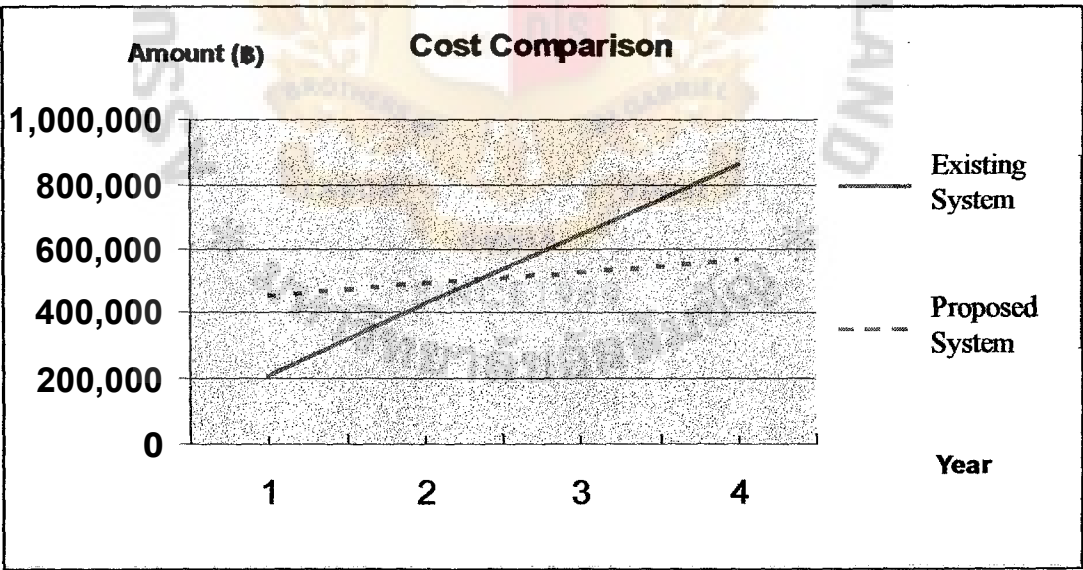


Figure 3.1. Cost Comparison between Existing and Proposed System.

From the information of above tables and graph, the proposed system will cause only one time investment as the employment of a new staff will cause continuous



payment in the future; moreover, the current problems in the company will not totally be solved once a new employee is employed. The proposed system will make a break even point in 2.4 years, and doesn't cause any extra expense onward. Of course, there are some additional maintenance cost of the proposed system, but these costs would not cause much difference compared with the existing system.

### **Tangible Benefit**

Decrease employment of extra new employee	150,000
Decrease over time expense about (5000x12)	60,000
Total tangible benefit per year	210,000

### **Intangible Benefits**

Intangible benefits of the proposed system would be gained as follows:

- (1) Ensure that information provided by the system is accurate and on time.
- (2) Increase customer satisfaction
- (3) Ensure the company's operation activities to be more systematic.
- (4) Increase productivity of workers
- (5) Increase employees' satisfaction and working morale
- (6) Reduce human errors
- (7) Improve the operation procedure to be quicker
- (8) Assist on making decision on management level of accurate data.
- (9) Provide better company image.
- (10) Closely control on management activities.

#### IV. SYSTEM IMPLEMENTATION

The implementation of the project will start after the management's decision to accept the new proposed system. The implementation will be set up by using the parallel running concept which is the business processes that will be working on both the existing manual system and the new proposed computerized system until the results of new system has been approved. It may need a period of time for the users to perform double jobs both on existing and proposed systems. Finally, once users are familiar with the new system, the existing system could be totally eliminated.

The implementation of the project consists of the installation of the computerized system, programming, testing and training of the new system. It is also concerned with hardware, software and people.

Project implementation consists of 5 processes which are separate and distinct tasks that must be performed in sequential order.

##### (1) Programming

The programming is the stage in which application programs are written in order to perform whatever business processes are being computerized. The programming is developed from the program flowchart and data flow diagram. Each module of the program is debugged again in order to make sure that the program can operate as a complete system.

##### (2) Testing

###### (a) Testing the Program

The programmer has to test the program to make sure that it is performed satisfactorily.

(b) Create an Extensive Set of Test Data

The programmer probably creates some test data for testing the program, but now test data must be created for all possible real life situations. The programmer, system analyst, user representatives and auditors should now get together. They should create test data that contain both valid and invalid data, test normal processing routines, test error routine, check list, test variations using different input and output formats, test the addition and deletion of records to files, test the files storage and retrieval algorithms, insert data that will cause problems, and finally, prepare just plain ridiculous out of scale data.

(c) System Testing

Computer operation people should try to run the system test so they can determine if the system will operate on the organization's computers. The objective of testing the system is to verify that the program meet the original programming specification, to ensure that the computer operations staff has adequate documentation to run the systems, to ensure that the overall system flow works properly.

(d) Backup and Restart Testing

The basic goals are to make sure that the files can be reconstructed if they are totally destroyed, that the files can be recovered to a value from a previous period of time. In which the program is backed up in case it is destroyed, and the system can still be restarted in case of disaster.

#### (e) Complete Documentations

After completion of the testing, the documentation of the program and set of program is needed.

### (3) Installation

Actual implementation of the new systems can begin at this point by using either a parallel or changeover method, or the combination of two. It is suggested that both the systems analyst and programmer should observe the following basic principles during any implementation.

- (a) Avoid disrupting the day to day business activities during the implementation process.
- (b) Inform management of all changes in the implementation method or time schedule.
- (c) Do not give demanding orders, you are functioning as advisory staff, not a line manager.

In the changeover method, the existing system is completely replaced by the new system. This method abruptly stops the use of the old system and simultaneously puts the new systems into operations.

The parallel method allows both the existing system and the new system to operate simultaneously until the new system has proven its reliability. This method is appropriate when installing a new computer in a computer bases information systems, or when replacing one computer system with another. It also may be used for replacing a manual system with a computerized system. It is suggested to install the new TMA system by using this method, in which users could learn the new system together with the reliable current operation system in the day to day business. Then the

company could totally replace with the new system later once the new system reaches satisfaction.

#### (4) Training

The training stage is also an important job and is a must because users will run the system correctly when they understand it well. End users are usually introduced to the functionality of new system via a one to one or a group lecture training program.

Even well designed and technically elegant system can succeed or fail because of the way they are operated and used. Therefore, the quality of training received by the personnel involved with the system in various capacities helps or hinders, and may even be prevented. Those who will be associated with or effected by the system must know in detail what their roles will be, how they can operate the system, and the system's limitation. Both system operators and users need training.

##### (a) System Operators

\* The system operators need to ensure that they are able to handle all possible operations, both routine tasks and extraordinary jobs

##### (b) User Training

User training helps the users to be familiar with the processing system and to use the application. The training will be provided by the vendors of computer/software in either classroom training or on job training. Details of training program cover the following topics.

- (1) The difference between the existing manual system and the proposed computerized system.
- (2) Overview of the new system operation and procedures.

(3) Organization and use of the system's user manual and help screens.

14) Duties and responsibilities of the end users.

(5) Demonstration of the system.

(6) Familiarization with the system, such as practices in the system with test data.

#### (5) Documentation

Documentation of the system will help the program as well as users to maintain the system and continue the further development in the future.

Documentation can be divided into 2 types of documents.

(a) User Guide

The details of the user guide describe the methods to prepare and how to use the proposed system in each screen.

(b) Programming Guide

The details of the programming guide describe the flow of the system and the data dictionary.

## **V. CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Conclusions**

The existing system is manually operated, each staff create their own job independently on individual computer units. It lacks an effective database system which causes data inaccuracy, loss of data and waste much time for historical data searching. And lacking of network application for the interchange of information within the organization, which causes duplicate tasks.

The system processes and layouts design are made simply to apply for all users, some menus offer automatic calculation or generation function in order to prevent mistakes from manual calculation and generation. A well organized database system could support the interchange information among departments.

From the feasibility study, the new proposed system will be able to solve current problems better than employment of an extra worker. The new worker could help the company to reduce the current over load work force capacity, but the problems of information system still remains. Workers still have to waste much time in searching historical documents as operation data is still inaccurate. Therefore, the company should solve the problem directly. The new system will solve all problems of current system with effective database system and network application.

The company doesn't have financial problem in this project investment, as more TMA members have good education background in operation of computer application. User could convert old paperwork and spreadsheet file into database for planning purpose.

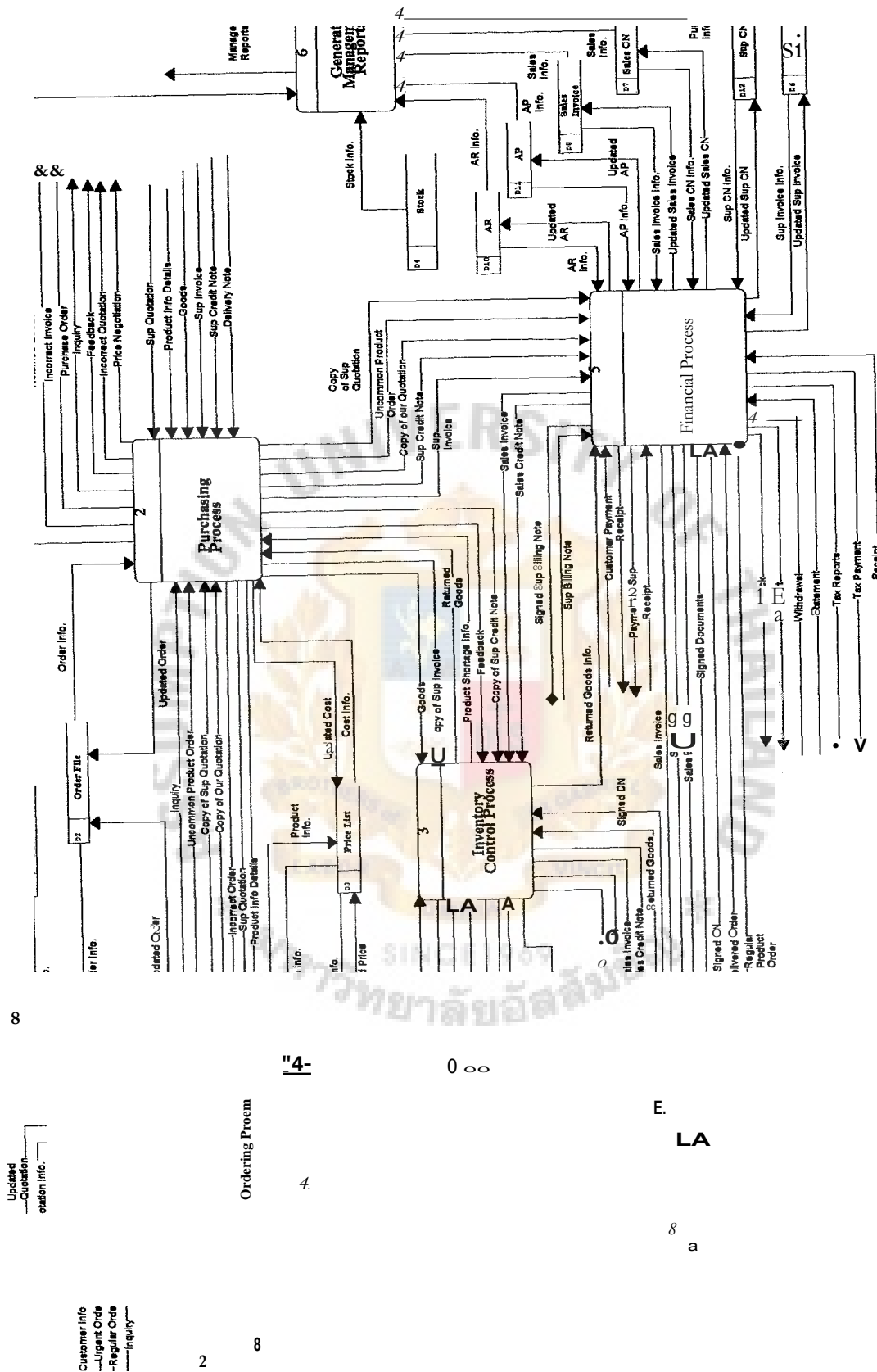


## 5.2 Recommendations

The proposed system is designed to support the major problems in the current system as it still does not cover all business operation activities such as payroll system, miscellaneous expenses, creating income statement and balance sheet under Accounting Department, and other import activities with its expenses. This system is initially developed to support current needs; in case of continuous development the system in the future, the system is flexible enough to implement cover of other areas of business operation activities.







**Figure A.1.** TMA System\_Level 0 (Existing System).

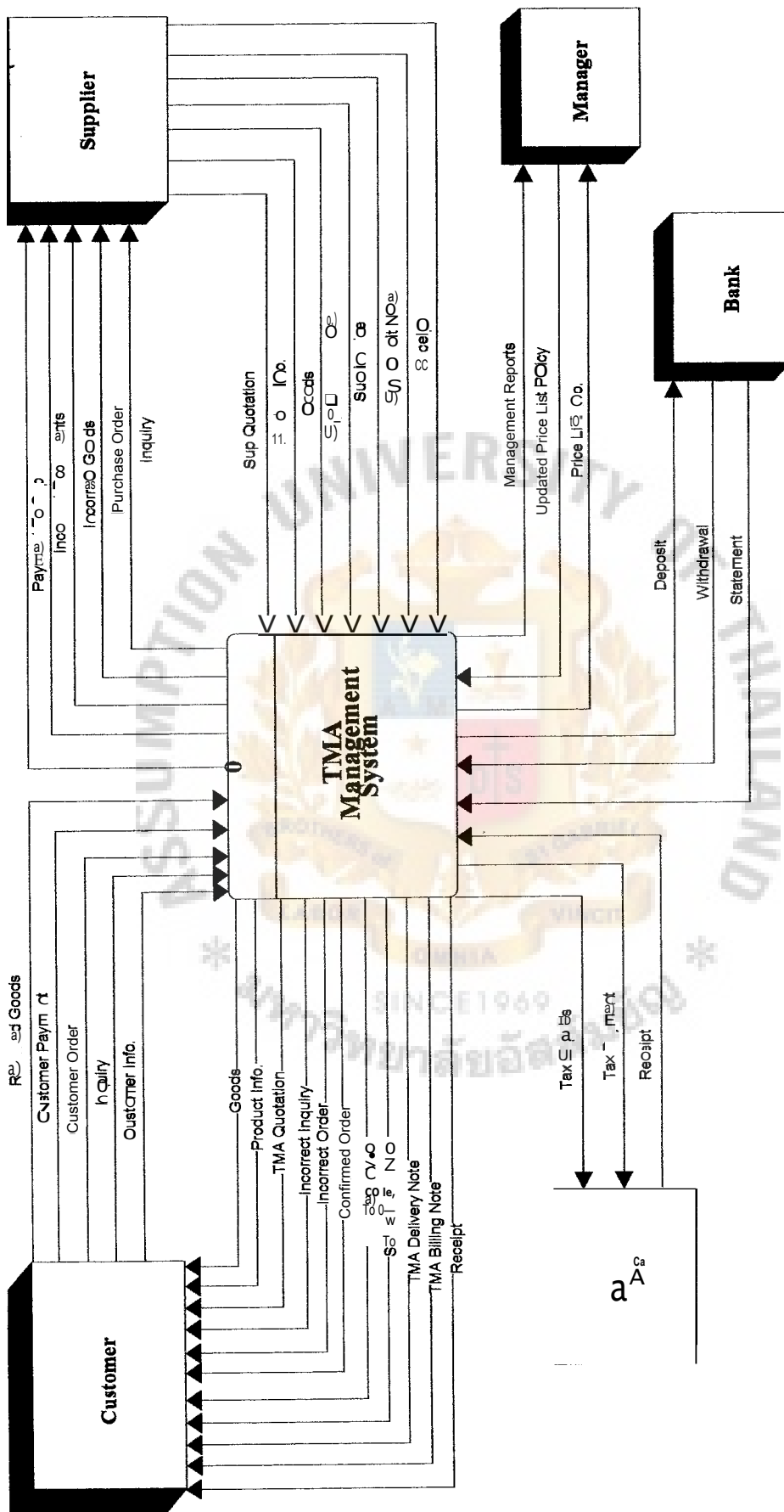
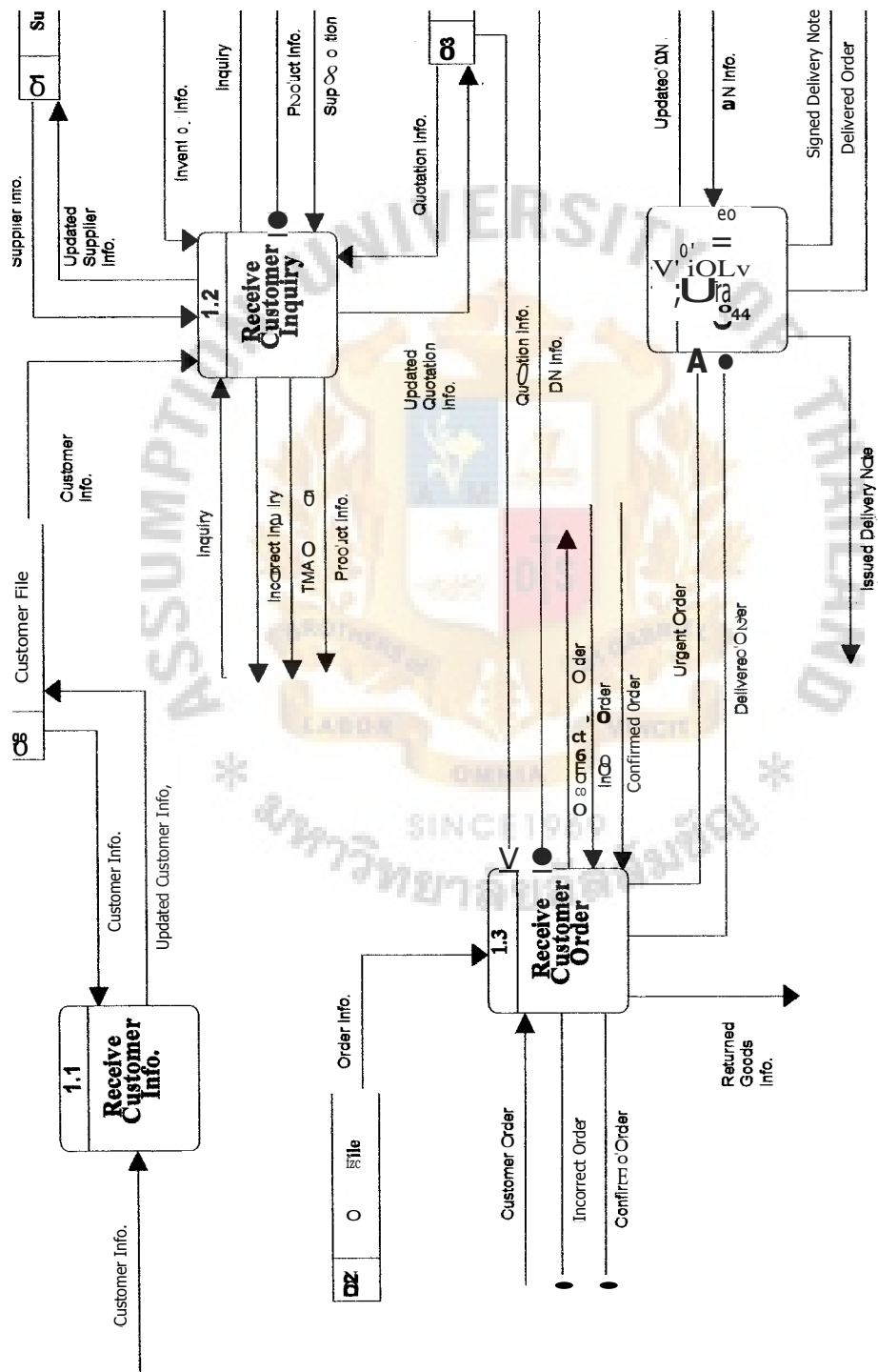


Figure A.2. Context Diagram (New System).





**Figure A.4.** Ordering Proccess\_Level 1(**DFD**,New System).

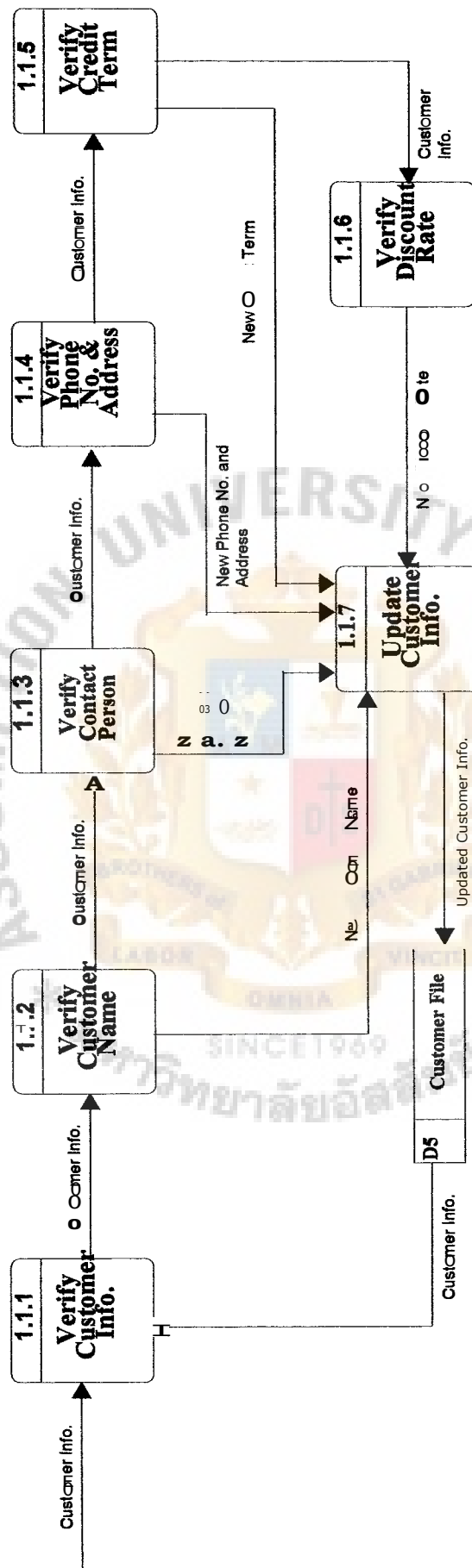


Figure A.5. Receive Customer Info. Level 2 (DFD, New System).



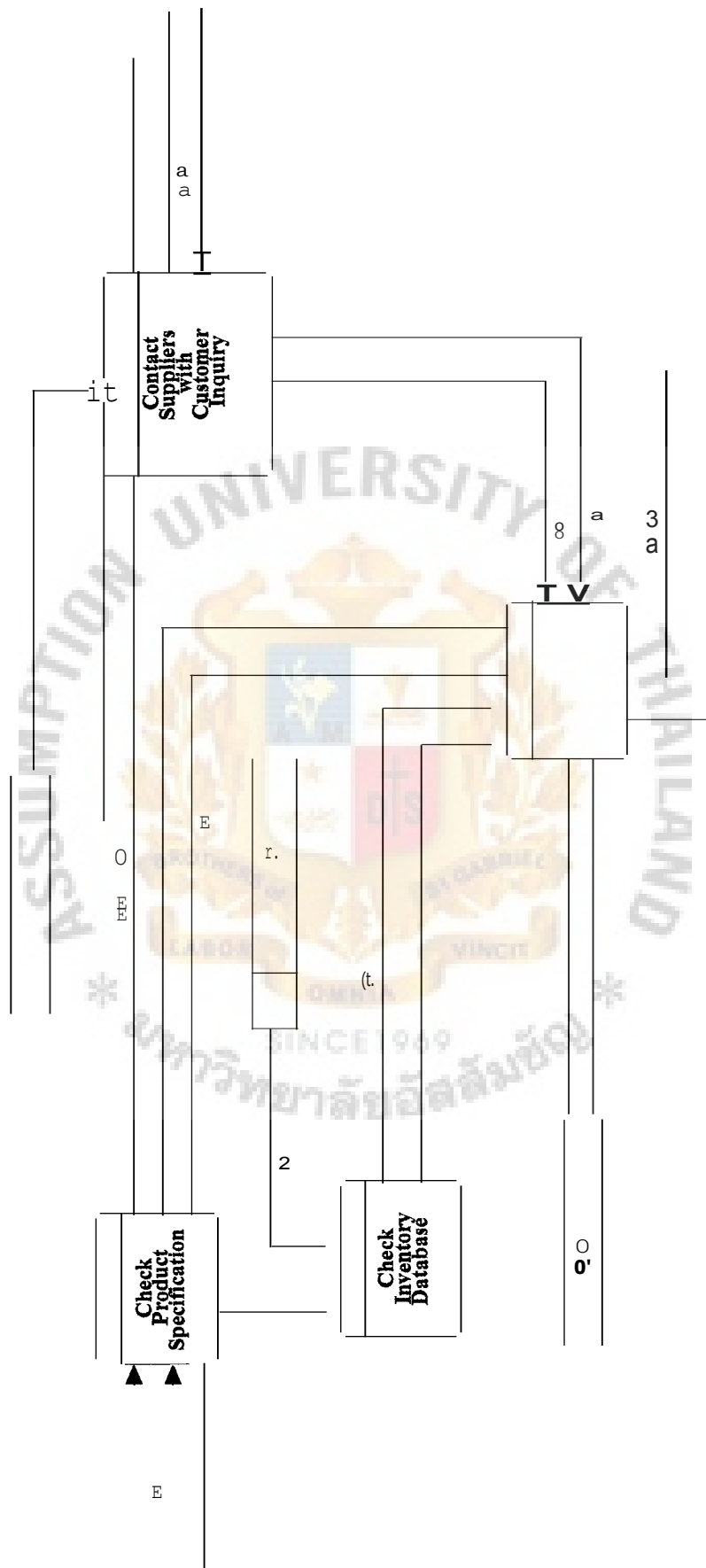


Figure A.6. Receive Customer Inquiry\_Level 2 (DFD, New System).

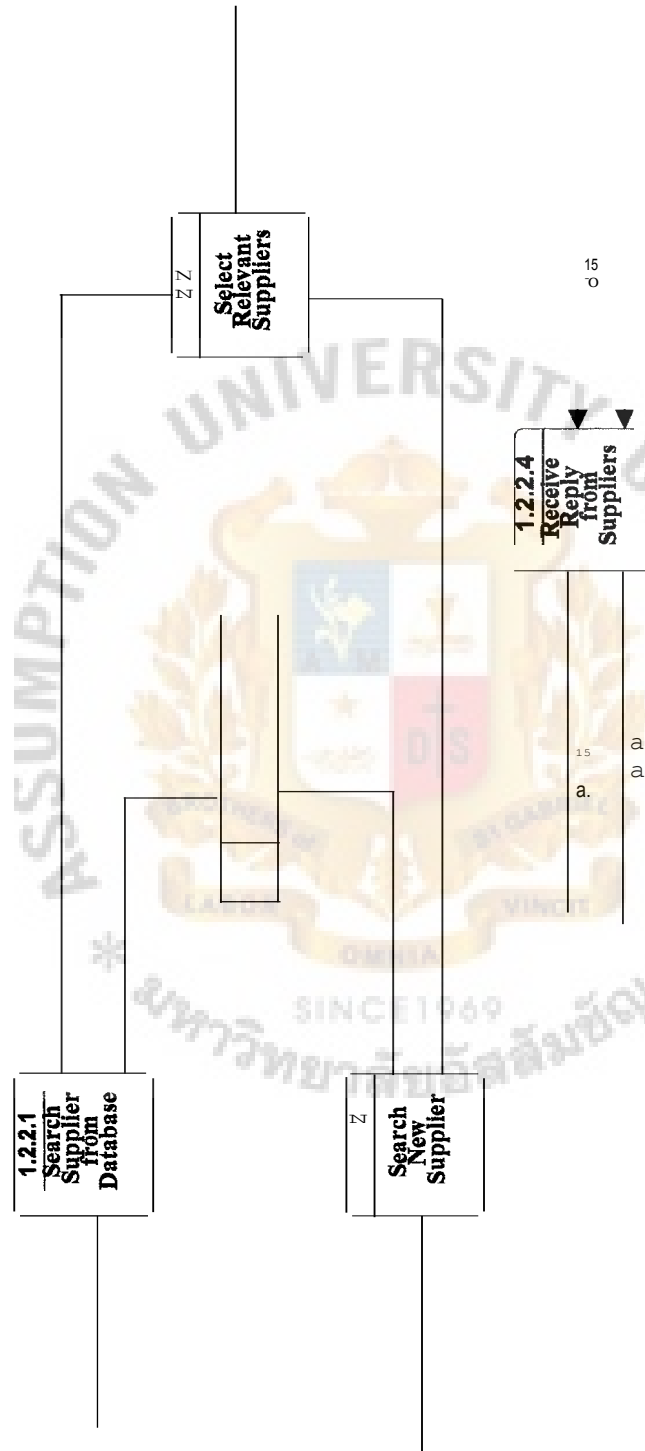
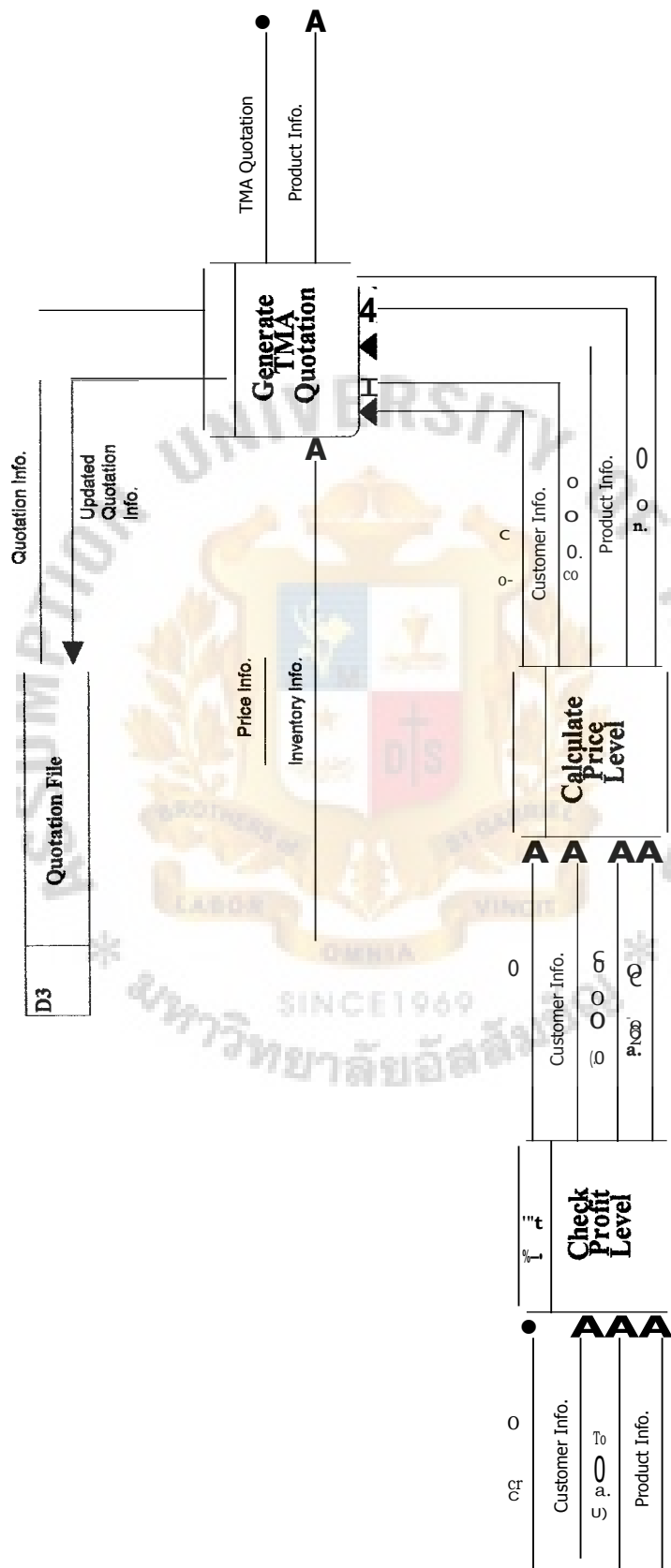


Figure A.7. Contact Supplier\_Level 3 (DFD, New System).



6 Generate Quotation Level 3 (DFD, New System).

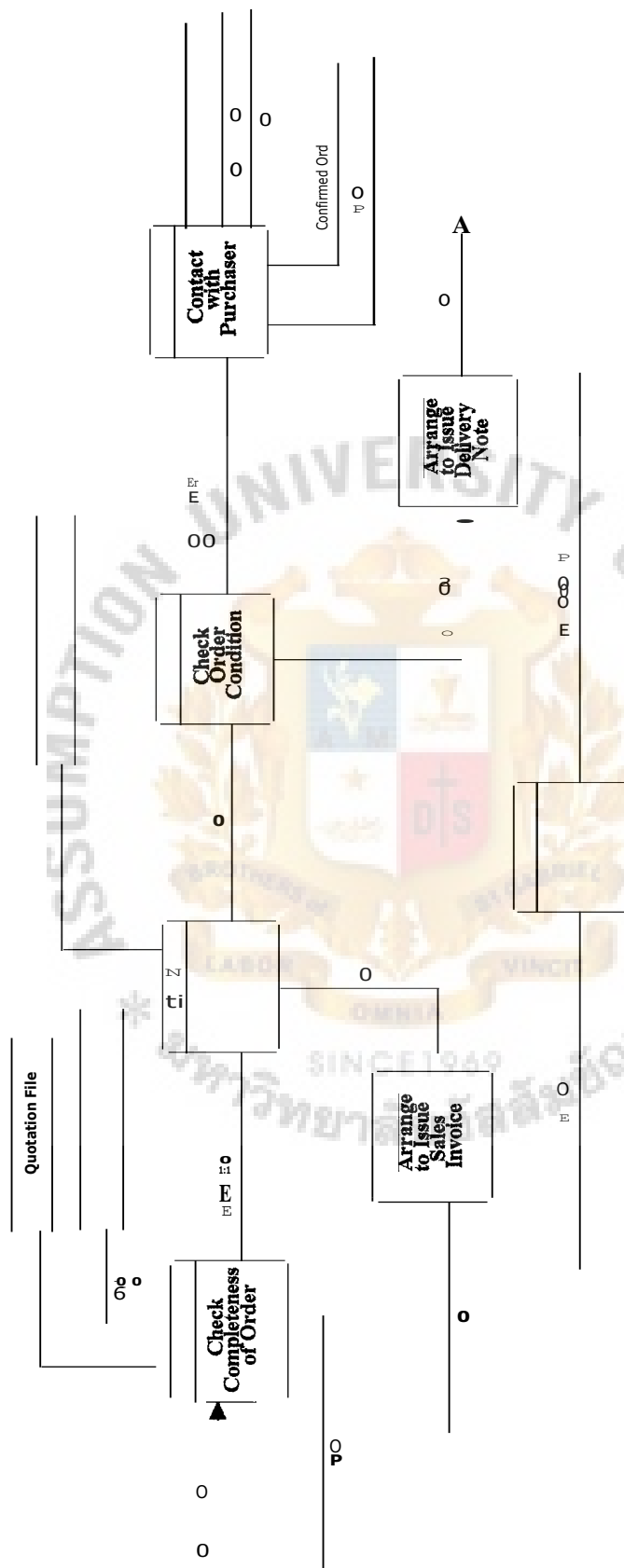
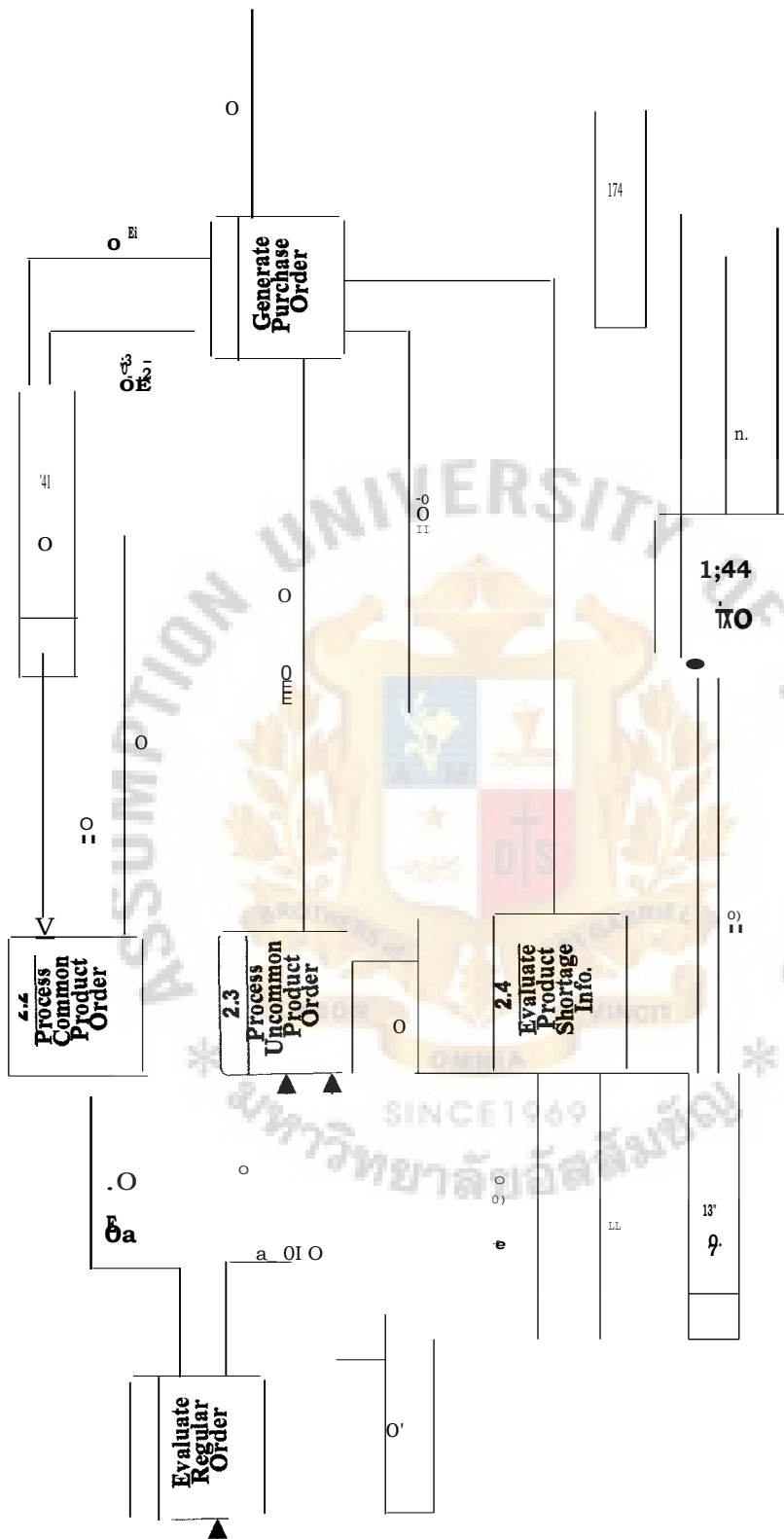


Figure A.9. Receive Customer Order Level 2 (DFD, New System).



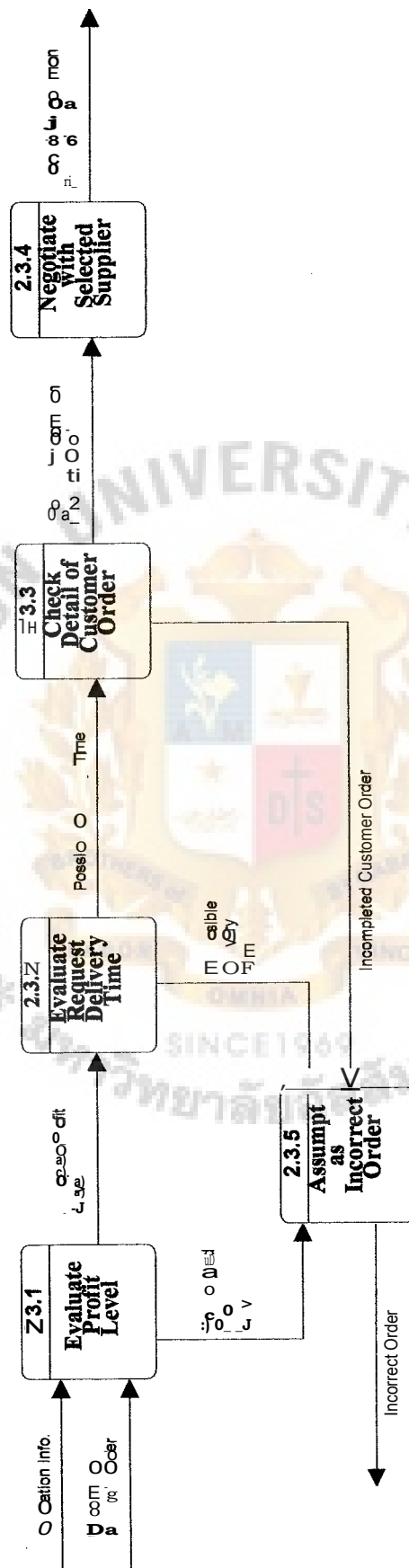
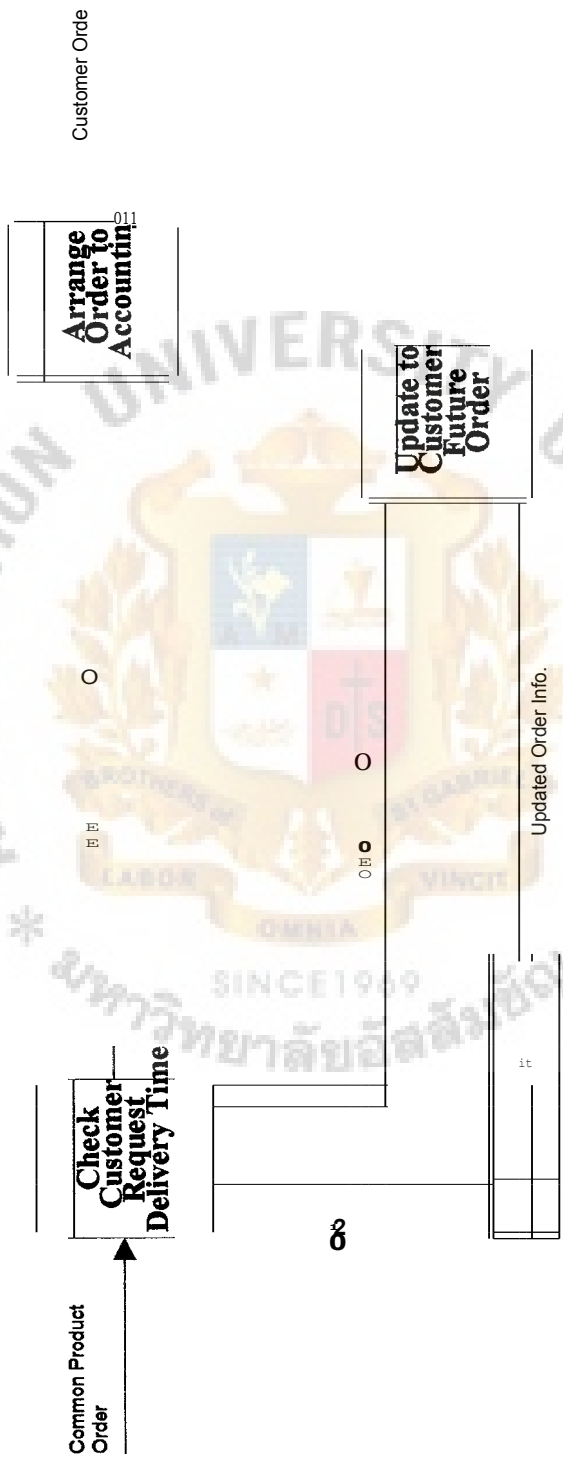
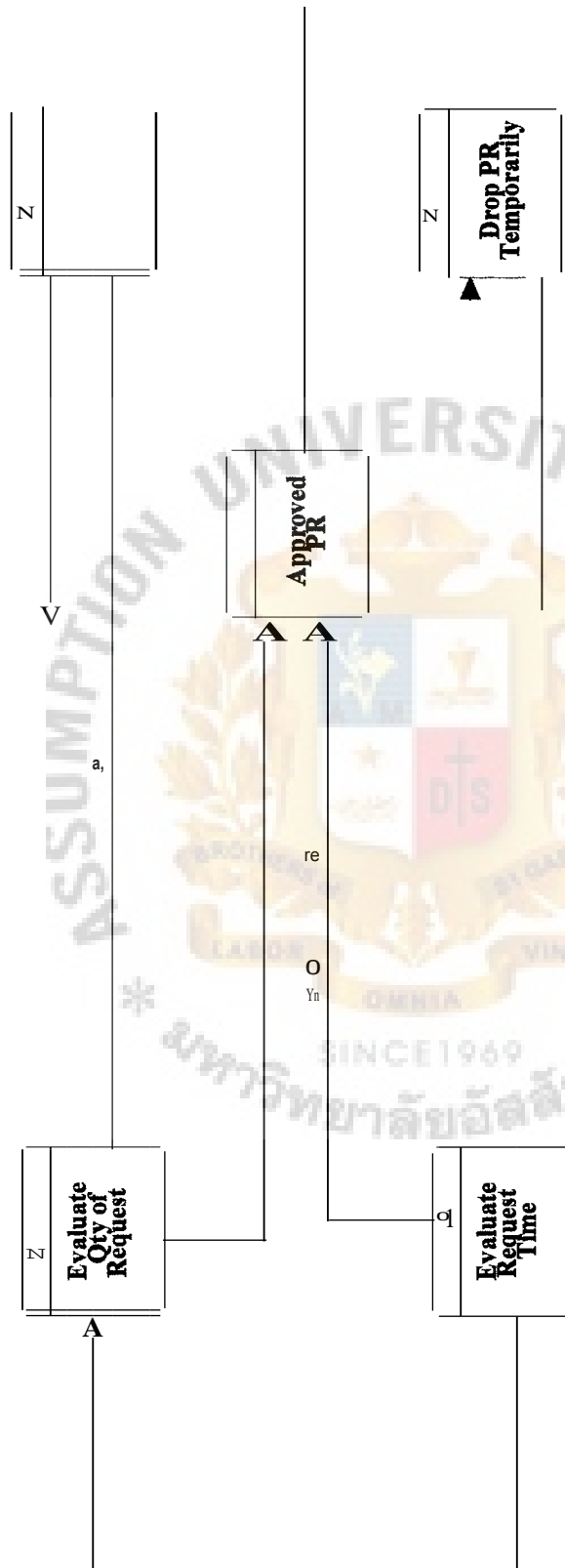


Figure A.11. Process Uncommon Product Order Level 2 (DFD, New System),



Process Common Product Order Level 2 (DFD, New System).



Evaluate Product Shortage Info\_Level 2 (DFD, New System),



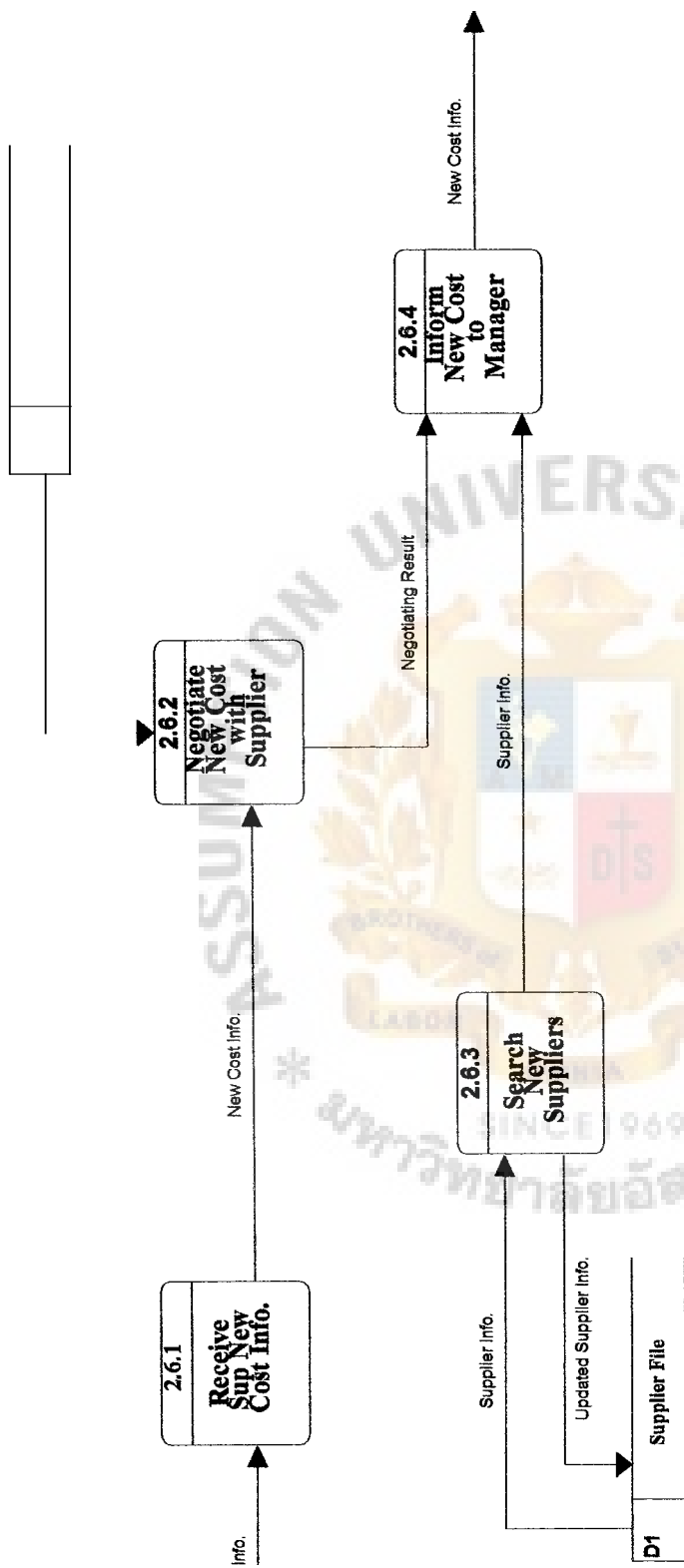
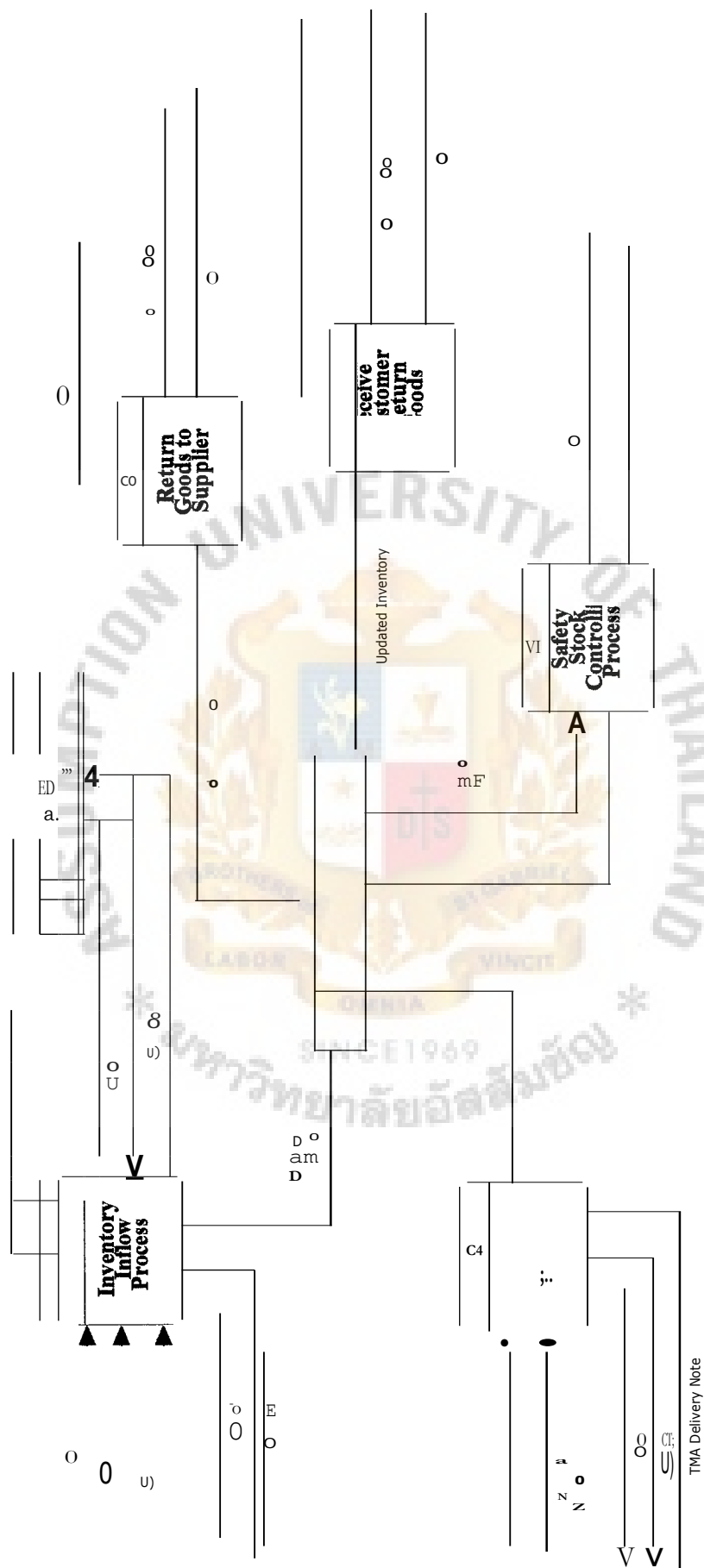
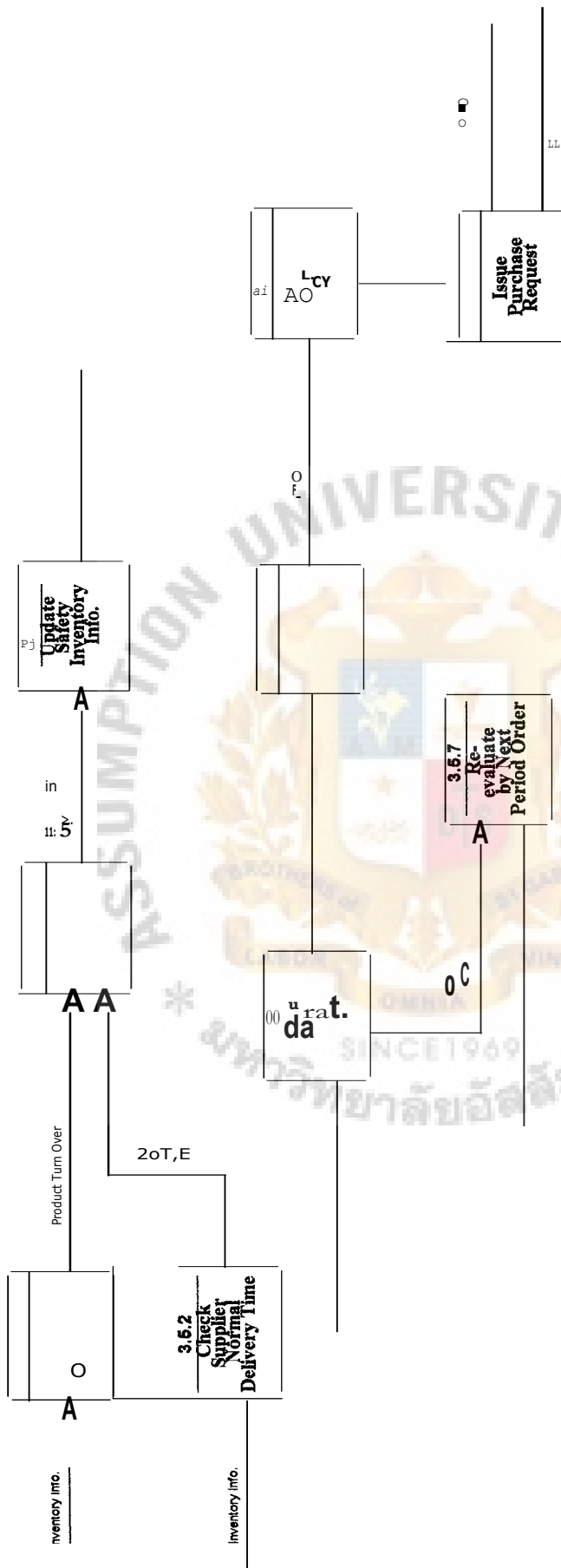


Figure A.14. Interact with New Cost Info. Level 2 (DFD, New System).







Z Safety Stock Controlling Process\_Level 2 (DFD, New System).

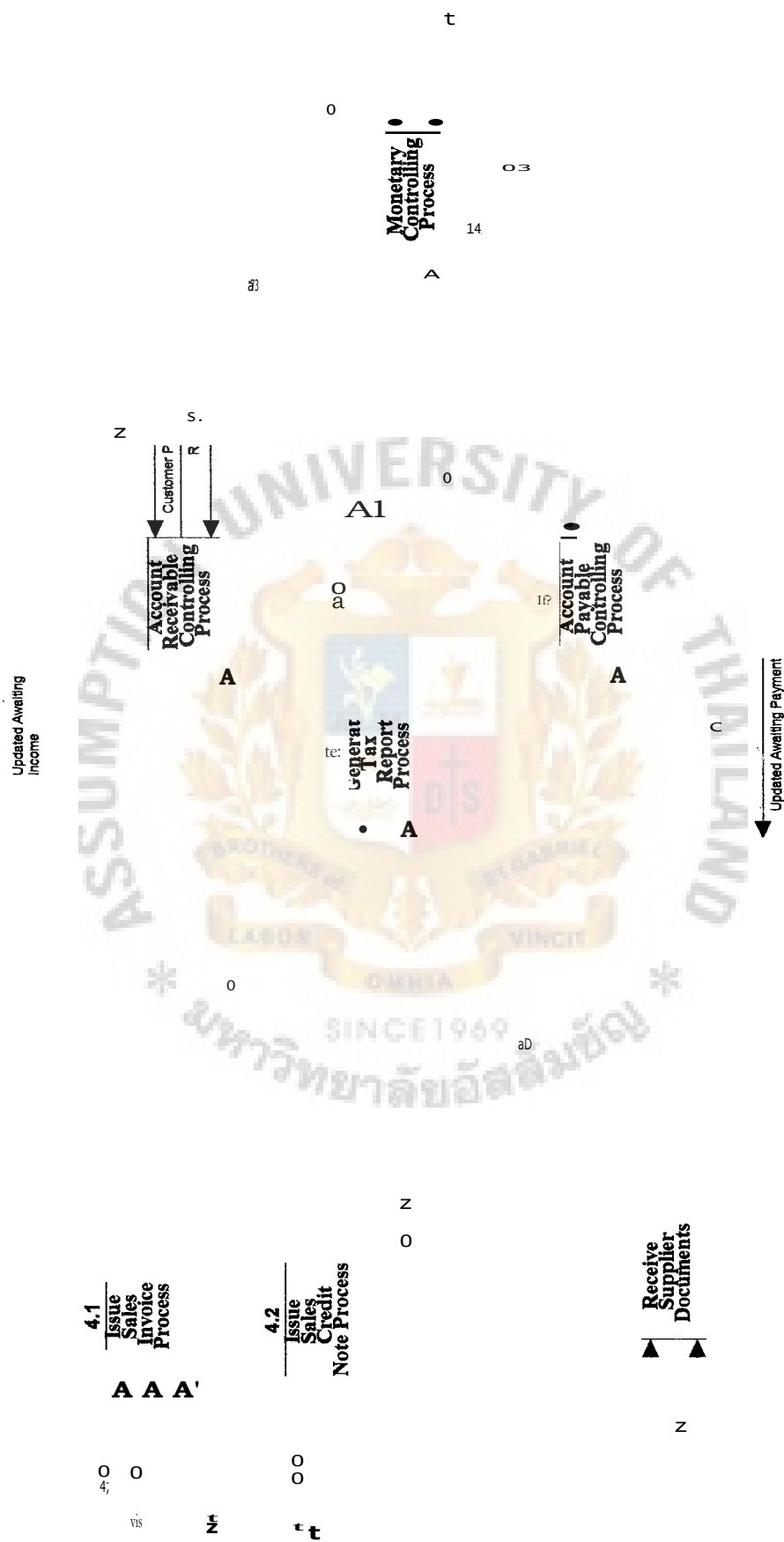
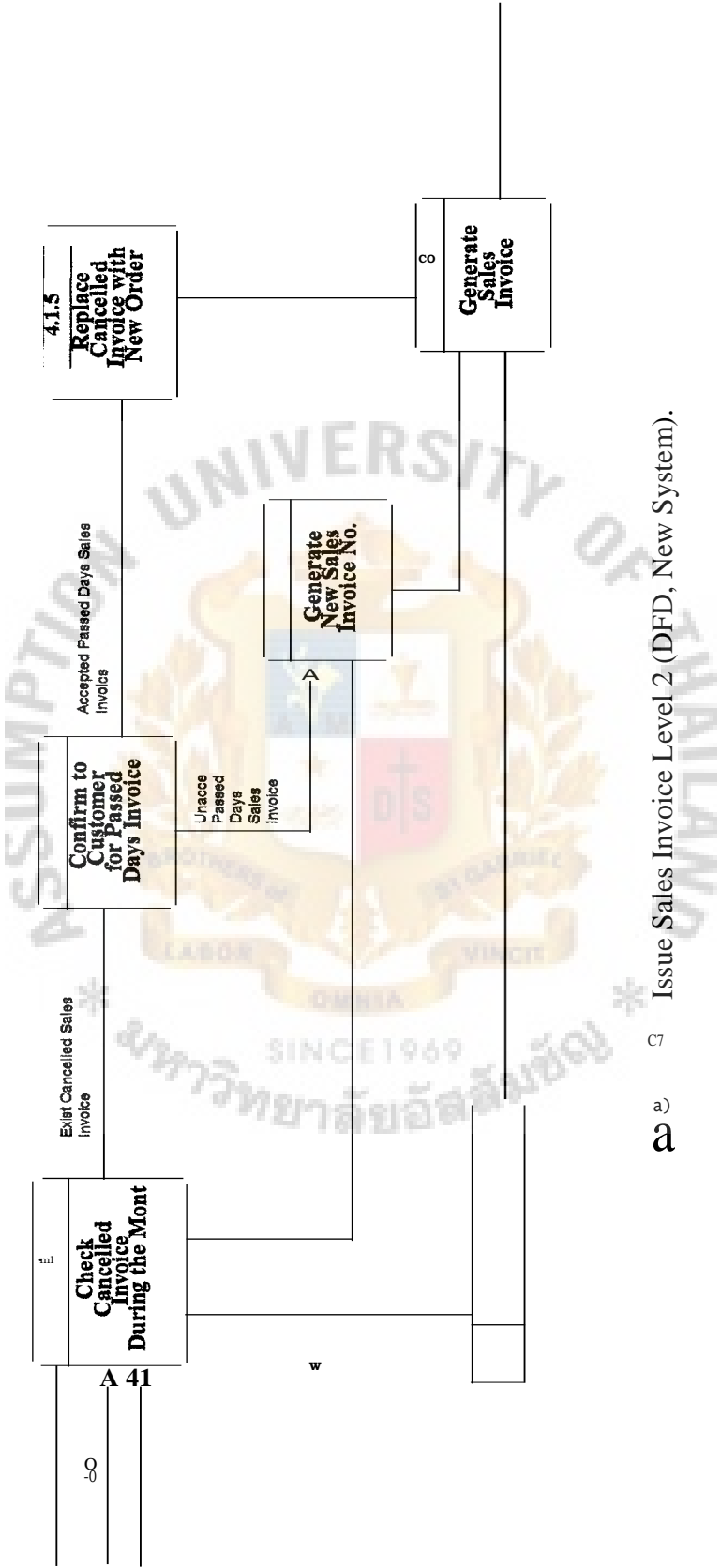
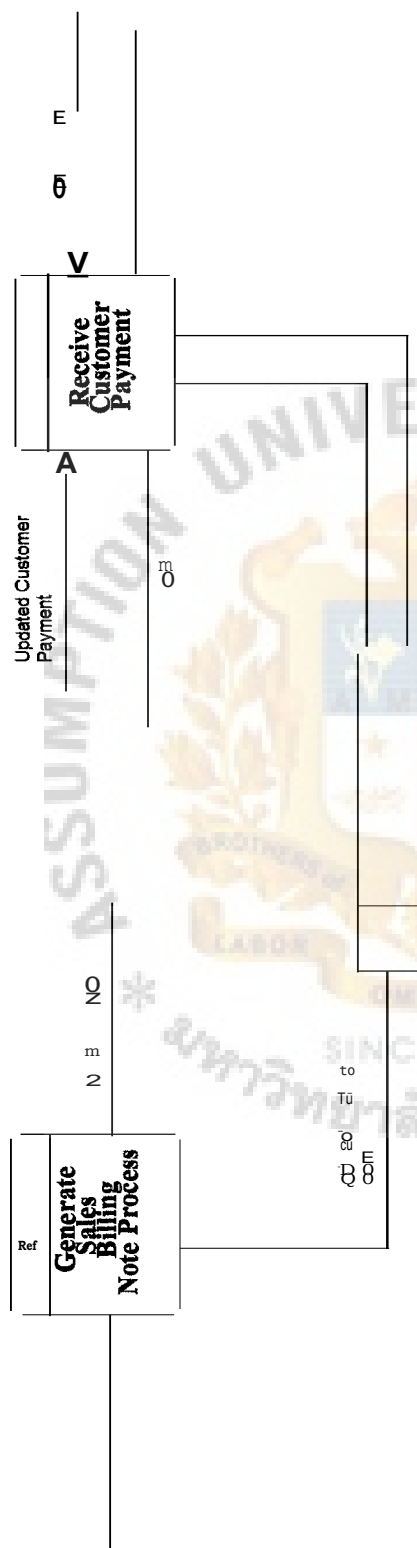
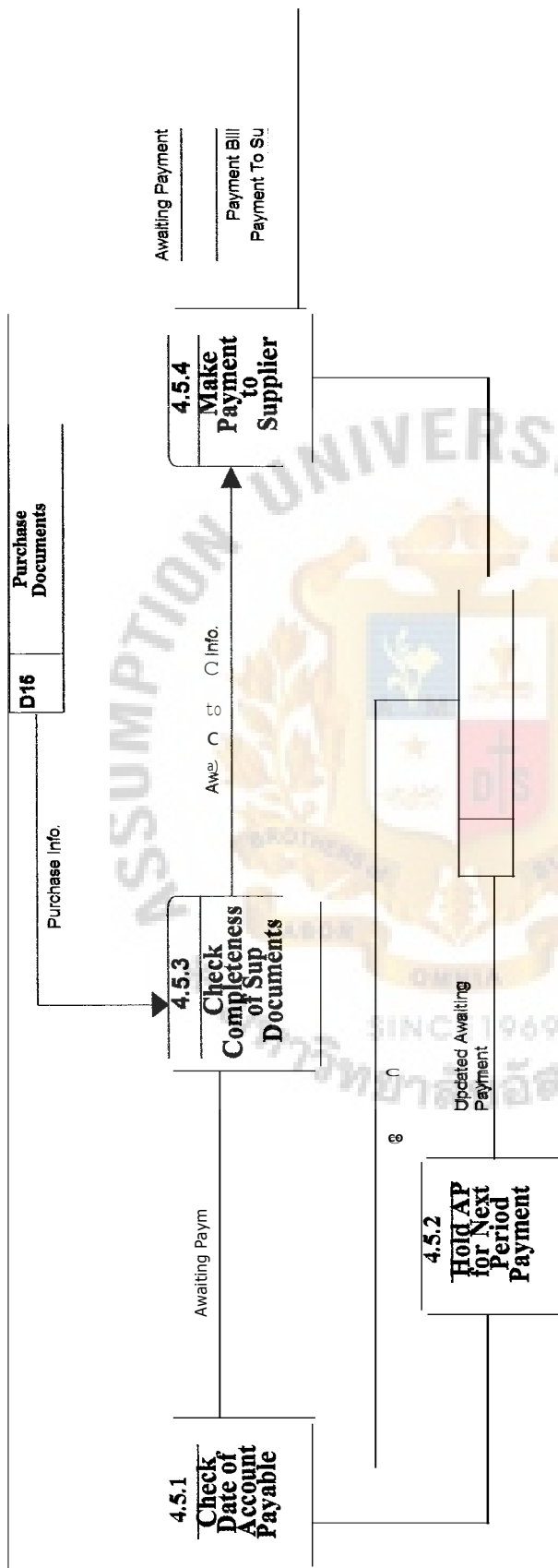


Figure A.18, Financial Process Level 1 (DFD, New Sy



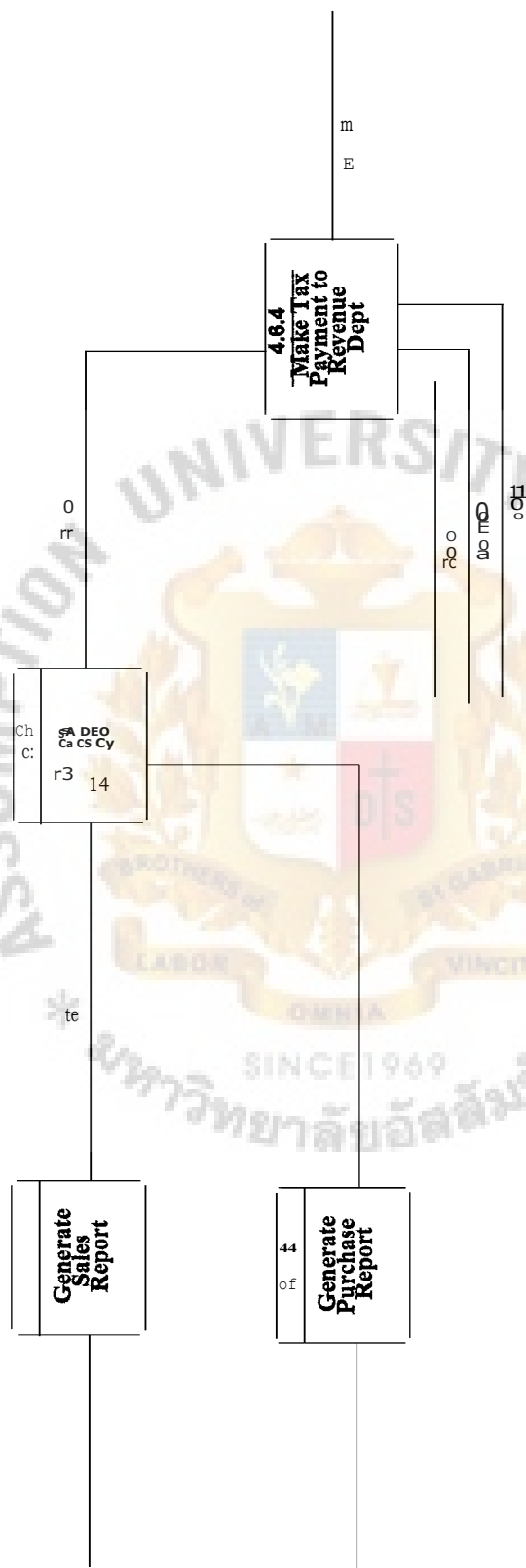


Account Receivable Controlling Process Level 2 (DFD, New System).

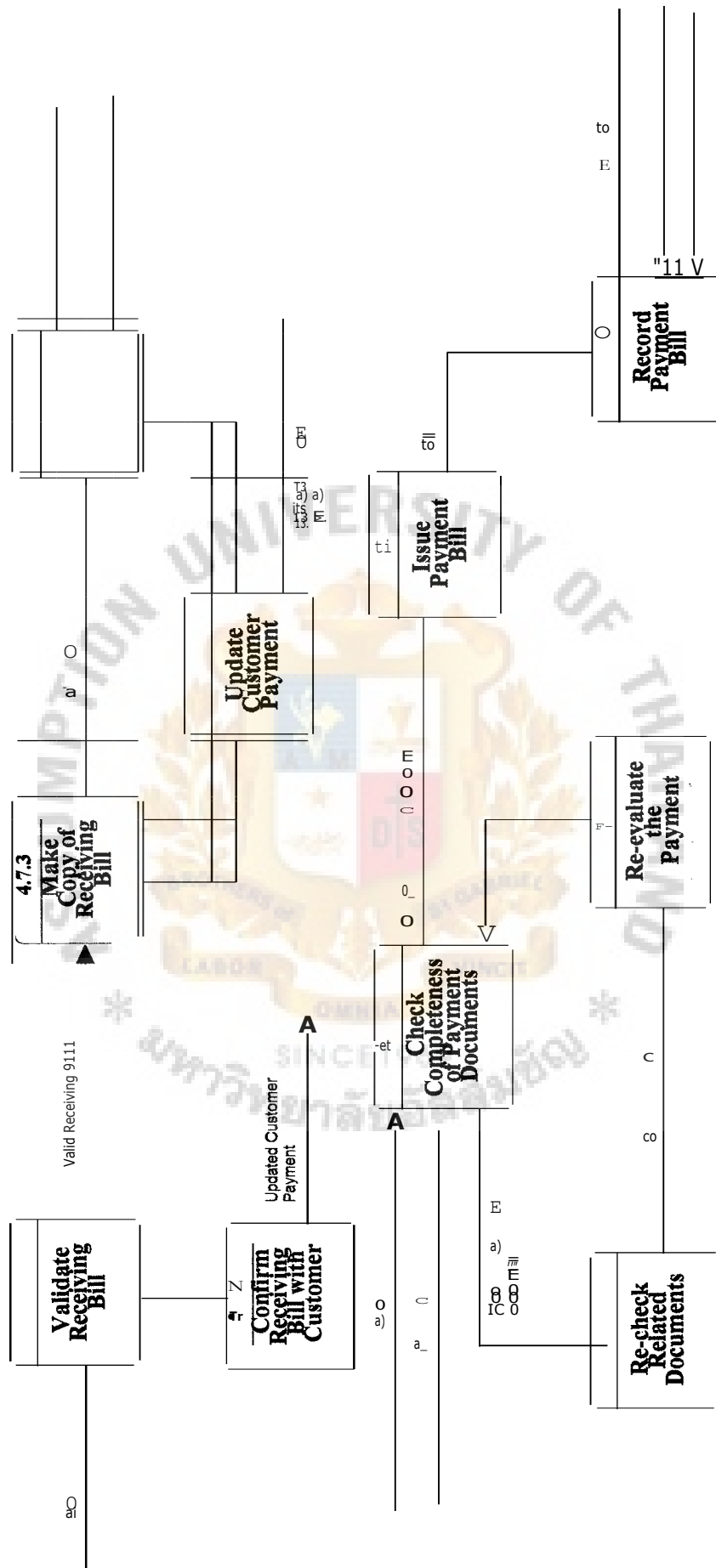


Account Payable Controlling Process\_Level 2 (DFD, New System).

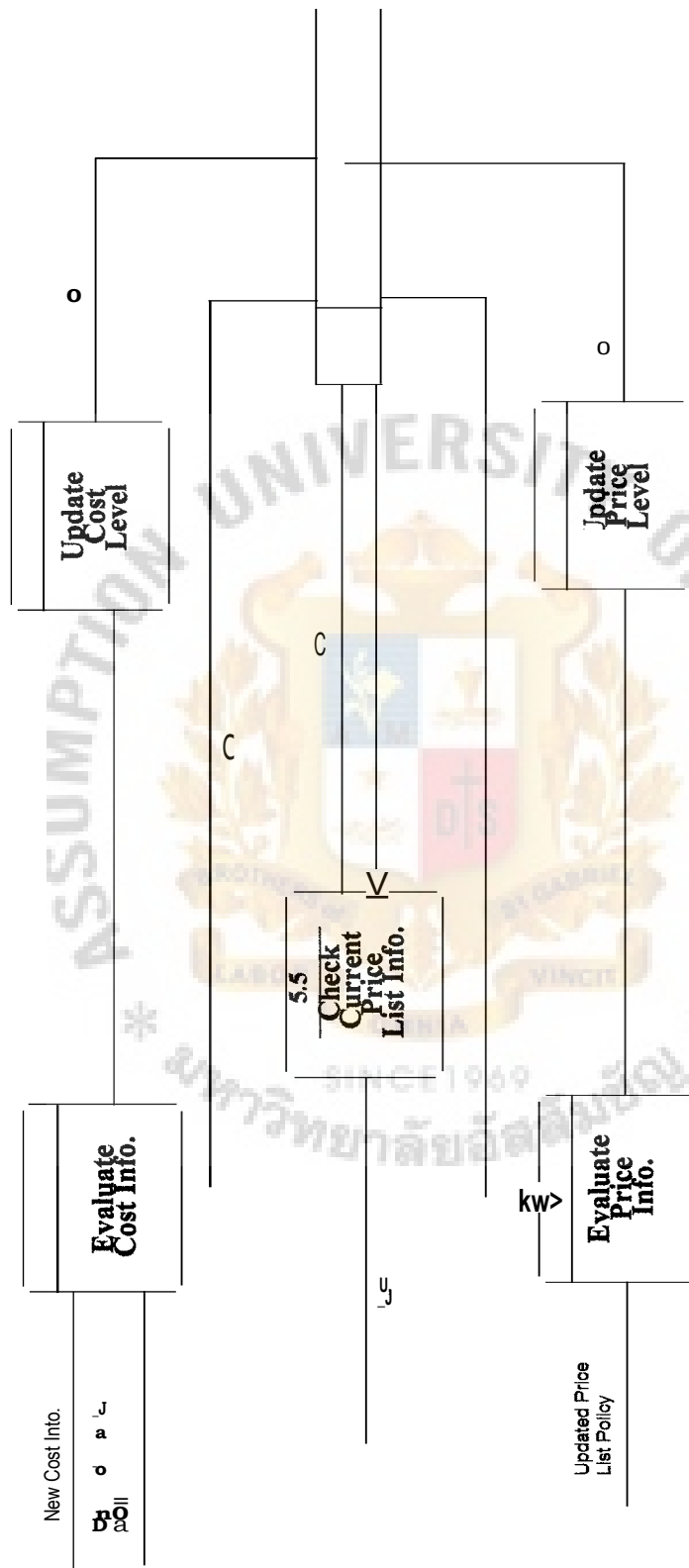




**Figure A.22.** Generate Tax Report\_Level 2 (DFD, New System).



a) Monetary Controlling Process Level 2 (DFD, New System).





## **APPENDIX B**

### ENTITY RELATIONSHIP DIAGRAM





**APPENDIX C**  
**DATABASE DESIGN**

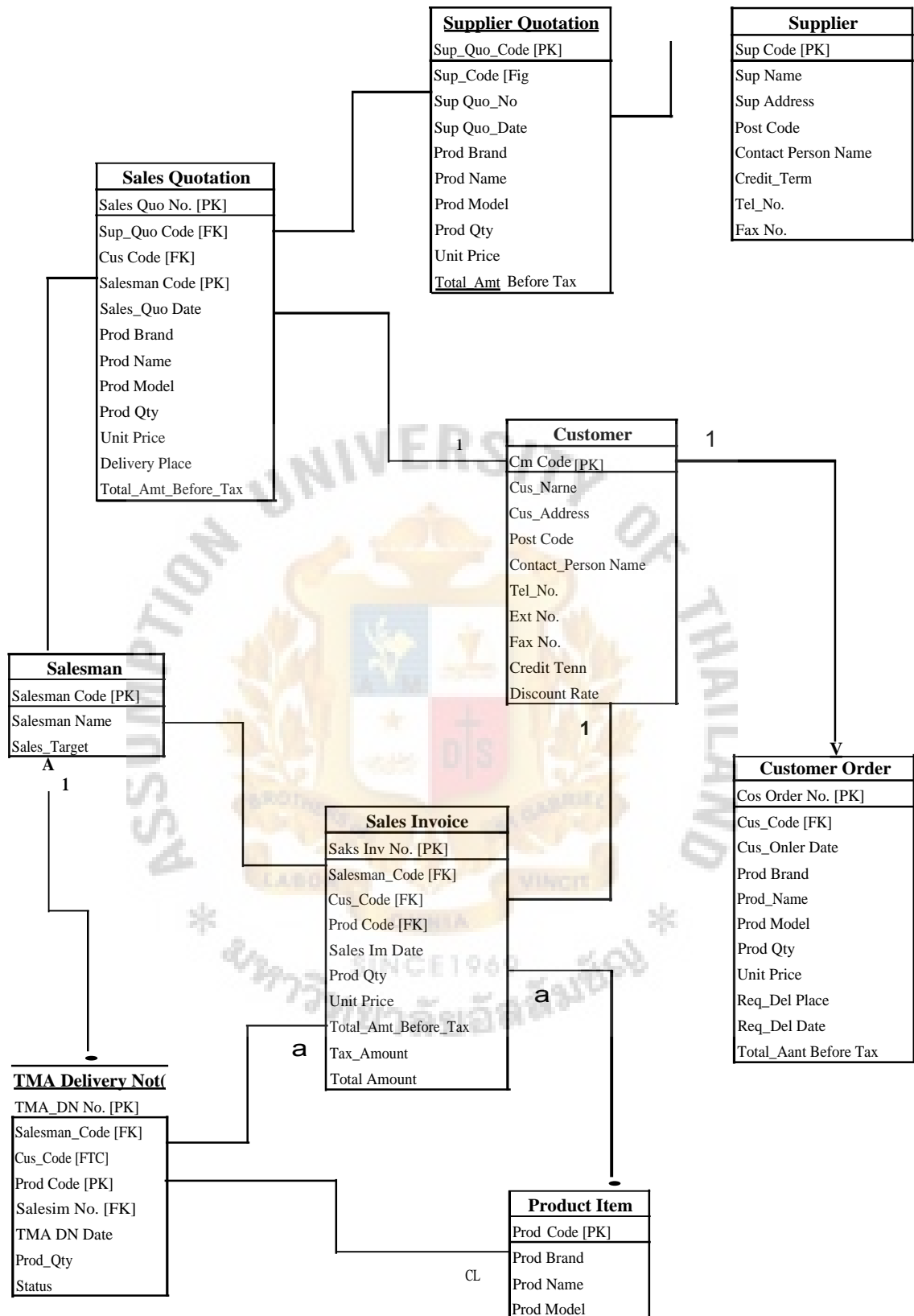


Figure C.1. Data Relationship (Sales Part).

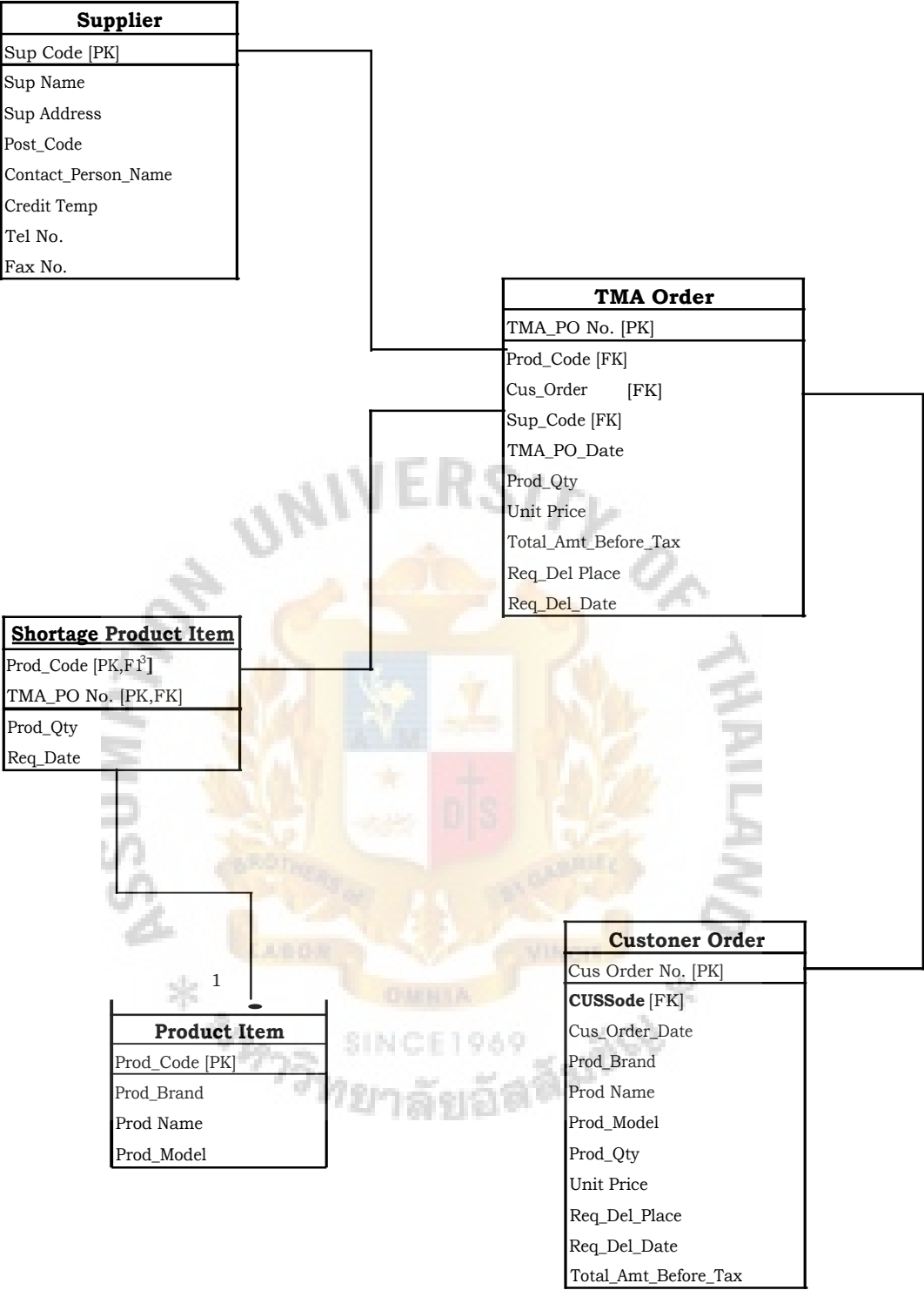


Figure C.2. Data Relationship (Purchase Part).



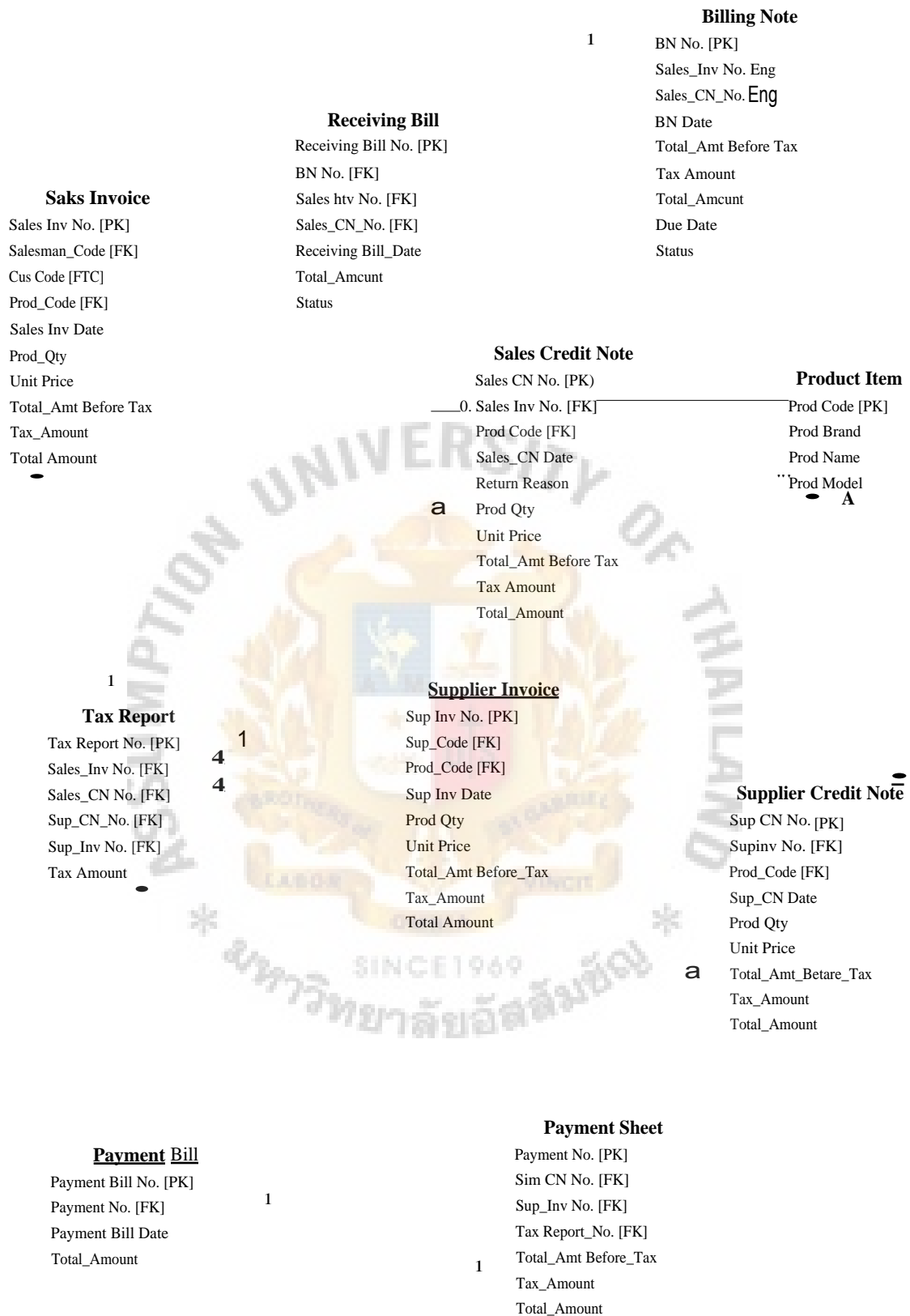


Figure C.3. Data Relationship (Financial Part).



**APPENDIX D**  
USER MANUAL

## USER MANUAL

This operation system is designed to cover the main business practices of the organization including sales, purchasing, accounting, inventory and management level; therefore, all the users will be able to log in this system. In order to prevent all the users are using the system in a particular way and without the interruption of other departments' data base. The system will design each users' ability for using each menu function such as Read & Modifiable, Read Only, Can't Log in. The following table is briefly shown each department users' ability for using each menu function.

Table D.1. User Authority of the System.

Department	Read & Modifiable	Read Only	Can't log in
Sales	1. all sales menu 2.1 sub menu supplier Info.	2. all purchase menu 3. all financial doc menu 5. all inventory menu 7. all report menu	4. all monetary menu 6. all executive menu
Purchase	2. all purchase menu	1. all sales menu 3. all financial doc menu 4. all monetary menu 5. all inventory menu 7. all report menu	6. all executive menu
Accounting	3 all financial doe menu 4. all monetary menu	1. all sales menu 2. all purchase menu 5. all inventory menu 7. all report menu	6. all executive menu
Inventory	5. all inventory menu	1. all sales menu 2. all purchase menu 3. all financial doc menu 7. all report menu	4. all monetary menu 6. all executive menu
Manager	6. all executive menu	1. all sales menu 2. all purchase menu 3. all financial doc menu 4. all monetary menu 5. all inventory menu 7. all report menu	

A Log In screen (Figure D.1) will be appeared for authorized users to enter their user names and passwords, the computer system will design the particular tasks that the users can perform from the correct user name and password; else the computer will reject the log in.

TMA MANAGEMENT SYSTEM

PLEASE ENTER USER NAME  
AND PASSWORD FOR LOG IN.

Enter I

USER I

PASSWORD I

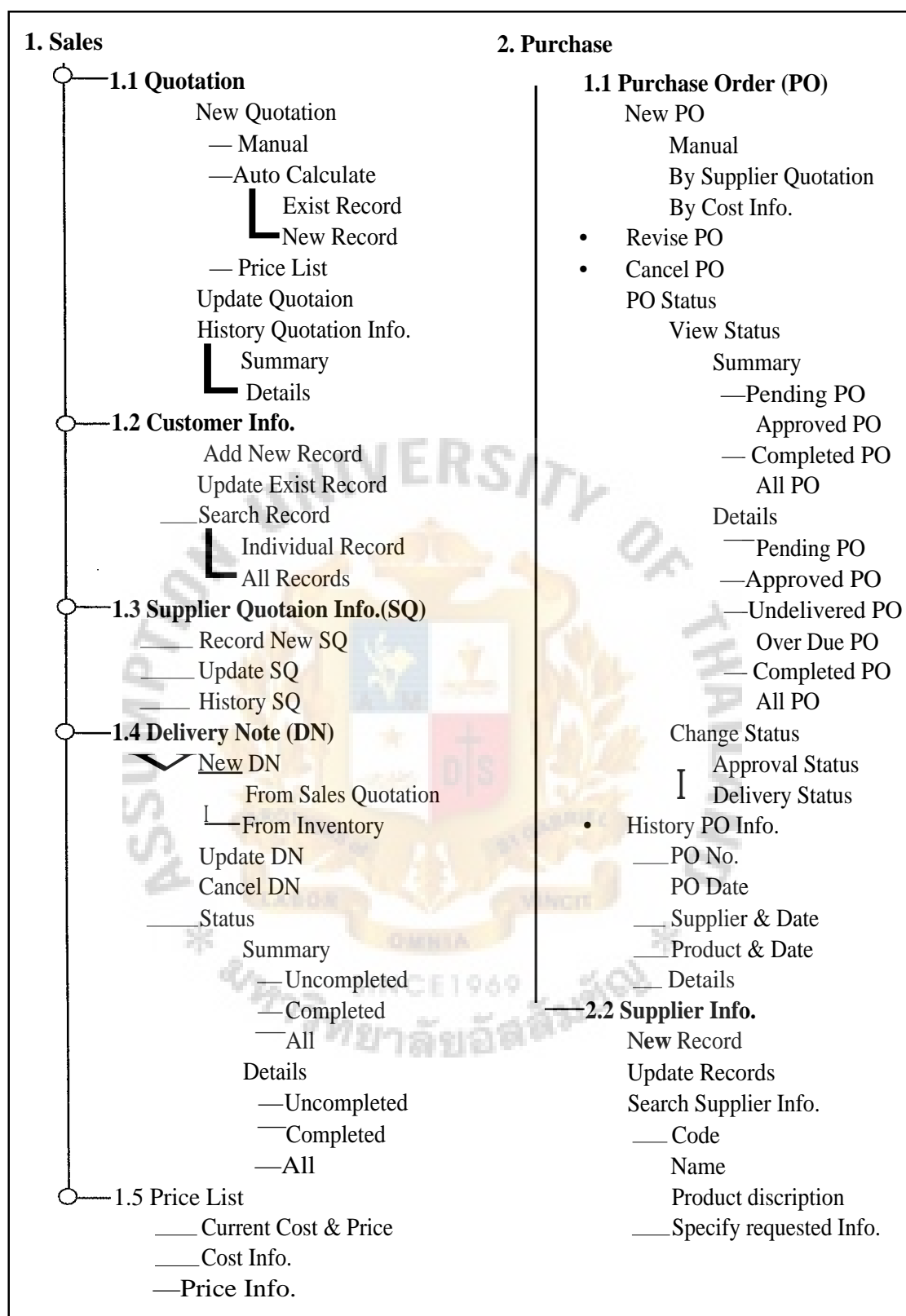
Carlee4

Figure D.1. Log In Screen.

The Main Menu screen will be appeared for correct the log in from the previous step, in which users then select their required menu function. This system comprises 8 main menus which are 1.Sales, 2.Purchase, 3.Financial Doc, 4.Monetary, 5.Inventory, 6.Executive, 7.Reports and 8.Exit. Each main menu consists detail sub menus which are shown in the following Figure D.3, A.4, A.5 and A.6.

Form1			
Sales Purchase Finance Docs Monetary	Inventory	Reports Exit	
Customer Info.	Manual		
Supplier Quo Info.	History Quotation Info, 01	Price List	
Delivery Note			

Figure D.2. Main Menu Screen.



**Figure D.3. Sub Menu Details 1.**

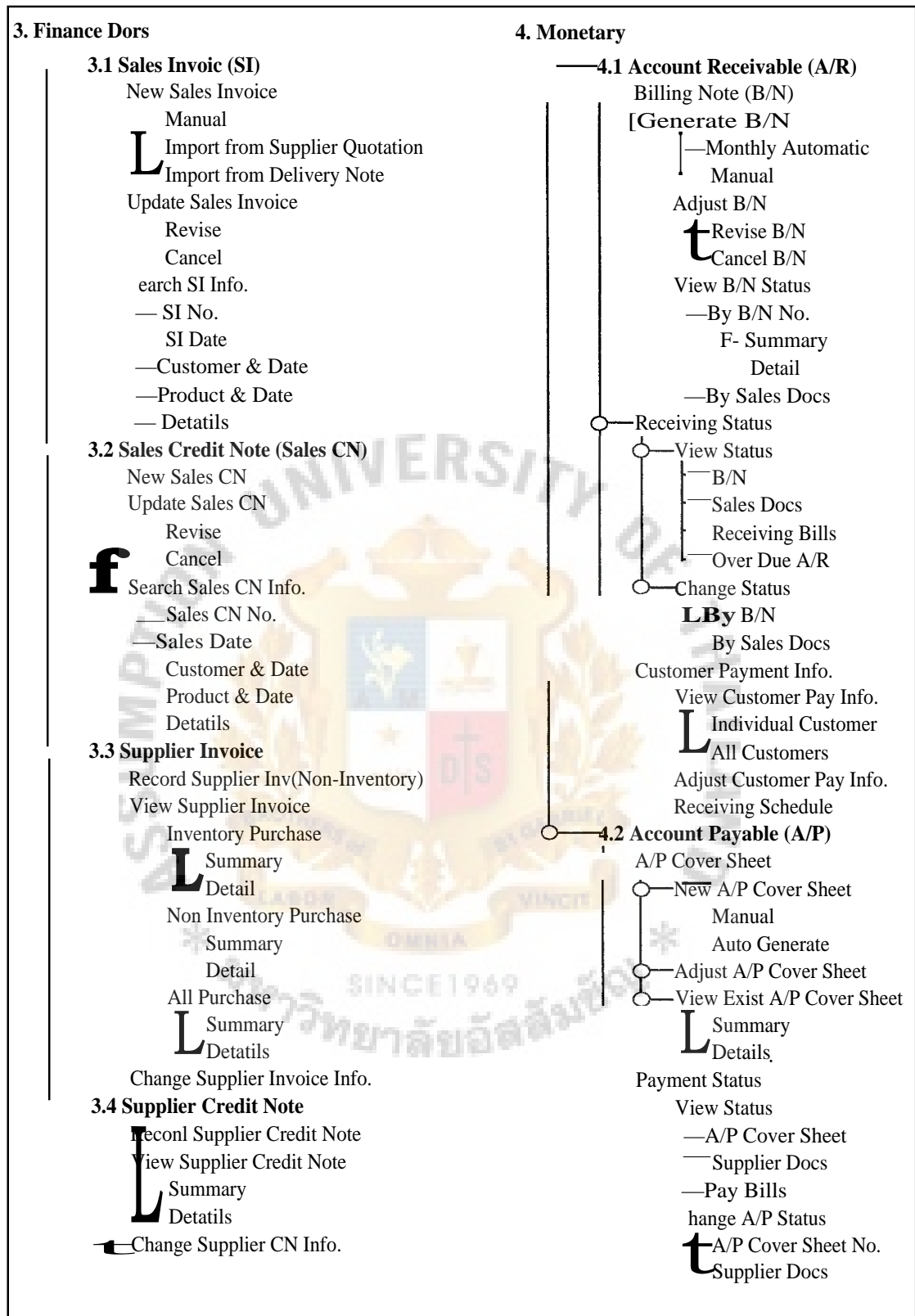


Figure D.4. Sub Menu Details 2.

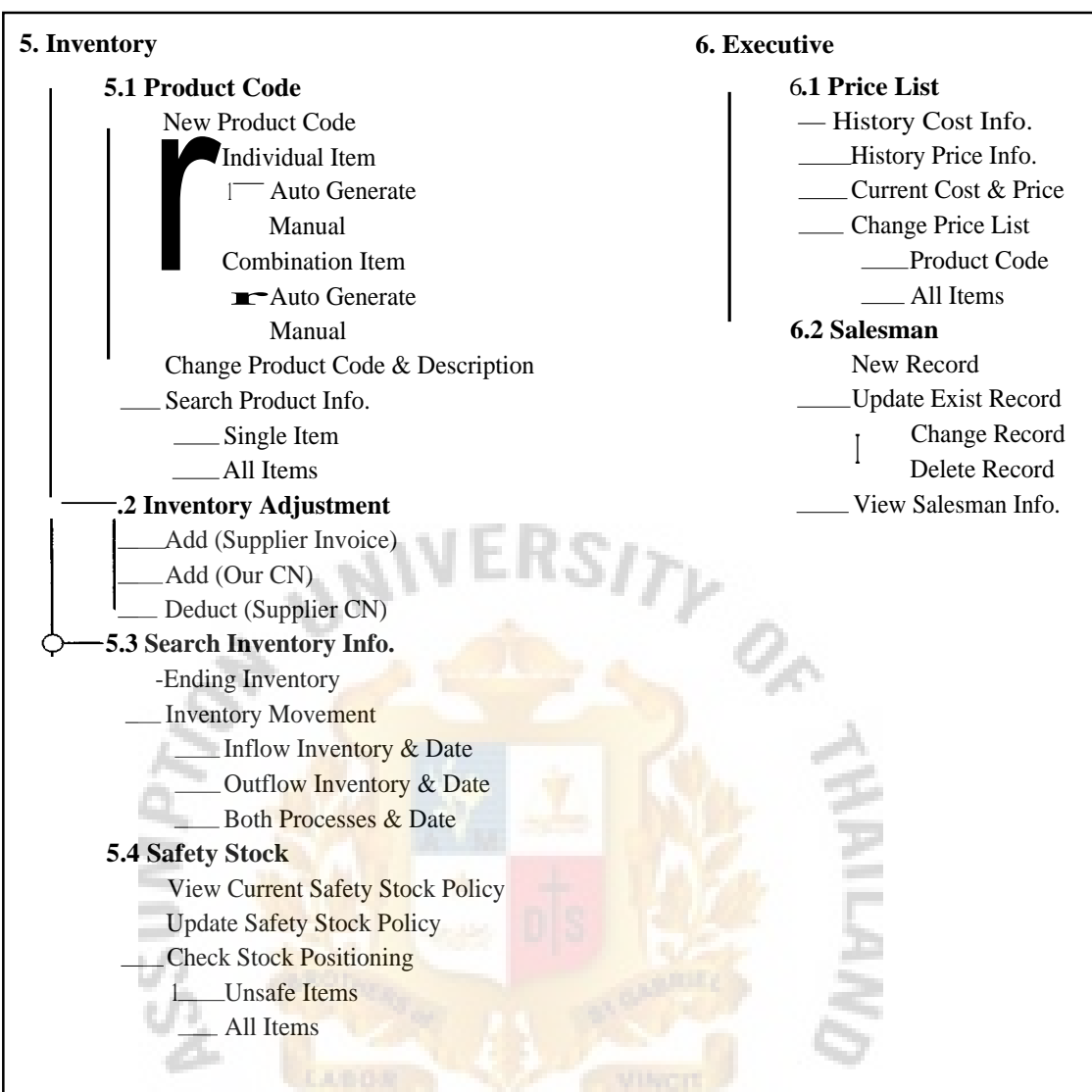


Figure D.S. Sub Menu Details 3.

## 7. Reports

## 8. Exit

### 7.1 Sales Report

- Summary Report
  - \_\_\_ Customer Sales Value
  - \_\_\_ Product Sales Value
  - \_\_\_ Product Category
    - \_\_\_ Sales only
    - \_\_\_ Sales & Margin
  - \_\_\_ Salesman
  - \_\_\_ Monthly Report
  - \_\_\_ Sales Target Report
- Detail Report
  - \_\_\_ By Customer
  - \_\_\_ By Product
  - \_\_\_ By Salesman
- Sales Analysis
  - \_\_\_ Monthly
  - \_\_\_ Quarterly
  - \_\_\_ Yearly

### 7.2 Purchase Report

- Common Product
  - \_\_\_ By Supplier
  - \_\_\_ Summary
  - \_\_\_ Detail
  - \_\_\_ By Product
- Uncommon Product \*
- All Inventory product \*
- Office Supplier
- All Purchase
  - \_\_\_ Summary
  - \_\_\_ Detail
- Product Category

### 7.3 Financial Report

- \_\_\_ Sales Summary
- \_\_\_ Purchase Summary
- \_\_\_ Profit Summary

### 7.4 Inventory Report

- Ending Inventory
  - \_\_\_ By Product Code
  - \_\_\_ By Value
- Turn Over Analysis

\* Sub menus are same as Common Product

Figure D.6. Sub Menu Details 4.



## **1.1 QUOTATION**

### **1.1.1 New Quotation**

User can create new quotation by three method which are manual, auto calculate, and from price list. A quotation layout form will be displayed if users choose to create new quotation by manual method, once users choose customer code or customer name from the list box, then the system will automatically display the other customer information from the database; however, users still can changes the customer addition information. User can choose product code if the product is already existed in the database or choose other product information if users don't know the product code. If the product is not exist yet, users should input the product brand, product name and product model manually, *product code is not required to indicate in sales quotation even the product has already existed or not*, because there are a lot uncommon products exist in the system. The unit price, quantity, discount and any other information should be inputted by users.

Objective box is used to search quotation in the future; however, users can skip to input this information. Supplier Quo Ref is not available on Manual function due to no reference to supplier quotation. Objective and Supplier Quo Ref will not appear on the print out quotation.

Quotation No. will be automatically generated in the next number in the format "Q03-xxxx, Q03 stands for quotation year 2003, and Date will be referred to current date.

The disadvantages of creating quotation by manual method is without reference of supplier quotation information in the future.

Quotation

INA Caltd.  
11/111 Pattandam Road. Suanluang  
Ramat, Bangkok 11111  
Tel: 0-3333-3333 Fax 0-444-4444

Data: Feb 203  
Quo Nix Q03-0045  
You Ref: \_\_\_\_\_

Customer Code/Name: A001 AAA Co.,Ltd

ATTN: Mr.K/Pur

Phone No. 10\_2222\_2222  
Fax No. 10-1111-1111

Validity: 30 Days

Credit Term: 30 Days

Delivery Place: Your Factory

Supplier Quo Ref: SQ0302018

Subject: \_\_\_\_\_

We are pleasure to quote you the merchandises with the term and condkions below.

No.	Qty	Prod_Code	Prod_Brand	Prod_Name	Prod_Model	Unit_Price	Total Amount	Deiremy Time
1	<span style="border: 1px solid black; padding: 2px;">10</span>	<span style="border: 1px solid black; padding: 2px;">Each</span>	6203050	KHK Gear	<span style="border: 1px solid black; padding: 2px;">HHt1.5-18</span>	200.00	2,000.00	3 ways
2	<span style="border: 1px solid black; padding: 2px;">10</span>	<span style="border: 1px solid black; padding: 2px;">Each</span>	E203052	rGear	<span style="border: 1px solid black; padding: 2px;">.11HHt1.5-20</span>	400.00	4,000.00	3 Days
3	<span style="border: 1px solid black; padding: 2px;">110</span>	<span style="border: 1px solid black; padding: 2px;">Each</span>	6203055	IKI-1K	<span style="border: 1px solid black; padding: 2px;">HHt1.5-25</span>	800.00	88,000.00	Vs
						Discount	10 %	
							-1,400.00	
						Total	112600 00	

Note: On,, 5Pcs of Item 3 is in stock now,  
The balance Qty dekvry 60 days.

Figure D.7. Generate New Quotation Layout Screen.

Auto Calculate function is used to refer supplier quotation information, and useful for future reference. If supplier quotation is already recorded in the database, users could just input Supplier Quo Ref No. by Figure D.8, then click Enter. If users don't know Supplier Quo Ref No., then click Browse button.

PLEASE ENTER SUPPLIER  
QUOTATION REFERENCE

BROWSE

Enter

Figure D.8. Input Supplier Quo Ref No. Screen.

On Select Supplier Quo Ref No., users could select relevant supplier quotation information in Figure D.9. that users have already known such as supplier code or name, quotation date.

PLEASE SPECIFY SUPPU AND DATE

Slippier Code:

Soppier Name:

DATE  TO

Figure D.9. Select Supplier Quo Ref No. Screen.

DATE	Supprer Quo Rer NO.	Soppier Name	Supfser Quo No.	Subject
	SQ0301002			
	SQ0301015			
	S00302121			
	500302122			
	900302457			

Figure D.10. Summary Supplier Quo Screen.

On Figure D.10, it will display the relevant supplier quotations from the previous process selection. User could choose the supplier quotation by double click on the Supplier Quo Ref No.

Supplier Quo Form will be displayed after users' selection, all quotation conditions will shown from the previous record. The Supplier Quo Ref No will keep the same if users still uses this Supplier Quo Ref No. to generate sales quotation.

Figure D.7), users still can change the product information on the sales quotation condition with customer info and etc.

OK ☒ Cancel

Figure D.11. Display Exist Supplier Quo Screen.

If supplier quotation doesn't exist yet, users could use New Record function, New Supplier Quo screen will be displayed for users to record supplier quotation info. and complete all processes of calculation. Click on OK button when the calculation is finished, all product information will be transfer to Generate New Quotation Layout

screen(Figure D.7), users still can change the product information on this screen and complete the sales quotation condition with customer info and etc.

Supplier Quo Ref NO. will be automatically generated in the next number in the format "SQ03-xxxx, SQ03 stands for supplier quotation in year 2003.

Please Record Sopplier Quotation Info.

SUPPVerOU1;ii: IEF0135

Stvdierouo Ref No. isonoasa

Supplier Code: SX001

Date 11/2/03

Supplier Nam m{ Eakid

Subject 1:TOC; for AM Coltd.

Decimal Format 415

Decimal Format r Q01

Phone Na 10-2111411

CuTenc\$ USS

415

r

Fax No- 10-1222-2222

Delivery Place 1Our compay

ri Add up

C 1

Contact Person: Mr.B/Sales

Credk Ten 130 Days

Cut

10

Please Record Supplier Quotation Product Info.

Markup Tacit Exchange TMA Quotation

Click to Select Prod Brand Prod Name Prod Model

Unk Cost Count Unit Del jl

Apply toAI

Fa% ADPT

1 us..S • Apply 140 \$ to Ai

Sel Price Del

1KHK 7 HHO.5-18 5 5 130 d PO X 10 % 140 \$ 1270 kr. Days

3 [KHK Gear II-NO.5-20 10 Each 130 d 2 10 % 143 540 1:3 Days

r EHKH 1Gear 1HHO.5-25 15 Each 1. 30 d 115 % 10 % 143 145 Days

r r- 2 ra% 4/ 1 Days

NOTE:

Discount 5 %

Or Total

OK

Figure D.12. Record New Supplier Quo Screen.

If users generate quotation from price list, it would also display New Quotation Layout screen. After users select the product code or product description, the system will automatically display the unit price that is already kept in the database. Once input customer information, the system will automatically display the discount rate to a particular customer that is kept in the customer database. This discount rate is applied to customer for common product only or the products that have price list info.

1.1.2 Update Quotation

Once quotation is generated, it would also be revised in the future by just inputs the quotation No. if users know it. Else users still can browse the sales quotation by the following steps.

PLEASE ENTER SALES  
QUOTATION NO:

BROWSE

Enter

Figure D.13. Input Sales Quo No. Screen.

If users browse the sales quotation, Search Sales Quotation screen will be displayed. User should input relevant sales quotation info. that users know, or search from Subject Title if the quotation consists with a Subject. Then, select the display method that arrange by quotation No, date or the alphabet of customer name.

Enter Your Request Quotation Data

Quotation Na To

Customer All Customer

Salesman All Salesman

Subject Title

Date: From To

Display Method

C By Quotation Na

C By Date

C By Customer Name

Search Exit

Figure D.14. Search Sales Quo Screen.

This screen will show the relevant quotations from users' inputted quotation info., and users can double click on quotation No. button to see the detail of each quotation.

Quotation No.	Date	Customer	TotalAmoul	Subject	Soppier	Sources
QT030032						SOG301022
QT030088						SQ0301255
QT030121						S00301256
QT030122						SQE3302021
QT030122/1						500302021/1

Figure D.15. Summary Sales Quo Screen.

If the displayed sales quotation is not users' request, please just click the Cancel button to close this window. On this screen, users can change customer info., product info., and price info. in the calculation process. The quotation No. format will be "Q03-xxxx/1", /1 stands for revise first time, and count continuously for the following revises. Revised quotation date will refer to the current date.

If supplier also revises the quotation to the company, users could double click on Supplier Quo Ref No. button for going to Revise Supplier Quo screen (Figure D.17).

After finished the revision, click on OK button which will return to Generate New Quotation Layout screen (Figure D.7) for final checking.

Customer Code <input type="text"/> Customer Name <input type="text"/> ATTN: <input type="text"/> CC: <input type="text"/> Phone Na <input type="text"/> Fax No. <input type="text"/> Customer RFQ <input type="text"/>		Quotation No. <input type="text"/> /1 Date <input type="text"/> Subject <input type="text"/> Credit Term <input type="text"/> Delivery Place <input type="text"/> Validity <input type="text"/>		Supplier Name <input type="text"/> Supplier Quo Ref <input type="text"/> 500301123	
--	--	--	--	---	--

Item	Prod	City	Count	Unit	ProcLRrand	Prod_Name	Prod Model	Unt Price	Delivery	Unit Cost	Mark Up	Tare	Exchange
								US \$	%	%	1	us\$	= \$
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	1.50	r20	5	142.15
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	11.00	f 15	10	F2715		

NOTE:	Discoctmt <input type="text"/>	Or Total <input type="text"/>
-------	--------------------------------	-------------------------------

Figure D.16: Revise Sales Quo Screen.

Next, the system will transfer product and price information to a revise sales quotation screen same as Generate New Quotation Layout screen (Figure D.7) for final checking and modification. The revised sales quotation no. will refer to revised Supplier Quo Ref No. for future reference.

Figure D.17. Revise Supplier Quo Screen.

82



1.2 CUSTOMER INFO.

Following screen is used to record new customer database, once customer name is inputted, the system will automatically generate a new customer code for such customer by using the first alphabet of customer name combine with the next number such as A002.

Customer information database can be updated any time once customer information is changed. Users could also search. customer information in the database any time by using customer code, customer name or customer business type. Detail screen layouts are skipped here.

The screenshot displays a form titled "Record Customer Info. Screen" with a background watermark of the Assumption University of Thailand logo. The form includes the following fields and labels:

- Customer Code: [Text Box]
- Date of Record: [Text Box]
- Customer Name: [Text Box]
- Address: [Text Box]
- Phone No: [Text Box]
- Fax Na: [Text Box]
- Contact Person: [Text Box]
- ATTN: [Text Box]
- Ext:r: [Text Box]
- CC: [Text Box]
- Ext: [Text Box]
- Discount Hate: [Text Box]
- Notice: [Text Box]
- Creat Term: [Text Box]
- Business Type: [Text Box]

Figure D.18. Record Customer Info. Screen.

1.3 SUPPLIER QUOTATION INFO.

Users can record supplier quotation condition by using Record New Supplier Quotation menu instead of creating the sales quotation by using New Quotation Auto Calculate New Record menu.

After record all supplier quotation information, users can save this record for using to generate sales quotation later on by click SAVE button, this menu function is suitable when is not ready to generate sales quotation now. However, users can also click SAVE and GENERATE Sales Quotation button to generate sales quotation

immediately. In case of this, all product and price information will be transfer to Generate New Quotation Layout screen (Figure D.7) for issuing a new sales quotation. Supplier Quo Ref No. and Sales Quotation No. will be automatically generated same as the previous process in New Quotation menu.

Please Record Suppler Quotation Infa.

Supplier Code:

Supplier Name

Phone No:

Fax Na

Contact Person

Subject

Supplier Quo Na

SLI3Pliet Quo Refer No:

Date

Currency

Delivery Place

Credit Term

Decined Format

4/5

Add up

CIA

Decimal Format

0.01

0.1

1

10

Please Record Supplier Quotation Product Info.

Click to

Select Prod Brand

Prod Name

Prod Model

Unil

Cost

Courk\_Unk

Del I

Markup

Tarif

Exchange

TMA Quotation

APpb' I-5ftoAll

1 u4 API\*

to

Sel Price

Del

9

Days

Days

Days

Days

NOTE:

Discount Fs%

Or Total I

Save

SAVEand Then Generate Sales ; Quotation

Cancel

Figure D.19. Record Supplier Quo Screen.

Supplier quotation can be revised and reviewed any time by the steps that are similar in searching sales quotation in Figure D.13, A.13, A15, and A.16, users can replace the exist supplier quotation with the revised supplier quotation, or even save as a revised supplier quotation. The detail layout design is skipped here.

1.4 DELIVERY NOTE

There are 2 methods to generate Delivery Note when Sales Invoice is not available to issue, which are generated by sales quotation and inventory. Use could follow the steps in searching sales quotation in Figures D.13, A.14 and A.15. Then Generate Delivery Note by Sales Quo screen (Figure D.20) will be displayed, then users choose items and quantity to generate in the delivery note. In using this method, users must make sure that the product items are already entered the inventory. Perhaps the product description in the sales quotation and inventory records have some difference, in case of this, users must change the product description same as the inventory record or

manually find out the product code. If the product description in the both places are the same, the exist product code will be automatically fill in.

This method is suitable for the sales quotation consists a lot of product items and more of there are generated in delivery note.

Input Delivery Note Info.

Customer Code

Quotation No.

Customer Name

Date

ATTN:

Subject

Phone No.

Fax No.

Customer RFQ

Input The Salesmen

Salesman

Item Prod. Code

Prod Description

Prod Qty

Count

UM

NOTE:

Click to select

Select All

City to be appeared in Delivery Note

Figure D.20. Generate Delivery Note by Sales Quo Screen.

Generate Delivery Note by Inventory (Figure D.21) is more convenience than the last method, users just choose the product code if it is known, or choose product brand, product name and product model, then the system will also automatically displayed the product code. Finally, input the quantity of each item.

Customer Code

Customer Name

ATTN:

Phone No.

Fax No.

Customer RFD

Input The Salesman

Salesman

Item	Prod_Code	Prod Brand	Prod Name	Prod_Model	ProUltly Cotrit_ Unt
1	TE				rs2
1	-J1				FE

NOTE:

Figure D.21. Generate Delivery Note by Inventory Screen.

Issued delivery note can be revised and cancelled any time depend on situation change such as delivered items to customer are returned. Users should follow the steps similar to Figure D.13, D.14 and D.15 in order to log in delivery note screen (Figure D.21).

Users can check each delivery note status by assigning the specific required information such customer, sales man and etc.

Figure D.22 is an example of searching delivery note status in summary for salesman Mr.Somchai in period 1/2/03-11/2/03, users still can double click on DN No. button to see the detail of each delivery note.

Date	DN Na.	Customer	Salesman	Status
712703	<u>DN03:0921</u>	j /AAA Co.,Ltd/IA001	[Mr.Somchaill001	
<u>912103</u>	<u>DN0301328</u>	1rEC Co.,Ltd./A003	I IvIr.S °moiler/1001	
f11:2/03	<u>DN03-0E28</u>	I iligro..Ltd1/13001	FMr.Somchaill601	Canceled
1112103	<u>DNE13.0029</u>	FAAA Co.,Ltd//A001	IMr.Somchaillarl	

Close

F..." Completed DN

Not all Items Completed ON

I NonPruyra, DN

Figure D.22. DN Status Summary Screen.

Figure D.23 is an example of detail displaying all items status in each delivery note in the scope of uncompleted delivery note for a salesman during period 1/2/03-28/2/03. Even though only one item in the delivery note is not completed, it would be also considered the whole delivery note is not completed.

Delivery Note Status Detail_Uncompleted DNs 6y salesman_date 1/2/03 -28/2/03										
DN No. IDN030022			Date 1/2/03		Customer AAA Ca,Ltd//A001		Sales Invoice Info.			Balance Status
No.	Prod Description		Qty		Doc No.		Date		Qty	
1	Nachi, Drill L600 Dia 4.0//1101040		1100Pcs		11V0302225		115/2/03		1100	
1	Nachi, Drill L600 Dia 5.0//1101050		40Pcs		11V0302202		112/2/03			
DN No. IDN03-0028			Date 13/2/03		Customer 1886 Co.,Ltd.118001					FT 7 Canceled
No.	Prod Description		Qty							
1	Fuji, induction motor 11120117010235		11Unk							
2	Fuji, induction motor TT200//7010241									
										Completed Item
										Not al Completed Illy
										Not Progress Item

Figure D23. DN Status Detail Screen.

1.5 PRICE LIST INFO.

Users can check current common product cost, price in the database by inputting product code or selecting product description (Figure D.24) which the system would also automatically display the product code. Multiple items are allowed to search at the same time.

Prod Code	Prod_Brand	Prod_Name	Prod Model
1100255	Nachi	rEirill L600	31

OK

Figure D.24. Input Product Info. Screen.

Figure D.25 displays the current cost information of request items in the previous step, and function of Price Info. menu would be the same as Cost Info..

Price List\_Cost Info.\_Prodcut 110200 to 110203 Date 27/2/03

Item	Product Code	Product Description	Unit Cost
11	1110200	List500, Dia: 9.2	80.00
12	1110201	1Nachi,Dril List500, Dia: 8.3	80.00
	11020 2	ach1Dral List500. Dia: 9.4	81.00
Ft	1110203	1N achIA rtl List500, Dia: 0.5	81.00

Figure D.25. Display Cost Info. Screen.

Figure D.26 displays both current cost and price information as well as mark up margin.

Price List Current Cost and Price Into.\_Prodcut 110200 to 110203 Date 27/2/03

Item	Product Code	Product Description	Unit Cost	Uri Price	Margin
1	1110200	rNachi.Dril List500, Dia: 8.2	1 80.00	NIKO	170.711
2	1110201	[NachiDoll List500, Dia: 8.3	1 80.00	1110T13	2000 x
3	1110202	Nachi.Dril List500, Dia: 8.4	reioi	rivitTo	22.86 y
4	110203	Nadv Ddl List500, Dia: 8:5	81A0	100.00	22.86 f

Close

Figure D.26. Current Cost & Price Info. Screen.

## 2.1 PURCHASE ORDER (PO)

### 2.1.1 New Purchase Order

Purchase Order(PO) that is issued to suppliers can be generated by three methods which are manual, by supplier quotations and by cost record in the database.

In Manual method, Generate New PO by Manual screen (Figure D.27) is provided to input the information of supplier, product, unit cost, discount, quantity and request day. Moreover, it is also requested users to select type of purchase such as Common Product, Uncommon Product and Office Supplies; PO approving status, normally it is effective on pending status, if users are sure that the PO could be approved, users could select the status as approved in order to avoid to change approving status later; it is an alternative for users to input customer name for the PO with the option of showing the customer name to supplier.

In Cost Record method, it is available to purchase common product by the cost record kept in the database, cost will be automatically inputted once product information is selected. The same screen Figure D.27 will also be provided to new PO generation.

The form is titled "Generate New PO by Manual Screen". It contains the following sections:

- Supplier Info:** Sumba Code (dropdown), Supplier Name (text), Contact Person (text), Phone No. (text), Fax No. (text).
- PO Info:** PO No. (text), Delivery Place (dropdown), Credit Term (dropdown), Currency (dropdown).
- Customer Info.:** For Customer (dropdown), Display On Purchase Order (checkbox).
- Type of Purchase:** Radio buttons for Common Product, Uncommon Product, Office Supplies.
- PO Approving Status:** Radio buttons for Pending, Approved.
- Product Info. Table:**

Item	Prod_Code	Prod_Brand	Prod_Name	Prod Model	Prod_Qty	Count	Unit	Unit Cost	Total Amount	Request Day
					7	2	EA			
					7					
- NOTE:** (Text area)
- Discount:** (text) %
- Or Total:** (text)
- Buttons:** OK, Cancel

Figure D.27. Generate New PO by Manual Screen.

If the PO consists a lot of items, users could import the product information from supplier quotation in case of supplier quotation is recorded in the database. Figure D.28 is provided to users to enter Supplier Quo Ref No. or search the No. similar to steps in Figure D.13, A.14 and A.15. After supplier quotation information is exported to Generate New PO by Supp Quo screen (Figure D.29), users could also change any data and complete the another PO functions. The *special function on this screen is providing*

*Add More Items button*, users could add more product items from other supplier quotations by follow the same steps as Figure D.28.

Please enter Supplier Quotation Ref No: Browse

Enter #

Cancel

Supplier Info

Suppor Code I

Supplier Name

Contact Person

Phone No: I

Fax No:

Supplier Quo Na

Supplier Quo Ref No: L

PO Na

Date

Delivery Place

Credit Term

Currency

Customer Info.

For Customer

Display On Purhcase Order

C Yes

4: No

Type of Purchase

Common Product

Uncommon Product

Office Supplies

PO Approving Status

r Approved

Product Info.

Item	Prod_Cade	Prod_Brand	Prod Name	Prod_Model	Prod Qty	Count Unit	Unit Cost	TotalAmount	Request Day
F									
n	3	711							

NOTE:

Discount

Or Total

OK

Cancel

Add More Items

Figure D.29. Generate New PO by Sup Quo Screen.

**2.1.2 Revise PO and 2.1.3 Cancel PO**

These 2 sub menus are applicable to users to change the condition of issued PO. After inputting the PO number, an addition screen would be provided to users to perform a change on product information, quantity, price or even cancel a product item.



2.1.4 PO status

Sub menus of pending PO, approved PO, Undelivered PO, Over due PO, completed PO or all PO are the selective alternatives to check the status of approval and delivery. Figure D.30 is provided to enter or browse PO number.

Please Select Purchase Order Info.

PO No:  To

Supplier  All

Date  To

Type of Purchase: ☐ All Purchase ☐ Common Product ☐ Uncommon Product ☐ Office Supplies

OK Cancel

Figure D.30. Browse PO Screen.

Figure D.31 displays the summary status of PO from request PO information in the previous process. Users could also double click the PO number button in order to display the detail information of such PO (Figure D.32).

Date	PO No.	Supplier	Total Amount	Approval Status		Delivery Status
				Pending	Approved	
5/1/03	P0030006	EH	1 2300		ri	Tv
15/1/03	P0030007	jrAT	11500e		-	r
5/1/03	P0030008	JCR	2300\$	4		r
5/1/03	P0030009	JCR	2300 \$			

ri; Completed      r Not al Completed      V Urcompleted

Figure D.31. PO Status Summary Screen.

PD Status View Detail										17. CW Oetted ellman.		17 N°tAIGa, r Pleted Del ves' r		r Undefwered Items	
										DeivelyStatus					
Date	PD Na	Supplier	Prod_Description	Prod Qty	Unit...	Cost	Total	Cost g	t	Approval Status	Qty	Doc Na	Date	Balance	Status
571761	<u>P00301:106</u>	i>pcx co.,Ltd	1Pump sd250	12Pcs	I	1,000.001	2.00000020	1/03		C' Peni-n9		<u>E25620</u>	hwucr		
			1Pump sd250	12PCS	1	1,000.001	2.00000020	1/021		r• APORcs'e	11	<u>E25628</u>	12M/0: 11		
			1Pump sd720	21	Ff,ocia.	00f	2.000.00	iO/D		-	-	-	12		

Figure D.32. PO Status Detail Screen.

Before changing PO status, Figure D.33 would be provided to input relevant PO numbers. Users can select all pending PO or even input directly the PO number.

Please enter relevant PO number irk.

PO No. I

To

Date F

To I

Al Panting POs

OK I

Cancel !

Figure D.33. Input PO No. Screen.

Figure D.34 is an example of all pending PO between PO number 030003 — 030009, the approval status would be changed by just click option button.

Date	PO No:	Supplier	Total Amount	Approval Status	
				Pending	Approved
15/1/03	P0030006	15&Ecatcidisxoof	F 0 —	<input type="radio"/>	<input type="radio"/>
15/1/03	P0039007	15>0< Z Co.,Ltd.//SX002	I1500 *-	<input type="radio"/>	<input type="radio"/>
6/1/03	p0030008	1YYY Co.,Ltd.//SY001	11500*	<input type="radio"/>	<input type="radio"/>
6 103	P0930009	ii.22Eatdi/szooi	11500 *	<input type="radio"/>	<input type="radio"/>

Figure D.34. Change PO Approval Status Screen.

Purchaser should update the delivery status of the PO once purchasing department receives supplier invoices. After the process of inputting PO number or browse the PO number, Figure D.35 will display detail of such PO as well as providing a Delivery Info. frame for users to input supplier invoice number, date and quantity received. And the system will automatically display the balance quantity and its delivery status.

Supplier Info

Supplier

Supplier Quo No:

Supplies Quo Ref No:

PO No:

Date

Delivery Place

Credit Term

Currency

Product Info.

Item	Prod Code	Prod Discription	Prott..Qty	Uri Cost	Total Amount
11	11111053T	IF* Motor SFUJ-325	2Pcs	1,000.00	2,000.00
12	11100335	Fujt Motor SFLiJ-355	12 c	1,000.00	F2,001101

NOTE: URGENT!

Discount

% Or Total

Save

Cancel

Delivered Info.

Qty	Doc	Date	Balance	Status
1	IV21202	25/1/03	1	<input checked="" type="checkbox"/>
2	IV21202	25/1/03	0	<input checked="" type="checkbox"/>

☒ Completed Deivery
 ☒ Not Ai Completed Deivery
 ☐ ivered Order

Figure D.35. Change PO Delivery Status Screen.

### 2.1.5 History Po Info.

It is a search engine menu that is useful for users to search historical PO record. Users could search from PO number, date, supplier, product code and product description. However, modification of PO could not be made here.

### 2.2 SUPPLIER INFO.

Supplier information is a database to record supper code supplier name, address, phone number, fax number, contact person, discount rate on common product, credit term and product titles. All are similar to Customer Info. menu in Figure D.18. Detail screen layout is skipped here.

### 3.1 SALES INVOICE

#### 3.1.1 New Sales Invoice

Sales invoice can be issued by three methods which are Manual, Import from sales quotation and Import from delivery note.

(1) Manual method. Figure D.36 is displayed for users to enter customer info. such as customer name or code, customer PO number if it is needed, and other reference info. such our quotation number, our PO number and salesman. Then, users may directly input product info. by product code or choose the product brand, name and model; once the product info. is cleared, the system will automatically display the current product quantity both the stock 1(main stock) and stock 2(delivery note stock). If stock 2 is exist, it is users' decision whether to deduce the inventory from stock 1 or stock 2; however, the system is generally marked the option button on stock 1. If users select to mark on stock 2, additional screen (Figure D.37) will be displayed for the confirmation of the correct delivery documents. Next, users have to input unit price of each product item and the discount (for uncommon product items only). Discount rate and price list in the database are applied to only common product items.

**Invoice Info.**

Customer Code  Invoice No:

Customer Name  Quotation No:

Customer PO No:  Our PO No:

Salesman

**Product Info.**

Item	ProdSode	ProtBrand	Prod_Name	Prod_Model	Prod_Qgr	Count...	Unit	Unit_Cost	Total	Amount
	1100333	7:11Fuji	..11Rrnp	..11A71567	1		Pcs.	20000		20000
T	11100334	Fuji	..11AKJ 620	..11	1		1Pcs	15000I		15000
	11100335	..11Fuji	id1Purnp	..11AKJ 820			Ps	120001		12000
								Discount		
								Or Total	j	-2000
								Sub Total		
								VAT		
								Grand Total		

Save

**Inventory Source**

Stock 1		Stock 2	
Sel	Qty	Sel	Qty
<input checked="" type="radio"/>	4	<input type="radio"/>	0
<input type="radio"/>	1	<input type="radio"/>	0
<input type="radio"/>	1	<input type="radio"/>	0

Stock 1: Main Stock  
Stock 2: Delivery Note Stock

Figure D.36. Issue Sales Invoice Screen.

In Figure D.37, this screen will display uncompleted delivery note documents and previous issued invoice info. regarding the selected product item. If quantity of stock 2 is more than current invoice quantity, users have to select which delivery notes are used to issue the sales invoice by mark on the option button of SEL and input the quantity in the Current Invoice part. Figure D.37 is an example of selecting 2 unit of a product item from 2 delivery note. After users completely confirm the delivery documents and quantity, the system will show the product in each delivery document's status.

If users want to change the selection of delivery note once the operation is complete and exist from this window, users will have to revise this sales invoice from sub menu Update Sales Invoice.

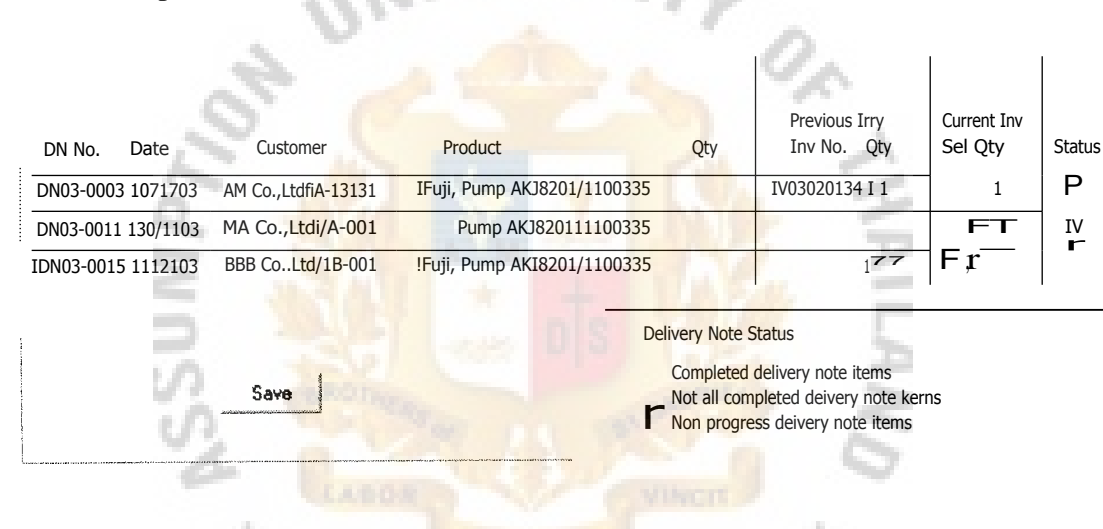


Figure D.37. Confirm DN Screen.

(2) Import from Sales Quotation method, users have to follow the steps similar to Figure D.8, A.9, and A.10 in order to input or browse sales quotation number, and then select the items to issued in sales invoice similar to Figure D.11. The remaining processes are same as Figure D.36 and A.37. This method saves time in inputting product info. in case of more items in the sales quotation are applied to issue sales invoice. However, this method has a limitation that lack of product code of common product in sales quotation; therefore, if the product descriptions of sales quotation and inventory are the same, the system could automatically display its product code, else it is important for users to enter correct product code.

(3) Import from Delivery Note method, the operation process is similar as sub menu Import form Sales Quotation. It is suitable for more items in the delivery

documents are applied to generate sales invoice. This method could correctly import customer and product info. Figure D.38 shows the detail of delivery note info, users have to select items and quantity to be applied in issuing sales invoice. Then, Figure D.36 will be appeared for the final confirmation of issuing sales invoice.

DN Noc DN03-0012   Deal-m/03   Customer IAA Co.1td.11A-001

APPKr   APPLY DN Qty

Item	Product description/code	Qty	AP*	Ott
1	Mitutoyo, Vernier 110-001115500802	5	1"4	
2	Mitutoyo, Vernier 110-002115500103	5	W.	FT
3	Mitutoyo, Vernier 110-003115500105	110		
4	Mitutoyo, Vernier 110-004115500108	110	V	E5

OK

Figure D.38. Apply DN Items for Sales Invoice Screen.

**3.1.2 Update Sales Invoice & 3.1.3 Search Sales Invoice Info.,**

Sales invoice could be revised and cancelled anytime, or even searched history info.

Figure D.39 would allow users to enter relevant sales invoice info, that match users' request; then, the computer will display the sales invoices match relevant data. Detail layout design is skipped here.

Enter Your Request Sales Invoice Data

Display Method

Please Choose Priority Alternative   1>9, 9>1, A>Z, or Z>A

1   2   3   4

Invoice No:   To   Or   Invoice Date:   To

Customer   All Customers   Salesman   All Salesmen   Product   All Items

Search   Exit

Figure D.39. Search Sales Invoice Screen.

### 3.2 SALES CREDIT NOTE

Sales credit note can be issued only in manual method, Figure D.40 is displayed as lay out form of sales credit note. Users must input the Reference Invoice No. and the reason of issuing sales credit note. In case the reason of issuing sales credit note is due to returning of goods, inventory level must also be adjusted under Inventory Adjustment sub menu(5.2).

Issued sales credit note can be revised, cancelled or searched history info. All processes are similar with Sales Invoice menu, details are skipped here.

Customer Info.

Customer Code \_\_\_\_\_

Customer Name \_\_\_\_\_

Credit Note No: \_\_\_\_\_

Date \_\_\_\_\_

Refer Invoice No: \_\_\_\_\_

Product Info.

Item	Prod Code	Prod Brand	Prod Name	Prod Model	Prot%	Count	Unit	Unit Cost	Total Amount
11	1100333	IFuji	d1Pump	2-LIAKJ 567		Pa	1	200001	20000
11	11100334	711Fui	d1Pump	AKJ 620	1	Pa	1	15000	15000

Reason for issuing Credit Note: Return Goods

Discount I \_\_\_\_\_

Or Total \_\_\_\_\_

Sub Total \_\_\_\_\_

VAT \_\_\_\_\_

Grand Total \_\_\_\_\_

Save I \_\_\_\_\_

Cancel I \_\_\_\_\_

Figure D.40. Generate New Sales Credit Note Screen.

### 3.3 SUPPLIER INVOICE

#### 3.3.1 Record Non Inventory Purchase

Non inventory purchase invoice should be recorded under Accounting Dept, as inventory purchase invoice would be recorded in Inventory Dept. Figure D.41 will allow users to record of supplier document and purchase items info. All records under this function will not affect inventory database.





Figure D.43 briefly displays the relevant supplier invoice base on previous step's indication if users' request is displaying in summary. The example is displayed primary on document date and minority on alphabet of customer name. Moreover, supplier invoice No. button is also clickable to see the detail of each supplier invoice (Figure D.44).

Supplier Invoice/Summary/Display Date Supplier name

Date	Sup Name	Sup Invoice No.	Total Amount Before Tax	VAT	Total Amount
11/2/03	MA Co.Ltd	IR3246	10,000.00	700.00	10,700.00
ifilig	BBB Co.Ltd	8235914521	1,000.00	f igo	1,070.00
piiai	JAAA Co.Ltd	RR3249	10,700.00	700.00	10,760.00
16/2103	IEECo.Ltd	65326	1,070.00	70.00	1,070.00
Sum Total			11,540.00	11,540.00	23,540.00

Figure D.43. View Supplier Invoice Summary Screen.

Figure D.44 displays supplier record in detail product info. in order to respond detail display requirement. Once Inventory Dept recorded the purchase and returned the document to Account Dept, Account Dept can view the record in the system with the actual supplier document. If there is a difference, users can make a change by double click the supplier Invoice No. button in order to transfer to Change Supplier Invoice Info. sub menu.

Under Change Supplier Invoice Info. sub menu, users can make any change of supplier invoice info. Lay out design of View Supplier Invoice Info. and Change Supplier Invoice info. are the same.

Supplier Invoice/Detail/Display Date Supplier name

Date	Sup Name	Sup Invoice No.	Prod Qty	Prod_Code	Prod Description	Ur*	Cost	Total_Cost
572/03	1AAA Co.Ltd	R113246	PTS	1100235	IFu* Pump AKZ550	1	3,000,003	6,000.00
			FTcm	11f0236	rFujrT'ump AKZ555	1	2,000,001	2,000.00
			1 Pcs	11100241	141 <sup>3</sup> tnip AkZ560		2031100	2,0100.00
					Sun Total			10:600700
172/03	CCC Co.Ltd	65326	121 <sup>3</sup>	11100235	Fr,F Pump AKZ550		3,00,00,	67dFo i
			11 Pet	1100236	IFujE Pump AKZ555		n00.00l	2,000.00
					Sun Total			8,000.00
					Grand Total			18,000.00

Figure D.44. View Supplier Invoice Detail Screen.

### 3.4 SUPPLIER CREDIT NOTE

Supplier credit note is recorded under this sub menu. In case the reason of issuing credit note is due to returning of goods, inventory level must also be adjusted under Inventory Adjustment menu(5.2).

Supplier credit note could be revised, cancelled or searched history info. All processes are similar to Supplier Invoice menu, and the details are skipped here.

Record Supplier Credit Note

Supplier Code

Supplier Name

Supplier Credit Note No:

Refer Supplier Invoice No.

Date:

Date:

Reasons for issurrq Credit Note

Discount

Net Cost

VAT

Total Amount

Item

Description

Qty

Unk Cost

TotalSost

Mistake of unk cost in supplier invoice

Figure D.45. Record Supplier Credit Note Screen.

4.1 ACCOUNT RECEIVABLE (A/R)

4.1.1 Billing Note(BN)

Billing Note (BN) is a document that generated to customer for the collecting of customer payment. BN can be generated in 2 methods which are Manual and Monthly Auto.

(1) In Monthly Auto method (Figure D.46), users can select an individual customer or all customers, the enter the accounting period month and year. In which, the system will automatically search all related documents and display in BN Layout Form (Figure D.47). This method is suitable for generating BN at the end of the accounting period.

(2) Manual method, BN is generated with custom options with any related documents at any time of accounting period under this method. Figure D.47 is directly displayed to users to choose customer name or code, then choose or enter documents No. in the Combo box. After enter the document No., another related information of such document will be shown automatically.

BEng Note/Generate/Auto

Enter Relevant Nig Note Ida

i

AI Custom= Customer - Code Or Customer Name

Accounting Period

Month Year

Generate Cancel

Figure D.46. Generate BN Auto Screen.

Customer Name	AAA Co.,Ltd	811m42 Note No.	
Cusotmer Coder	A-001	Date:	

Item No.	Document No.	Doc Date	Total Amount	Due Date
1	W:301002	14/1/03	2,000.05	2/2/03
2	iiV0301020	16/1/03	8,000.00	5/2/133
3	IIV0301040	1311/03	1 22,000.00	12/2/03
4	CR 0301002	4/1/03	-2,000.00	3/2703
Total			1 30,000.00	

Figure D.47. BN Layout Form Screen.

Users can revise or cancel issued BN by just input the BN No., Figure D.47 will be displayed to users to change any data of the BN. Or browse the relevant BN No., Figure D.48 will show the summary information of related BN. Users can double click on the BN No. in order to process to Figure D.47.

Users could also view issued BN in summary (Figure D.48) and in detail (Figure D.49), or even arranged by sales documents(Figure D.50). In this view, users can see each sales document's issuing BN status, which document is still not issued BN yet. Sales Doc No. and BN No. are clickable button to see actual document in other windows.

Date	Ellin Nobs No.	Customer	Total Amount	Due Date
11/12/2/03	<a href="#">BN0302001</a>	1 it,A,TEitd	10,70010	18)3/03
i 16. /03	<a href="#">BN0302002</a>	1 AAA Caltd	1 10,00000	fi5/376
1 28/2/03	<a href="#">8N0302003</a>	j 1BBB Co.Ltd	40,000.00	127/3/03
1 128/2/03	<a href="#">8N0302004</a>	1 CCC Caltd	1 100,00.00	27/if03
Total			70,700.00	

Figure D.48. View BN Summary Screen.

BangNote No.	BN Date	Customer	Documents No.	Document Date	Amount	Due Date
ri072031	03/11/2003	IAAA Co.,Ltd	<u>IV0302110</u>	2/2/03	5,000.00	11/3/03
			<u>IV0302111</u>	2/2/03	1 - 15,000.00	11/3/03
			<u>CR030201</u>	10/2/03	1 - 2,000.00	9/3/03
			Sun Total		1 13,000.00	

Figure D.49. View BN Detail Screen.

View Billing Note Status/Sales Documents/Date

Sales Documents	Date	Customer	Total Amount	Due Date	Sling Note Status
<u>V03020011</u>	11/2/03	IAAA	10,000.00	128/2/03	<u>0N0302002</u>
<u>IV03020022</u>	11/12/03	1138B Co.,Ltd	10,000.00	28/2/03	<u>BN0302003</u>
<u>11/03020031</u>	19/2/03	rEIE Co.,Ltd	14,000.00	17/3/03	
<u>IV03020041</u>	110/2/03	1AaA Co.,Ltd	10,000.00	19/3/03	<u>BN0302002</u>
<u>CR03020011</u>	19/2/03	IAAA Co.,Ltd	-2,000.00	10/3	<u>BN0302002</u>

Figure D.50. View BN by Sales Doc Screen.

#### 4.1.2 Receiving Status

##### (1) View Status

Figure D.51 shows the relevant BN No. from previous process of users' selection, and each BN's receiving status such as no received, received but without the approval of bank, and completed receiving from customer.

Receiving Status/BN					Receiving Status		
Date	Sling Note No.	Customer	Total Amount	Due Date	Status	Sources	Date
<u>WAY</u>	<u>BI40302001</u>	IAAA Co.,Ltd	25,000.00	19/3/133		Iabank_3250011	<u>287</u> [13
28/12/03	EIN0302002	IAAA Co.,Ltd	1 40,000.00	127/3/03		ICitibank_3250018.1	30/3103
r2872701	<u>BN0302003</u>	BBB Co Ltd	1 8,110.00	127/3/03			<u>i67</u> <u>107</u>
128	<u>GN0302004</u>	icreeT Ltd.	1 50,013000	127/4/03			f

1 Unreceived  
 P Received  
 1 Completed Receiving Bi

Figure D.51. BN Receiving Status by BN Screen.

Figure D.52 shows relevant sales documents from previous processes of users' selection, additional information will be displayed in each sales document including its BN status and receiving status. In this screen, users can select to arrange by sales document No. or alphabet of customer name.

View Bang Nate Status/S ales Doctments/Date					Bing Note Status	Receiving Status		
Sales Documents	Date	Customer	Total Amount	Due Date		Receiving Bil	Date	Status
IV03020011		AAA Co.,Ltd	1 10,000.00	128/2/03	BN03321132 1	ICThanic,_3201122	13071/03	
IV03020021	11/1/03	IBBB Co.,Ltd	1 10,000.00	128/2/03	BN0302003 1	ITFB_3566566	30/3/03	5 <sup>4</sup>
IV112020031	11/2/03	IEEE Co.,Ltd	1 10,000.00	11/2/03		!us	15/2/03	
IV0302004 I	12/1/03	JAAA Co.,Ltd	10,000.00	19/3/03	BN03132032 1	1Cnbark,3201122	30/3/03	1 <sup>7</sup>
CR03020011	13/2/03	'AAA Co.,Ltd	1 -2,000.130	17/3/03	8NC/302002	1Ciabank_3201122	r30/3/03	1 <sup>7</sup>

ra" Unreceived  
 r Received  
 9 Completed Receiving Status

Figure D.52. BN Receiving Status by Sales Docs Screen.

Figure D.53 shows receiving bill info. from customer's payment, users can select relevant information from customer names and customer approximately payment date in the previous process. Users could know the reference documents and its status of each receiving bill whether it is complete or still waiting the confirmation from bank. This screen can be arranged by receiving bill date or customer name.

View Receiving Status Receiving Ns Date 1/1/03 - 30/1/03						Receiving Bi Status
Date	Receiving Bi Info.	Customer	Total Amotait	Document Reference		
10A/03	IC/S	IEEE Co.,Ltd_	r 9:500.00	1V03010136, 1V03(0008		r40 <sup>1</sup> Completed
10A/03	ITFB_3322011	iMitt Co.,Ltd_	29,500.00	IBN0212110	-	Ai Completed
1121/03	ITFB_3322012	IMA Co.,Ltd.	r 20,500.00	IBN0212110		W Completed
130/1/03	[Citibank 555667; gBBB Co.,Ltd.		r 40,0 00.00	10N0712050, CR03021 4		i Completed
rkii103	[W0_7744111	FFF	30,00e3.00	18N0212011		r Waiting
Total			129,50no			

Figure D.53. BN Receiving Status by Receiving Bill Screen.

Figure D.54 shows over due account receivable of both BN and sales documents in case of such sales document doesn't issue BN yet. However, users also can change the receiving status by just click the change status of each document, and click the document No. to see the detail of each document.

View Receiving Status Over Due AJR\_Documents Date 1/1/03 - 31/3/03

Date	Documents Na	Customer	Total Amount	Payment Due Date	BRastating	Change Receivlg Status
110/1/03	IV0301220	g 15GG Co.,Ltd.	1 9,500.00	110/1/03	Unreceived	Click 1
C15/1/03	13N0301020	g A4A Co. Ltd	297500.00	114/3/03	r Unreceived	Click 1
128/1/03	8N0302009	IBBB Co.,Ltd	1 20,000.00	127/3/03	Unreceived	Click 1
128/1/03	ON0302010	FPI Co. Ltd	r 40,000.00	127/3/03	Unreceived	Click
13/3/03	1V0303013	1GGG Co.,Ltd	F5,0701100	13/3/03	r Unreceived	Click
Total			1102.00a00			

Figure D.54. BN Receiving Status by Over Due Screen.

## (2) Change Status

Once the company receives a receiving bill from customer. Users have to verify whether this receiving bill is paid for a single sales document or BN. If the bill is paid for a BN, users select Change Status by BN sub menu. Additional processes of selecting BN No. will allow users to enter or browse the BN No. Figure D.55 is displayed the BN info. and its previous payment info.

On this screen, users can enters the receiving bills' info., then system will show the bill status as waiting. Users could also mark on the check box as completed if the bill is trustable in order to save time to change the bill status later after the bank's confirmation. If not, users have to log in to this screen again to change the bill status in the future.

Receiving Bil\_Change Status By tiling note

Date	Billing Note No.	Customer	TotalAmount	Receiving Status
130/1/03	13N0301011	rAAA Co.,Ltd.	12,000.00	Unreoeived

6' Received

Receiving BB Info	Date	Amount	Bil Status
1. PIT13_2211001	125/2/03	1 6,000.00	14: Cuff:KW
1TFB_2211002	ro3/03	6,000.00	F Waling

Figure D.55. Change Receiving Status of BN Screen.

4.2 ACCOUNT PAYABLE (A/P)

The company has policy to pay to supplier by the end of following month after date of issued tax invoice or in cash payment in case of necessary.

4.2.1 Account Payment (AP) Cover Sheet.

Account payment cover sheet is needed to contain detail payment info. in order to submit to manager level for payment approval. There are 2 methods of creating AP cover sheet, which are Manual and Monthly Auto.

(1) Manual method (Figure D.56), once users selected supplier and supplier documents, the system will automatically display the detail information of each document and sum in total amount, and users have to select type of payment whether it is cash purchase or credit 30 days.

Generate A/P No\_ Manual

A/P No.

Date

Type of Payment  
CZ Cash Purchase  
Croit 30 days

Supplier Code	Supplier Name	Doctreent No.	Pa <sup>ul</sup> -lent	Amount Before Tax	VAT	Total Amourk
is49971	080<63.,Ltd	71 1123456	1 16/2/03	1,000.00	70.00	1.1370.00
		rSD235F5	114/2/03	Oxon <sup>o</sup>	700.00	111700.00
Total						1'1,770.00

Save I

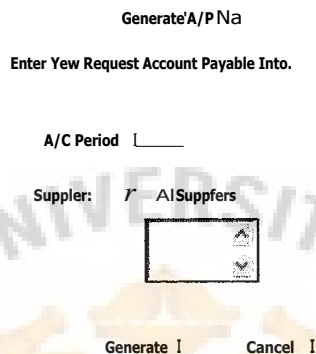
Cancel

Figure D.56. Generate AP Cover Sheet by Manual Screen.



## (2) Monthly Auto

This method is similar to Generate BN menu that allows users to use this function by the end of each accounting period. Figure D.57 is displayed for selecting account period and suppliers. Then, Figure D.56 will show the AP cover sheet in page layout for each supplier.



Generate A/P Na

Enter Yew Request Account Payable Into.

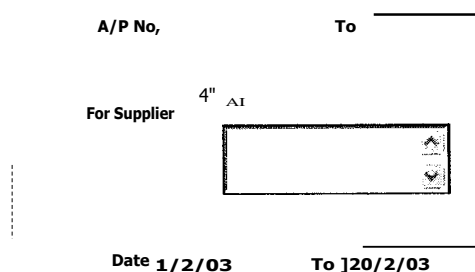
A/C Period

Supplier:

Generate

Figure D.57. Generate AP Cover Sheet by Auto Screen.

Figure D.58 is provided to users to revise, cancel or view issued AP cover sheet. Users could directly input request AP No. if users knows it, then Figure D.56 will be displayed to users to make a modification of the AP cover sheet. If users don't know the AP no., users could also input related information such as approximately AP No., and/or date, and/or supplier. Figure D.59 will display summary of relevant AP No., then users could double click the AP No. to see the detail AP cover sheet in Figure D.56. Any information of the AP cover sheet could be revised or even cancelled in Figure D.56 in case users are using Adjust A/P menu.



A/P No.  To

For Supplier

Date  To

Figure D.58. Browse AP No. Screen.

View Ail' No._Suninety Date 112/03 - 20/2/03								
Date	AMNo.	Supplier.Name/Code	A/C Period	Amotrt Before Tax	VAT	TotalAmotrit	Payment Condition	
11.72703	AP0302001	ixocco.ltd.islaci	j Pan 03	1,000.00	70.00	1,070.03	De& 30 days	
11.72703	AMMON	WY Co.,Ltd./S1033	zi Jan 03	10,000.00	700.00	10200.03	Credk 30 days	
19/2/03	AP0302003	IHHH C,a,Ltd/S9999	1 Feb 03	10,00100	70E0	10200300	Credk 30 days	
Total						22,470.00		

Figure D.59. View AP Summary Screen.

#### 4.2.2 Payment Status

Users could view the payment status of each supplier in 3 menus which are A/P No., Supplier Docs, and Pay Bills. Previous process (Figure D.58) initially allows users to select relevant information of the AP No.

In Figure D.60, users could see the payment status of each AP No. Pay Bill No. and date will be provided if the AP No. is paid.

Payment Status View A/P Na_Date 1/2/03 - 213/2/03							
Date	AP No.	Pay To	Total Amount	Payment Condition	PaYrment Status	Pay Bil Info.	
						Pay BA No.	Date
11/2/03	AP0302001	1HHH Co Ltd.	2E000.00	iC./S	Unpaid	TF13_5550011	12/2/03
128/2/03	AP0300:02	1>CKX Co. Ltd	7,60.00	days	Unpaid		
12871/03	AP03029P	JYYY Co.,Ltd.	8,001100	Credit 30 days	Unpaid		
128/2/03	AP0302004	Ca,Ltd.	50,000.00	days	Unpaid		
Close							

Figure D.60. Payment Status by A/P No. Screen.

In Figure D.61, required suppliers and their documents will be fully displayed the document date, amount, payment term, issued in AP No. and Pay Bill info. if such supplier document is paid.

Payment Status View By Supplier Date 1/2/03 - 28/2103					Payment Status	
Soppier Name/Code	Supplies Document Na	Date	Total Amount	Payment Conditios	A/P No.	Pay Bill Info. Date
1 I>O<X Co.,Ltd	E23659	5/2/03	25,000.00	IDS	' 1AP0302015	IT F8_3322011 10/2/03
	E23630	10/2/03	1 40,000.03	I Credit 30 days	1AF11302100	---
	E23690	IT2/2/03	r ...000.00	'Credit 30 days	V5E0302100	---
1YYY Co.,Ltd.	506	18/2/03	50,000.00	'Credit 30 days	1AP0302200	---
Dose						

Figure D.61. Payment Status by Supplier Docs. Screen.

In Figure D.62, the system will display request Pay Bill info. such as supplier name, total amount, and reference AP No. Moreover, users could also double click each AP No. to see the its details.

see the its details.

Payment Status View_Pay Bill						
Date	Pay Bill No.	Supplies	Total Amount	A/C Period	NP No.	
10/2/03	TF3 3322001	OsX Calkl.	25,000.00	1Feb 03	AP0302020	
2212/03	TFB 3322002	>40{	40,00000	IFeb 03	AP0302022	
128/2/03	TF0 3322003	IYYYCaltld	1 8,000.00	Jan 03	AP0302030	
120/2/03	TF6 3322004	Co-Ltd.	50,000.00	IJan 03	P \$!-3302031..	
Dose						

Figure D.62. Payment Status by Pay Bill Screen.

Once account payable is approved and issued cheque or cash from management level, users have to change the status of AP No. By directly input the AP No., then Figure D.63 is offered users with briefly Info. of the AP No. such as date, supplier name, total amount and payment term. On the right side of the screen, users have to input whether the payment to supplier is on cash or cheque and its cheque No. and date.

Payment Status Change Status A/P No.					Pay Bill Info.			
Date	AP No.	Pay To	Total Amount	Payment Condition	Payment Status	Pay Bill No.	Amount	Date
11/01/13	1313 AP0302001	1HHH Co.,Ltd.	฿ 25,000.00	1Credit 30 days	4* Paid	TFB_0901110	ri0:000.00	125/3/03
						1TFB_0901111	15,000.00	3013103

FigureD.63. Change Payment Status Screen.

## 5.1 PRODUCT CODE

### 5.1.1 New Product Code

Individual product code can be generated both automatically and manually. Under auto mode, Figure D.64 is provided to select/input product brand, product name and product model. If the product description is already recorded in the database, the system will immediately show its product code. If the product description is not exist yet, users have to select first 2 digit code which defines the product category(Table D.2), then the system will automatically generate next number under which product title code. Multiple product items are allowed to generated product code in the same screen.

If users generate product code under Manual mode, same operation processes of Figure D.64 will allow users manually to input desired produce code. However, the system will reject the repeat product code which is already exist in the database if the product description is not the same.

Table D.2. Product Code Category.

10	Nachi, Drill
20	OSG, Tap
30	Blank for future use
40	Machine
50	Measuring Instrument
60	Mechanical parts
70	Electrical parts
80	Special Projects
90	Others

Generate Product Code

Prod Code	Prod Brand	Prod Name	Prod Model	Count	Unit
11	Nachi	[Dull List 500	Dia: 5.0	[Each	11
12	Nachi	r[dList 600	31 Dia: 5.03	rEad	
65		IMotor	rAKJ 4230, 220y,	teach	

Generate I Cancel I

Figure D.64. Generate Individual Product Code Screen.

Figure D.65 will confirm users with the new generated product code or exist product code.

Product Code	Product Description
1. Exist 1100256	Nachi, Dill List500, Dia 5.0
2. New 1202546	Nachi, Dril List 600, Dia: 5.03
3. New 6005560 >	Fuji, Motor, AKJ4230 220v
Accept	Cancel

Figure D.65. Confirm Product Code Screen.

The company has possibility to buy many product items from many suppliers and sell as only one product item. In case of necessary, users could also generate product code under Combination Item menu. The extra function of this menu is that the ending product code will add "C01" and count continuously with the following items. When sales invoice is issued under the normal product code ; for example in Figure D.66 "8002546", all items and quantity of product code "8002546C01" until "8002546C04" will be deducted from the inventory, and all product costs will be added together for cost of goods sold consideration. The limitation of this method is that the normal product code can not be repeated in the future once sales invoice is issued, in order to prevent the misunderstanding of the system in vary of product item and quantity in next purchase. Then, Figure D.65 will be appeared for the final confirmation.

Generate Product Code Combination Items

Prod Code	Prod Brand	Prod Name	Prod Model	Count Unit
Fist 2 des Last 4 dolls				
80	x02546 C01	enyo	IRTibot	rGZ012
	FEZ CO2	Hitachi	'electric cable 2:1 'ZEN 5.5somm	
	F62546 C03	'ABC Co ltd.	ilnstallation	
	102546 C04	(AcB	'Transportation	

Each

Meter

Set

Figure D.66. Generate Combination Product Code Screen.

Exist product code and product description can be changed in Figure D.64 and Figure D.66. Once users input current product code or selects product description, users could change the product code or product description, the new product info. will replace the exist product info. in the database.

### 5.1.2 Inventory Adjustment

There are 4 documents that affect the inventory level which are sales invoice, supplier invoice, sales credit note and supplier credit note. Inventory will be automatically deduced once sales invoice is issued, but it is needed to adjust manually with another documents.

*Add( Supplier Invoice)*, users have to supplier code or name and supplier invoice date and number. Next, directly input product code or select correct product description; then input purchase quantity, unit price and discount amount. If discount is occurred, the system will calculate the actual unit price by deducting the discount on value proportionally. This menu is available for inventory purchase only, all record in this menu will be added to inventory. Therefore, non inventory purchase should be recorded under Finance Docs menu (3.3)

Supplier Code

Supplier Name

Supplier Inv No.

1

Soppier Inv Date

OK

Cancel

Discount

Net Cast

Figure D.67. Add Inventory by Sup Invoice Screen.

If the company's issued credit note is due to returning of goods, the returned goods must be added into the inventory. Figure D.68 is available to input customer info., our Credit Note info., reference Sales Invoice No., returned product info. and product quantity.

In the opposite way, we also has to deduce inventory level for supplier credit note due to returning of goods. Processes and screen layout will be similar to Figure D.68.

Frame?

Customer Code

Customer Name

Our Credit Note No. 1

Our Credit Note Date

Refer Sales Invoice No. 1

- Frame3

Item Prod Code	Prod Brand	Prod Name	Prod Model	city
jJ110256	Nachi	Dri List500	IDia 5.0	
	Nachi	Dnl LiaOO71r5r5703		

OK | Cancel

Figure D.68. Add Inventory by Our CN Screen.

### 5.3 SEARCH INVENTORY INFO.

Figure D.69 is available for users to search request product info. by inputting product code or product description. Multiple product items are allowed to manipulate in the same screen.

Search Ending Inventory Info.

Item Prod Code	Prod Brand	Prod_Name	Prod Model
---	Froisr- 1Nachi		DriL List500
r125646	Nast i		Nit List600 7 Dia: 5.03
I 1303303	0,t1 7LaileV1,F.3FT15011		

OK | Cancel

Figure D.69. Search Inventory Screen.

Figure D.70 shows ending inventory info. such as quantity, count unit, latest unit cost and latest unit price. Price list will be applied as latest unit price if the product item is in common product line.



Ending Inventory Info.							
Item	Prod Code	Product Description	Cecil Unit		Latest Unit Cost	Latest Unit Price	
I	120236	Nachi, Dri List 500, Dia: 5.0	BO	1P7s	1	40.00	60.00
	125646	INachin, Dril List 600, Dia: 5.03	rio	FS	1	50.00	80.00
I j	303303	!Chum& Lathe M/C, PJ1500t	rom	Br		r300L000.00	
Close							

Figure D.70. Ending Inventory Screen.

Inventory Movement, users can view inventory movement under 3 sub menus which are 1. Inflow Inventory, Outflow Inventory and Both Processes(Inflow + Outflow). An additional screen will be appeared for users to enter request product code and indicate inventory movement period. Figure 68 is an example of both processes movement.

Inventory Info._Move 2 Procedures Date 1/1/03 - 31/1/03-----						
Product Code		Product Description			Count Unk	
		Inflow		Outflow		Balance
Frog	Date	Qty	Docnanent	Qty	Document	
i 11/143:3			egin			100
r2		Imo	10235			300
r3--	12,T103	I	1	14T	IV03012221	70
Ft	15271703	120	CN	r 1		80
Close						

Figure D.71. Inventory Movement both Processes Screen.

## 5.4 SAFETY STOCK

Safety stock menu is only available for common products, which can calculate total quantity sold and average monthly sold for each product item, control safety stock policy and warning of lower than safety stock quantity item.

Users have to select request product info. by directly entering the product code, or all common product items, or specific product line in Figure D.72.

Product Code

11100320

Enter

Cancel

C All

lx al Nachi Ddls

▼

11 List 600

12 List 700

13 List 1300

14 List 900

15 List 7570P

Figure D.72. Select Common Product Items Screen.

Figure D.73 allows users to know total quantity sold since beginning of accounting period until current date, average quantity sold per month, current safety stock quantity, supplier for each product item and its normal delivery lead time.

View Current Safety Stock Date1/1/133-213/2/03

Prod Code	Prod Description	Total Sold Qty	Average Monthly Sold	Safety Stock Qty	Supplier	Normal Del very Time
11100222	Nachi,Dril 1600, Dia:2.0	200	100	<b>J 150</b>	ABC Co.,Ltd.	
11100223	1NachiDrill L600, Dia2.1	1 40	20	<b>1 40</b>	ABC Co.,Ltd.	<u>60 days</u>
11100224	1Nachail L600, Dia2.2	100	50	<b>1 100</b>	ABC Caltd	<b>60days</b> _
11100225	1Nachi,Drill L600, Dia2.3	1 50	25	<b>1 40</b>	ABC Co.,Ltd	60 days

Figure D.73. View Current Safety Stock Policy Screen.

Safety stock quantity could be changed depend on the company's policy, Figure D.73 would also appear to users to change its safety stock quantity, or even supplier and normal delivery lead time.

Check Stock Positioning menu allows users to know current stock positioning, safety stock and its safety condition. The system will indicate lower than safety stock items in red colour for the warning to users. However, users have 2 alternatives to view this screen which are all items and on Unsafe Items. Figure D.74 is an example of displaying all items both safety items and unsafe items.

Prod Code	Prod_Description	Current Stock	Safety Stock	Safety Condition
1100222	Nachi,Dril L600, Dia:2.0	110	100	+10
1100223	Nachi,Dril L600, Dia:2.1	40	20	+20
1100224	Nachi,Dril L600, Dia:2.2	80	100	-20
1100225	Nachi,Dril L600, Dia:2.3	50	20	+30

Figure D.74. View Stock Positioning Screen.

## 6.1 PRICE LIST

This menu is available to manager only to change the price list of common products both cost and price.

Figure D.75 allows users to know historical change of cost info. in a specific product item. History Price Info. menu's manipulation will be similar as History Cost info.

History Cost Info.				
Product 1Nachi,Dril L600,, Dia 2.5/n200125			Date 1/1/02 - 28/2/03	
Date	Unit Cost	Soppier	Document	
2/2/02	10.00\$	ABC Co.,Ltd.	TM 235465	
9/6/02	9.50\$	BBC Co.,Ltd.	001001323	
12/12/02	10.00\$	3 ABC Co.,Ltd.	TM 356565	

Figure D.75. View History Cost Info. Screen.

Current Cost & Price Info. menu comprises current unit cost, current unit price and its mark up margin. See Figure D.26.

Once price list policy is changed no matter cost or price, users can manipulate in Figure D.76. Users can change the unit cost and unit price directly, as margin will be automatically calculated. Moreover, users could also input desired margin, then the system will calculate the selling price.

Update Price List				Mar*
Prod Code	Prod Description	Unit Cost	Unit Price	to
1100100	Nadi. Dril L600, Dia IO	1 3.50	50.00	ITC %
1160101	Nacho Dril L601:1, Dia 1.1	35.00	60.00	11.66
11100102	1Nachi, Mil L600, Dia 1.2	f 35.00	60.00	41.66
11100103	1Nachi, Dril L600, Dia: 1.3	1 35.00	60.00	41.66

Figure D.76. Update Price List Screen.

## 6.2 SALESMAN

Salesman' performance and target are also under the control of executive level. Figure D.77 allows users record a new salesman info. such as salesman code which will be automatically generated, salesman name, sales target and sales commission.

Salesman's record could be changed, deleted or viewed any time depend on users' requirement, details are skipped here.

Salesman Info.

Sales person Code	003	Note:
Sales person Name	Narin	
Sales Target / Month	1,000,000 ฿	
Sales Commission		

Figure D.77. Record New Salesman Info. Screen.

Reports Menu is providing an executive results during a period of time of business operation. An additional screen will initially allow users to input request report scope such as report period, individual or all customers/suppliers/salesmen, display arrangement top to least or least to top, and etc. Moreover, some reports also comprise creating graph and chart function such as Monthly Report, Sales Target Report and etc. Initial screen is vary on each report and detail of each initial screen is skipped here.

7.1 SALES REPORTS

Report Sales Summary Customer Sales Amount Top to Least Date 1/2103 - 29/2/03

Item	Customer	SalesAmount	Decrease Debt	Increase Debt	Net Sales	of T sales	Cost	Margin In Amount	MargM In X
1 1AAA Co.,Ltd.// 0011	1AAA Co.,Ltd.// 0011	1,400,000.00	0.00	0.00	1,400,000.00	139.55 %	1200,000.00	200,000.00	114.29 %
1 CCC Co.,Ltd.// H001	CCC Co.,Ltd.// H001	800,000.00	0.00	0.00	800,000.00	122.60 %	650,000.00	150,000.00	119.7E %
1 HHH Co.,Ltd.// 8108	HHH Co.,Ltd.// 8108	1,500,000.00	0.00	0.00	750,000.00	121.19 %	650,000.00	100,000.00	113.33 %
1 1389 Co.,Ltd.// DI397	1389 Co.,Ltd.// 8108	500,000.00	0.00	0.00	500,030.00	5.12 %	410,001.00	90,000.00	119.00 %
1 ODD Co.,Ltd.// 11303.013	ri ODD Co.,Ltd.// DI397	1,100,000.00	-10,000.00	0.00	90,000.00	12.54 %	55,300.03	35,001.00	139.89 %
Total		3,500,000.00	-160,000.00	0.00	3,541,301.30	1100 %	2,965,000.00	575,000.00	119.39 %

Figure D.78. Sales Report\_Summary\_Customer Sales Value Screen.

Report\_Sales Summary Product Value Top to Least\_Date1/2/03 -28/2/03

Item	Product	Sold Cite	Returned Qty	Net Sales	Count Unit	NetSales	Cost	Margin In Amount	Margin In
1 Denyo,Robot 11200// 660023	Denyo,Robot 11200// 660023	1	0	1	11	1,500,000.00	1,200,000.00	300,001.00	120,00%
1 Nachi,Doll L1300,Dia: 3.011110030	Nachi,Doll L1300,Dia: 3.011110030	1420	0	1400	Each	400,000.03	290,000.00	110,000.00	F7.50%
3 1Fujir, Pump AA15-23//440236	1Fujir, Pump AA15-23//440236	10	0	10	Each	301E00.00	260000.013	40,00E00	113.33 %
1 41>00<, instatation work//8013045	41>00<, instatation work//8013045	1	0	1	lob	3130000.00	270,00E00	30,000.00	10.00%
1 5 IN achinal L6013, Dia: 5.011110050	5 IN achinal L6013, Dia: 5.011110050	350	0	353	rEacil	24E001193	170.006.00	70.00E00	129.17 %
Total		1762	0	1762		22401000.03	2,190,000.00	5513,000.03	W.08%

Figure D.79. Sales Report\_Summary Product Value Screen.

Product Category	Sales Amount	Must Amount	Net Sales Amount	1%)
adi cln11/11!"*!"	300,000.00	1100	1 300,000.00	,10.07
SG Tap/12	180,000.00	0.00	1 180,000.00	6.04
achinery/I1""*	1,500,001100	0.00	1 1,500,000.00	50.33
Measurement Instrument1/5""	90,000.00	0.00	1 90,000.00	Fi11
Mechanical Parts/16""*****	1 500,000.00	0.00	500,000.00	16.78
Electrical Parts/7""*****	330,000.00	0 00	1 330,000.00	111.08
Special Orders/Ir""*****	--80,000.00	0.00	j 00,000.00	r2113
Total	1 2,980,000.00	0.00	1 2,980,000.00	100

D.80. Sales Report\_Summary Product Category\_Sales Amount

Product Category	Sales Amount	Sales Cost	Margin
Handi dffilli/1''''''''''	300,000.00	220,000.00	80,000.00
SG Tap112''''''	180,001100	130,000.00	amoaco
machinery114''''''''*	1,500,000.66	1,350,000.00	150,000.00
Measurement Insurnent115''''''r	Tama]	70,000.00	20,000.00
Mechanical Parts116'='''	1500,000.00	400,001100	100,601100
Electrical Parts17''''	330,000.00	290,000.00	40,0601013

Product Category	Sales Amount	Sales Cost	Margin	
Nadi dfilli/1''''''''''	300,000.00	220,000.00	80,000.00	3&36
OSG Tap112''''''	180,001100	130,000.00	amoaco	38.46
Machinery114''''''''&	1,500,000.66	1,350,000.00	150,000.00	
Measurment Insurgent115''''''''r Tama]	70,000.00	20,000.00		28.57
Mechanical Parts116''''''	1—500,000.00	400,001100	100,60110r0	25.00
Electrical Parts1/7—	r 330,000.00	290,000.00	40,0601013	13.79
Special Orders/1/3—	80,000.00	60,001100	n 20,000.06	33.33
<b>Total</b>	<b>2,980,000.00</b>	<b>2,520,000.00</b>	<b>460,000.00</b>	<b>1(125</b>

Report SobsSunman; Salesman Salesman Code 1 -9\_ Date 112/03 - 28/2103

Salesman rSoinchai/001						
Customer	Net Sales		Cost	Margin In Amount	Margin In	
FAAA Co.,Ltd.// A003	1,400,000.00		1,200,000.00	200,000.00	7473 %	
IBBB Co.ltd.//B011	1	80,000.001	60,000.00	20,000.00	125.00 %	
1FFF Co..Ltd//F009	100.00000		70.000.00	1	30.00000	
1666 Co.,Ltd.i/ 6108	1	220,000.00	170,000.00	1	50,000.00	2273 %
Total for Saleman > Somchai1001	1000000.00		1	1.50,000.00	300.000.00	FCC/ %

Salesman somwang/002						
Customer	Net Sales		Cost	Margin In Amount	Margin In X	
1CCC Co.,Ltd.// A003	1000000.00		600,00100	200,001100	25.00 %	
1000 Co.,Ltd.// A003	40,000.00		29,000.00	3	11.000.00	27.50 %
co.J...bin A003	1000000.00		120,000.00	1	30000.00	20.00 %
Total For Saleman > Somwang/002	990,000.00		749,001100	1	241,006000	24.24 %
Grand Total Sales		2,790,000760	1	2249,00000	541,000.00	

Figure D.82. Sales Report\_Summary\_Salesman Screen.

Report Monthly Sales Month 1- 5/03

Item	Customer	Jan'03	Feb'03	Mat'03	Apt'03	May'03	Total
1	FT littev <sup>5</sup> . C.o..Ltd.i/A001	200,000.001	100,001100	50,000.00	50,000.003	100,000.00	500,000.00
2	SAAB Ca .Ltd. i/A002	100,000.00	0.00	50,000.00	100,000.00	40,000.00	100,000.00
3	1AAC Co.Ltd.//A003	10,000.00	100030.00	500,0011001	50,0010.001	20,000.00	320,000.00
4	BBB Co.,Ltd_1/131:01	10,000.00	5,000.00	0.00	1:661	13.00	15,000.00
5	il:;CC Co.,Ltd.h0001	0.00	0.00	0.00	0.001	40,000.00	40,000.00
Total		1 220,000001	205,000.001600,000:001	110.001103	110,000.00	1	975,001100

Figure D.83. Sales Report\_Summary Monthly Report Screen.

Report SalesTarget Month 1- 2/03

Salesman	Jan'03				Feb'03				Total			
	Actual Sales	Target Sales	DIF		Actual Sales	Target Sales	DIF		Actual Sales	Target Sales	OW	
1Mr.Somchai/001	440,000.00	1 400,000.00	1:1i6i		360,000.00	1 400,000.03	10.0%		800,000.00	800,000.00	0%	
Pr.Somwong/002	760,000.00	F8007000.00	5.0%	1	720,000.00	1 800,000.00	-10.0%	E	1,520,000.00	1,600,000.00		
1Mr.Somporn/003	600,000.00	400,000.00	+50.0%		550,000.00	1 500,000.00	+10.0%		1,150,000.00	900,000.00	+27.8%	
Total for al salesmen	11,800,000.00	1,600,000.00	+12.5%		11,630,000.00	8700,000.00			3,430,030.00	3,300,000.00	F-7379i	

Figure D.84. Sales Report\_Summary\_Sales Target Screen.

Report Detail Customer Date 1/2103 - 28/2/03									
Customer									
Doc No.	Doc Date	Prod Description	Qty Sold	Sales Amount	Sales Cost	Margin	1,41		
MA Co.,Ltd//A001									
11V0302002	11/21133	Machin, Dril L600. Dia: 4.6/41100464	147	1200.00	1.000.00	2130.00	120.00		
		Machin, Dril L600, Diis. 4.8//1100468	100	2,000.00	1,500.1313	500.00	1310		
11w0302023	ribri 03	Machin, Dril L600, Dia: 4.6111100464	140	1,200.00	1,030.00	200.00	120.00		
		A12200n/113601655	1	25700.00	20,000.00	5,000.00	raid		
ICN0302002	121/2/03	1Nachin, Dril L6013. Dia: 4.61/1100464	1-10	-300.00	-250.00	-50.00	120.00		
Total for customet: AM Co.,Ltd.1/A001			iff	28,100.00	23,250.00	4,850.00	120.86		
MC Co.,Ltd1/A002									
11V0302066	118/2/03	Omron, Photo Sensor ZNEI 3-212114202655	100	50,000.00	413,000.00	10,000.00	125.00		
Total for customer: MC Co.,Ltd.1/A002			1100	50,0130.00	40,000.00	10,000.013	2500		
Grand Total for Al Customers			f221	78,100.00	63150.00	14,850.00	23A8		

Figure D.85. Sales Report\_Detail\_Customer Screen.



Repod\_DetailfroclAct\_by product code Date112/03 - 2812103

Prod Description	Qty	Sales Amount	Sales Cost	Margin
Sold to Customer				
1. Nadi DM 1.1300 Dia: 1.0mm//1100010, Count Unit Pcs.				
AA;E:co.,Ltdcuakooi	10	6,000.00	4,200.00	1,800.00 42.86
[BBB Co.,Ltd./18001	500	22,500.00	17,500.00	5,000.00
CCC Co.,Ltd//0001	400	18,000.00	14,000.00	4,000.00 28.57
Total	1020	45000.00	35100.00	10,800.00 30.25
2. Nachi, Dril L600 Dia:Timm/11100011, Count Unit Pcs.				
1BBB Co.,Ltd./13001	500	22,500.03	17,500.00	5,000.00 28.57
DDD Co.,Ltdi/D001	10	500.00	350.00	150.00 42.86
Total	510	23,000.00	18,000.00	5,000.00 21.74
Grand Total for All Product Items	11538	69,500.00	53,700.00	15,800.00 29.42

Figure D.86. Sales Report Detail Product Screen.

Report Detail Salesman\_by customer code product code Date 1/2103 - 2812/03

Salesman/customer	Prod Description	Qty	Sales Amount	Sales Cost	Margin
1. Salesman: Mr.Somchai/1001					
MA Co.,Ltd./14001					
iNactarill.600 Dia: 1.01/1100010	1120	6,000.00	4200.00	1,800.00	-
1Nachi, Dill L800 Dia:32.5/11300565	12	12,000.00	8,000.00	4,000.00	150.50
1Hkachi, Motor HHM20200W/4302232		18,000.00	14,800.766	4,000.00	128.757
Total for AAA Caltd.i/A001	1123	36,000.00	26,200.00	9,800.00	3740
DDD Co.,Ltd/10001					
16enyo, Spot Gun TQ1200N115002036	FT	720,000.00	Guano		
1XXX, Intstallation world/8066652		140,000.00	140,000.00	40,000.00	28.57
Total for DDD Ca,Ltd./D001		980,000.00	860,000.00	120,000.00	113.95
Grand Total for Salesman Mr.Somchai/001	125	1,016,010.00	886200.00	1123,706.66	114765
Grand Total for al Salesmen					

Figure D.87. Sales Report Detail\_Salesman Screen.

Report Sales analysis All Customer Quarter 12 year 02, 03

Customer	Qua1'02	Clua1'03	DIF	Qua2'31	Qua203	DIF	Total'02	TotaT03	OW
AAA C° ,LtdliA1001	I	aoa400:000.00	T		soaOEo.00		r"-06E	1:88000.00	r>7.7
AAC Co.ltd.//A1302	1	500000.00	350,000.00	-30.0%	250.000.00	400.000.00	rif010%		thaTforia
Po Ca ltd.//A003		204000.00	0.00	100.0	80,000.00	1200.000.00	+150.0%	F280.0130.00	r 208,000.00 -28_6%
Total for al Customers		r 700,000.00	1750,000.00	r+771%	r 330,000.00	[1,202.3.0(1+2133.6%		0073riw),000.00	1+89.3%

Figure D.88. Sales Report\_Sales Analysis\_ Quarterly Screen.

7.2 PURCHASE REPORTS

Report Purchase Common Product by supplier\_purchase value top to least summary Date 1/2/03 - 28/2/03

Item	Supplier	Purchase Amount	Ackust Amount	Net Purchase Amount	% of Purchase
1	XXX Co.,Ltd.//SX001	640,000.00	-20,000.00	620,000.00	42.18
2	XYZ Co.,Ltd.//SX002	403,000.00	0.00	r 400,000.00	
3	YYY Co.,Ltd.//SY001	300,000.00	0.00	1-3007060700	
4	YYZ Co.,Ltd.//SY001	1200a	-20,00000	E100,000.00	rub
5	ZZZ Co.,Ltd.//SZ001	50,00aoo	aoo	ouoao0	
Total		1,510,000.00	-40,000.00	1,470,000.00	100.60

Figure D.89. Purchase Report\_Common Product by Supplier Summary Screen.

Report Purchase All inventory purchase Supplier Deal Date1/2/03 - 28/2/03

Suppler	ProducLDescription	Qty	Net Purchase Amount
XXX Caltd.1/SX001	Naclr, Dril L600 Dia 1.1//1100010	500	16)10.00
	Nachi, Dril L600 Dia 5.0111100050	1000	40,000.00
	Dril L900 Dia 8.05111300856	100	30,000.00
	Nachi, Dril L600 Dia 12.0//1100120		-1,000.00
	Total for X).Ci< Co.,Ltd.11SX001	1600	05,000.00
XXY Coltd..11SX002	!Ornron, Photo Sensor KT005117020445		katia00
	!Fuji. PLC MIN-25-0117200850		16,000.00
	Total for XXV Co.,Ltd119X002	1.	20.000.00
Grand Total for all Suppliers		1-1609	105,000.00

Figure D.90. Purchase Report\_All Inventory Purchase by Supplier Detail Screen.

Report Purchase AI inventory purchase Product by product value top to least Date 1/2/03 - 28/2/03

Item	Prod Description	Qty	Purchase	Adjust Amount	Net Purchase Amount	% of Purchase
1-T 10kuma, Lathe mik PT1000T114100214		1	1,400,000.00	1 0.00		166.04
1- 2 16ensiTCWelding mic KK200114500502		2	400,000.00	1 0.00	400,000.00	118.87
ri iWZ... Installation work/18100230		1T	200.000.00	r a d.b0	200.000.00	9.43
Fri' INachi, Dril L600 Dia 5.0111100050		12000	70,000.00	1 0.00	70.000.00	3.30
ri 1Hitachi, lectric Cable 5.5sqmm117700222		rfa1	50.000.00	1 0.00	50,000.00	1 2736
Total for all Inventory Purchase		12NW	F212:000.00	1 0.00	2,120,000.00	100.0 <sup>0</sup>

Figure D.91. Purchase Report\_All Inventory Purchase by Product Screen.

Report Purchase All Purchase Date 1/2/03 - 28/2/03

Type of Purchase	Purchase Amount	Adjust Amount	Net Purchase Amount	Z of Total Purchase
Common Inventory	800,000.00	0.00	800,000.00	139.22
Uncommon Inventory	1,160,000.00	<sup>w</sup> -10,000.00	1,150,001.100	56.37
Office Supplies	90,000.00	0.00	90,000.00	4.41
All Purchases	12,050,000.00	-10,000.00	12,040,000.00	1160

Figure D.92. Purchase Report All Purchases Screen.

Report Purchase Product Category Date 1/2/03 - 28/2/03

Product Category	Purchase Amount	Adjust Amount	Net Purchase Amount	(%)
Nachi chill//1'''''	1 300,000.00	-10,000.00	I 280,000.00	110.07
OSG Tapi12'''''	1 180,000.00	0.00	I 1130,000.00	6.14
MachineryibV'''''	1 1300,000.00	0.00	11,500,000.00	150.33
Measurment Instrument//5'''''	E 90,000.00	0.00	1 10:000011	ra02
Mechanical Parts//6'''''	1 500,000.00	0.00	I 500,000.00	11170
Electrical Parts//7''	1 330.00 0.00	-to,00i.oii	ri20,000.00	11.00
Special Orders//8''''	E 80,1300.00	1 a00	r 80,000.00	r 2.6e
Total	1 2,980,0013.00	1 -20.0011100	1 2.960,000.00	ino

Figure D.93. Purchase Report Product Category Screen.

7.3 FINANCIAL REPORTS

RepokFinancial Sales summary\_Date 112103 -2812/03

Date	Doc No.	Customer	Sales Amount	VAT Amount	Total Amount
1/2/03	IV0302001	AAA Co.,Ltd./IA001	Alcoa00	1,400.00	21A013788
1/2/03	IV0302002	BBB Co.,Ltd.1113001	100,000.00	7,000.00	107200.00
2/2/03	IV0302003	BBB Co.,Ltd./19001	20,000.00	1,400.00	21,400.00
2/2/03	IV0302004	ODD Co.,Ltd./D001	100,000.00	7,000.00	107 000.00
3/VC13	IV0302005	AAA Co.,Ltd.1/A031	10,0013.00	700.00	10,700113
10/2/03	0413302001	BBB Co.,Ltd./B001	-10.000.00	-700.00	-10.700.00
Total			n 240,000.00	16,800.00	256,80(100

Figure D.94. Financial Report\_Sales Summary Screen.

Report Financial Profit summary Month 1- 3103

A/C Period	Net Sales	Net Purchase	Gross Profit	(%)
Jan 03	2,500,000.00	2,900,000.00	-400,000.00	-16.00
1Feb 03	40107000.00	3,200,000.00	17,800.000.00	20.00
IMar 03	3,1100,000.00	3,000,00000	+800,000.00	21.53
Total	10,300,000.00	9,100,000.00	1,200100.00	51.65

Figure D.95. Financial Report Profit Summary Screen.

7.3 INVENTORY REPORTS

Report Ending Inventory In stock Inventories by product code Summery Date 2812/03						
Item	Prod Code	Prod Description	Count_Unit	Qty	Unit Cost	Total Amount
1	1100010	Nachi, DM L600 Dia 1.0	Each	PTO 1	36FO	12,000.00
2	11100030	Nachi. Drill L600 Dia an	iEach	F 20	33.00	660.00
3	1100035		Each	100	33.00	3,300.00
	11100038	INachi, Drill L600 Dia: 3.8	Each	1 10	35.00	350.00
	11100040	Nachi, Dal L600 Dia: 4.0	Each	WO	33.00	33,000.00
Total				152		48,310.00

Figure D.96. Inventory Report Ending Inventory\_ Summary Screen.

Report Endng Inventory AllInventodes Items by product code Detml Date 28/2/03													
Item	Prod_Code	Prod Description	Count_Unit	Qty				Amount					
				Begin	Ptschase	Sales	Adjust	Balance	Begin	Purchase	Sales	Cost	Az ust
r 1110	1	Nachi, Doi L600 Dia: 1.0	rEach	450	1800	a000	I	250	13.50000	r54.000	00raaoaoo	riiiiiir	750.00
1 0100020	f	Nachi, DTA L600 Dia: 2.0	(Each	1 1001	71 00	E900	I	01 0	3.000.00	24,000.00	1 27,000.00	1 01101	0.00
1711001930	(Nadi Dri	L600 Dia: an	(Each	1 711	ETI 731)				1	0.001	0.001	aoo [ o.00	0.00
1 411100040	(Moot* Dui	L600 Dia 4.0	Each	1					1	0.00	go.000.00	1 42:0oa00f.3a00.0	00
Total				[Thro	/moo[	4300	Ra	950	1 16510.00	12850.00	1 19660.00	1 100A1 285E0.00	

Figure D.97. Inventory Report Ending Inventory Detail Screen.





**APPENDIX E**  
**FORMS AND REPORTS DESIGN**



**TMA (THAILAND) CO.,LTD.**  
11/111 Pattanakarn Road, Suanluang,  
Prawet, Bangkok 10250  
Tel: 0-3333-3333      Fax: 0-2222-2222

**QUOTATION**

To: AAA Co.,Ltd.  
Attn: Mr.Somchai/Purchasing Dept.  
CC: Mr.Somwang/Maintenance  
Tel: 0-1111-1111  
Fax: 0-1111-1112

Date: 3/28/2003  
Quo No: Q03-0320  
Your Ref:

We are pleasure to quote you the commodities as the term and conditions belows:

No:	Qty	Description	Unit Price	Total	Delivery
1	100 Pcs	KHK, Gear SS1.5-20	100	10,000	3 Days
2	50 Pcs	KHK, Gear SS1.5-21	120	6,000	3 Days
3	50 Pcs	KHK, Gear SS1.5-22	140	7,000	30 Days
4	20 Pcs	KHK, Gear SS1.5-23	160	3,200	3 Days
			Total	26,200	

Trade Terms:

- 1. Currency: Thai Baht
- 2: Delivery Place: Your Factory
- 3. Payment Term: 30 Days After Delivery
- 4 Validity: 30 Days
- 5: VAT: Excluded
- 6: Warranty:

\_\_\_\_\_  
Sales Staff

\_\_\_\_\_  
Sales Manager

Figure E.1. Sales Quotation Form.

**TMA (THAILAND) CO.,LTD.**  
11/111 Pattanakarn Road, Suanluang,  
Prawet, Bangkok 10250  
Tel: 0-3333-3333      Fax: 0-2222-2222

**PURCHASE ORDER**

Supplier: TMA Coporate  
Attn: Mr.Yamaha  
Tel: 001-70C-7000000(  
Fax: 001-xx-xnonot

PO No: P0030110  
Date: 3/30/2003  
Your Quo: AT020108

No:	Qty	Description	Unit Price	Total	Request Date
1	100 Pcs	KHK, Gear SS1.5-20	200	20,000	05-Apr-03
2	50 Pcs	KHK, Gear SS1.5-21	250	12,500	05-Apr-03
3	50 Pcs	KHK, Gear SS1.5-22	280	14,000	05-Apr-03
4	20 Pcs	KHK, Gear SS1.5-23	330	6,600	05-Apr-03
Total				53,100	

For Customer: AAA Co.,Ltd.  
Payment Tenn: 30 Days  
Currency: Yent

Confirm & Accept By Vendor

TMA (Thailand) Co.,Ltd.

Vendor

/ /

Date

Authorized Singature

/ /

Date

Figure E.2. Purchase Order Form.

**TMA (THAILAND) CO.,LTD.**

11/111 Pattanakam Road, Suanluang, Prawet, Bangkok 10250  
Tel: 0-3333-3333 Fax: 0-2222-2222

**Billing Note**  
**lma&**

Customer: A001  
AAA Co., Ltd.  
999 Sathon Road, Bangrak,  
Bangrak, Bangkok 10200

Billing Note No: BN030082  
Date: 1-Apr-03  
Payment Term: 30 Days  
Currency: Baht

No:	Document No:	Date	Due Date	Amount	Paid	Balance
1	IV0303008	2-Mar-03	30-Apr-03	10,000.00		10,000.00
2	IV0303020	8-Mar-03	30-Apr-03	100,000.00		100,000.00
3	IV0303021	8-Mar-03	30-Apr-03	18,000.00		18,000.00
4	IV0303098	18-Mar-03	30-Apr-03	42,000.00		42,000.00
5	IV0303202	24-Mar-03	30-Apr-03	57,000.00		57,000.00
6	CR0303002	22-Mar-03	30-Apr-03	-15,000.00		-15,000.00
(Two Hundred Twenty Two Thousand Baht Only)					Total	212,000.00

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TMA (Thailand) Co.,Ltd.

fiaejmna \_\_\_\_\_

Figure E.3. Billing Note Form.

**TMA (THAILAND) CO.,LTD.**

11/111 Pattanakarn Road, Suanluang, Prawet, Bangkok 10250  
Tel: 0-3333-3333 Fax: 0-2222-2222

**Payment Sheet**

**Pay To: SX001**  
**XXX Co., Ltd.**  
991 Sathon Road, Bangrak,  
Bangrak, Bangkok 10200

Payment No: BN030082  
Date: 1-Apr-03  
Payment Term: Credit 30 Days  
Currency: Baht

No:	Document No:	Doc Date	Pay Date	Amount	Paid	Balance
1	KT33230	12-Mar-03	30-Apr-03	10,000.00		10,000.00
2	KT33231	12-Mar-03	30-Apr-03	50,000.00		50,000.00
3	KT33245	18-Mar-03	30-Apr-03	18,000.00		18,000.00
4	KT33550	30-Mar-03	30-Apr-03	5,000.00		5,000.00
5	OKT00234	14-Mar-03	30-Apr-03	-8,000.00		-8,000.00
(Seventy Five Thousand Baht Only)					Total	75,000.00

Type of Payment:  
ED Purchase of Inventory  
Purchase of Office Supplies  
Tax Payment  
ED Others \_\_\_\_\_

Approved

General Manager  
\_\_\_\_\_  
Date

Figure E.4. Payment Sheet Form.

**TMA (THAILAND) CO.,LTD.**  
11/111 Pattanakam Road, Sonninang,  
Prawet, Bangkok 10250  
Tel: 0-3333-3333 Fax: 0-2222-2222

**Tax Invoice/Delivery Order/Receipt**

intithrtalfitaning 301 1111 11

Customer: A001 AAA Co., Ltd. 999 Sathon Road, Bangrak, Bangrak, Bangkok 10200		INV No: IV0303089 Date: 12-Mar-03 Customer PO No: KT23501	
OnrQnn		Salesman.	
Q03-0320	7.00	Somchai	30 Days
		P00302202	

No:	Prod Code	Description	Qty	Unit Price	Total ..
1	601120	KHK, Gear S S1.5-20	100 Pcs	100.00	10,000.00
2	601121	KHK, Gear SS1.5-21	50 Pcs	120.00	6,000.00
3	601122	KHK, Gear S S1.5-22	50 Pcs	140.00	7,000.00
4	601123	KHK, Gear S S1.5-23	20 Pcs	160.00	3,200.00

Amount In Character ( Twenty Eight Thousand Thirty Four Baht Only)		Total	26,200.00
		VAT	1,834.00
		Grand Total	28,034.00
Received By	Delivered By	TMA (Thailand) Co.,Ltd.	
<div></div>	<div></div>	<div>Authorized Signature</div>	
<div>/ /</div> <div>Date</div>	<div>/ /</div> <div>Date</div>	<div>Copy for Customer</div>	

Figure E.5. Sales Invoice Form.

Auto, Decimal format: non specific

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2st Revision: --

2. 1.

<...End of Report....>

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Nil	Customer	Sales Amount		Increase		Net Sales	% of Total Sales	Margin in	
				Debt	Debt				Amount
1	BBB Co.,Ltd.//B001	1,936,000.00	1,936,000.00	4		1,936,000.00	30.63%	0.00	1,936,000.00
2	BCC Co.,Ltd.//B015	1,400,000.00	1,400,000.00			1,400,000.00	22.15%	0.00	1,400,000.00
3	DDB Co.,Ltd.//D022	990,000.00	990,000.00			990,000.00	15.66%	0.00	990,000.00
4	AAA Co.,Ltd.//001	1,150,000.00	1,150,000.00	6		870,000.00	13.76%	0.00	1,150,000.00
5	ABD Co.,Ltd.//A018	480,000.00	480,000.00			480,000.00	7.59%	0.00	480,000.00
6	IBC Co.,Ltd.//a009	325,000.00	325,000.00	6		325,000.00	5.14%	0.00	325,000.00
7	DBA Co.,Ltd.//D026	108,000.00	108,000.00	6		108,000.00	1.71%	0.00	108,000.00
8	EEF Co.,Ltd.//E018	54,000.00	54,000.00			54,000.00	0.85%	0.00	54,000.00
9	EEG Co.,Ltd.//E017	53,200.00	53,200.00			53,200.00	0.84%	0.00	53,200.00
10	EEA Co.,Ltd.//E010	42,000.00	42,000.00	1500		43,500.00	0.69%	0.00	42,000.00
11	CCB Co.,Ltd.//C011	35,000.00	35,000.00			35,000.00	0.55%	0.00	35,000.00
12	CCA Co.,Ltd.//C009	10,800.00	10,800.00	6		10,800.00	0.17%	0.00	10,800.00
13	CCD Co.,Ltd.//C008	8,800.00	8,800.00			8,800.00	0.14%	0.00	8,800.00
14	CCH Co.,Ltd.//CO28	7,200.00	7,200.00			7,200.00	0.11%	0.00	7,200.00
Total		6,614,000.00	-294,000.00	1,500.00		6,321,500.00	100.00%	0.00	6,614,000.00



Inventory Report Form.





**APPENDIX F**  
**PROCESS SPECIFICATION**

## PROCESS SPECIFICATION

---

Account Payable Controlling Process	Process
-------------------------------------	---------

*Description:*

Process of controlling account payable, arrange payment to suppliers and etc.

*Process #:* 4.5

*Process Description:*

- 1> Receive awaiting payment info. from Awaiting Payment file.
- 2> Check the due date of payment.
  - IF the due date of payment is over,
  - THEN check the correctness of awaiting payment info.
  - ELSE ignore it.
- 3> Check awaiting payment info. with purchase document
  - IF awaiting payment info. is correct comparing with recorded historical purchase documents.
  - THEN arrange to issue payment cover sheet.
  - ELSE contact supplier with incorrect documents.
- 4> Generate payment cover sheet.
- 5> Send payment cove sheet and related documents to manager for issuing payment bill.
- 6> Receive payment bill from manager.
- 7> Send the payment bill to supplier
- 8> Receive receipt from supplier
- 9> Update awaiting payment database.

*Location:*

Financial Process ( 4 )

---

Account Receivable Controlling Process	Process
--	---------

*Description:*

Process of controlling account receivable activities such as issuing billing note, collect payment from customers.

*Process #:* 4.3

*Process Description:*

- 1> Receive awaiting income info and sales info.
- 2> Generate billing note to customer.
- 3> Control the due date to receive receiving bill from customers.
  - IF customer payment's due date is over,
  - THEN arrange to collect money from customer.
  - ELSE ignore it.
- 4> Send our receipt to customer in case received customer payment already.
- 5> Update awaiting income database.
- 6> Send the receiving bills for depositing to bank.
- 7> Receive confirmed deposit statement from the bank.
- 8> Update receiving bill status in the awaiting income.

*Location:*

Financial Process ( 4 )

Approved PR	Process
<i>Description:</i> Product items and quantity of purchase request is approved. <i>Process #:</i> 2.4.5 <i>Process Description:</i> 1> Receive information of approved product quantity. 2> Receive information of appropriate delivery time of purchase request. 3> Approve shortage product items and quantity of purchase order.  <i>Location:</i> <u>Evaluate Product Shortage Info.</u> ( 2.4 )	
Arrange Customer Return Goods	Process
<i>Description:</i> Process of acceptance returning goods from customer. <i>Process #:</i> 1.3.7 <i>Process Description:</i> 1> Receive returning goods info. from customer. 2> Consider the returning reasons. IF the returning reason is acceptable THEN accept the returning goods, and inform the returning goods info. to Purchase Department for issue credit note. ELSE ignore it.  <i>Location:</i> <u>Receive Customer Order</u> ( 1.3 )	
Arrange Order to Accounting	Process
<i>Description:</i> Prepare customer order to Accounting Department for issuing sales invoice <i>Process #:</i> 2.2.3 <i>Process Description:</i> 1> Receive promptly delivery customer order. 2> Arrange the customer order to Accounting Department for issuing sales invoice.  <i>Location:</i> <u>Process Common Product Order</u> ( 2.2 )	
Arrange to Issue Delivery Note	Process
<i>Description:</i> Arrange customer urgent order to issue the company temporary delivery note. <i>Process #:</i> 1.3.5 <i>Process Description:</i> 1> Receive customer urgent order info. 2> Arrange the order info. to issue temporary delivery note.  <i>Location:</i> <u>Receive Customer Order</u> ( 1.3 )	

---

Arrange to Issue Sales Invoice

Process

*Description:*

Arrange customer order that is delivered already to issue sales invoice.

*Process #:* 1.3.3

*Process Description:*

1> Receive delivered order.

2> Arrange the customer purchase order to issue sales invoice.

*Location:*

Receive Customer Order ( 1.3 )

---

Assume as Incorrect Order

Process

*Description:*

Customer order is assumed as under incorrect condition.

*Process #:* 2.3.5

*Process Description:*

1> Receive information of unaccepted profit, or impossible request delivery time, and other uncompleted customer order info.

2> Assume such customer order is incorrect.

3> Inform the incorrect customer order to Sales Department.

*Location:*

Process Uncommon Product Order ( 2.3 )

---

Calculate Price Level

Process

*Description:*

Process of calculation selling price.

*Process #:* 1.2.4.2

*Process Description:*

1> Receive supplier quotation, customer info. and inquiry info.

2> Receive assigned mark up margin.

3> Calculate selling price.

4> Receive selling price.

*Location:*

Issue Quotation ( 1.2.4 )

---

Check Cancelled Invoice During the Month

Process

*Description:*

Process of checking whether there is cancelled invoice during the accounting period or not.

*Process #:* 4.1.1

*Process Description:*

1> Receive customer order.

2> Receive sales info. from the sales database.

3> Check cancellation of Sales Invoice during the month of accounting period.

IF occur cancelled Sales invoice,

THEN there is cancelled Sales Invoice.

ELSE there is no cancelled Sales Invoice.

*Location:*

Issue Sales Invoice Process ( 4.1 )

---

Check Completeness of Doc and Goods

Process

*Description:*

Process of checking supplier documents and delivered goods.

*Process #:* 3.1.1

*Process Description:*

- 1> Receive goods from suppliers
- 2> Check condition of received goods,  
IF received goods is correct and in good condition,  
THEN consider as correct goods.  
ELSE consider as incorrect goods.
- 3> Receive supplier invoice.
- 4> Check the delivery status.  
IF the supplier invoice is replaced for previous temporary delivery note.  
THEN update the supplier temporary delivery note file.
- 5> Check correctness and completeness of supplier invoice.  
IF supplier invoice is correct,  
THEN pass the supplier invoice to Account Department.  
ELSE consider as incorrect supplier documents.
- 6> Receive supplier temporary delivery note,  
THEN update supplier delivery note file.

*Location:*

Inventory Inflow Process ( 3.1 )

---

Check Completeness of Order

Process

*Description:*

Check completeness of received customer order.

*Process #:* 1.3.1

*Process Description:*

- 1> Receive customer order.
- 2> Check quotation info. from the database.  
IF the detail condition stated in customer order is acceptable  
comparing with our sales quotation.  
THEN consider as completed order.  
ELSE consider as incorrect order.
- 3> Check customer previous orders from the database.  
IF the customer new order is not exist in the system.  
THEN consider as completed order.  
ELSE consider as incorrect order.
- 4> Inform customer for incorrect order.

*Location:*

Receive Customer Order ( 1.3 )

---

Check Completeness of Payment Documents

Process

*Description:*

Final check the completeness and correctness of payment documents

before issuing Payment Bill.

Process #: 4.7.6

Process Description:

- 1> Receive Awaiting Payment info.
- 2> Or receive Tax Report
- 3> Check the completeness and correctness of payment documents.  
IF the payment documents are complete and correct,  
THEN arrange to issue Payment Bill  
ELSE contact with related persons regarding the payment documents.

Location:

Monetary Controlling Process ( 4.7 )

---

Check Completeness of Sup Documents	Process
-------------------------------------	---------

Description:

Process of checking completeness of supplier documents before making the payment to supplier.

Process #: 4.5.3

Process Description:

- 1> Receive Awaiting Payment info.
- 2> Detail check supplier documents from the Purchase File.  
IF Awaiting Payment info. is correct comparing with supplier documents in the Purchase database.  
THEN arrange to make a payment for the Awaiting Payment.  
ELSE discuss with related persons.

Location:

Account Payable Controlling Process ( 4.5 )

---

Check Current Price List Info.	Process
--------------------------------	---------

Description:

Process of checking and evaluating current selling price and margin info.

Process #: 5.5

Process Description:

- 1> Receive cost and price info. from Price List
- 2> Evaluate current profit margin.
- 3> Get the conclusive report of current Price List situation.

Location:

Update Price List Process ( 5 )

---

Check Current Product Qty	Process
---------------------------	---------

Description:

Check current ending inventory level in the stock.

Process #: 3.5.5

Process Description:

- 1> Receive current ending inventory info. from the database.
- 2> Compare with safety quantity policy.  
IF remaining product quantity is lower than safety stock quantity,  
THEN consider as under safety stock item.  
ELSE consider as over safety stock item.

*Location:*

Safety Stock Controlling Process ( 3.5 )

---

Check Customer Request Delivery Time

Process

*Description:*

Process of checking product delivery time of customer order.

*Process #:* 2.2.1

*Process Description:*

1> Receive customer common product order.

2> Receive information of customer previous orders from the Order File.

3> Check request delivery time of customer purchase order.

IF customer order could be immediately arranged the delivery,

THEN consider as immediately delivery order.

ELSE consider customer order as future order.

*Location:*

Process Common Product Order ( 2.2 )

---

Check Date of Account Payable

Process

*Description:*

Check the due date of arranging payment against the account payable.

*Process #:* 4.5.1

*Process Description:*

1> Receive Awaiting Income info.

2> Check the due date of account payable

IF the account payable is due,

THEN arrange to issue a payment bill

ELSE ignore it.

*Location:*

Account Payable Controlling Process ( 4.5 )

---

Check Delivery Status

Process

*Description:*

Check delivery status against received customer order.

*Process #:* 1.3.2

*Process Description:*

1> Receive completed customer order.

2> Check Delivery Note info. from the database.

3> Check the delivery status against received customer order.

IF customer order has not been delivered yet,

THEN consider as undelivered order,

ELSE consider delivered order.

*Location:*

Receive Customer Order ( 1.3 )

---

Check Detail of Customer Order

Process

*Description:*

Check other detail information of customer order such as authorized signature, clearly define product item, request credit term and delivery place.

*Process #:* 2.3.3

*Process Description:*

- 1> Receive customer uncommon product order.
- 2> Check other detail information of customer order as the followings:

1. Clearly defined product item and quantity.
2. Exist authorized signature.
3. Extra request credit term and delivery place.
4. etc.

IF detail information of customer order is correct and acceptable,  
THEN consider customer order as correct order.  
ELSE consider as incomplete order.

*Location:*

Process Uncommon Product Order ( 2.3 )

---

Check Future Order

Process

*Description:*

Check customer advance order and future potential order.

*Process #:* 3.5.6

*Process Description:*

- 1> Receive product info.
- 2> Check received customer advance order.
- 3> Evaluate potential change in near future order.
- 4> Desire product quantity needed.

*Location:*

Safety Stock Controlling Process ( 3.5 )

---

Check Inventory Database

Process

*Description:*

Process of check current product positioning and price info.

*Process #:* 1.2.3

*Process Description:*

- 1> Receive common product info.
- 2> Check current product stock quantity.
- 3> Check current selling price.
- 4> Receive output of stock and price info.

*Location:*

Receive Customer Inquiry ( 1.2 )

---

Check Order Condition

Process

*Description:*

Check customer order condition whether the order is urgent or not.

*Process 11:* 1.3.4

*Process Description:*

- 1> Receive undelivered order.
- 2> Evaluate customer's order.

IF customer's order is urgent and the product items are in stock.  
THEN consider as customer urgent order.  
ELSE consider as customer regular order.

*Location:*

Receive Customer Order ( 1.3 )



---

#### Check Product Code

Process

##### *Description:*

Checking product code in our system of supplier delivered goods.

*Process #:* 3.1.2

##### *Process Description:*

1> Receive correct goods and documents

2> Check product code in the system.

IF the product item is exist in the system already,

THEN consider as exist product code.

ELSE consider as non-exist product code.

##### *Location:*

Inventory Inflow Process ( 3.1 )

---

#### Check Product Specification

Process

##### *Description:*

Process of verifying customer inquiry.

*Process #:* 1.2.1

##### *Process Description:*

1> Receive customer inquiry.

2> Evaluate completeness of customer inquiry,

IF customer inquiry is uncompleted,

THEN reply to customer as uncompleted inquiry,

ELSE process customer inquiry to next processes.

3> Evaluate product type of customer inquiry.

IF customer inquiry is exist in common product stock,

THEN consider as common product inquiry.

ELSE consider as uncommon product inquiry.

##### *Location:*

Receive Customer Inquiry ( 1.2 )

---

#### Check Product Turn Over Rate

Process

##### *Description:*

Process of checking frequency sold of product item in a specific period of time.

*Process #:* 3.5.1

##### *Process Description:*

1> Receive inventory info.

2> Calculate product turn over rate, may be in term of average quantity sold per month.

3> Get result of product turn over rate.

##### *Location:*

Safety Stock Controlling Process ( 3.5 )

---

#### Check Profit Level

Process

##### *Description:*

Evaluate the percentage of mark up that the company should use to calculate selling price.

*Process #:* 1.2.4.1

*Process Description:*

- 1> Receive customer info.
- 2> Receive customer inquiry info.
- 3> Receive Supplier quotation.
- 4> Receive product info.
- 5> Evaluate cost condition.
- 6> Evaluate competition for the customer.
- 7> Assign the profit level or mark up margin.

*Location:*

Issue Quotation ( 1.2.4 )

---

Check Supplier Normal Delivery Time

Process

*Description:*

Check normal delivery lead time of supplier.

*Process #:* 3.5.2

*Process Description:*

- 1> Open Inventory database.
- 2> Check normal delivery lead time of supplier.

*Location:*

Safety Stock Controlling Process ( 3.5 )

---

Confirm Receiving Bill with Customer

Process

*Description:*

Contact to supplier for invalid Receiving Bill.

*Process #:* 4.7.2

*Process Description:*

- 1> Receive invalid Receiving Bill from customer.
- 2> Contact customer for the reason of invalid Receiving Bill.

*Location:*

Monetary Controlling Process ( 4.7 )

---

Confirm to Customer for Passed Days Invoice

Process

*Description:*

Ask customer whether customer could accept passed a period of days sales invoice or not.

*Process #:* 4.1.2

*Process Description:*

- 1> Receive exist cancelled Sales Invoice during the month of accounting period.
- 2> Ask customer whether passed a period of days sales invoice could be accepted or not.
  - IF customer accepts passed days sales invoice,  
THEN replace the cancelled Sales Invoice with new customer order.
  - ELSE generate a new Sales Invoice number for customer order.

*Location:*

Issue Sales Invoice Process ( 4.1 )

---

Contact Suppliers with Customer Inquiry

Process

*Description:*

Process of communication with relevant suppliers for customer uncommon product request.

*Process #:* 1.2.2

*Process Description:*

- 1> Receive uncommon product inquiry.
- 2> Check relevant suppliers from the database.
- 3> And/or search out source suppliers.
- 3> Contact relevant suppliers with customer uncommon product request.
- 4> Receive quotation and product info. from suppliers.
- 5> Update supplier info. in case exist new supplier record.

*Location:*

Receive Customer Inquiry ( 1.2 )

Contact with Purchaser

Process

*Description:*

Process of interaction with the company purchaser to control customer regular order.

*Process #:* 1.3.6

*Process Description:*

- 1> Receive customer regular order.
- 2> Pass customer order to purchaser.
- 3> Receive reply from purchase against customer order. the order might be accepted or rejected by supplier.  
IF the order is accepted by supplier,  
THEN consider the order as confirmed order,  
ELSE consider as incorrect order.
- 4> Inform the order condition to customer.

*Location:*

Receive Customer Order ( 1.3 )

Delivery Note Controlling Process

Process

*Description:*

The process of controlling the company temporary delivery documents.

*Process #:* 1.4

*Process Description:*

- 1> Receive urgent order,  
Then issue a new Delivery Note.
- 2> Return signed Delivery Note,  
Then update Delivery Note file.
- 3> Receive delivered order from customer,  
Then pass related documents to Financial department,  
Next, update Delivery Note database.

*Location:*

Ordering Process ( 1 )

Deposit to Bank

Process

*Description:*

Deposit the Receiving Bill to bank.

Process #: 4.7.4

Process Description:

- 1> Receive valid original Receiving Bill.
- 2> Deposit the Receiving Bill to bank.
- 3> Receive bank confirmation statement of the deposit.
- 4> Send to bank statement to update customer payment info.

Location:

Monetary Controlling Process ( 4.7 )

---

Desire Order Qty

Process

Description:

Desire needed product quantity in order to support future use.

Process #: 3.5.8

Process Description:

- 1> Receive current stock info.
- 2> Receive future order info.
- 3> Evaluate quantity needed for the future.
- 4> Desire quantity to be ordered.

Location:

Safety Stock Controlling Process ( 3.5 )

---

Discuss with Store Dept

Process

Description:

Discuss with Store Department in term of product quantity request in the purchase request.

Process #: 2.4.4

Process Description:

- 1> Receive unapproved product quantity request information.
- 2> Discuss the appropriate product quantity need with Store Department.

Location:

Evaluate Product Shortage Info. ( 2.4 )

---

Drop PR Temporarily

Process

Description:

Temporary drop the purchase request and keep for the next time purchase.

Process #: 2.4.3

Process Description:

- 1> Receive exceeding normal delivery time purchase request.
- 2> Keep the purchase request for consideration next time

Location:

Evaluate Product Shortage Info. ( 2.4 )

---

Evaluate Cost Info.

Process

Description:

Process of evaluating common product cost info. in the price list.

Process #: 5.1

Process Description:

- 1> Receive current cost info. the price list
- 2> Receive new cost info. from supplier.

- 3> Evaluate the change of cost info.  
     IF accept the change of cost info.  
     THEN update the new cost info.  
     ELSE negotiate with supplier again.
- 4> Receive the outcome of cost info., it may be the new cost info. or current cost info.

*Location:*

Update Price List Process ( 5 )

---

Evaluate Inventory Min Qty

Process

*Description:*

Process of evaluating minimum product quantity that should kept in the stock.

*Process #: 3.5.3*

*Process Description:*

- 1> Receive supplier normal delivery lead time.
- 2> Receive product turn over rate info.
- 3> Evaluate minimum quantity for keeping in stock.
- 4> Get result of safety stock quantity.

*Location:*

Safety Stock Controlling Process ( 3.5 )

---

Evaluate Price Info.

Process

*Description:*

Process of evaluating price info. in Price List record.

*Process #: 5.3*

*Process Description:*

- 1> Receive current price info. the price list
- 2> Receive updated price list policy
- 3> Evaluate the possible change of on price.  
     IF the price info. should be changed,  
     THEN decide a new selling price of the Price List.  
     ELSE maintain the current selling price and ignore the change of selling price policy.
- 4> Receive the outcome of price info., it may be the new price info. or current price info.

*Location:*

Update Price List Process ( 5 )

---

Evaluate Product Shortage Info.

Process

*Description:*

Process of evaluating product shortage info. and purchase request from Store Department.

*Process #: 2.4*

*Process Description:*

- 1> Receive product shortage info. and purchase request of common product from Store Department.
- 2> Evaluate the purchase request.  
     IF the purchase request is accepted,

THEN consider as approved purchase request.  
 ELSE purchaser should feedback and discuss with Store  
 Department for getting a final solution of an adjust  
 purchase request.

*Location:*

Purchasing Process ( 2 )

Evaluate Profit Level

Process

*Description:*

Process of evaluating profit level from customer order.

*Process #:* 2.3.1

*Process Description:*

- 1> Receive customer uncommon product order.
- 2> Receive quotation info. both from our sales quotation and supplier quotation.
- 3> Evaluate the profit earned from such customer order.  
 IF profit level is same as the company sales quotation or the profit level is still reached acceptable level.  
 THEN accept customer order in term of price and profit.  
 ELSE consider customer order is incorrect in term of price.

*Location:*

Process Uncommon Product Order ( 2.3 )

Evaluate Qty of Request

Process

*Description:*

Evaluate product quantity request.

*Process #:* 2.4.1

*Process Description:*

- 1> Receive product shortage info.
- 2> Evaluate quantity request in the purchase request.  
 IF quantity request is appropriate,  
 THEN approve the purchase request in term of quantity.  
 ELSE consider as accepted quantity request.

*Location:*

Evaluate Product Shortage Info. ( 2.4 )

Evaluate Regular Order

Process

*Description:*

Evaluate product items of customer order are in normal product line or uncommon product line.

*Process* 2.1

*Process Description:*

- 1> Receive customer regular order.
- 2> Evaluate product items of customer order.  
 IF product items are in normal product line,  
 THEN process as common product order.  
 ELSE process as uncommon product order.  
 IF customer order consists both product line.  
 THEN separate the order into 2 parts, and manage in 2 different

processes.

*Location:*

Purchasing Process ( 2 )

---

Evaluate Request Delivery Time

Process

*Description:*

Process of evaluating product delivery time of customer request.

*Process #:* 2.3.2

*Process Description:*

- 1> Receive customer uncommon product order.
- 2> Receive quotation info. both from our sales quotation and supplier quotation.
- 3> Evaluate customer request delivery time.  
IF the company can supply the product on time,  
THEN accept customer order in term of possible delivery time.  
ELSE consider customer order is incorrect in term of impossible to supply the products on time.

*Location:*

Process Uncommon Product Order ( 2.3 )

---

Evaluate Request Time

Process

*Description:*

Evaluate request date of product item in the Purchase Request.

*Process #:* 2.4.2

*Process Description:*

- 1> Receive product shortage info.
- 2> Evaluate product request date of Purchase Request.  
IF request date is shorter or equal to supplier normal delivery time,  
THEN consider as appropriate delivery time of purchase request.  
ELSE consider as exceeding normal delivery time purchase request.

*Location:*

Evaluate Product Shortage Info. ( 2.4 )

---

Financial Process

Process

*Description:*

The process performs operation activities regarding all financial concerned.

*Process #:* 4

*Process Description:*

- 1> Receive Customer Order sheet and other related documents,  
Then issue Sales Invoice
- 2> Receive returned goods information from sales department or store department,  
Then issue Sales Credit Note.
- 3> Receive Supplier Invoice,  
Then update to supplier document file
- 4> Receive Supplier Credit Note,  
Then update supplier document file.



- 5> Evaluate due date of customer payment,  
Then control to collect payment from customers.
- 6> Accept supplier billing note,  
Then check and arrange the payment to suppliers.
- 7> Generate Tax Report,  
Then arrange the tax payment.

*Location:*

TMA System Level 0 ( 0 )

---

Generate Management Reports

Process

*Description:*

The process of generating operation reports to management level for the evaluation of business operation results.

*Process #:* 6

*Process Description:*

- 1> Receive information from financial department concerning Sales and Purchase data.  
Then generate sales performance report  
and generate purchase performance report.
- 2> Receive information from inventory database,  
Then generate inventory performance report.
- 3> Receive customer information in the database,  
Then generate customer reports.

*Location:*

TMA System Level 0 ( 0 )

---

Generate New Sales Invoice No.

Process

*Description:*

Process of generating a new sales invoice number.

*Process #:* 4.1.4

*Process Description:*

- 1> Receive non exist cancelled Sales invoice during the month of accounting period.
- 2> Or receive information that customer could not accept passed a period of days Sales Invoice.
- 3> Generate a new Sales Invoice number.
- 4> Get a new Sales Invoice number.

*Location:*

Issue Sales Invoice Process ( 4.1 )

---

Generate Product Code

Process

*Description:*

Process of generating new product code.

*Process #:* 3.1.3

*Process Description:*

- 1> Receive non-exist product info.
- 2> Generate new product code.  
By classify product category,  
By consider individual product or combination product items.



3> Receive newly generated product code.

*Location:*

Inventory Inflow Process ( 3.1 )

---

Generate Purchase Order

Process

*Description:*

Process of issuing purchase order to supplier.

*Process #:* 2.5

*Process Description:*

- 1> Receive approved purchase request of common product.
- 2> Or receive correct uncommon product order.
- 3> Check current order info.
- 4> Generate purchase order to supplier
- 5> Fax out purchase order to supplier
- 6> Update order file.

*Location:*

Purchasing process (2)

---

Generate Purchase Report

Process

*Description:*

Process of generating purchase report in a specific period of time.

*Process #:* 4.6.2

*Process Description:*

- 1> Receive purchase info. from Purchase database.
- 2> Generate purchase report by the following:
  - \*Net Purchase Amount Before Tax = Total Purchase Amount Before Tax - Total Supplier Credit Note Amount before Tax
  - \*Net Tax Amount = Total Tax amount of Supplier Invoice - Total Tax amount of Supplier Credit Note.
  - \*Total Amount = Total Purchase Amount include Tax - Total Amount of Supplier Credit Note include Tax.
- 3> Get Purchase Report.

*Location:*

Generate Tax Report ( 4.6 )

---

Generate Sales Billing Note Process

Process

*Description:*

Process of generating sales billing note to customer in order to inform customer to arrange the payment later.

*Process #:* 4.3.1

*Process Description:*

- 1> Receive sales info. from Sales database.
- 2> Generate billing note to customer.
- 3> Update Awaiting Income database.

*Location:*

Account Receivable Controlling Process ( 4.3 )

---

Generate Sales Invoice

Process

*Description:*

Process of issuing new Sales Invoice.

Process #: 4.1.6

Process Description:

- 1> Receive customer order info.
- 2> Receive Sales Invoice number.
- 3> Issue new Sales Invoice to customer.
- 4> Send issued Sales Invoice to Store Department
- 5> Update Sales Invoice into the Sales Document file.

Location:

Issue Sales Invoice Process ( 4.1 )

---

Generate Sales Report

Process

Description:

Process of generating sales report in a specific period of time.

Process #: 4.6.1

Process Description:

- 1> Receive sales info. from Sales database.
- 2> Generate sales report by the following:
  - \*Net Sales Amount Before Tax = Total Sales Amount Before Tax -  
Total Sales Credit Note Amount before Tax
  - \*Net Tax Amount = Total Tax amount of Sales Invoice - Total Tax  
amount of Sales Credit Note.
  - \*Total Amount = Total Sales Amount include Tax - Total Amount of  
Sales Credit Note include Tax.
- 3> Get Sales Report.

Location:

Generate Tax Report ( 4.6 )

---

Generate Tax Report

Process

Description:

Process of generating tax report in a specific period of time.

Process #: 4.6.3

Process Description:

- 1> Receive Sales Report
- 2> Receive Purchase Report
- 3> Make Tax Report
  - \* Net Sales Amount - Net Purchase Amount = Gross Profit.
  - \* Net Tax Amount of Sales - Net Tax Amount of Purchase  
= Net Payment of Tax Amount.
- 4> Get Tax Report.

Location:

Generate Tax Report ( 4.6 )

---

Generate Tax Report Process

Process

Description:

Process of generating tax report to Revenue Department.

Process #: 4.6

Process Description:

- 1> Receive sales info.

- 2> Generate sales report
- 3> Receive purchase info.
- 4> Generate purchase report.
- 5> Generate tax report.
- 6> Send copy of tax report to issue payment bill
- 7> Receive payment bill for tax.
- 8> Summit tax report and tax payment bill to Revenue Department.
- 9> Receive receipt from Revenue Department.

*Location:*

Financial Process ( 4 )

Generate TMA Quotation

Process

*Description:*

Process of issuing the company sales quotation to customer.

*Process #:* 1.2.4.3

*Process Description:*

- 1> Receive customer info, and customer inquiry info.
- 2> Receive cost of goods sold info. from supplier, and selling price info.
- 3> And/Or Receive inventory and price info. for common product.
- 4> Receive current sales quotation info.
- 5> Generate new sales quotation to customer.
- 6> Update sales quotation.

*Location:*

Issue Quotation ( 1.2.4 )

Hold AP for Next Period Payment

Process

*Description:*

Keep account payable to arrange the payment by next accounting period in case the due date of account payable is not over yet.

*Process #:* 4.5.2

*Process Description:*

- 1> Receive undue awaiting payment info.
- 2> Keep the awaiting payment to be considered by next accounting period.

*Location:*

Account Payable Controlling Process ( 4.5 )

Inform New Cost to Manager

Process

*Description:*

Inform manager with new supplier product cost.

*Process #:* 2.6.4

*Process Description:*

- 1> Receive new product cost after final negotiation with supplier.
- 2> Receive product cost info. from other suppliers.
- 3> Inform supplier with new supplier product cost.

*Location:*

Interact with New Cost Info. ( 2.6 )

---

Interact with New Cost Info.

Process

*Description:*

Process of interacting new cost info. with supplier.

*Process #:* 2.6

*Process Description:*

- 1> Receive new cost info. from supplier.
- 2> Negotiate price with supplier.
- 3> Check the product item to other suppliers in the database.
- 4> Update supplier info. if occurred new supplier record.
- 5> Inform new cost info. to manager.

*Location:*

Purchasing Process ( 2 )

---

Inventory Controlling Process

Process

*Description:*

The process of controlling inventory movement and its safety stock.

*Process #:* 3

*Process Description:*

- 1> Check inventory add,  
Then update inventory level.
- 2> Check inventory used,  
Then update inventory level,
- 3> Check inventory balance quantity,  
Check customer future order,  
Check minimum safety stock quantity,  
Then generate inventory shortage report.

*Location:*

TMA System Level 0 ( 0 )

---

Inventory Inflow Process

Process

*Description:*

Controlling process of adding inventory into stock.

*Process #:* 3.1

*Process Description:*

- 1> Receive goods from suppliers
- 2> Check condition of received goods,  
IF received goods is correct and in good condition,  
THEN accept the goods and update to inventory.  
ELSE consider as incorrect goods.
- 3> Receive supplier invoice.
- 4> Check the delivery status.  
IF the supplier invoice is replaced for previous temporary delivery note.  
THEN update the supplier temporary delivery note file.
- 5> Check correctness and completeness of supplier invoice.  
IF supplier invoice is correct,  
THEN pass the supplier invoice to Account Department.  
ELSE consider as incorrect supplier documents.

- 6> Receive supplier temporary delivery note,  
THEN update supplier delivery note file.

*Location:*

Inventory Controlling Process ( 3 )

---

## Inventory Outflow Process

Process

*Description:*

Process of controlling used inventory.

*Process #:* 3.2

*Process Description:*

- 1> Receive sales invoice or temporary delivery note from Sales Department.
- 2> Take goods from stock.
- 3> Update inventory.
- 4> Send goods and sales invoice or delivery note to transportation section.

*Location:*

Inventory Controlling Process ( 3 )

---

## Issue Payment Bill

Process

*Description:*

Process of issuing Payment Bill

*Process #:* 4.7.9

*Process Description:*

- 1> Receive complete and correct payment documents.
- 2> Issue Payment Bill for the payment documents as get authorized signature.
- 3> Receive issued Payment Bill.

*Location:*

Monetary Controlling Process ( 4.7 )

---

## Issue Purchase Request

Process

*Description:*

Process of generating product items and quantity are needed for keeping inventory.

*Process #:* 3.5.9

*Process Description:*

- 1> Receive requested product quantity.
- 2> Generate request product items and quantity to Purchasing Department.
- 3> Inform product shortage info. to Purchasing Department.
- 4> Get a feedback from Purchasing Department against the purchase request.

*Location:*

Safety Stock Controlling Process ( 3.5 )

---

## Issue Quotation

Process

*Description:*

Process of issuing sales quotation to customers.

*Process #:* 1.2.4

*Process Description:*

- 1> Receive supplier quotation and product info.
- 2> And/Or receive product and price info. of common product from the database.
- 3> Check customer info. and inquiry.
- 4> Receive current quotation info.
- 5> Generate new sales quotation to customer.
- 6> Update sales quotation record.

*Location:*

Receive Customer Inquiry ( 1.2 )

---

Issue Sales Credit Note Process

Process

*Description:*

Process of issuing sales credit note for return of goods or adjust of price level.

*Process #:* 4.2

*Process Description:*

- 1> Receive return goods info. or adjust price level info.
- 2> Check current Sales Credit Note info.
- 3> Generate new Sales Credit Note.
- 4> Send the new Sales Credit Note to Customer.
- 5> Update Sales Document file.

*Location:*

Financial Process ( 4 )

---

Issue Sales Invoice Process

Process

*Description:*

Process of issuing sales invoice to customer.

*Process #:* 4.1

*Process Description:*

- 1> Receive customer regular order or delivered order with other related documents.
- 2> Issue a new Sales Invoice.
- 3> Send Sales Invoice to Store Department or customers.
- 4> Update Sales Document file.

*Location:*

Financial Process ( 4 )

---

Make Copy of Receiving Bill

Process

*Description:*

Make a copy of Receiving bill from customer in order to keep for future reference.

*Process #:* 4.7.3

*Process Description:*

- 1> Receive valid Receiving Bill.
- 2> Make a copy of valid Receiving Bill
- 3> Send the original Receiving Bill to deposit to bank.

4> Send the copy of Receiving Bill to update customer payment info.

*Location:*

Monetary Controlling Process ( 4.7 )

Make Payment to Supplier

Process

*Description:*

Process of making the payment to supplier.

*Process #:* 4.5.4

*Process Description:*

- 1> Receive complete Awaiting Payment info.
- 2> Send the complete Awaiting Payment info. to manager for issuing payment bill.
- 3> Receive payment bill from manager.
- 4> Update payment bill info. for Awaiting Payment record.
- 5> Send the payment bill to supplier.
- 6> Receive receipt from supplier

*Location:*

Account Payable Controlling Process ( 4.5 )

Make Tax Payment to Revenue Dept

Process

*Description:*

Process of arranging tax payment and tax report to Revenue Department.

*Process #:* 4.6.4

*Process Description:*

- 1> Receive Tax Report
- 2> Send copy of complete Tax Report to manager for issuing payment billing for tax payment.
- 3> Receive payment bill from manager.
- 4> Submit Tax Report and payment bill for tax payment to Revenue Department.
- 5> Receive receipt from Revenue Department.

*Location:*

Generate Tax Report ( 4.6 )

Monetary Controlling Process

Process

*Description:*

Process of controlling all transaction of money in the company.

*Process #:* 4.7

*Process Description:*

- 1> Receive tax report or awaiting payment info.
- 2> Check the correctness of such payment.
  - IF payment documents are correct and complete,
  - THEN issue a payment bill
  - ELSE re-evaluate and discuss related persons.
- 3> Return the issued payment bill for providing to Revenue Department of suppliers.
- 4> Receive bank statement for confirmation of the withdrawal
- 5> Receive receiving bills from customer.
- 6> Deposit the receiving bills to bank.



7> Receive bank statement regarding the deposit.

8> Update customer payment

*Location:*

Financial Process ( 4 )

---

Negotiate New Cost with Supplier

Process

*Description:*

Process of negotiation product cost with supplier.

*Process #:* 2.6.2

*Process Description:*

- 1> Receive new product cost from supplier.
- 2> Receive current product cost from Price List database.
- 3> Negotiate price with supplier.
- 4> Get result of the negotiation.

*Location:*

Interact with New Cost Info. ( 2.6 )

---

Negotiate with Selected Supplier

Process

*Description:*

Final process of negotiating price level with supplier before issuing purchase order to the supplier.

*Process #:* 2.3.4

*Process Description:*

- 1> Receive complete customer order.
- 2> Negotiate price level with selected supplier.  
IF get a discounts from supplier,  
THEN apply the new cost to order to supplier,  
ELSE apply the current cost to order to supplier.

*Location:*

Process Uncommon Product Order ( 2.3 )

---

Ordering Process

Process

*Description:*

The process of interaction with customers in order to support customer's request and procedure customer's order.

*Process #:* 1

*Process Description:*

- 1> Receive customer new information,  
Then update customer database.
- 2> Receive customer inquiry,  
Then issue sales quotation to customer.
- 3> Receive customer order,  
Then procedure customer order.

*Location:*

TMA System Level 0 ( 0 )

---

Process Common Product Order

Process

*Description:*

Process of arranging customer order of common product.



Process #: 2.2

Process Description:

- 1> Receive common product order.
- 2> Check stock positioning.  
IF request product quantity is exist in the store,  
THEN pass the customer order to issue Sales Invoice.  
ELSE temporary keeps customer order in Order File.
- 3> Update Order File.

Location:

Purchasing Process ( 2 )

---

Process Uncommon Product Order

Process

Description:

Process of arranging customer order of uncommon product.

Process #: 2.3

Process Description:

- 1> Receive customer uncommon product order.
- 2> Check the company's sales quotation in the database.  
IF detail conditions stated in customer order is acceptable  
comparing with our quoted sales quotation.  
THEN consider as correct uncommon product order.  
ELSE consider as incorrect order.

Location:

Purchasing Process ( 2 )

---

Purchasing Process

Process

Description:

The process of interaction with suppliers in term of quotation request,  
purchase order controlling and price negotiation.

Process #: 2

Process Description:

- 1> Receive order from Sales department,  
Then negotiate price with supplier, and control the full processes of  
issued purchase order.
- 2> Receive product shortage information from Store department,  
Then discuss detail purchase request with Store department,  
Next, generate purchase order to supplier.

Location:

TMA System Level 0 ( 0 )

---

Re-check Related Documents

Process

Description:

Process of re-check incomplete payment documents.

Process #: 4.7.7

Process Description:

- 1> Receive incomplete payment documents.
- 2> Contact with related persons such as in charge accounting staffs or  
supplier for detail information of incomplete payment documents.

*Location:*

Monetary Controlling Process ( 4.7 )

---

Re-evaluate by Next Period Order

Process

*Description:*

Product item will be evaluated for making a purchase in next period.

*Process #:* 3.5.7

*Process Description:*

- 1> Receive information of product item that is higher than safety stock quantity.
- 2> Keep the product item to be evaluated again in next time.
- 3> Update inventory database.

*Location:*

Safety Stock Controlling Process ( 3.5 )

---

Re-evaluate the Payment

Process

*Description:*

Process of making decision toward incomplete payment documents.

*Process #:* 4.7.8

*Process Description:*

- 1> Receive incomplete payment documents info.
- 2> Receive additional information from related persons regarding incomplete payment documents.
- 3> Decide the payment against incomplete payment documents.

*Location:*

Monetary Controlling Process ( 4.7 )

---

Receive Customer Info.

Process

*Description:*

Process of receiving additional information from customer.

*Process #:* 1.1

*Process Description:*

- 1> Receive customer information.
- 2> Check customer information in the database.  
IF the database information is difference with the new information,  
THEN update exist database with new information,  
ELSE ignore it.

*Location:*

Ordering Process ( 1 )

---

Receive Customer Inquiry

Process

*Description:*

Process of responding customer' s inquiry.

*Process #:* 1.2

*Process Description:*

- 1> Receive customer inquiry.
- 2> Check the completeness of customer inquiry,  
IF the inquiry is incomplete,  
THEN inform customer as incomplete inquiry,

ELSE check store positioning from inventory database for  
normal product line,  
OR check to relevant suppliers for uncommon product  
line.

3> Receive supplier quotation and product info.  
OR receive inventory info.  
THEN generate sales quotation to customers.

4> Update quotation file.

*Location:*

#### Ordering Process ( 1 )

Receive Customer Order

Process

##### *Description:*

Process of receiving and controlling customer's order.

*Process #:* 1.3

##### *Process Description:*

- 1> Receive order from customer,
- 2> Check completeness of the order,  
IF the order is in complete condition,  
THEN accept the order,  
ELSE reject the order.
- 3> Check stock position,  
THEN feedback to customer.
- 4> Check level of urgency of customer order.  
IF customer's order is under urgent case,  
THEN issue temporary Delivery Note,  
ELSE wait for customer order sheet.
- 5> Check customer order's condition,  
IF the order is completed and delivered already,  
THEN process the order documents to Financial department  
ELSE process the documents to purchaser.

*Location:*

#### Ordering Process ( 1 )

Receive Customer Payment

Process

##### *Description:*

Process of arranging to collect customer payment

*Process #:* 4.3.2

##### *Process Description:*

- 1> Receive Awaiting Income info.
- 2> Check the due date of customer payment  
IF due date of customer payment is over,  
THEN arrange to collect receiving bill from customer.  
ELSE ignore it.
- 3> Receive receiving bills from customer.
- 4> Send the company receipt to customer.
- 5> Update Awaiting Income with receiving bill info.
- 6> Send receiving bill to deposit later.
- 7> Update status of receiving from bank statement.

<i>Location:</i> <u>Account Receivable Controlling Process</u> ( 4.3 )	
Receive Customer Return Goods	Process
<i>Description:</i> Process of controlling returned goods from customer. <i>Process #:</i> 3.4 <i>Process Description:</i> 1> Receive returned goods from customer. 2> Receive sales credit note. 3> Update inventory. 4> Send sales credit note to be signed by customer.	
<i>Location:</i> <u>Inventory Controlling Process</u> ( 3 )	
Receive Reply from Suppliers	Process
<i>Description:</i> Receive quotation and feedback from suppliers against our inquiry request. <i>Process #:</i> 1.2.2.4 <i>Process Description:</i> 1> Receive supplier quotation and product info. 2> Process the quotation and product info. to next processes.	
<i>Location:</i> <u>Contact Suppliers with Customer Inquiry</u> ( 1.2.2 )	
Receive Sup New Cost Info.	Process
<i>Description:</i> Receive new product cost information from supplier. <i>Process #:</i> 2.6.1 <i>Process Description:</i> 1> Receive new product cost information from supplier. 2> Verify the supplier new product cost.	
<i>Location:</i> <u>Interact with New Cost Info.</u> ( 2.6 )	
Receive Supplier Documents	Process
<i>Description:</i> Process of managing received supplier documents such as supplier invoice and credit note. <i>Process #:</i> 4.4 <i>Process Description:</i> 1> Receive supplier invoice and credit note. 2> Update the received supplier invoice and credit note into Purchase Documents.	
<i>Location:</i> <u>Financial Process</u> ( 4 )	
Record Payment Bill	Process
<i>Description:</i>	

Process of recording issued Payment Bill and sending to supplier.

Process #: 4.7.10

Process Description:

- 1> Receive issued Payment Bill.
- 2> Record detail information of Payment Bill to supplier payment info.
- 3> Send the Payment Bill to supplier.
- 4> Receive receipt from supplier against the payment.
- 5> Receive bank statement regarding the Payment Bill.
- 6> Update the supplier payment info.

Location:

Monetary Controlling Process ( 4.7 )

---

Replace Cancelled Invoice with New Order

Process

Description:

Use the cancelled Sales Invoice number to issue a new Sales Invoice.

Process #: 4.1.5

Process Description:

- 1> Receive customer's acceptance of passed days Sales Invoice information.
- 2> Use the cancelled Sales Invoice to be replaced by issuing a new Sales Invoice of customer order.

Location:

Issue Sales Invoice Process ( 4.1 )

---

Return Goods to Supplier

Process

Description:

Process of controlling returned goods to supplier.

Process #: 3.3

Process Description:

- 1> Return goods to supplier.
- 2> Receive supplier credit note.
- 3> Update inventory.
- 4> Send supplier credit note to Accounting Department.

Location:

Inventory Controlling Process ( 3 )

---

Safety Stock Controlling Process

Process

Description:

Process of controlling safety stock quantity.

Process #: 3.5

Process Description:

- 1> Receive current inventory info. from the database.
- 2> Generate product shortage info.
- 3> Inform product shortage info. to Purchasing Department.
- 4> Receive feedback from suppliers against the purchase request.
- 5> Update inventory data.

Location:

Inventory Controlling Process ( 3 )

---

## Search New Supplier

Process

### *Description:*

Process of searching new supplier from out sources.

*Process #:* 1.2.2.2

### *Process Description:*

- 1> Receive uncommon product inquiry.
- 2> Search relevant new suppliers.
- 3> Process the supplier info. to next stage for product inquiry.
- 4> Update supplier record into supplier database.

### *Location:*

Contact Suppliers with Customer Inquiry ( 1.2.2 )

---

## Search New Suppliers

Process

### *Description:*

Process of contacting new supplier against the products.

*Process #:* 2.6.3

### *Process Description:*

- 1> Check supplier info. both from database and out source.
- 2> Provide suppliers with product info.
- 3> Receive product cost from other suppliers.
- 4> Update new supplier record into database in case the supplier record is not exist yet.

### *Location:*

Interact with New Cost Info. ( 2.6 )

---

## Search Supplier from Database

Process

### *Description:*

Process of selecting relevant supplier from the system database regarding customer uncommon product request.

*Process #:* 1.2.2.1

### *Process Description:*

- 1> Receive uncommon product inquiry.
- 2> Check relevant suppliers from the database against customer request.

### *Location:*

Contact Suppliers with Customer Inquiry ( 1.2.2 )

---

## Select Relevant Suppliers

Process

### *Description:*

Process of selecting relevant suppliers both from new records and in database records against customer inquiry.

*Process #:* 1.2.2.3

### *Process Description:*

- 1> Receive relevant supplier info. from the database.
- 2> Receive relevant new supplier info.
- 3> Select relevant suppliers who are matched on customer inquiry.
- 4> Inform suppliers with inquiry.

### *Location:*

Contact Suppliers with Customer Inquiry ( 1.2.2 )

---

TMA Management System	Process
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*Description:*

It is business operation system of TMA (Thailand) in term of Sales, Purchasing, Inventory control and part of Financial activities.

*Process #:* 0

*Process Description:*

Sales department in the Ordering process will keep interactive with customer for product specification confirmation and customer order procedure, Purchasing department will keep communication with suppliers for customer inquiry and purchase order controlling. Both departments need to interact with store department for safety stock and movement of stock controlling. Financial department will control on issuing financial documents; controlling account receivable, account payable and other detail paper work. As management level would also need periodical check the business operation result as well as updating common product price list.

*Location:*

TMA SYS ( CONTEXT )

---

Update Cost Level	Process
-------------------	---------

*Description:*

Process of updating new cost info. to Price List record.

*Process #:* 5.2

*Process Description:*

1> Receive outcome of cost info.  
IF outcome of product cost is new cost.  
THEN update the new cost info. into the Price List database.  
ELSE ignore the updating Price List policy.

*Location:*

Update Price List Process ( 5 )

---

Update Customer Info.	Process
-----------------------	---------

*Description:*

Process of adjusting customer database in case customer information has been changed.

*Process #:* 1.1.7

*Process Description:*

1> Receive customer new name or telephone number or address or contact person or credit term or discount rate.  
THEN update the new information into database,  
ELSE ignore it.

*Location:*

Receive Customer Info. ( 1.1 )

---

Update Customer Payment	Process
-------------------------	---------

*Description:*

Process of updating customer payment info.

*Process #:* 4.7.5



*Process Description:*

- 1> Receive copy of valid Receiving Bill from customer.
- 2> Update the information of Receiving Bill to customer payment info.
- 3> Receive bank statement regarding deposit of the Receiving Bill.
- 4> Update the status of Receiving Bill to customer payment info.

*Location:*

Monetary Controlling Process ( 4.7 )

---

Update Inflow Inventory to Stock

Process

*Description:*

Process of updating inflow inventory to stock record.

*Process #:* 3.1.4

*Process Description:*

- 1> Receive purchase product info.
- 2> Get product code.
- 3> Add inventory record into the system.
  - By input product code and quantity
  - By input product unit cost and discount
  - By input supplier name or code.

*Location:*

Inventory Inflow Process ( 3.1 )

---

Update Price Level

Process

*Description:*

Process of updating new price info. into Price List record.

*Process #:* 5.4

*Process Description:*

- 1> Receive outcome of selling price info.
  - IF outcome of selling price is new selling price.
  - THEN update the new selling price info. into the Price List database.
  - ELSE ignore the updating Price List policy.

*Location:*

Update Price List Process ( 5 )

---

Update Price List Process

Process

*Description:*

Process of changing price list database of common product.

*Process #:* 5

*Process Description:*

- 1> Receive new cost information from Purchasing department,
  - Evaluate current cost and price info.,
  - Evaluate current sales and profit situation,
  - Then approve new price list.

*Location:*

TMA System Level 0 ( 0 )

---

Update Safety Inventory Info.

Process

*Description:*



Process of updating safety stock policy

Process #: 3.5.4

Process Description:

- 1> Receive a new safety stock data.
- 2> Update the new safety stock quantity into the database.

Location:

Safety Stock Controlling Process ( 3.5 )

---

Update to Customer Future Order

Process

Description:

Process of updating customer order in order to keep for future delivery.

Process #: 2.2.2

Process Description:

- 1> Receive customer future order.
- 2> Keep customer order into Order File,
  - Separate by customer name,
  - Ascend by request delivery date.

Location:

Process Common Product Order ( 2.2 )

---

Validate Receiving Bill

Process

Description:

Process of checking received Receiving Bill from customer.

Process #: 4.7.1

Process Description:

- 1> Receive Receiving Bill from customer
- 2> Check the detail information of the Receiving Bill.
  - Check the payment amount,
  - Check payment date,
  - Check the payee name,
  - Check the authorized signature.

IF the Receiving Bill is valid

THEN send to the Receiving Bill to next process for depositing  
to the bank.

ELSE contact customer for the invalid Receiving Bill.

Location:

Monetary Controlling Process ( 4.7 )

---

Verify Contact Person

Process

Description:

Check the contact person name.

Process #: 1.1.3

Process Description:

- 1> Receive customer information,
- 2> Check contact person name,
  - IF the contact person name is difference from the database,
  - THEN arrange the new contact person name to update  
database later.
  - ELSE ignore it.

*Location:*

Receive Customer Info. ( 1.1 )

---

Verify Credit Term

Process

*Description:*

Check payment term that offered to the customer.

*Process #:* 1.1.5

*Process Description:*

1> Receive customer information,

2> Check credit term,

IF the credit term is difference from the database,

THEN arrange the new credit term to update database later.

ELSE ignore it.

*Location:*

Receive Customer Info. ( 1.1 )

---

Verify Customer Info.

Process

*Description:*

Process of briefly check customer additional information.

*Process #:* 1.1.1

*Process Description:*

1> Receive customer new information.

2> View customer current information in the database.

3> Verify the change of customer information,

IF the new customer information is difference in the database,

THEN process to check detail of customer record,

ELSE ignore it.

*Location:*

Receive Customer Info. ( 1.1 )

---

Verify Customer Name

Process

*Description:*

Check customer's name

*Process #:* 1.1.2

*Process Description:*

1> Receive customer information,

2> Check customer name,

IF the customer name is difference from the database,

THEN arrange the new customer name to update database later.

ELSE ignore it.

*Location:*

Receive Customer Info. ( 1.1 )

---

Verify Discount Rate

Process

*Description:*

Check the discount rate that provide to each customer.

*Process #:* 1.1.6

*Process Description:*

1> Receive customer information,

2> Check discount rate,  
 IF the discount rate is difference from the database,  
 THEN arrange the new discount rate to update database later.  
 ELSE ignore it.

Location:

Receive Customer Info. ( 1.1 )

Verify Phone No. & Address	Process
----------------------------	---------

Description:

Check customer's telephone number and address.

Process #: 1.1.4

Process Description:

1> Receive customer information,  
 2> Check customer telephone number and address,  
 IF the telephone number or address is difference from the  
 database.  
 THEN arrange the new telephone number or address to update  
 database later.  
 ELSE ignore it.

Location:

Receive Customer Info. ( 1.1 )



**APPENDIX G**  
**DATA DICTIONARY**

## DATA DICTIONARY — EXTERNAL ENTITY

---

Bank	External Entity
<i>Description:</i> One of business partner who control the company's money deposit and withdrawal by offering with interest.	
Customer	External Entity
<i>Description:</i> The priority business partner who buy the company's product or service.	
Manager	External Entity
<i>Description:</i> A person who works on management level to control and manage the company's business activities.	
Revenue Dept	External Entity
<i>Description:</i> One of government department to control and collect tax payment from business sector.	
Supplier	External Entity
<i>Description:</i> One of business partner who supply the company with material and service.	

## DATA DICTIONARY — DATA STORE

---

Awaiting Income	Data Store
<i>Description:</i> Customer payment database and waiting for the due date to collect money from customers.	
Awaiting Payment	Data Store
<i>Description:</i> Supplier account payable database and waiting for the due date to pay to suppliers.	
Customer File	Data Store
<i>Description:</i> The location that contains detail information of customers.	
Inventory File	Data Store
<i>Description:</i> The location that keeps detail information of inventory such as ending inventory quantity, inventory inflow and outflow.	
Order File	Data Store
<i>Description:</i> The location that keeps issued purchase both from our company and customers..	
Price List	Data Store
<i>Description:</i> The location that keeps information of product cost and product price for each common product item.	
Purchase Documents	Data Store
<i>Description:</i> The location that keeps supplier documents such as supplier invoice and supplier credit note.	
Quotation File	Data Store
<i>Description:</i> The location that contains detail information of issued quotation to customer and attached supplier quotation.	
Sales Documents	Data Store
<i>Description:</i> The location that keeps the company issued sales invoice and sales credit note.	
Sup Delivery Note	Data Store

*Description:*

The location that keeps supplier temporary delivery document which is not issued invoice to the company yet.

Supplier File

Data Store

*Description:*

The location that contains detail information of supplier such as supplier general data, business title, and trade term.

TMA Delivery Note

Data Store

*Description:*

The location that keeps the company temporary delivery note which is issued to customers.



## DATA DICTIONARY — DATA FLOW

Accepted Passed Days Sales Invoice	Data Flow
<i>Description:</i> Date occurred on the Sales Invoice is passed a period of days and it is still accepted by customer.	
<i>Location:</i> Issue Sales Invoice Process ( 4.1 )	
Accepted Profit Level	Data Flow
<i>Description:</i> Profit earned from customer order is in accepted level.	
<i>Location:</i> Process Uncommon Product Order ( 2.3 )	
Accepted Qty Request	Data Flow
<i>Description:</i> Product quantity of purchase request from Store Department is accepted.	
<i>Location:</i> Evaluate Product Shortage Info. ( 2.4 )	
Appropriate Delivery Time PR	Data Flow
<i>Description:</i> Request date of purchase request is appropriate to order now.	
<i>Location:</i> Evaluate Product Shortage Info. ( 2.4 )	
Approved Purchase Request	Data Flow
<i>Description:</i> Purchase request of common product from Store department is approved.	
<i>Location:</i> Purchasing Process ( 2 ) Evaluate Product Shortage Info. ( 2.4 )	
Awaiting Income Info.	Data Flow
<i>Description:</i> Information of account receivable that is waiting due date to collect payment from customer.	
<i>Location:</i> TMA System_Level 0 ( 0 ) Financial Process ( 4 ) Account Receivable Controlling Process ( 4.3 )	
Awaiting Payment Info.	Data Flow
<i>Description:</i> Information of account payable that is waiting due date to pay to suppliers.	
<i>Location:</i> TMA System Level 0 ( 0 )	



Financial Process ( 4 )	
Account Payable Controlling Process	(4.5 )
Monetary Controlling Process ( 4.7 )	
<hr/>	
Common Product Info.	Data Flow
<i>Description:</i>	
Information of common product which is kept in inventory.	
<i>Location:</i>	
Receive Customer Inquiry ( 1.2 )	
<hr/>	
Common Product Order	Data Flow
<i>Description:</i>	
Product item of customer order is the company's normal product title, inventory is exist in the company's stock.	
<i>Location:</i>	
Purchasing Process ( 2 )	
Process Common Product Order ( 2.2 )	
<hr/>	
Complete Payment Documents	Data Flow
<i>Description:</i>	
Payment documents submitted by Accounting Department is correct and complete.	
<i>Location:</i>	
Monetary Controlling Process ( 4.7 )	
<hr/>	
Completed Order	Data Flow
<i>Description:</i>	
Customer's order is in completed condition and accepted by the company.	
<i>Location:</i>	
Receive Customer Order ( 1.3 )	
<hr/>	
Confirmed Order	Data Flow
<i>Description:</i>	
Customer order is accepted and confirmed by the company according all the order' conditions.	
<i>Location:</i>	
TMA_SYS ( CONTEXT )	
TMA System Level 0 ( 0 )	
Ordering Process ( 1 )	
Receive Customer Order ( 1.3 )	
Purchasing Process ( 2 )	
<hr/>	
Copy of Receiving Bill	Data Flow
<i>Description:</i>	
Information of receiving bill from customer.	
<i>Location:</i>	
Monetary Controlling Process ( 4.7 )	
<hr/>	
Correct Goods and Documents	Data Flow

*Description:*

Goods and supplier documents are in correct condition.

*Location:*

Inventory Inflow Process ( 3.1 )

---

Correct Uncommon Product Order

Data Flow

*Description:*

Customer order of uncommon product is correct comparing to issued company sales quotation and supplier quotation.

*Location:*

Purchasing Process ( 2 )

Process Uncommon Product Order ( 2.3 )

---

Cost Info.

Data Flow

*Description:*

Cost of goods sold of common product in the price list

*Location:*

TMA System Level 0 ( 0 )

Update Price List Process ( 5 )

---

Customer Future Order

Data Flow

*Description:*

Customer advance order for indicating request delivery time in the future.

*Location:*

Process Common Product Order ( 2.2 )

---

Customer Info.

Data Flow

*Description:*

Detail information of customer such as customer name, address, telephone number, trade condition and etc.

*Location:*

TMA\_SYS ( CONTEXT )

TMA System Level 0 ( 0 )

Ordering Process ( 1 )

Receive Customer Info. ( 1.1 )

Receive Customer Inquiry ( 1.2 )

Issue Quotation ( 1.2.4 )

---

Customer Order

Data Flow

*Description:*

Order is given to the company from customer for the acknowledgement of buying the company's products.

*Location:*

TMA\_SYS ( CONTEXT )

TMA System Level 0 ( 0 )

Ordering Process ( 1 )

Receive Customer Order ( 1.3 )

Purchasing Process ( 2 )

Process Common Product Order ( 2.2 )

Financial Process ( 4 )  
Issue Sales Invoice Process ( 4.1 )

---

Customer Payment Data Flow

*Description:*

Payment from customer for the interchange of purchased the company's products.

*Location:*

TMA SYS ( CONTEXT )  
TMA System Level 0 ( 0 )  
Financial Process ( 4 )  
Account Receivable Controlling Process ( 4.3 )

---

Customer Regular Order Data Flow

*Description:*

Customer's order is under normal condition such as the company's normal delivery time.

*Location:*

TMA System Level 0 ( 0 )  
Ordering Process ( 1 )  
Receive Customer Order ( 1.3 )  
Purchasing Process ( 2 )

---

Delivered Order Data Flow

*Description:*

The received customer's order that the products have already been delivered.

*Location:*

TMA System Level 0 ( 0 )  
Ordering Process ( 1 )  
Receive Customer Order ( 1.3 )  
Financial Process ( 4 )  
Issue Sales Invoice Process ( 4.1 )

---

Deposit Data Flow

*Description:*

Money or receiving bill from customers that are deposited into the bank.

*Location:*

TIVIA\_SYS ( CONTEXT )  
TMA System Level 0 ( 0 )  
Financial Process ( 4 )  
Monetary Controlling Process ( 4.7 )

---

DN Info. Data Flow

*Description:*

Information of temporary delivery note such as bill number, issuing sales invoice status and etc.

*Location:*

TMA System Level 0 ( 0 )

Ordering Process ( 1 )	
Receive Customer Order ( 1.3 )	
<hr/>	
Due Awaiting Payment	Data Flow
<i>Description:</i>	
It is the time to arrange a payment for the account payable.	
<i>Location:</i>	
Account Payable Controlling Process ( 4.5 )	
<hr/>	
Exceed Normal Delivery Time PR	Data Flow
<i>Description:</i>	
Request date of purchase order exceed normal delivery time from supplier.	
<i>Location:</i>	
Evaluate Product Shortage Info. ( 2.4 )	
<hr/>	
Exist Cancelled Sales Invoice	Data Flow
<i>Description:</i>	
There is cancelled Sales Invoice during the accounting period.	
<i>Location:</i>	
Issue Sales Invoice Process ( 4.1 )	
<hr/>	
Exist Product Code	Data Flow
<i>Description:</i>	
Product code is exist in the system already.	
<i>Location:</i>	
Inventory Inflow Process ( 3.1 )	
<hr/>	
Feedback	Data Flow
<i>Description:</i>	
The replying information.	
<i>Location:</i>	
TMA System_Level 0 ( 0 )	
Purchasing Process ( 2 )	
Evaluate Product Shortage Info. ( 2.4 )	
Inventory Controlling Process ( 3 )	
Safety Stock Controlling Process ( 3.5 )	
<hr/>	
Future Order Info.	Data Flow
<i>Description:</i>	
Information of customer's future order.	
<i>Location:</i>	
Safety Stock Controlling Process ( 3.5 )	
<hr/>	
Goods	Data Flow
<i>Description:</i>	
Products that are used to sell to customers or buy from suppliers.	
<i>Location:</i>	
TMA_SYS ( CONTEXT )	

TMA System Level 0 ( 0 )	
TMA_SYS ( CONTEXT )	
TMA System Level 0 ( 0 )	
Inventory Controlling Process ( 3 )	
Inventory Inflow Process ( 3.1 )	
<hr/>	
Immediate Delivery Order	Data Flow
<i>Description:</i>	
Receive customer order is promptly arranging to deliver to customer.	
<i>Location:</i>	
Process Common Product Order ( 2.2 )	
<hr/>	
Impossible Delivery Time	Data Flow
<i>Description:</i>	
Customer request delivery time is impossible for the company to supply it on time.	
<i>Location:</i>	
Process Uncommon Product Order ( 2.3 )	
<hr/>	
Incomplete Payment Documents	Data Flow
<i>Description:</i>	
Payment document submitted by Account Department is incorrect or incomplete.	
<i>Location:</i>	
Monetary Controlling Process ( 4.7 )	
<hr/>	
Incorrect Documents	Data Flow
<i>Description:</i>	
Supplier invoice or credit note or any documents from supplier are not in correct conditions.	
<i>Location:</i>	
TMA_SYS ( CONTEXT )	
TMA System_Level 0 ( 0 )	
Inventory Controlling Process ( 3 )	
Inventory Inflow Process ( 3.1 )	
<hr/>	
Incorrect Goods	Data Flow
<i>Description:</i>	
Products from supplier are incorrect or in damaged condition	
<i>Location:</i>	
TMA_SYS (CONTEXT )	
TMA System_Level 0 ( 0 )	
Inventory Controlling Process ( 3 )	
Inventory Inflow Process ( 3.1 )	
<hr/>	
Incorrect Inquiry	Data Flow
<i>Description:</i>	

Inquiry information from customer is not completed and can not be found in the actual request.

*Location:*

TMA\_SYS ( CONTEXT )  
TMA System\_Level 0 ( 0 )  
Ordering Process ( 1 )  
Receive Customer Inquiry ( 1.2 )

-----  
Incorrect Order

Data Flow

*Description:*

Received customer order is in invalid or unaccepted condition

*Location:*

TMA\_SYS ( CONTEXT )  
TMA System\_Level 0 ( 0 )  
Ordering Process ( 1 )  
Receive Customer Order ( 1.3 )  
Purchasing Process ( 2 )  
Process Uncommon Product Order ( 2.3 )

-----  
Inquiry

Data Flow

*Description:*

Information of product requested.

*Location:*

TMA SYS ( CONTEXT )  
TMA System\_Level 0 ( 0 )  
Ordering Process ( 1 )  
Receive Customer Inquiry ( 1.2 )  
Contact Suppliers with Customer Inquiry ( 1.2.2 )

-----  
Inquiry Info.

Data Flow

*Description:*

Information of customer inquiry such as request product item, quantity and date.

*Location:*

Receive Customer Inquiry ( 1.2 )  
Issue Quotation ( 1.2.4 )

-----  
Inventory Info.

Data Flow

*Description:*

Information of inventory such as ending quantity, unit price, unit cost and historical sales info.

*Location:*

TMA System\_Level 0 ( 0 )  
Ordering Process ( 1 )  
Receive Customer Inquiry ( 1.2 )  
Issue Quotation ( 1.2.4 )  
Inventory Controlling Process ( 3 )  
Safety Stock Controlling Process ( 3.5 )

Issued Delivery Note

Data Flow

*Description:*

Newly generated temporary delivery note.

*Location:*

TMA System Level 0 ( 0 )

Ordering Process ( 1 )

Inventory Controlling Process ( 3 )

---

Management Reports

Data Flow

*Description:*

Executive reports that are generated in order to report the business operation result to management level

*Location:*

TMA SYS ( CONTEXT )

TMA System Level 0 ( 0 )

---

Negotiating Result

Data Flow

*Description:*

Output of price negotiation with supplier.

*Location:*

Interact with New Cost Info. ( 2.6 )

---

New Contact Person Name

Data Flow

*Description:*

A new person name of customer who contacts with our company.

*Location:*

Receive Customer Info. ( 1.1 )

---

New Cost Info.

Data Flow

*Description:*

New product cost offered by supplier.

*Location:*

TMA System Level 0 ( 0 )

Purchasing Process ( 2 )

Interact with New Cost Info. ( 2.6 )

Update Price List Process ( 5 )

---

New Credit Term

Data Flow

*Description:*

New allowance credit term that request from customer or provided by the company.

*Location:*

Receive Customer Info. ( 1.1 )

---

New Customer Name

Data Flow

*Description:*

Name of customer has been changed to a new name.

*Location:*

Receive Customer Info. ( 1.1 )

-----	
New Discount Rate	Data Flow
<i>Description:</i> Rate of discount that offered to customer has been changed in common product.	
<i>Location:</i> Receive Customer Info. ( 1.1 )	
-----	
New Phone No. and Address	Data Flow
<i>Description:</i> Customer telephone number or address has been changed in new information.	
<i>Location:</i> Receive Customer Info. ( 1.1 )	
-----	
New Product Code	Data Flow
<i>Description:</i> Newly generated product code.	
<i>Location:</i> Inventory Inflow Process ( 3.1 )	
-----	
Non-exist Product Code	Data Flow
<i>Description:</i> Product code is not exist in the system yet.	
<i>Location:</i> Inventory Inflow Process ( 3.1 )	
-----	
Non Exist Cancelled Sales Invoice	Data Flow
<i>Description:</i> There is no cancelled sales invoice during the account period.	
<i>Location:</i> Issue Sales Invoice Process ( 4.1 )	
-----	
Order Info.	Data Flow
<i>Description:</i> Information of the company's purchase order such as request product items, quantity and date.	
<i>Location:</i> TMA System Level 0 ( 0 ) Ordering Process ( 1 ) Receive Customer Order ( 1.3 ) Purchasing Process ( 2 ) Process Common Product Order ( 2.2 )	
-----	
Over Safety Qty Items	Data Flow
<i>Description:</i> Remaining product quantity is more than safety stock quantity.	
<i>Location:</i> Safety Stock Controlling Process ( 3.5 )	



Payment Bill	Data Flow
<i>Description:</i> A bill that issued by the company to other person, in which bill holder could get the amount of money that indicated in the bill from a bank.	
<i>Location:</i> Financial Process ( 4 ) Account Payable Controlling Process ( 4.5 ) Generate Tax Report ( 4.6 ) Monetary Controlling Process ( 4.7 )	
Payment To Sup	Data Flow
<i>Description:</i> The company payment to supplier against the purchased goods from supplier.	
<i>Location:</i> TMA_SYS ( CONTEXT ) TMA System Level 0 ( 0 ) Financial Process ( 4 ) Account Payable Controlling Process ( 4.5 )	
Possible Delivery Time	Data Flow
<i>Description:</i> Customer request delivery time is possible for the company to supply on time.	
<i>Location:</i> Process Uncommon Product Order ( 2.3 )	
Price Info.	Data Flow
<i>Description:</i> Information of unit price of common product in the price list.	
<i>Location:</i> TMA System Level 0 ( 0 ) Receive Customer Inquiry ( 1.2 ) Issue Quotation ( 1.2.4 ) Update Price List Process ( 5 )	
Price List Info.	Data Flow
<i>Description:</i> Infomation of product cost, product selling price and mark-up margin.	
<i>Location:</i> TMA_SYS ( CONTEXT ) TMA System Level 0 ( 0 ) Purchasing Process ( 2 ) Interact with New Cost Info. ( 2.6 ) Update Price List Process ( 5 )	
Product Info.	Data Flow
<i>Description:</i>	

Information of the product such as product model, figure, detail technical specification, price and etc.

*Location:*

TMA\_SYS ( CONTEXT )  
TMA System\_Level 0 ( 0 )  
Ordering Process ( 1 )  
Receive Customer Inquiry ( 1.2 )  
Contact Suppliers with Customer Inquiry ( 1.2.2 )  
Issue Quotation ( 1.2.4 )  
Purchasing Process ( 2 )  
Interact with New Cost Info. ( 2.6 )

Product Normal Delivery Time Data Flow

*Description:*

Normal delivery lead time of supplier

*Location:*

Safety Stock Controlling Process ( 3.5 )

Product Safety Qty Data Flow

*Description:*

Product quantity that should keep at the minimum level.

*Location:*

Safety Stock Controlling Process ( 3.5 )

Product Shortage Info. Data Flow

*Description:*

Information of products that are empty or nearly empty from the stock.

*Location:*

TMA System\_Level 0 ( 0 )  
Purchasing Process ( 2 )  
Evaluate Product Shortage Info. ( 2.4 )  
Inventory Controlling Process ( 3 )  
Safety Stock Controlling Process ( 3.5 )

Product Turn Over Rate Data Flow

*Description:*

Frequency of product sold in a specific period of time.

*Location:*

Safety Stock Controlling Process ( 3.5 )

Purchase Info. Data Flow

*Description:*

Information of previous purchase documents from suppliers.

*Location:*

TMA System\_Level 0 ( 0 )  
Financial Process ( 4 )  
Account Payable Controlling Process ( 4.5 )  
Generate Tax Report ( 4.6 )

Purchase Order

Data Flow

*Description:*

The company's purchase order that is placed to supplier for the confirmation of future order.

*Location:*

TMA SYS ( CONTEXT )

TMA System Level 0 ( 0 )

Purchasing Process ( 2 )

---

Purchase Report

Data Flow

*Description:*

Executive report of purchasing in a specific period of time.

*Location:*

Generate Tax Report ( 4.6 )

---

Quotation Info.

Data Flow

*Description:*

Information of issued quotations both from the company and supplier for stating detail information of product info. and trade term.

*Location:*

TMA System Level 0 ( 0 )

Ordering Process ( 1 )

Receive Customer Inquiry ( 1.2 )

Issue Quotation ( 1.2.4 )

Receive Customer Order ( 1.3 )

TMA System\_Level 0 ( 0 )

Purchasing Process ( 2 )

Process Uncommon Product Order ( 2.3 )

---

Receipt

Data Flow

*Description:*

A financial document that is issued to another partner for the confirmation of received the partner's payment

*Location:*

TMA SYS ( CONTEXT )

TMA System\_Level 0 ( 0 )

Financial Process ( 4 )

Account Receivable Controlling Process ( 4.3 )

Account Payable Controlling Process ( 4.5 )

Generate Tax Report ( 4.6 )

---

Receiving Bill

Data Flow

*Description:*

A payment bill that issued by customer in order to make a payment to the company.

*Location:*

Financial Process ( 4 )

Account Receivable Controlling Process ( 4.3 )

Monetary Controlling Process ( 4.7 )

Requested Product Qty	Data Flow
<i>Description:</i> Product quantity that is requested to buy	
<i>Location:</i> Safety Stock Controlling Process ( 3.5 )	
Returned Goods	Data Flow
<i>Description:</i> Products are returned from customer due to any other reasons.	
<i>Location:</i> TMA_SYS ( CONTEXT ) TMA System_Level 0 ( 0 ) Inventory Controlling Process ( 3 )	
Returned Goods Info.	Data Flow
<i>Description:</i> Information of goods are returned and the reasons of returning.	
<i>Location:</i> TMA System Level 0 ( 0 ) Ordering Process ( 1 ) Receive Customer Order ( 1.3 ) Financial Process ( 4 )	
Sales Credit Note	Data Flow
<i>Description:</i> A financial document that is issued to customer for the acceptance of deducting customer's debt.	
<i>Location:</i> TMA_SYS ( CONTEXT ) TMA System_Level 0 ( 0 ) Inventory Controlling Process ( 3 ) Financial Process ( 4 )	
Sales Info.	Data Flow
<i>Description:</i> Information of historical sales.	
<i>Location:</i> TMA System_Level 0 ( 0 ) Financial Process ( 4 ) Issue Sales Invoice Process ( 4.1 ) Account Receivable Controlling Process ( 4.3 ) Generate Tax Report ( 4.6 )	
Sales Invoice	Data Flow
<i>Description:</i> A financial document that is issued to customer for confirmation of merchandise value and will collect this amount from customer.	
<i>Location:</i>	

TMA SYS ( CONTEXT )  
TMA System Level 0 ( 0 )  
Inventory Controlling Process ( 3 )  
Financial Process ( 4 )  
Issue Sales Invoice Process ( 4.1 )

---

Sales Report Data Flow

*Description:*

Executive report of sales in a specific period of time.

*Location:*

Generate Tax Report ( 4.6 )

---

Signed Delivery Note Data Flow

*Description:*

Temporary delivery note is signed by receiver for acceptance the delivered products.

*Location:*

TMA System Level 0 ( 0 )  
Ordering Process ( 1 )  
Financial Process ( 4 )  
Issue Sales Invoice Process ( 4.1 )

---

Statement Data Flow

*Description:*

A financial document from bank for the confirmation of money transfer.

*Location:*

TMA\_SYS ( CONTEXT )  
TMA System Level 0 ( 0 )  
Financial Process ( 4 )  
Monetary Controlling Process ( 4.7 )

---

Sup Credit Note Data Flow

*Description:*

A supplier document that is issued to us for deducting our debt.

*Location:*

TMA SYS ( CONTEXT )  
TMA System Level 0 ( 0 )  
Inventory Controlling Process ( 3 )  
Financial Process ( 4 )

---

Sup Delivery Note Data Flow

*Description:*

Supplier's temporary delivery document that is used to confirm the delivery to us.

*Location:*

TMA\_SYS ( CONTEXT )  
TMA System Level 0 ( 0 )  
Inventory Controlling Process ( 3 )  
Inventory Inflow Process ( 3.1 )

Sup Delivery Note Info.	Data Flow
<i>Description:</i> Information of supplier delivery note for delivered products.	
<i>Location:</i> TMA System Level 0 ( 0 ) Inventory Controlling Process ( 3 ) Inventory Inflow Process ( 3.1 )	
Sup Invoice	Data Flow
<i>Description:</i> Supplier invoice that is issued to us in order to notice the sales of merchandise and collect the payment to us later.	
<i>Location:</i> TMA SYS ( CONTEXT ) TMA System_Level 0 ( 0 ) Inventory Controlling Process ( 3 ) Inventory Inflow Process ( 3.1 ) Financial Process ( 4 )	
Sup Quotation	Data Flow
<i>Description:</i> Supplier quotation that is generated to us in order to offer us detail product info. and its price as well as the trade term.	
<i>Location:</i> TMA SYS ( CONTEXT ) TMA System Level 0 ( 0 ) Ordering Process ( 1 ) Receive Customer Inquiry ( 1.2 ) Contact Suppliers with Customer Inquiry ( 1.2.2 ) Issue Quotation ( 1.2.4 )	
Supplier Info.	Data Flow
<i>Description:</i> Information of supplier such as supplier name, address, business type, trade term and etc.	
<i>Location:</i> TMA System_Level 0 ( 0 ) Ordering Process ( 1 ) Receive Customer Inquiry ( 1.2 ) Contact Suppliers with Customer Inquiry ( 1.2.2 ) Purchasing Process ( 2 ) Interact with New Cost Info. ( 2.6 )	
Tax Payment	Data Flow
<i>Description:</i> An amount of money that the company should pay to Revenue Department in case the company makes profit on business.	
<i>Location:</i>	

TMA_SYS ( CONTEXT )	
TMA System Level 0 ( 0 )	
Financial Process ( 4 )	
Generate Tax Report ( 4.6 )	
-----	
Tax Reports	Data Flow
<i>Description:</i>	
A financial report that the company made to report to Revenue Department on the result of business operation.	
<i>Location:</i>	
TMA_SYS ( CONTEXT )	
TMA System Level 0 ( 0 )	
Financial Process ( 4 )	
Generate Tax Report ( 4.6 )	
Monetary Controlling Process ( 4.7 )	
-----	
TMA Billing Note	Data Flow
<i>Description:</i>	
The company's Billing Note to customers in order to inform customer for preparing such amount of payment to the company on assigned date.	
<i>Location:</i>	
TMA_SYS ( CONTEXT )	
TMA System_Level 0 ( 0 )	
Financial Process ( 4 )	
Account Receivable Controlling Process ( 4.3 )	
-----	
TMA Delivery Note	Data Flow
<i>Description:</i>	
The company's temporary delivery note that is issued to customer in order to confirm the delivery .	
<i>Location:</i>	
TMA_SYS ( CONTEXT )	
TMA System_Level 0 ( 0 )	
Inventory Controlling Process ( 3 )	
-----	
TMA Quotation	Data Flow
<i>Description:</i>	
The company's quotation that is generated to customers in order to offer product specification, price and trade term.	
<i>Location:</i>	
TMA_SYS ( CONTEXT )	
TMA System_Level 0 ( 0 )	
Ordering Process ( 1 )	
Receive Customer Inquiry ( 1.2 )	
Issue Quotation ( 1.2.4 )	
-----	
Unaccepted Passed Days Sales Invoice	Data Flow
<i>Description:</i>	

Date occurred on the Sales Invoice is passed a period of days and is not accepted by customer.

*Location:*

Issue Sales Invoice Process ( 4.1 )

---

Unaccepted Profit Level

Data Flow

*Description:*

Profit earned from customer order is lower than standard request.

*Location:*

Process Uncommon Product Order ( 2.3 )

---

Unaccepted Qty Request

Data Flow

*Description:*

Product quantity of purchase request is not approved.

*Location:*

Evaluate Product Shortage Info. ( 2.4 )

---

Uncommon Product Info.

Data Flow

*Description:*

Information of product item that are considered as rarely sold and doesn't keep in stock.

*Location:*

Receive Customer Inquiry ( 1.2 )

Contact Suppliers with Customer Inquiry ( 1.2.2 )

---

Uncommon Product Order

Data Flow

*Description:*

Product item of customer order is not in company's normal product line, and need to purchase from supplier once received customer order.

*Location:*

Purchasing Process ( 2 )

Process Uncommon Product Order ( 2.3 )

---

Uncompleted Customer Order

Data Flow

*Description:*

Customer order is under uncompleted condition such as lack of authorized signature, unclear product item and other uncompleted PO information.

*Location:*

Process Uncommon Product Order ( 2.3 )

---

Undelivered Order

Data Flow

*Description:*

Received customer order has not been delivered the goods.

*Location:*

Receive Customer Order ( 1.3 )

---

Under Safety Qty Items

Data Flow

*Description:*



Remaining product quantity is lower than safety stock quantity.	
<i>Location:</i> Safety Stock Controlling Process ( 3.5 )	
-----	
Undue Awaiting Payment	Data Flow
<i>Description:</i> Account payable should not be paid now.	
<i>Location:</i> Account Payable Controlling Process ( 4.5 )	
-----	
Invalid Receiving Bill	Data Flow
<i>Description:</i> Receiving bill from customer is under invalid condition.	
<i>Location:</i> Monetary Controlling Process ( 4.7 )	
-----	
Updated Awaiting Income	Data Flow
<i>Description:</i> Account Receivable is updated into the database system.	
<i>Location:</i> TMA System Level 0 ( 0 ) Financial Process ( 4 ) Account Receivable Controlling Process ( 4.3 )	
-----	
Updated Awaiting Payment	Data Flow
<i>Description:</i> Account payable is updated into the database system.	
<i>Location:</i> TMA System_Level 0 ( 0 ) Financial Process ( 4 ) Account Payable Controlling Process ( 4.5 )	
-----	
Updated Cost	Data Flow
<i>Description:</i> New cost is accepted to apply.	
<i>Location:</i> TMA System_Level 0 ( 0 ) Update Price List Process ( 5 )	
-----	
Updated Customer Info.	Data Flow
<i>Description:</i> Customer information in the database is updated with the new information.	
<i>Location:</i> TMA System_Level 0 ( 0 ) Ordering Process ( 1 ) Receive Customer Info. ( 1.1 )	
-----	
Updated Customer Payment	Data Flow
<i>Description:</i>	

Process of updating customer payment once receive customer payment bills.

*Location:*

Account Receivable Controlling Process ( 4.3 )

Financial Process ( 4 )

Monetary Controlling Process ( 4.7 )

---

Updated DN.

Data Flow

*Description:*

The company's delivery note is updated in case of issuing a new one, returned signed DN or status or DN is replaced by sales invoice.

*Location:*

TMA System\_Level 0 ( 0 )

Ordering Process ( 1 )

---

Updated Inventory

Data Flow

*Description:*

Inventory information is updated due to change of inventory record.

*Location:*

TMA System Level 0 ( 0 )

Inventory Controlling Process ( 3 )

Inventory Inflow Process ( 3.1 )

Safety Stock Controlling Process ( 3.5 )

---

Updated Order Info.

Data Flow

*Description:*

Order is periodically updated due to the change of order info. such as issuing a new one, approval and delivery status.

*Location:*

TMA System Level 0 ( 0 )

Purchasing Process ( 2 )

Process Common Product Order ( 2.2 )

---

Updated Price

Data Flow

*Description:*

New price list is accepted to apply.

*Location:*

TMA System\_Level 0 ( 0 )

Update Price List Process ( 5 )

---

Updated Price List Policy

Data Flow

*Description:*

Currently change on price list.

*Location:*

TMA\_SYS ( CONTEXT )

TMA System\_Level 0 ( 0 )

Update Price List Process ( 5 )

---

Updated Purchase Info.

Data Flow

*Description:*

The company's purchase order info. is updated for recording its payment record and etc.

*Location:*

TMA System\_Level 0 ( 0 )  
Financial Process ( 4 )

---

Updated Quotation Info.

Data Flow

*Description:*

Sales quotation in the database is updated.

*Location:*

TMA System\_Level 0 ( 0 )  
Ordering Process ( 1 )  
Receive Customer Inquiry ( 1.2 )  
Issue Quotation ( 1.2.4 )

---

Updated Sales Info.

Data Flow

*Description:*

Sales information in the database is updated once managing the return signed sales document and complete the customer payment.

*Location:*

TMA System Level 0 ( 0 )  
Financial Process ( 4 )  
Issue Sales Invoice Process ( 4.1 )

---

Updated Sup Delivery Note

Data Flow

*Description:*

Supplier delivery note document is updated once supplier issued a new one or supplier invoice to replace delivered merchandise.

*Location:*

TMA System Level 0 ( 0 )  
Inventory Controlling Process ( 3 )  
Inventory Inflow Process ( 3.1 )

---

Updated Supplier Info.

Data Flow

*Description:*

Information of supplier is newly recorded or changed exist record in the database.

*Location:*

TMA System Level 0 ( 0 )  
Ordering Process ( 1 )  
Receive Customer Inquiry ( 1.2 )  
Contact Suppliers with Customer Inquiry ( 1.2.2 )  
Interact with New Cost Info. ( 2.6 )  
Purchasing Process ( 2 )  
TMA System\_Level 0 ( 0 )

---

Urgent Order

Data Flow

*Description:*

The confirmed customer order in urgent case in which the company has to deliver products to customer first before receiving customer order sheet.

Location:

- Ordering Process ( 1 )
- Receive Customer Order ( 1.3 )

Valid Receiving Bill

Data Flow

Description:

Receiving bill from customer is valid and can be deposited to the bank.

Location:

- Monetary Controlling Process ( 4.7 )

Withdrawal

Data Flow

Description:

Money withdrawal from the bank for making payment to suppliers or Revenue Department.

Location:

- TMA\_SYS ( CONTEXT )
- TMA System Level 0 ( 0 )
- Financial Process ( 4 )
- Monetary Controlling Process ( 4.7 )

## DATA DICTIONARY — ENTITITY RELATIONSHIP

### Billing Note

Entity

#### Description:

A financial document that issued by the company in order to inform to customer to arrange the payment to the company on a specific date.

#### Composition:

BN No. [PK]  
Salesinv No. [FK]  
Sales\_CN No. [FK]  
BN Date  
Tax\_Amount  
Total\_Amount  
Total\_Amount\_Before\_Tax  
Due\_Date  
Status

#### Location:

##### ERD

#### Attached relationships on ERD:

Is generated by Sales Invoice MIN: 1 MAX: many  
Is generated by Sales Credit Note MIN: 0 MAX: many  
Create Receiving Bill MIN: 1 MAX: many

### Customer

Entity

#### Description:

Identification information of customer.

#### Composition:

Cus\_Code [PK]  
Cus Name  
Fax No.  
Tel\_No.  
Extention No.  
Cus\_Address  
Post\_Code  
Contact\_Person Name  
Discount\_Rate  
Credit term

#### Location:

##### ERD

#### Attached relationships on ERD:

Is supervised by Salesman MIN: 1 MAX: 1  
Receive MIN: 1 MAX: many

Sales Quotation

Place

MIN: 0 MAX: many

Customer Order

Receive

MIN: 1 MAX: many

Sales Invoice

-----  
Customer Order

Entity

*Description:*

Purchase order that is issued by customer to the company for the confirmation of buying the company's product.

*Composition:*

Cus\_Order No. [PK]

Cus\_Code [FK]

Cus\_OrderDate

Prod\_Brand

Prod Name

Prod\_Model

Prod\_Qty

Req\_Del Date

Req\_Del\_Place

Total\_Amt\_Before\_Tax

Unit Price

*Location:*

ERD

*Attached relationships on ERD:*

Is placed by

MIN: 1 MAX: 1

Customer

-----  
Payment Bill

Entity

*Description:*

A payment document that issued by bank for making an amount of payment to bill holder.

*Composition:*

Payment\_Bill No. [PK]

Payment No. [FK]

Payment Bill Date

Total Amount

*Location:*

ERD

*Attached relationships on ERD:*

Paid for

MIN: 1 MAX: 1

Payment Cover Sheet

-----  
Payment Cover Sheet

Entity

*Description:*

A document that is made to summarize the detail of payment.

*Composition:*

Payment No. [PK]  
 Sup\_CN No. [FK]  
 Sup\_Inv No. [FK]  
 Tax Report No. [FK]  
 Tax\_Amount  
 Total\_Amount  
 Total Amt Before Tax

Location:

ERD

Attached relationships on ERD:

Is generated by <u>Tax Report</u>	MIN: 1 MAX: 1
Is generate by <u>Sup Credit Note</u>	MIN: 0 MAX: many
Is generated by <u>Sup Invoice</u>	MIN: 1 MAX: many
Use to issue <u>Payment Bill</u>	MIN: 1 MAX: 1

Product Item	Entity
--------------	--------

Description:

Product specification and description.

Composition:

Prod\_Code [PK]  
 Prod\_Brand  
 Prod\_Name  
 Prod Model

Location:

ERD

Attached relationships on ERD:

Is consisted in <u>TMA Delivery Note</u>	MIN: 0 MAX: many
Is consisted in <u>Sales Invoice</u>	MIN: 0 MAX: many
Is consisted in <u>Sales Credit Note</u>	MIN: 0 MAX: many
Refer to <u>Shortage Product Item</u>	1VIIN: 1 MAX: 1
Is consisted in <u>Sup Credit Note</u>	MIN: 0 MAX: many
Is consisted in <u>Sup Invoice</u>	MIN: 0 MAX: many

Receiving Bill	Entity
----------------	--------

Description:

Money or cheque that received from customer for the interchange of buying the company's product.

*Composition:*

Receiving Bill No. [PK]  
BN No. [FK]  
Sales\_Inv No. [FK]  
Sales\_CN No. [FK]  
Receiving\_Bill\_Date  
Total Amount  
Status

*Location:*

## ERD

*Attached relationships on ERD:*

Is received for MIN: 1 MAX: many  
Billing Note

## Sales Credit Note

Entity

*Description:*

The company issued credit note in order to reduce debt to customer.

*Composition:*

Sales\_CN No. [PK]  
Sales\_Inv No. [FK]  
Prod\_Code [FK]  
Return Reason  
Sales\_CN\_Date  
Tax\_Amount  
Total\_Amount  
Total\_Amt\_Before\_Tax  
Prod\_Qty  
Unit Price

*Location:*

## ERD

*Attached relationships on ERD:*

Refer to <u>Sales Invoice</u>	MIN: 1 MAX: 1
Consist <u>Product Item</u>	MIN: 1 MAX: many
Generate <u>Tax Report</u>	MIN: 1 MAX: 1
Generate Billing Note	MTN: 1 MAX: 1

## Sales Invoice

Entity

*Description:*

The company issued invoice to customer, it is an evidence to indicate that customer bought the company's product.

*Composition:*

Sales\_Inv No. [PK]



Salesman\_Code [FK]  
 Cus\_Code [FK]  
 Prod\_Code [FK]  
 Sales\_Inv Date  
 Prod\_Qty  
 Unit\_Price  
 Tax\_Amount  
 Total\_Amount  
 Total Amt Before Tax

Location:

ERD

Attached relationships on ERD:

Is issued to	MIN: 1 MAX: 1
<u>Customer</u>	
Is controlled by	MIN: 1 MAX: 1
<u>Salesman</u>	
Is referred in	MIN: 0 MAX: many
<u>Sales Credit Note</u>	
Refer to	MIN: 0 MAX: many
<u>TMA Delivery Note</u>	
Consist	MIN: 1 MAX: many
<u>Product Item</u>	
Generate	MIN: 1 MAX: 1
<u>Tax Report</u>	
Generate	MIN: 1 MAX: 1
<u>Billing Note</u>	

Sales Quotation

Entity

Description:

Quotation that the company offers to customer for the product price and additional trade terms.

Composition:

Sales\_Quo No. [PK]  
 Salesman\_Code [FK]  
 Cus Code [FK]  
 Sup\_Quo\_Code [FK]  
 Sales\_Quo\_Date  
 Delivery Place  
 Prod\_Brand  
 Prod Name  
 Prod\_Model  
 Prod\_Qty  
 Unit\_Price  
 Total\_Amt\_Before\_Tax

Location:

ERD

Attached relationships on ERD:

Is issued by <u>Salesman</u>	MIN: 1 MAX: 1
Is issued to <u>Customer</u>	MIN: 1 MAX: 1
Is generated by <u>Supplier Quotation</u>	MIN: 1 MAX: many

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Salesman	Entity
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*Description:*  
A person who supervises the company's sales activities.

*Composition:*  
Salesman\_Code [PK]  
Salesman Name  
Sales\_Target

*Location:*  
ERD

*Attached relationships on ERD:*

Issue <u>Sales Quotation</u>	MIN: 1 MAX: many
Supervise <u>Customer</u>	MIN: 1 MAX: many
Control <u>Sales Invoice</u>	MIN: 1 MAX: many
Control <u>TMA Delivery Note</u>	MIN: 1 MAX: many

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Shortage Product Item	Entity
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*Description:*  
Product items that are empty or nearly empty from the inventory.

*Composition:*  
Prod\_Code [PK, FK]  
TMA PO No. [PK, FK]  
Prod\_Qty  
Req\_Date

*Location:*  
ERD

*Attached relationships on ERD:*

<u>Is referred by</u> <u>Product Item</u>	MIN: 1 MAX: 1
<u>Is consisted in</u> <u>TMA Order</u>	MIN: 1 MAX: many

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Sup Credit Note	Entity
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*Description:*  
Supplier issued credit note to the company in order to deduct the company debt.

*Composition:*

Sup\_CN No. [PK]  
Sup\_Inv No. [FK]  
Prod\_Code [FK]  
Sup\_CN\_Date  
Prod\_Qty  
Unit Price  
Tax Amount  
Total\_Amount  
Total\_Amt Before\_Tax  
Return Reason

*Location:*

ERD

*Attached relationships on ERD:*

Consist	MIN: 1 MAX: many
<u>Product Item</u>	
Is referred by	MIN: 1 MAX: 1
<u>Sup Invoice</u>	
Generate	MIN: 1 MAX: 1
<u>Tax Report</u>	
Generate	MIN: 1 MAX: 1
<u>Payment Cover Sheet</u>	

Sup Invoice

Entity

*Description:*

Supplier invoice that issue to the company.

*Composition:*

Sup Inv No. [PK]  
Prod\_Code [FK]  
Sup Code [FK]  
Sup\_Invoice Date  
Prod\_Qty  
Unit\_Price  
Tax\_Amount  
Total\_Amount  
TotalAmtBefore\_Tax

*Location:*

ERD

*Attached relationships on ERD:*

Consist	MIN: 1 MAX: many
<u>Product Item</u>	
Refer	MIN: 0 MAX: many
<u>Sup Credit Note</u>	
Generate	MIN: 1 MAX: 1
<u>Tax Report</u>	
Generate	MEN: 1 MAX: 1
<u>Payment Cover Sheet</u>	

Supplier	Entity
<i>Description:</i>	
One of the business partner who supply company with products.	
<i>Composition:</i>	
Sup_Code [PK]	
Sup Name	
Sup_Address	
Contact_Person Name	
Credit_term	
Fax No.	
Post No.	
Tel No.	
<i>Location:</i>	
<u>ERD</u>	
<i>Attached relationships on ERD:</i>	
Receive	MIN: 0 MAX: many
<u>TMA Order</u>	
Issue	M1N: 0 MAX: many
<u>Supplier Quotation</u>	
Supplier Quotation	Entity
<i>Description:</i>	
Supplier quotation that issue to the company for offer product price and other trade conditions.	
<i>Composition:</i>	
Sup_Quo_Code [PK]	
Sup_Code [FK]	
Sup_Quo_No.	
Sup_Quo_Date	
Prod Brand	
Prod Name	
Prod_Model	
Prod_Qty	
Unit Price	
Total Amt Before Tax	
<i>Location:</i>	
<u>ERD</u>	
<i>Attached relationships on ERD:</i>	
Is received from	MIN: 1 MAX: 1
<u>Supplier</u>	
Generate	MIN: 1 MAX: 1
<u>Sales Quotation</u>	
Tax Report	Entity
<i>Description:</i>	
An executive report that is generate to report Revenue Department for the	

outcome of business operation.

Composition:

Tax Report No. [PK]  
Sales\_CN No. [FK]  
Sales Inv No. [FK]  
Sup\_CN No. [FK]  
Sup\_Inv No. [FK]  
Tax\_Amount

Location:

ERD

Attached relationships on ERD:

Is generated by	MIN: 1 MAX: many
<u>Sales Invoice</u>	
Is generated by	MIN: 0 MAX: many
<u>Sales Credit Note</u>	
Is generated by	MIN: 1 MAX: many
<u>Sup Invoice</u>	
Is generated by	MIN: 0 MAX: many
<u>Sup Credit Note</u>	
Generate	MIN: 1 MAX: 1
<u>Payment Cover Sheet</u>	

TMA Delivery Note

Entity

Description:

The company temporary delivery note that is issued to customer for the acceptance of delivered goods.

Composition:

TMA\_DN No. [PK]  
Salesman Code [FK]  
Cus\_Code [FK]  
Prod\_Code [FK]  
Sales Inv No. [FK]  
TMA DN Date  
Prod Qty

Location:

ERD

Attached relationships on ERD:

Consist	MIN: 1 MAX: many
<u>Product Item</u>	
Is referred in	MIN: 1 MAX: many
<u>Sales Invoice</u>	
Is controlled by	MIN: 1 MAX: 1
<u>Salesman</u>	

TMA Order	Entity
<i>Description:</i>	
The company's purchase order that issue to supplier for the confirmation of company purchase.	
<i>Composition:</i>	
TMA PO No. [PK]	
Prod_Code [FK]	
Sup_Code [FK]	
TMA PO Date	
Prod Qty	
Unit_Price	
Total_Amt_Before Tax	
Req_Del_Date	
Req_Del_Place	
<i>Location:</i>	
<u>ERD</u>	
<i>Attached relationships on ERD:</i>	
Is placed to	MIN: 1 MAX: 1
<u>Supplier</u>	
Consist	MIN: 1 MAX: many
Shortage Product Item	

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