



Online Shopping System for Dual Sports Ball

by

Ms. Thandar Aung

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

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

November 2006

St. Gabriel's Library, Au

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Project Title Online Shopping System for Dual Sports Ball


Name Ms. Thandar Aung

Project Advisor Assoc.Prof.Dr. Suphamit Chittayasothorn


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

Approval Committee:



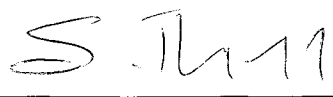
(Assoc.Prof.Dr. Suphamit Chittayasothorn)
Advisor



(Prof. Dr. Srisakdi Charmonman)
Chairman



(Dr. Rapeepat Techakittiroj)
Program Coordinator



(Assoc.Prof. Somchai Thayarnyong)
CHE Representative

November 2006

I. ABSTRACT

Electronic commerce represents the future of selling on the internet channel, and its service can be utilized from wherever by means of electronic channels. The increasing rate in the establishment of e-commerce companies is also one of the particular concerns that many companies have changed their systems to become computerized.

The current system operates manually, and it often has many unexpected problems. Most data are stored on paper, while some parts are kept in the Microsoft Excel and Microsoft Word programs. Many concerns such as inconsistent data and lack of efficient performance reports have happened.

As a result, in this project, the new proposed information system will be developed to replace the current manual system. The proposed system is designed as an interactive e-commerce process which offers ease of use to customers as well as employees. All data are kept in a database server that leads to avoiding poor data quality. Additionally, the new system also helps the company to reduce high paper cost, expand target market, monitor the performance of the company and improve the processing time concerning queries or inventory transactions.

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TABLE OF CONTENTS

<u>Chapter</u>	<u>Page</u>
ABSTRACT	i
ACKNOWLEDGEMENT	ii
LIST OF FIGURES	v
LIST OF TABLES	vii
I. INTRODUCTION	1
1.1 Background of the project	1
1.2 Problems of Existing System	2
1.3 Problem Statement	2
1.4 Objectives	3
1.5 Scope	3
1.6 Deliverables	4
1.7 Project Plan	6
II. THE EXISTING SYSTEM	8
2.1 Background of the organization	8
2.2 The Existing Problems and Areas for Improvement	10
2.3 Suggestions	12
2.4 The Existing Computer System	13
III. THE PROPOSED SYSTEM	15
3.1 System Requirements	16
3.2 System design	16
3.2.1 Candidate Solution	18
3.2.2 Feasibility Analysis	19

<u>Chapter</u>	<u>Page</u>
3.3 Process Modeling	20
3.4 Data Modeling	24
3.5 Screen and Report Design	26
3.6 Hardware and Software Requirements	27
3.7 Security and Control	31
3.8 Cost and Benefit Analysis	33
IV. PROJECT IMPLEMENTATION	46
4.1 Overview of Project Implementation Schedule	46
4.2 Test Plan and Results	46
4.3 Conversion	47
4.4 Post Implementation Review	47
V. CONCLUSIONS AND RECOMMENDATIONS	49
5.1 Conclusions	49
5.2 Recommendations	51
APPENDIX A DATA FLOW DIAGRAMS	52
APPENDIX B ENTITY RELATIONSHIP DIAGRAMS	60
APPENDIX C DATABASE DESIGN	63
APPENDIX D PROCESS SPECIFICATION	70
APPENDIX E DATA DICTIONARY	82
APPENDIX F REPORT DESIGN	85
APPENDIX G WEB INTERFACE DESIGN	95

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1.1 The Gantt Chart of the project	7
2.1 The organization chart of Dual Sports Ball company	9
3.1 Network configuration of the proposed system	28
3.2 New Organization Chart of Online Shopping System	35
3.3 Accumulated Cost of Existing System and proposed System, Baht	40
3.4 Payback Analysis	43
A1 Context Diagram of Online Shopping System	52
A2 Functional Decomposition of Online Shopping System	53
A3 Data Flow Diagram Level 0 of Online Shopping System	54
A4 Data Flow Diagram Level 1 of Searching Product Subsystem	55
A5 Data Flow Diagram Level 1 of Registration Management Subsystem	54
A6 Data Flow Diagram Level 1 of Order Management Subsystem	57
A7 Data Flow Diagram Level 1 of Delivery Management Subsystem	58
A8 Data Flow Diagram Level 1 of Supplier Order Management	59
B.1. Entity Relationship Diagram of Online Shopping System	60
B.2 Key-Based Data Model of ER Diagram	61
B.3 Fully Attributed Data Model of ER Diagram	60
F.1. Report of Member Information	80

<u>Figure</u>	<u>Page</u>
F.2. Report of Member Detail Information	85
F.3. Report of Supplier Information	86
F.4. Report of Product Information	87
F.5. Report of Product Detail Information	88
F.6. Report of Category List Information	89
F.7. Report of Purchase List Information	90
F.8. Report of Daily Order List	91
F.9. Report of Order Detail Information	92
F.10. Report of Delivery Information	93
G.1. Web Interface Design of Main Screen	94
G.2. Web Interface Design of Team Sports Screen	95
G.3. Web Interface Design of Special Sports Screen	96
G.4. Web Interface Design of Individual Sports Screen`	97
G.5. Web Interface Design of Individual Sports with Shopping Cart	99
G.6. Web Interface Design of Remove the Shopping Cart Screen	100
G.7. Web Interface Design of Payment Screen	101
G.8. Web Interface Design of Payment with Invalid Expire Date Screen	102
G.9. Web Interface Design of Payment Detail Screen	103
G.10. Web Interface Design of Sport News and Events Screen	104
G.11. Web Interface Design of New Member Screen	105
G.12. Web Interface Design of Admin Login Screen	106
G.13. Web Interface Design of Admin Control Panel Screen	107

LIST OF TABLES

<u>Table</u>	<u>Page</u>
2.1 The Existing Computer System	13
3.1 Hardware for Server	21
3.2 Candidate Solution	22
3.3 Feasibility	22
3.4 The Hardware Specification for Web Server	29
3.5 The Hardware Specification for Database Server	29
3.6 The Hardware Specification for Workstation	30
3.7 The Hardware Specification for Accessories	30
3.8 The Software Specification	31
3.9 Employee Salaries	33
3.10 Existing System Utility Cost.	34
3.11 Employee salaries	37
3.12 Utility Cost	37
3.13 Cost of Computer Hardware and Software	38
3.14 Cost of Development and Installation	39
3.15 Cost of Existing System, Baht	40
3.16 Cost of Proposed System, Baht	40
3.17 Accumulated Cost of Existing System and proposed System, Baht	41
3.18 Payback Analysis for the Proposed System, Baht.	43
5.1 The Degree of Achievement of the Proposed System	50

<u>Table</u>	<u>Page</u>
C1. Structure of Member Table	63
C2. Structure of CreditCard Table	64
C3. Structure of Order Table	64
C4. Structure of OrderDetail Table	65
C5. Structure of Shipper Table	66
C6. Structure of Supplier Table	67
C7. Structure of Purchase Table	68
C8. Structure of Categories Table	68
C9. Structure of Product Table	69
D1. Process Specification of Process 1.0	70
D2. Process Specification of Process 1.1	70
D3. Process Specification of Process 1.2	71
D4. Process Specification of Process 2.0	72
D5. Process Specification of Process 2.1	72
D6. Process Specification of Process 2.2	73
D7. Process Specification of Process 2.3	73
D8. Process Specification of Process 2.4	73
D9. Process Specification of Process 3.0	74
D10. Process Specification of Process 3.1	74
D11. Process Specification of Process 3.2	75
D12. Process Specification of Process 3.3	75
D13. Process Specification of Process 3.4	76

<u>Table</u>	<u>Page</u>
D14 Process Specification of Process 4.0	76
D15 Process Specification of Process 4.1	77
D16 Process Specification of Process 4.2	77
D17 Process Specification of Process 4.3	78
D18 Process Specification of Process 5.0	78
D19 Process Specification of Process 5.1	79
D20 Process Specification of Process 5.2	79
D21 Process Specification of Process 5.3	79
D22 Process Specification of Process 5.4	80
D23 Process Specification of Process 5.5	80
D24 Process Specification of Process 5.6	80
D25 Process Specification of Process 5.7	81
E1 Data Dictionary of the Online Shopping Systems Database	82
E2 Data Dictionary of the Online Shopping Systems Database	83
E3 Data Dictionary of the Online Shopping Systems Database	84

I. INTRODUCTION

1.1 Background of the project

Dual Sports Ball Company is newly opened in Bangkok in 2005. All sorts of sports materials are available at that shop both for whole sale and retail. All the salesmen at the Dual Sports Ball are knowledgeable of all the sports so that they can fulfill the customers' satisfaction.

The shop owner decided to extend his sales onto the internet online as it is the age of E-commerce Thailand. The customers have come to the Dual Sports Ball shop so the sale rate depends on the salesmen's skills. There are mistakes as it is done by human the accounts has to be done till midnight. Sales in daytimes and accounts at night so too much manpower.



1.2 Problems of Existing System

All of data are done on paper currently, so which required so many staff and too much manpower. All processes are done manually. So the results in the slow process and human error occur. And also the customer can not find easy to their required the sports ball.

1.3 Problem Statement

The problems of the current system are:

- (1) Too much taking time for checking the rest over goods lists.
- (2) Too much taking time for customers who have to come to buy at shop.
- (3) Too much manpower so there is mistakes.

1.4 Objectives

This project aims to create a new effective computerized system for the company and its customer. Dual Sports Ball's aim is to fulfill the customers' will with one stop service where all kind of sports are available. And it is meant for all the corners of the world. The objectives of this project are as follows:

- (1) To analyze and identify problems of the existing system in order to develop the new computerized system to reach customer satisfaction.
- (2) To design the new computer-based information system which facilitates the all transaction can be managed by the computerized system.
- (3) To eliminate the problems occurring in the existing system.
- (4) To provide customers with an e-commerce system.
- (5) To expand the target markets which are not only in Thailand but also in other countries.
- (6) To offer customers an interactive e-commerce system which servers them for 24 hours per day and 7 days per week.

- (7) To get the right things quickly and to take easily.
- (8) To avoid frequent mistakes.
- (9) To show the current, details reorder level.
- (10) To show most favorite items.
- (11) To show detail fact of the goods.
- (12) To let every customer who has email can buy easily.
- (13) And once the customers come to be member the items can be bought by just login without wasting time. (or) And to let the member customer buy items by just log in.
- (14) To reduce the cost of company because the computerized system does not need to use paper and telephone.
- (15) To enable the company to collect, maintain and manipulate data to reach customer satisfaction in order to increase revenue and profitable growth.
- (16) To provide the company with a good mix of reporting and predictive analytics.
- (17) To evaluate all costs and benefits of the proposed system that can occur and also evaluate the payback period, net present value and life-time return on investment of this system.

1.5 Scope

This project covers System Analysis, System Design, Database and implementation of Dual Sports Ball information system. The scope of the project is to study the existing system to find out which area should be improved, change from manual system to be presented on computer screen. And also develop the system that can respond to the user's requirements and can satisfy the company's customer.

The function of this system will support the organization, which includes the following

- (1) The process starts by customers connecting the company's website.
- (2) To provide the sports ball's information on website.
- (3) Customers will then select the balls that they want to buy.
- (4) To create the Database Management technique to provide the effective and accurate information.
- (5) To provide the sports ball and customers of company to support daily operation and decision making process.
- (6) Company's admin will know the reorder level of the sports ball and easy to manage.

1.6 Deliverables

The following are the deliverables of this project.

- (1) Project introduction
 - (a) Background of project
 - (b) Objectives
 - (c) Scope
- (2) Description of the current system
 - (a) Background of existing system
 - (b) Current problems and area to be improved
- (3) Description of the new purposed system
 - (a) System (user) requirement
 - (b) Context Diagram
 - (c) Data flow Diagram
 - (d) Entity Relationship Diagram

- (e) System design
- (f) Hardware and software requirement
- (g) Security and controls
- (4) Project implementation
 - (a) Overview of project implementation
 - (b) Test plan and results
- (5) Interface Design
 - (a) The database that is developed by Microsoft SQL Sever
 - (b) The application is developed by Microsoft .Net (Client/Server C#)
 - (c) Web Interface Design Screen
 - (1) Main Screen
 - (2) Team Sports Screen
 - (3) Special Sports Screen
 - (4) Individual Sports Screen
 - (5) Individual Sports with Shopping Cart Screen
 - (6) Remove the Shopping Cart Screen
 - (7) Payment Screen
 - (8) Payment with Invalid Expire Date Screen
 - (9) Payment Detail Screen
 - (10) Sport News and Events Screen
 - (11) New Member Screen
 - (12) Admin Login Screen
 - (13) Admin Control Panel Screen

(d) Reports

- (1) Customer Information Report
 - (2) Customer Detail Information Report
 - (3) Supplier Information Report
 - (4) Product Information Report
 - (5) Product Detail Report
 - (6) Category List Report
 - (7) Purchase Report
 - (8) Customer Order Report
 - (9) Customer Order Detail Report
 - (10) Delivery Report
- (5) Conclusions and recommendations
- (6) Data dictionary

1.7 Project Plan

The project plan of Dual Sport Balls Information System can be represented in term of Gantt chart as in Figure 1.1.

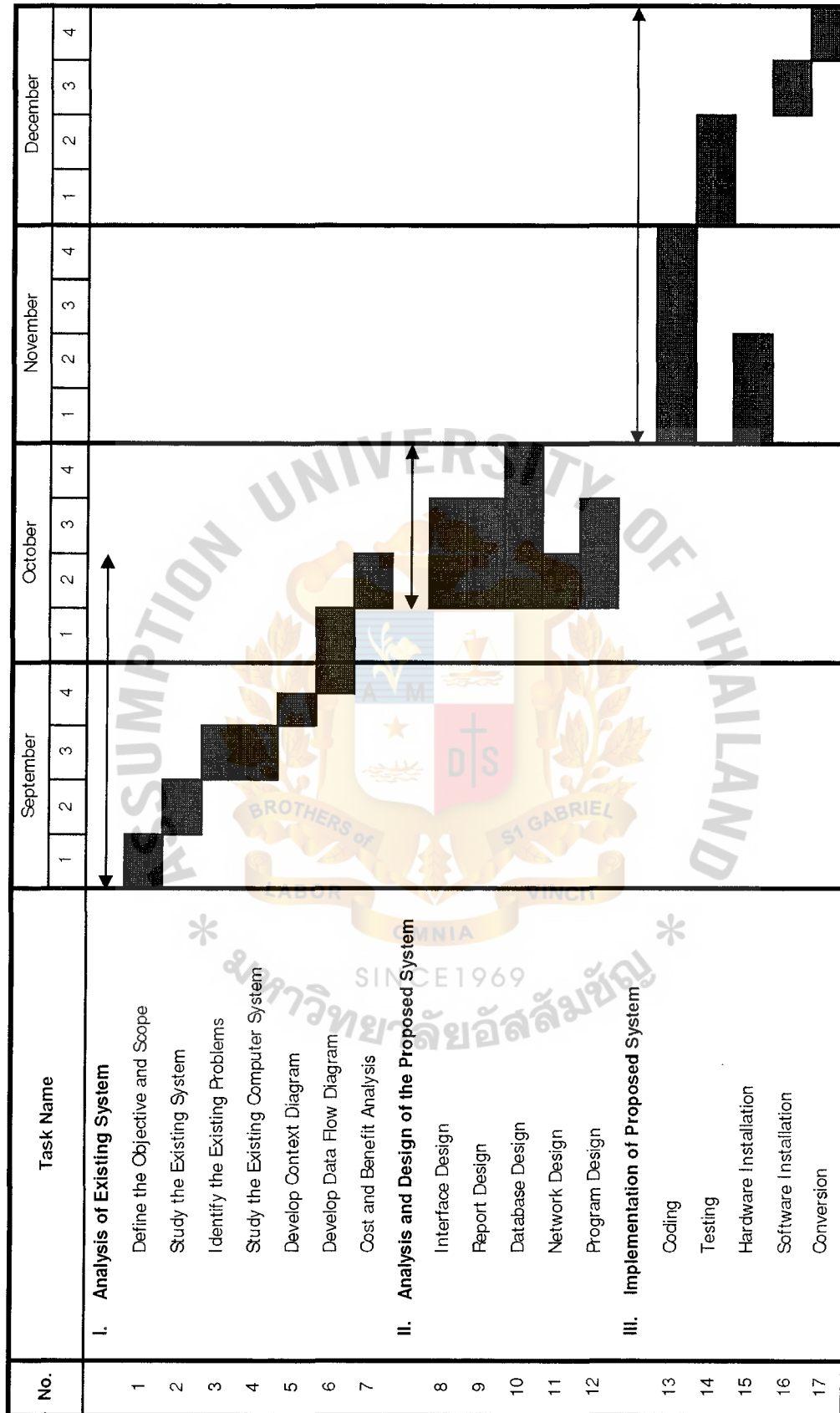


Figure 1.1. The Gantt chart of the project

II. THE EXISTING SYSTEM

2.1 Background of the Organization

Dual Sports Ball is a Shop located on Ladprao Road, Chatuchak, Bangkok. This shop has been established since 2005 with 14 staff; 1 CEO, 10 sale staff, 2 inventory staff and 1 accounting staff.

(1) Sales and Marketing Department

The sales and marketing department is responsible for arranging and selling the product, contracting the customers, analyzing the company's sale, analyzing the market and identifying the strategy for increasing the company's sales and customers.

(2) Inventory Control Department

The inventory control department is responsible for all activities deal with the company's inventory such as checking inventory, ordering the products, examining the receiving products, classifying the type of each product, recording the product's information and returning the product to the supplier.

(3) Financial Department

The accounting department is responsible for recording the daily transaction such as customer order transaction and supplier order transaction. Moreover, accounting department is concerned with receiving the payment, paying to supplier and updating payment status.

(4) CEO

The manager acts as the general manager monitoring all activities of every department of company and also is concerned with recruiting the company's employees. The organization chart will be shown in Figure 2.1.

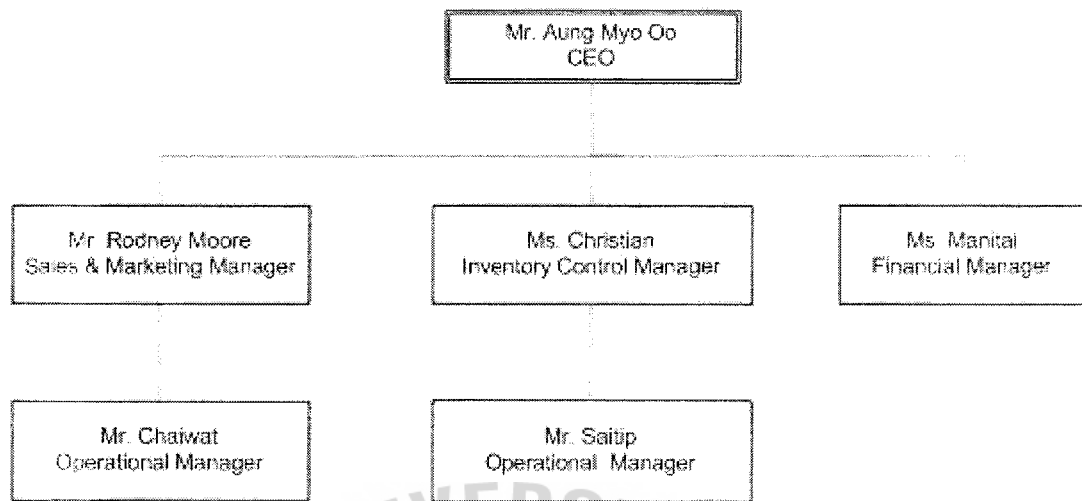


Figure 2.1. The Organization Chart of Dual Sports Ball

The process begins when the inventory control staff checks the available product, calculates the quantity of the required product that has to be ordered and sends the purchase order to supplier. After the supplier delivers the products to the warehouse, the inventory control staff examines the received product and sends the supplier invoice to the accounting department to record the supplier's transaction. Besides, the inventory control department is also responsible for classifying the type of each product and recording the product's information.

Later, the sales staff put the product on the shelf according to the categories of each product, decorates the shop, suggest interesting products to the customer and also service customers. After the customer take the products to the counter and pays money for them via the cash register, the accounting staff cannot immediately record the customer's transaction. He/she has to wait until the end of the day to see all cash transaction of each day from the roll of a paper, 3 inches wide, printed from the cash register and record all sales transactions in the evening.

All data such as Inventory data, accounting and other back office work are all done manually and process through paper. This is a time consuming task, too much paper work, paper consumption and take a long time to retrieve the required data. Besides, when the products are stolen, because of the poor inventory system, it cannot be exactly known and therefore all employees have to been deducted the salary for the responsibility of those stolen products.

Furthermore, when company wants to see the reports about overall income, sales analysis, product's information or any related information, staff has to collect much information from many sources. This is very difficult and time consuming tasks to produce just one report, still not mentioning errors that could occur at any time at any point. If thing went wrong, they would have to start over again.

Finally, these processes of the current system are not convenient for customers to search or buy the product because all information such as which products are the bestseller product, the suggested product, the new product as well as the price of each product are provided only at shop. The customers have to go to shop to see all information and purchase the product themselves.

2.2 The Existing Problems and Areas for Improvement

Most of current problems come from the manual operation. All of data currently done on paper, which require a lot of administrative work and staff. All operations are done manually and always results in the slow process and the human error operation. The following problems are the problems according to the PIECES Problem-Solving Framework.

Performance:

- (1) Response time is generally slow (both searching and checking the product) because all information between the paper work and the human memory.
- (2) Overwork load performed for some period of time such as morning and evening are so crowded but afternoon have only a few customers.

Information (and Data)

Outputs:

- (1) The output information is often missing, irrelevant and not accurate.
- (2) Generating the report is very slow and unreliable.

Inputs:

- (1) Data may not be captured on time because work is not done on a systematic basis.
- (2) Data are redundant or illegal data are captured.

Stored Data:

- (1) Data are certainly stored in redundant files or locations.
- (2) Data are stored in manually way so it is difficult to retrieve the required data.
- (3) Data is not secure from accident or vandalism.
- (4) Data is not well organized.

Economics:

- (1) Exact costs are not known because of the manual system leading to easily done human error.
- (2) Paper cost is too important and should be reduced.
- (3) The current system cannot reach the whole target group because it can attach only the near area.
- (4) The orders are lower than they should because the customers are not convenient to order the product in the current system.

Control (and Security):

- (1) Dishonest behavior (stolen products) can be occurred.
- (2) Processing errors are likely to occur.
- (3) Decision-making errors are occurring.

Efficiency:

- (1) The operation takes too long and waste time of employees to perform some other tasks.
- (2) Some data may be redundantly input or generated.
- (3) The enormous quantity of paper consumed.

Service:

- (1) Inaccurate results in inventory process, accounting process and outputs.
- (2) Information is inconsistent and unreliable.
- (3) All information is provided only at the shop. The customers have to go to the shop to see all information and buy the product with themselves.

2.3 Suggestions

- (1) Implementation of a new Information System should base on Database (relational) approach, so that all transactions can be managed by the computerized system.
- (2) All Information should be centralized to a central Database.
- (3) The Database Management System (DBMS) and application programs should be chosen and designed respectively to ensure and enhance accurate update of inventory records and accounting.
- (4) Network Architecture should be implemented with the proposed system to improve data sharing.
- (5) The new system should use bar code and "click" to be the main point strategy leading to significant reduction of key-in and avoid many typing mistakes. Such code bar is sometimes provided on the cover of the product or should be implemented by the shop for all products.
- (6) Consistent reports should be produced to provide a better decision support system.
- (7) Different departments should share the data of the central Database.
- (8) The proposed system should also support World-Wide-Web applications as new technology permits online transaction.
- (9) Maintenance and security features of the system should also be considered seriously to ensure the correctness and protection of the Database.

2.4 The Existing Computer System

The existing computer system has only one computer which contains Microsoft Window XP and Microsoft Office 2002 and 1 DeskJet 670c printer. In the existing

system, computer is used only for printing the document. The configuration and the specification of computer in the existing system are shown in Table 2.1.

Table 2.1. The Existing Computer System.

Computer Hardware & Software		Quantities
Workstation		1 Set
CPU	: Pentium IV 1.6 GHz	
Memory	: 128 MB	
Hard Disk	: 20 GB	
CD ROM	: 52x	
Monitor	: SVGA 17"	
Accessories		
Printer DeskJet 670C		1 Set
Software		
Windows XP Thai Second Edition (OEM)		1 Set
MS Office 2002 Professional Thai Edition		1 Set

(1) The advantages of the existing system are as follows:

- (a) Enable system is almost stable system.
- (b) Enable to understand the existing system.

(2) The disadvantages of the existing system are as follows:

- (a) Human error
- (b) Redundancy job
- (c) Lack of security

So, the proposed system will be developed to perform tasks more effectively and efficiently.

III. THE PROPOSED SYSTEM

3.1 System Requirements

For the new system, a survey is conducted in order to summarize all the user's requirements. The following is a typical text requirement specification for the Online Dual Sports Shop.

- (1) The system should be an E-Commerce System.
- (2) The system should allow to provide all product information on the web.
- (3) The system should be able to search the products according to the required condition such as the suggested product, the bestseller product and the new product.
- (4) The system should create, update and display the important product information such as price, quantity of product available and the delivery of product sold.
- (5) The system should record, update and display the member information.
- (6) The system should automatically calculate cost and revenue.
- (7) The system should show the lists of the member order that are requested to delivery and display the delivery information.
- (8) The system should rapidly show the quantity of product available.
- (9) The system should send the supplier order to the contracted supplier via Internet.
- (10) The system should generate the management report such as member information, member order information, product information, delivery information and supplier invoice information for each day, week or month.
- (12) The network architecture of the new system should be designed which the data can share and communicate.

- (13) All interfaces should contain a friendly graphical user interface (GUI).
- (14) The system should be able to accommodate users at different physical location.

3.2 System Design

Since receiving the requirement aspects of a system from various users including top management, the next phase of the project would be the system design. The new system will be changed from manual system to computer-based system. So, the system design is evaluation of alternative solutions and specification of a detailed computer-based system. It is necessary to point out that the flexibility and expandability must be concerned due to backtrack to previous phases to make corrections or response the new requirements.

Regarding the system design, it should consider the feasibility of the system in term of technical, economic, legal timing, management and social feasibility according to company background. It deals with the physical aspects of the system as hardware, software, database and services.

This phase would focus on the development of database by using Entity Relationship Diagram (ERD) to depict data in terms of the entities and relationships of the system. It can be able to assist to gain better analyze the business requirement for completeness, accuracy, and consistency. It also allows us to communicate with various end-users with less technical terms. Our new database development is using relational database management systems. It is to implement data in a series of simple two-dimensional tables that are related to one another through foreign keys. The good database designed must be simple, less redundant, more flexibility and adaptable to future needs.

Another important part of this phase is to design the proposed data flow diagram which depicts the flow of data through the system and processing performed by system. The new process in our proposed data flow diagrams is generated reports for management level to decision making.

Moreover, this phase would concern for the input and output design. Both of input and output specifications have been derived from user requirement. We, therefore, must be careful for soliciting their ideas and suggestion. The input screen must be developed to be user-friendly interface. The precise format of output and control must be specified to ensure that outputs are not lost, misused, or incomplete.



3.2.1 Candidate Solution

Given the business requirement established in the previous section, the candidate solution can be identified from the idea and opinion of the development team and user. Along with reviewing the system specification, the candidate solutions can be defined for the proposed system.

- (1) 3 tier Client/Server Computing - Web Database

Table 3.2. Candidate Solution

Characteristics	Candidate
Portion of System Computerized	Fully supported all relevant department involved in process
Benefits	Quickly implemented on client PC and easy application development
Servers and Workstation	Pentium IV 2.0 GHz, MS Window NT Server,
Software Tools	Microsoft Visual Studio.NET 2005 Microsoft SQL Sever 2005
Application Software	Customer Solution
Method of Data Processing	Database stored on and Processed on Sever
Output Devices and Implications	Display Monitor HP laser printer
Input Devices and Implications	Keyboard and mouse
Storage Devices and Implications	SQL Server DBMS with 40 GB Storage capacity

3.2.2 Feasibility Analysis

Given some candidate solution could seen enough for a simple system or even more complicated but what about the choice we shall make. What about the best choice that suits our organization.

To answer those questions, let's study the feasibility of each proposed solutions. The feasibility aspects considered for this project will cover four areas in accordance with the system owner and the system analyst:

- (1) Operational Feasibility to describe to what degree will the candidate solution benefit the organization.
- (2) Technical Feasibility to describe the maturity, availability and desirability of the computer technology needed to support the candidate solution.
- (3) Economic Feasibility to help weight the cost and benefit of each alternative candidate through the analysis of the Payback Period, Net Present Value or Return on investment.
- (4) Schedule Feasibility to estimate how long the candidate solution will take to design.

According to size of the organization, its everyday transactions and the fact that the existing system has been running on an entire manual system, the weight attributed to the operation feasibility is set to be 30%, the weight attributed to technical Feasibility is set to 30%, the weight attributed to economic Feasibility is set to 30% and finally the weight for schedule Feasibility will be 10%. The summary of that study is shown in Table 3.3 and is called the "Feasibility" table.

Table 3.3. Feasibility

Feasibility Criteria	Candidate
Operational Feasibility Functionality Political	Fully supports the user requirement with quick implementation
Technical Feasibility Technology Expertise	MSSQL is the simplest way to develop database and Internet Explorer is an available in all company's PC. It can be proved that It is suitable for a system with a large number of users
Economic Feasibility Cost to develop Payback Period Net present Value Detailed Calculations	Approximately B757,900 Approximately 1.5 Years Approximately B3,407,655
Schedule Feasibility	Approximately 6 months

3.3 Process Modeling

To respond to the above requirements, Online Shopping System for Dual Sports Ball can be divided into 5 subsystems as follows:

(1) Searching Product Subsystem

Searching the product system is the system for searching the product according to the required condition such as the bestseller sports ball, the suggested sports ball and the new product. Both members and non-members can access to this page and use this function. Moreover, managers and authorized staff can access this function to generate the management report deal with the product's information such as the history sale of each product, the rank of each bestseller sports ball and the product's information.

(2) Registration Management Subsystem

Registration management system is the system for managing the registration, collecting and recording the member's information as well as searching, deleting and updating member's information. Besides, manager can view the member's information such as the history purchase of each customer, the member address and the shipping address of each member and also can generate the report of the member.

(3) Member Order Management Subsystem

Member order management system is the system for managing all activities deal with the member order such as member ordering the product and paying for each member order. Only the member can order the products, non-member is required to register before. Furthermore, manager and authorized staff can access to this function to generate the management report deal with member order such as member order for each period, each day, each week or each month and the member status.

(4) Delivery Management Subsystem

Delivery management system is the system for generating the delivery report to inventory control department. In the new system, the inventory control department is also entrusted for delivering the ordered product according to the detail in member order. For example, the delivery request show that for each shipping expected date which order which product has been delivered, then grouping to nearest shipping address and send together. Moreover, manager and Inventory control supervisor can track the delivered bill to compare between the expected shipping date and the exact delivery

date for improving the delivery section to be more effective and more efficient.

(5) Supplier Order Management Subsystem

Supplier order management system is the system that is concerned with all activities related to procure the product such as checking the inventory available, directly sending the purchase order to the supplier via the internet, entering the supplier invoice information, recording the product information, recording the product return information, updating the supplier payment status and generating the supplier invoice report.

According to the above 5 subsystem of Online Shopping System for Dual Sports Ball, the flow of the data and the work or processing formed by the system can be depicted by Data Flow Diagram, DFD as shown in Figure A.1 - Figure A.8.

Context data flow diagram (Figure A.1) is constructed to establish initial project scope. This simple and one page data flow diagram shows which external agents related to the system and which data flow into the system and flow out from the system. There are six external agents related to the system i.e. non-member, member, account department, inventory control department, supplier and manager.

(1) Non-member

- (a) Both non-member and member can search the product by sending the product request.
- (b) The system shows the product information such as title, author, price, published year and the abstract.
- (c) Non-member should register before order the product by sending the registration form to the system.
- (d) The system informs the registration result.

(2) Member

- (a) If member would like to update the member information, he/she just fulfills the member data change form and send it to the system.
- (b) Member purchases the product by sending the member order and customer payment detail to the system.
- (c) The system informs the member order result.

(3) Financial Department

- (a) Financial department can access to view the customer payment information.
- (b) Financial department can enter the supplier invoice information, the product return information and the supplier payment information.

(4) Inventory Control Department

- (a) Inventory control department receive the delivery request information such as the lists of member orders that are requested to deliver and the shipping expected date.
- (b) After already delivered the product, inventory control staff send the delivery confirmation and delivery detail to the system.
- (c) Inventory control staff receives the quantity of product available to use to analyses and decide to order the product and send the purchase order to the supplier via the Internet.
- (d) Inventory control staff can create and update the product information such as categories of each product, price and the quantity of product sold.

- (5) Supplier
 - (a) Supplier receives the supplier order attached to e-mail.
- (6) Manager
 - (a) Manager can ask for all management report from the system.

Figure A.2. is the functional decomposition diagram for Online Shopping System for Dual Sports Ball that is drawn to partition the system into 5 logical subsystems and/or functions that is searching product subsystem, registration subsystem, member order subsystem, delivery management subsystem and supplier management subsystem. Besides, the functional decomposition diagram also shows the child process of each subsystem.

The flow of the data and the work formed by each subsystem is depicted by DFD level 1 of each function that is shown in Figures A.3 - A.8. Moreover, the steps for each function also are shown in Appendix D. Process Specification.

3.4 Data Modeling

Further design process modeling via the data flow diagram, the proposed system should be design data modeling via the Entity Relationship Diagram: E-R Diagram that represents the relationship of all data entity. There are three types of data model such as Context Data Model, Key-Based Data Model and Fully attributed Data Model

(1) Context Data Model

The first data model will consist of the simplest one called the context data model and will represent only the entities and their relationships. The entities chosen for the system are the following nine (regular) entities:

- (1) Member : The member of the system
- (2) Order : The order that are initiated by member
- (3) Payment : The payment paid by member for each order.

- (4) Product : The product that belong to the company
- (5) Product Detail : The detail of each product
- (6) Supplier : The supplier that contain the detail of invoice.
- (7) Shipper : The delivery bill for each order that contain the detail of shipping information.

The corresponding diagram representing the context data model is shown in Figure B.1.

(2) Key-Based Data Model

The next data modeling is the elaboration of the Key-Based Entity Relationship Diagram by:

- (1) Identifying keys (primary keys: PK, foreign keys: FK) of each entity type.
- (2) Resolving the two non-specific relationships which appear in the context ERD by introducing Associative Entities.
- (3) Identifying any generalization hierarchies that might occur. Here, the products can be of different categories, magazine and text, which determine an obvious generalization hierarchy.

This work is shown in Figure B.2.

(3) Fully Attributed Data Model

The next and last step is the elaboration of the fully-attributed data model by:

- (1) Identifying the remaining data attributes.
- (2) Updating the key-based ERD with those new attributes.

This work is shown in Figure B.3

The repository (Data Dictionary) and Database Design are also attached in the Appendixes C. and E. for the better reference and information about data types, entity types and relationships.

3.5 Screen and Report Design

According to the Data Flow Diagram and E-R Diagram of the proposed system, there are 13 screens and 10 reports as follows:

Screen

- (1) Main Menu Screen
- (2) Product Detail Screen
- (3) Registration Screen
- (4) Registration Confirmation Screen
- (5) Member Order Screen
- (6) Customer Payment Screen
- (7) Member Order Confirmation Screen
- (8) Delivery Screen
- (9) Purchase Order Screen
- (10) Add New Supplier Invoice Screen
- (11) Add New Product Screen
- (12) Delete Product Screen
- (13) Generate Report Screen

Report

- (1) Report of Product Information
- (2) Report of Member Information
- (3) Report of Member Order Information
- (4) Report of Delivery Information

- (5) Report of Supplier Invoice Information
- (6) Report of Cost and Revenue Information

3.6 Hardware and Software Requirements

Since this business has some constraints that limit the desire expected from the computer. We must consider other factors such as budget, maintenance etc. The proposed configuration is classified into parts of:

(1) Hardware Requirements

This Online Application needs the web server to serve online via the Internet on which more than 500 prospects may simultaneously participate. Also this server has been initially projected to fulfill multi-purpose of Operation System, Web Service Server, and Database Server though the architecture of Network Computing Solution should be applied; the distributed server could be one of those alternatives. However, the additional equal-qualified servers would be clustering for further enhancement. For instance, the hardware requirement must contain enough efficiency in specification, so the service application 1 GB program will continue to run smoothly. The memory of at least would contain in the processors. Besides server specification, the network hardware requirement must be issued to serve the large number of visitors. And also the web development could be implemented remotely via Internet or Dial-up remote access from PC workstation. So both server and workstation required the network interface card. High speed Modem will be used in case of remote handling. The hardware configuration is shown Figure 3.1.

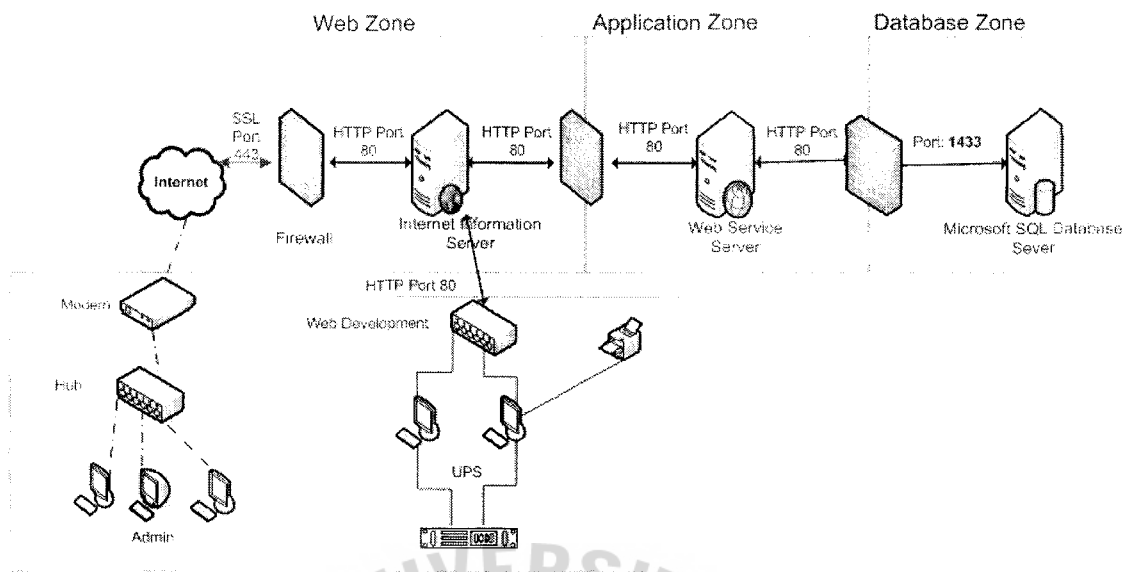


Figure 3.1. Network Configuration for the Proposed System

Table 3.4. The Hardware Specification for Web Server.

Web Server	Specification
CPU	Pentium IV 2.0 GHz
Memory	1 GB
Hard disk Memory	60 GB
Support Adapter	SCSI Adapter
VGA	Support SVGA
CDROM	52X
Network Interface	10/100 Mbps
Monitor	SVGA 17"

Table 3.5. The Hardware Specification for Database Server.

Database Server	Specification
CPU	Pentium IV 2.0 GHz
Memory	2 GB
Hard disk Memory	80 GB
Support Adapter	SCSI Adapter
VGA	Support SVGA
CDROM	52X
Network Interface	10/100 Mbps
Monitor	SVGA 17"

Table 3.6. The Hardware Specification for Workstation.

Workstation	Specification
CPU	Pentium IV 1.8 GHz
Memory	128 MB
Hard disk Memory	40 GB
VGA	Support SVGA
CDROM	52X
Sound Card	Sound Blaster Pro
Network Interface	10/100 Mbps
Monitor	SVGA 17"

Table 3.7. The Hardware Specification for Accessories.

Accessories	Specification
UPS for server	3.0 KVA.
UPS for workstation	500 VA.
Backup Tape	5 GB
Printer	Laser Printer
Switch	12 Port
Router	4 Port
Modem	256 K
Hub	8 Port

(2) Software Requirements

For the network operating system, software requirement must be based on Internet online performance issue and security and ease of use for administrative and significantly defined on lower total cost of ownership. Then the graphical user interface software is pre-determined on Microsoft Windows NT Server and Workstation. Since NT provides a bundle of free Internet service application and server also the client/server model of which

several development tools are powerful to implement could do development easily. However, all report documents could be accomplished through the web processing, so report generator program is not required yet. The overall software requirements are shown in the Table 3.7.

Table 3.8. The Software Specification.

Software	Specification
Operating System for Server	MS Windows NT Server
Operating System for Workstation	MS Windows NT Workstation 5.0
Database Server	MS SQL Server
Application Server	MS Visual Studio. NET

3.7 Security and Control

Security concern is very important for Internet application. Besides that, the allowance to a large number of visitors accessing the server resource would raise security flaws. Moreover, Internet browser could not protect the circumstance of re-enter or re-submission on a particular page and get duplicated process for increment amounts.

Hence, the major security concerns are:

(1) System Security and Control

The web service will run on Windows NT environment. When a client has an access to the NT Server, remote user is given and access to local hard disk resource by creating shared directories. So the player must be set for User Right Access on which permission control required a particular directory basis. Windows NT security system is as follows:

(a) Directory and File Resource Security

Any directory and files system must be set as Windows NT file System (NTFS), which protects its resources, including files, printer and applications by controlling access to them.

(b) Directory and File Resource Control

For each resource to be protected or secured, the resource must be accessible to authorized users and inaccessible to unauthorized users. Windows NT protects its resources by:

(1) Access Control Lists

(2) Access Control Entries

(c) Full back up both of database and system

(2) Data Security and Control

The database was designed to run on MySQL Server. The user has to be assigned User ID and corresponding Password to have the right to access database.

(a) Data Control

Database Management System must be backed up every day, so it could be recovered if there is any problem which occurs such as indexing damage.

(3) Application Security and Control

In the web development, all users could manage their account information by using their login and password. The permission will be granted or denied for each user. The administration page must enable authorized users and disable unauthorized users.

(a) Application Control

All web pages that are concerned about security issues need to pass the identification internally. After all, user may buy or do the activities only to enter their user email and password.

3.8 Cost and Benefit Analysis

In this case, the company needs to expand the other branch and decide between two alternatives as follows:

- (1) Expanding the traditional branch assumed that it has the annual operating cost as the cost of the existing system.
- (2) Expanding the virtual branch operating via the Internet and has the cost as the cost of the proposed system.

To study the cost feasibility of these two candidates, the company needs to estimate the cost and the benefit of both two systems, compare the cost & benefit and decide to select the better alternative. The results of the study are as followed:

- (1) Cost of existing system

The existing system is the manual system. Computer is used only for printing the documents. The cost of manual system for this company comprises of manpower cost, office supplies & equipment cost and utility cost. In this case, to be easy to calculate the cost of manual system, the cost of space cannot be determined. The company monthly costs are as following.

- (a) Employee Salary

Operating under manual system, the company needs to hire a total of employees that consist of

Table 3.9. Employee Salaries.

Employee	Salary	Total Salary
CEO	1 person @ 30,000	30,000.00
Supervisor	3 person @ 12,000	36,000.00
Office staffs	10 person @ 8,000	80,000.00
	Total manpower cost	146,000.00

The annual total employee salary is 1,752,000.00 baht. In the next five years the company estimates that the salary will increase by 5% each year as a positive reinforcement for employee. By the end of the fifth year, the annual total of employee salary is 2,129,566.95 baht.

(b) Office Supplies & Equipment Cost

The office equipment and supplies include paper, pen, pencil, cash register and so on. An estimated cost is 8,000 baht per month and a total of 96,000 baht per year. In the next five years the cost of office equipment will be increased by 5% each year because of inflation. By the end of the fifth year, the annual total of office equipment is 116,688 baht.

(c) Existing System Utility Cost

Table 3.10. Existing System Utility Cost.

Utilities	Total Utilities
Electricity bill	6,000.00
Water bill	700.00
Telephone	5,000.00
Total utility cost per month	11,700.00

An estimated cost is 11,700 baht per month and a total of 140,400 baht per year. In the next five years the cost of utilities will be increased by 5% each year because of inflation. By the end of the fifth year, the annual total of utilities is 170,675.08 baht.

(2) Cost of the proposed system

The proposed system is expanding the virtual branch operating via Internet by using the new information system, Online Shopping System for Dual Sports Ball. The cost of the proposed system for this company comprises of manpower cost, office supplies & equipment cost, utility cost, cost of computer hardware & software and development & installation cost. The organization chart of company after using the new system, Online Shopping System for Dual Sports Ball, is shown in Figure 3.2.

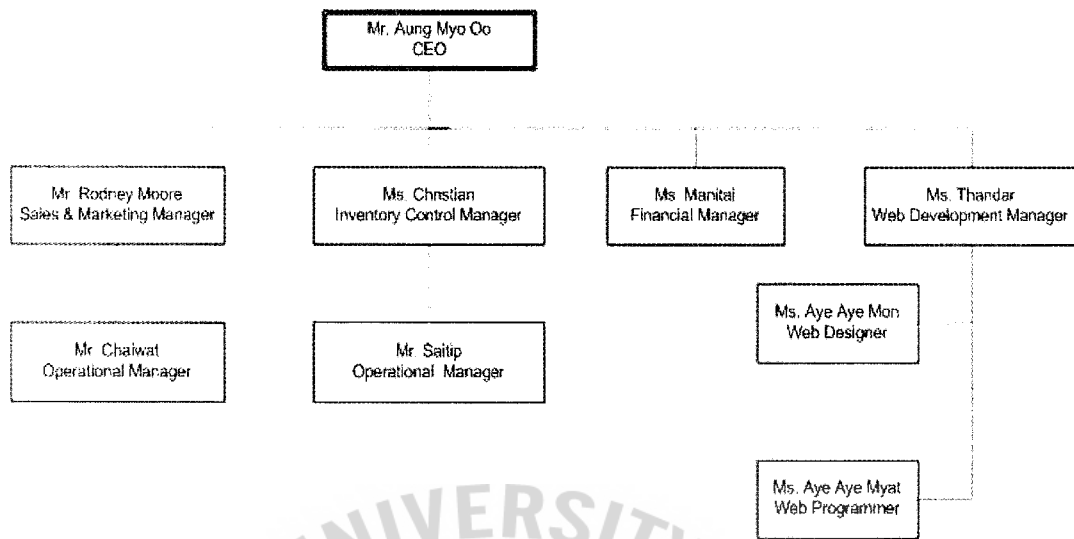


Figure 3.2. New Organization Chart of Online Shopping System

(a) Employee salary

Although the company expands the new branch as a virtual branch operating on the Internet, the company still has to hire the employees i.e. webmaster, web programmer and web designer for responding to the operating of the new system. However, the number of employees of the proposed system is less than employees in the existing system since the company can reduce some employees and use just three staffs of web development division to maintain the new system. Then the cost of employee salary is lower than the current system.

Table 3.11. Employee salaries.

Employee	Salary	Total Salary
CEO	1 person @ 30,000	30,000.00
Supervisor	3 person @ 12,000	36,000.00
Office staffs	4 person @ 8,000	32,000.00
Web Master	1 person @ 18,000	18,000.00
Web Programmer	1 person @ 15,000	15,000.00
Web Designer	1 person @ 15,000	15,000.00
	Total	134,000.00

After using the proposed system, the company can save the employee salary cost about 12,000 baht per month or 144,000 baht per year for the first year. The annual total of employee salary is 1,608,000 baht. In the next five years the company estimates that the salary will increase by 5% each year as a positive reinforcement for employee. By the end of the fifth year, the annual total of employee salary is 1,954,534.05 baht.

(b) Office Supplies & Equipment Cost

The estimated cost of office suppliers and equipment of the proposed system is about 2,000 baht per month that less than the current system because the new system can reduce the staff and also reduce the cost of supplies and equipment.

(c) Utility Cost

Table 3.12. Utility Cost.

Utilities	Cost
Electricity bill	10,000.00
Water bill	500.00
Telephone bill	1,000.00
Total utility cost per month	11,500.00

For expanding the virtual branch, the company can reduce the utility cost in the part of telephone bill since the company can directly connect to the supplier and customer via the Internet and also communicate among each branch via the e-mail. However, the electricity has increased because the new system has to use computers all day to serve customers all the time.

(d) Cost of Computer Hardware and Software



Table 3.13. Cost of Computer Hardware and Software.

Computer Hardware and Software	Quantity	Cost
Computer Hardware		
Web server	1 Set	80,000.00
Database server	1 Set	100,000.00
Workstation @ 30,000	3 Sets	90,000.00
Accessories		
UPS for server	1 Set	3,600.00
UPS for workstation	1 Set	2,800.00
Backup tape	1 Set	700.00
Laser printer	1 Set	8,000.00
Switch 12 port	1 Set	6,000.00
Router 4 port	1 Set	12,000.00
Modem 256 K	1 Set	12,000.00
Hub 8 port	1 Set	2,000.00
Computer Software		
MS Windows NT Server @ 13,400	2 Sets	26,800.00
MS Windows NT Workstation 5.0@12,000	3 Sets	36,000.00
MS SQL Server	1 Set	54,000.00
MS Visual Studio. NET Application @ 26,000	4 Sets	104,000.00

(e) Cost of Development and Installation

The project, Online Shopping System for Dual Sports Ball, has the project team that consists of 1 system analyst and 2 programmers. This project team is responsible for analyzing, designing, testing the system and also implementing the system. Therefore, the cost of development and installation is comprised of the cost for system analysts and programmers are as follows:

Table 3.14. Cost of Development and Installation.

System Analyst and Programmer	Quantities	Cost
System Analyst (40,000/month, 3 months)	1 person	120,000.00
Programmer (25,000/month, 2 months)	2 person	100,000.00
Total		220,000.00

(f) Cost of Transaction

The proposed system has to connect to the Internet at all time to serve the customers anywhere and at anytime. The company has to hire the line connecting to the Internet. The estimated cost for this is about 1,000 baht per month or 12,000 baht per year and will grows 5% per year.

(3) The comparison between the cost of existing system and the cost of the proposed system

Table 3.15. Cost of Existing System, Baht.

Cost Items	Years				
	1	2	3	4	5
Man Power Cost (Increase 5% per year)	1,752,000.00	1,839,600.00	1,931,580.00	2,028,159.00	2,129,566.95
Office Supplies and Equipment Cost (Increase 5% per year)	96,000.00	100,800.00	105,840.00	111,132.00	116,688.00
Utility Cost (Increase 5% per year)	140,400.00	147,420.00	154,791.00	162,530.55	170,657.08
Total Cost	1,988,400.00	2,087,820.00	2,192,211.00	2,301,821.55	2,416,912.03
Accumulated Cost	1,988,400.00	4,076,220.00	6,268,431.00	8,570,252.55	10,987,164.58

Table 3.16. Cost of Proposed System, Baht.

Cost Items	Years				
	1	2	3	4	5
Cost of Hardware	317,100.00	-	-	-	-
Cost of Software	220,800.00	-	-	-	-
Development and Installation Cost	220,000.00	-	-	-	-
Cost of Transaction Fee (Increase 5% per year)	12,000.00	12,600.00	13,230.00	13,891.50	14,586.08
Man power (Increase 5% per year)	1,608,000.00	1,688,400.00	1,772,820.00	1,861,461.00	1,954,534.05
Office Supplies & Equipment Cost (Increase 5% per year)	24,000.00	25,200.00	26,460.00	27,783.00	29,172.15
Utility Cost (Increase 5% per year)	138,000.00	144,900.00	152,145.00	159,752.25	167,739.86
Total Cost	2,539,900.00	1,871,100.00	1,964,655.00	2,062,887.75	2,166,032.14
Accumulated	2,539,900.00	4,411,000.00	6,375,655.00	8,438,542.75	10,604,574.89

Table 3.17. Accumulated Cost of Existing System and proposed System, Baht.

Year	Existing System	Proposed System
1	1,988,400	2,539,900
2	4,076,220	4,411,000
3	6,268,431	6,375,655
4	8,570,253	8,438,543
5	10,987,165	10,604,575

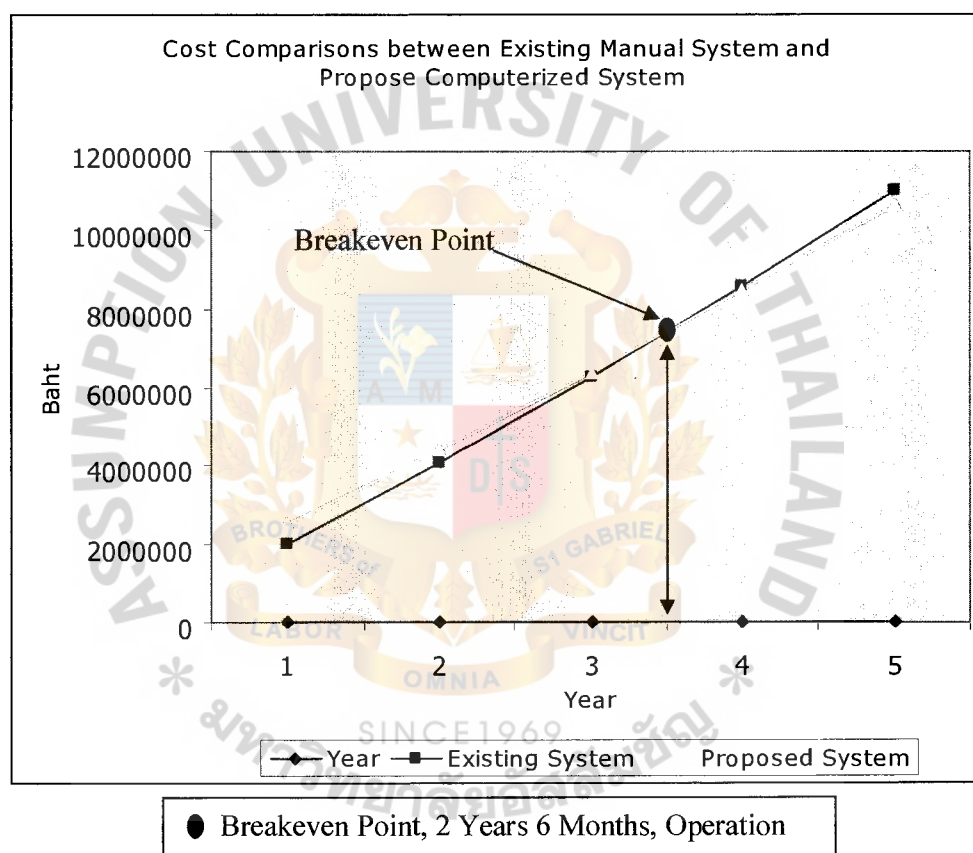


Figure 3.3. Cost Comparisons between Existing Manual System and Propose Computerized System

The graph that you see in Figure 3.3. will show you the relationship between the number of years and the amount of accumulated cost for both the existing and proposed system.

From the graph, you will see that the initial cost of proposed computerized system is higher than the initial cost of existing manual system because of the investment in development cost such as hardware and software cost, development and installation cost. However, as the result of developing the proposed system, the company can reduce the amounts of staff and make a result of, in the fifth year; the cost of proposed system is less than the cost of current system approximately 800,000 baht. Therefore, the company can save a lot of money when it uses a new system, Online Shopping System for Dual Sports Ball.

(4) Payback Analysis

The payback analysis technique is a simple and popular method for determining if and when an investment will pay for itself. Because system development costs are incurred long before benefits begin to accrue, it will take some time for benefits to overtake the costs. After implementation, you will incur additional operating expenses that must be recovered. Payback analysis determines how much time will lapse before accrued benefits overtake accrued and continuing costs. This period of time is called the payback period.

In Table 3.16. we see an information system that will be developed at a cost of 757,900 baht. The estimated net operating costs for each of the next five years are also recorded in the table. The estimated net benefits over the same five operating years are also shown. For this case, according to the graph in Figure 3.5., the break-even point

(when costs + benefits = 0) will occur approximately 1.5 years after the system begins operating.

Table 3.18. Payback Analysis for the Proposed System, Baht.

Cost Item	Years					
	0	1	2	3	4	5
Development cost	-759900	-	-	-	-	-
Operation & maintenance cost	-	-1,086,000.00	-1,142,100.00	-1,201,185.00	-1,263,421.00	-1,328,987.00
Discount factors for 12%	1.000	0.893	0.797	0.712	0.636	0.567
Time-adjusted costs (adjusted to present value)	-757,900.00	-969,798.00	-910,253.00	-855,243.00	-803,535.00	-753,535.00
Cumulative time-adjusted costs over lifetime	-757,900.00	-1,727,698.00	-2,637,951.00	-3,493,194.00	-4,296,729.00	-5,050,264.00
Benefits derived from operation	-	1,642,500.00	1,971,000.00	2,365,200.00	2,838,240.00	3,405,888.00
Discount factors for 12%	1.000	0.893	0.797	0.712	0.636	0.567
Time-adjusted costs	-	1,466,752.00	1,570,889.00	1,684,022.00	1,805,120.00	1,931,138.00
Cumulative time-adjusted benefits over lifetime	-	1,466,752.00	3,039,639.00	4,721,661.00	6,526,781.00	8,458,919.00
Cumulative time-adjusted benefits cost+benefit	-759,900.00	-260,946.00	399,688.00	1,228,467.00	2,230,052.00	3,407,655.00

Payback Analysis

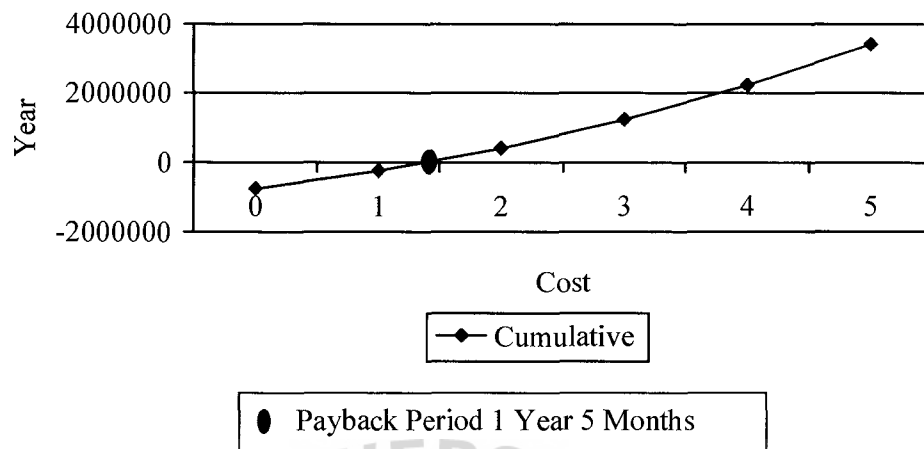


Figure 3.4. Payback Analysis

Furthermore, from the graph in table 3.16, we can calculate to determine the net present value (NPV) and the return-on-investment (ROI) value according to this formula.

$$\text{NPV} = 3,407,655 \text{ baht}$$

$$\text{ROI} = 3,047,655 / 5,050,264 = 0.67 = 67\%$$

(5) Intangible Benefits

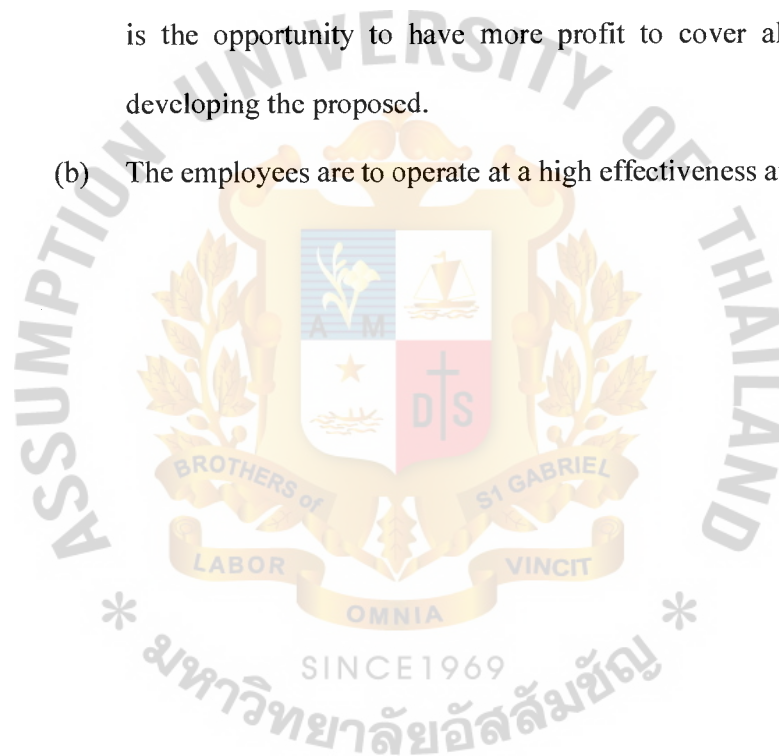
Some benefits that are gained by the organization from the user of the information system are difficult to measure but it is important. This benefit is known as intangible benefit. Intangible benefits can be unauthorized to:

- To impose discipline for all of the staff and management throughout the system.
- To forecast or improve management planned activities.
- To get more current and accurate information for management and plan for the future.

- (1) Improve service
- (2) Reduce the confusion problems in the operation
- (d) Information gained from the system could contribute value-added to the company in the future.
- (6) Tangible Benefit

The tangible benefit can be summarized into:

- (a) The break even point analysis can defined that the cost of proposed system is higher than the cost of manual system but in the future there is the opportunity to have more profit to cover all investment of developing the proposed.
- (b) The employees are to operate at a high effectiveness and efficiency.



IV. PROJECT IMPLEMENTATION

4.1 Overview of Project Implementation Schedule

This project can be divided into 3 main parts which are;

- (1) To analyze existing system, in order to identify the advantages and disadvantages of creating the new web site of product retail sale and its application, and define the development of the new system.
- (2) To use all the analysis data to design the new online application.
- (3) To set up some prototypes of the project in order for the trial and error and steps to implement the whole system.

This project has done following the Grant Chart as shown in the Figure 1.1.

4.2 Test Plan and Results

When the project is finished, the company sets a staff to test the system to make sure that the system works and the company can run its operation before the formal launch to its potential customers.

Testing of specific program, subsystems and total systems is essential for quality assurance. System and interfaces testing is done before the system is actually used. The major issues, which should be considered, are:

- (1) Testing individual program was completed during the programming task by the development team. Program testing concentrates on the programs themselves in an attempt to make sure that each program works properly.
- (2) Data testing consists of running a program, which appears to be working correctly with sample data.
- (3) Link testing tests the upstream and downstream feeds between the different programs and program modules.

- (4) Module testing is the process of testing the individual module that makes up the work program.
- (5) User acceptance testing is users' responsibility to make their own data to test if the system meets the requirements.
- (6) System testing ensures that all the programs that make up the new system work together.

4.3 Conversion

At this stage, the overall system is running the program, interfacing with the different files of data, utilizing the communication networks, and interfacing with the users. The type of conversion we used for this proposed system is "parallel conversion" which both manual and proposed system are operated for a short period of time. This method can ensure that all major problems in the proposed system have been solved before the old system is discarded.

4.4 Post Implementation Review

The implementation was well planned, and the entire event went smoothly. The system has been used for a period of time, but virtually no problems have been encountered. The system should be reviewed after six months. The objectives of the post implementation review are:

- (1) Determine whether the systems goals and objectives have been achieved.
- (2) Determine whether personnel procedures, operating activities, and order controls have improved.
- (3) Determine whether user service requirements have been met, while simultaneously reducing errors and costs.
- (4) Determine whether known or unexpected limitations of the system need attention.

All indications are that the new system was well received and that it will meet the performance objectives that led to its development in the first place.

IV. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The Online Shopping System for Dual Sports Balls requires only a group of people to handle the whole system (both on the technical and operation), that will help the company to save money and increase their profit.

Information and Internet technology have been used through this system to make it possible to serve company's objectives and to serve its customers. The product information, the member information, the invoice information etc could be retrieved from the database. With a Network Computing technology, the system not only provides the information of products for the visitors but also have features to support the daily operation of the company such as inventory checking process, member order process and supplier order process.

In the Online Shopping System for Dual Sports Balls all information are always updated in the form of reports. All reports could be retrieved from database via Structure Query Language (SQL). The executives can have reports at anytime by logging on to the Internet to get the reports. Since the management needs to up-to-date, faster and more accurate information help them as a decision supporting system for the management, the system has to fulfill the management's entire requirement.

The system has followed the objectives of the company and created the system step by step i.e. first, studying existing system, interviewing the management team, analyzing the requirements in order to identify the web application and developing the application for the company.

Table 5.1 shows the time performance on each process of the proposed system compared with the existing system. It shows that each process of the proposed system performs with less time than each process of the existing system that has to operate

many work steps in the manual system. So, it can be concluded that the proposed system is more efficient and effective than the existing system.

Table 5.1. The Degree of Achievement of the Proposed System.

Process	Existing System	Proposed System
Order Process	30 minutes	3 minutes
Billing Process	5 minutes	1 minute
Inventory Checking Process	30 minutes	3 minutes
Supplier Order Process	30 minutes	3 minutes
Generating Report Process	30 minutes	1 minute

The existing system use more time than proposed system because:

- (1) In Member order process, the existing system has to wait for receiving fax from the customer and have to verify it, after that, staff has to take a long time for checking inventory process to ensure that those ordered products are available, but the proposed system can retrieve order via Internet.
- (2) In billing process, the existing system has to write bills manually while in the proposed system it can be retrieved via Internet.
- (3) In inventory checking process, the existing system has to check products with the bill while the proposed system is not. Because if the proposed system has no some items of the product, administrative staff will input "out of stock" which means that the customer cannot order that item.

5.2 Recommendations

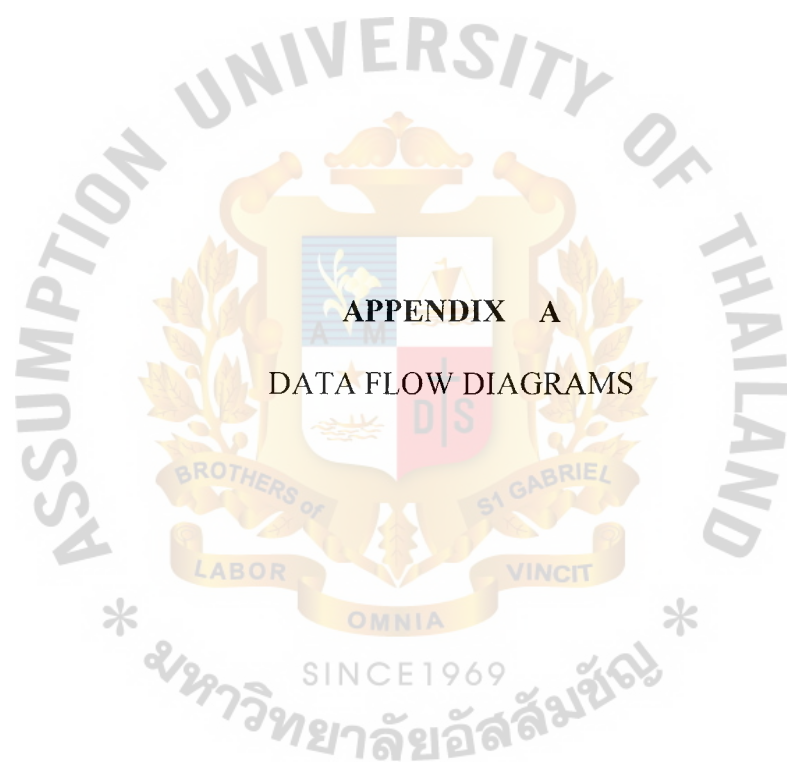
The system should have the sponsor registration system for its promotion in the future to check and manage the information of sponsors and prizes including the report such as which item is attractive, is out of stock, which item we should continue to promote etc.

This system, Online Shopping System for Dual Sports Ball, should have a program that can track customers' behavior while visiting the site and program that automatically sends new promotions to members, In case, after a period of time the company gains enough data from the user and the program is quite static that means that the web marketing strategy is useful. Therefore, programs that can track customers would help to track which item is popular for the customer or help to plan for future promotion plans.

The system should have online barcode reader, online EDC machine, online fraud monitoring control system for credit card and dynamic currency control system.

This system, Online Shopping System for Dual Sports Ball, should use the browser

- (1) Netscape (version 8 and up) <http://browser.netscape.com/nss/>
- (2) Mozilla/Firefox (version 2 up) <http://www.mozilla.com/>
- (3) Internet Explorer (version 5 up) <http://www.micorsoft.com/windows/ie/>
- (4) Opera (version 9 up) <http://www.opera.com/download>
- (5) Safari (version 1.2 up) <http://www.apple.com/support/downloads/safari.html>



APPENDIX A
DATA FLOW DIAGRAMS

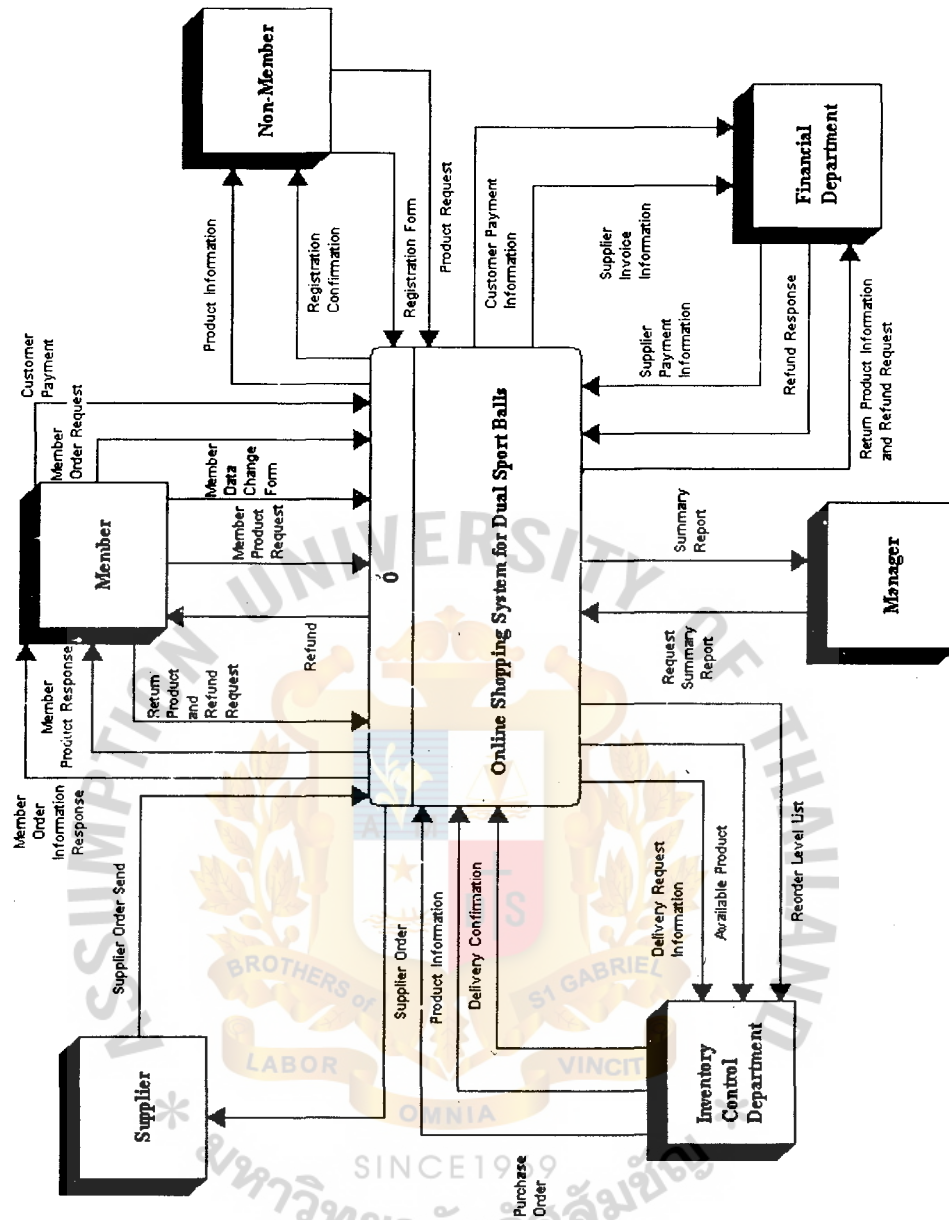


Figure A.1. Context Diagram of Online Shopping System

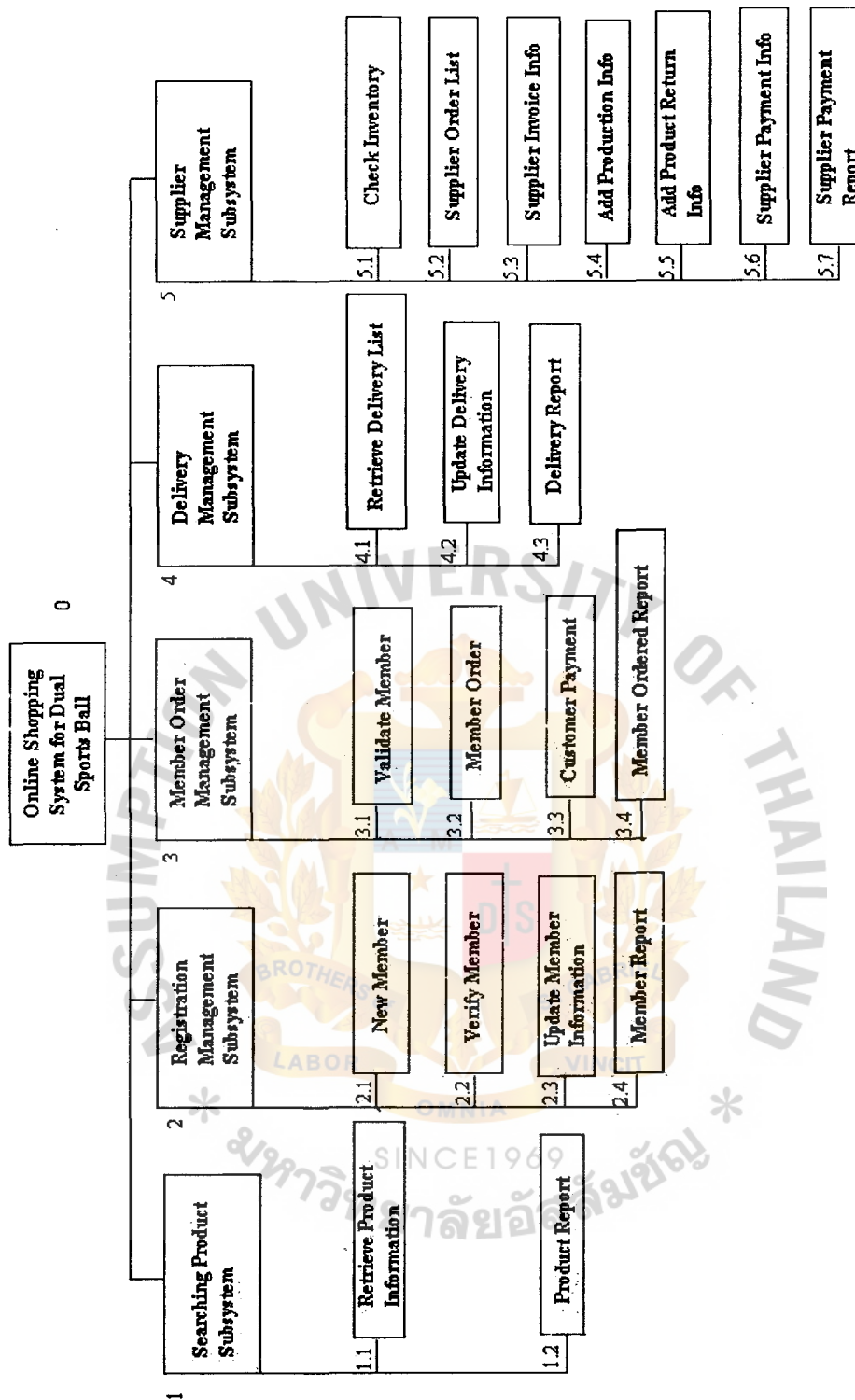


Figure A.2. Functional Decomposition of Online Shopping System

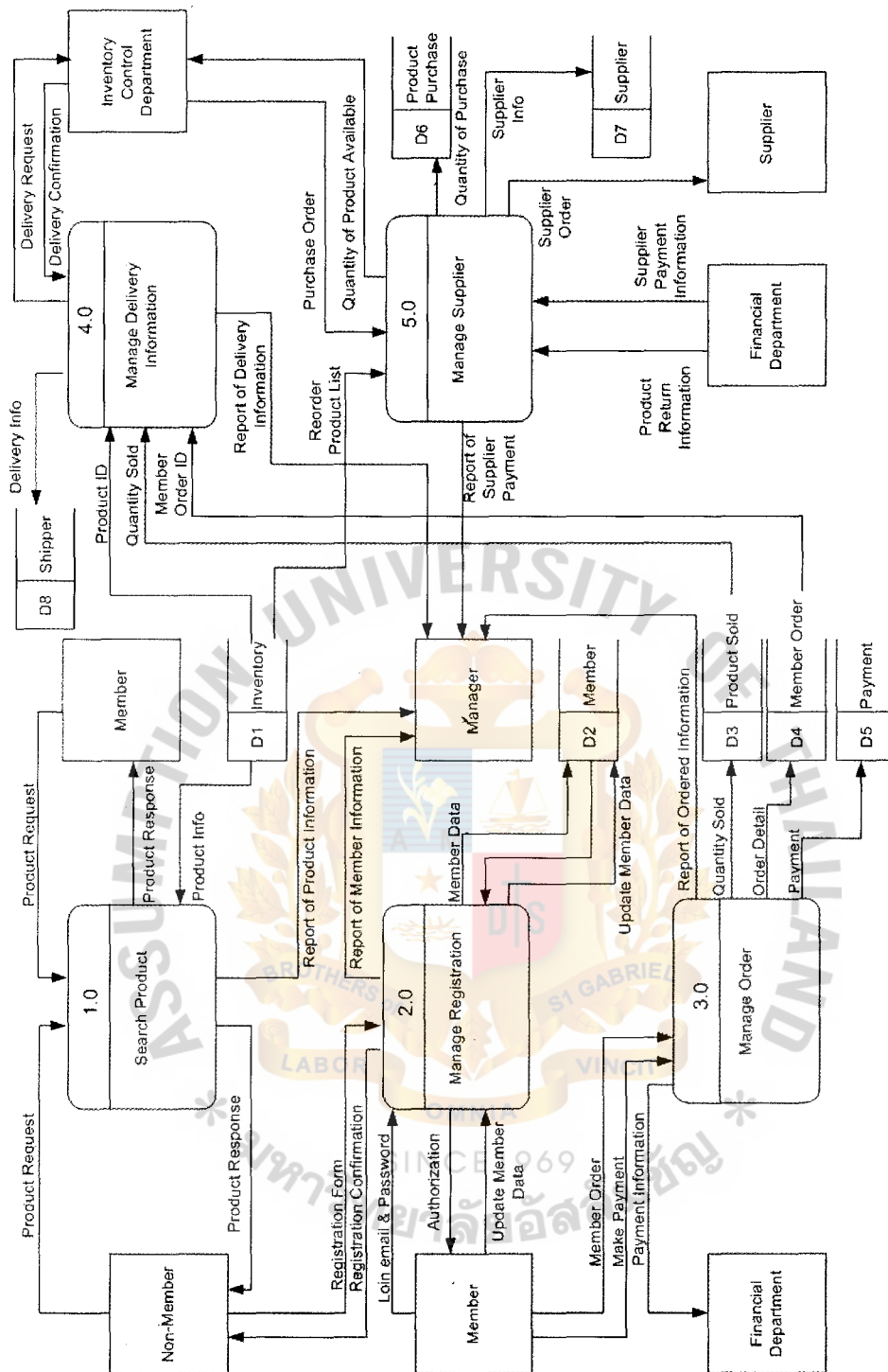


Figure A.3. Data Flow Diagram Level 0 of Online Shopping System

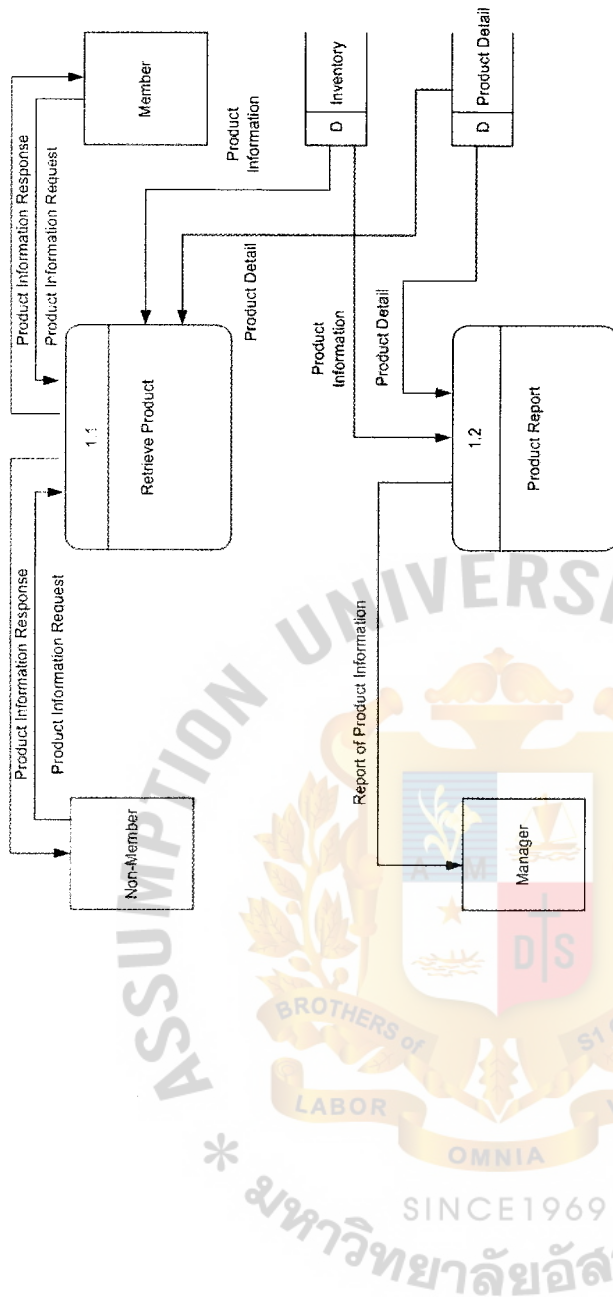


Figure A.4. Data Flow Diagram Level 1 of Searching Product Subsystem

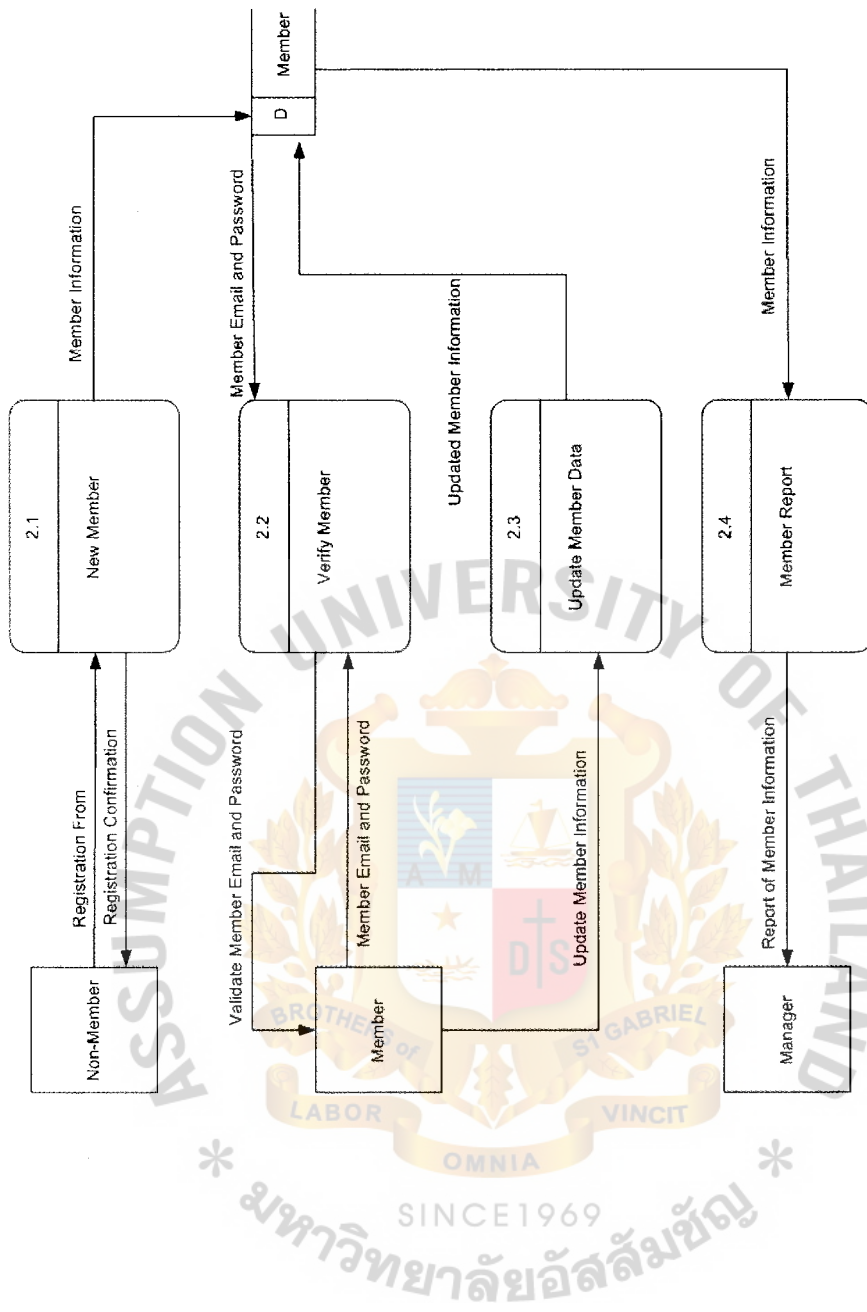


Figure A.5. Data Flow Diagram Level 1 of Registration Management Subsystem

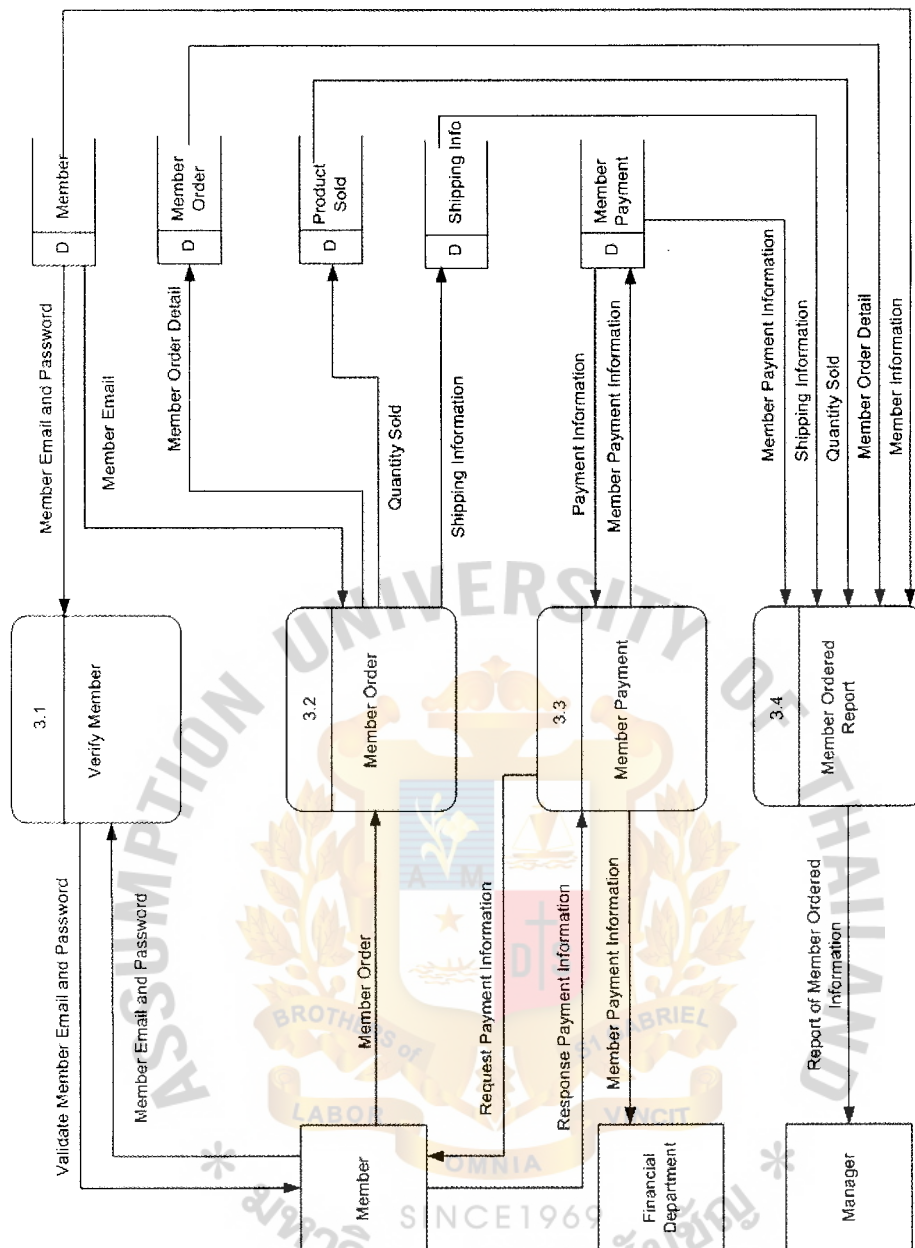


Figure A.6. Data Flow Diagram Level 1 of Order Management Subsystem

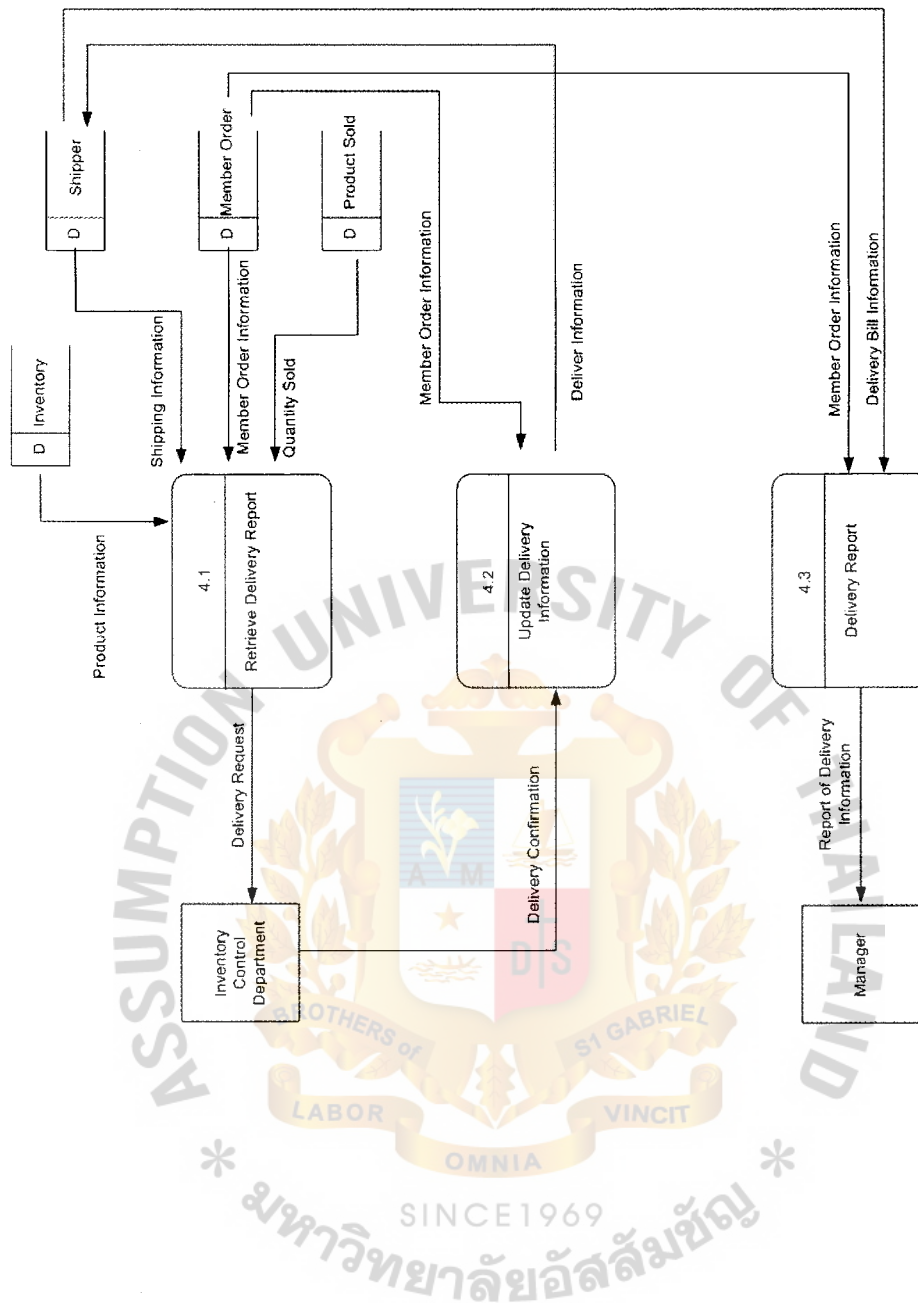


Figure A.7. Data Flow Diagram Level 1 of Delivery Management Subsystem

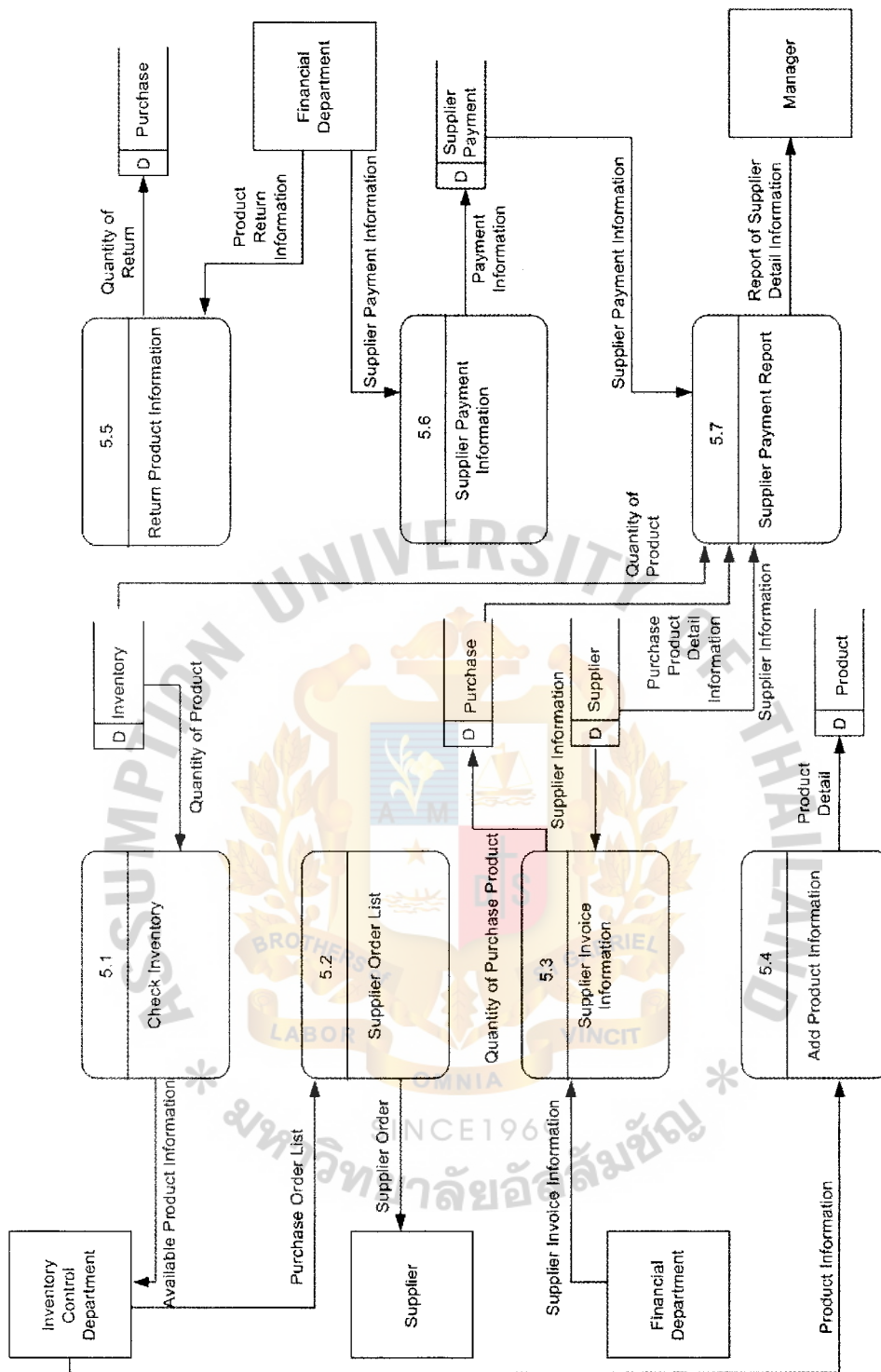


Figure A.8. Data Flow Diagram Level 1 of Supplier Order Management Subsystem



APPENDIX B

ENTITY RELATIONSHIP DIAGRAMS

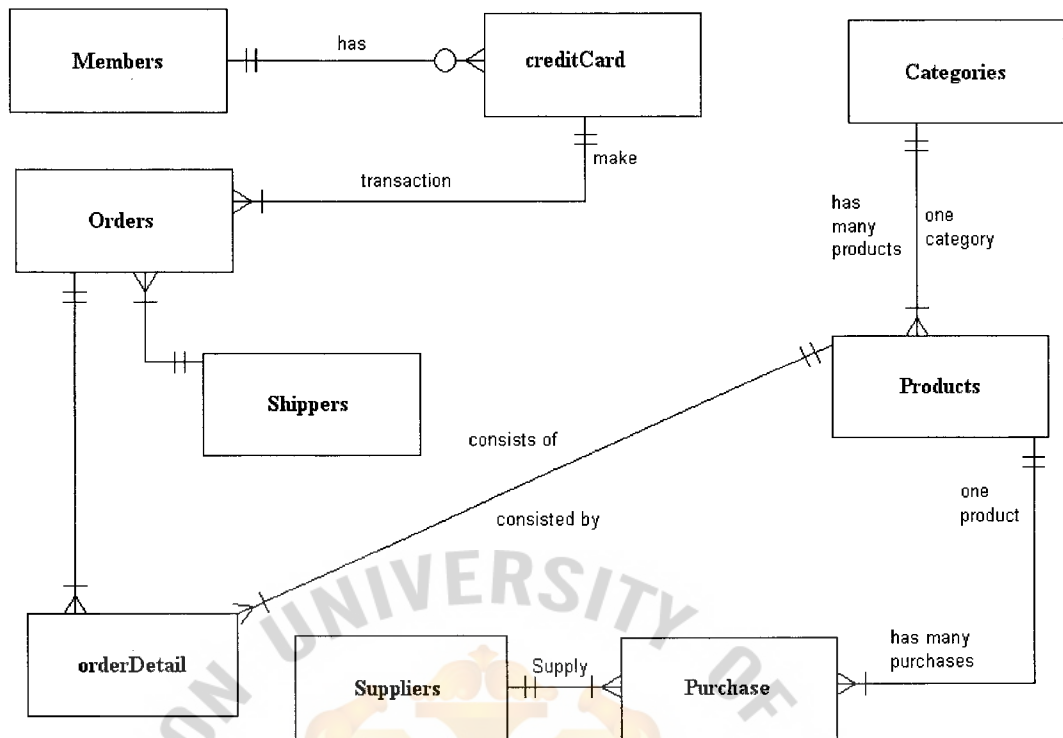


Figure B.1. Entity Relationship Diagram of Online Shopping System

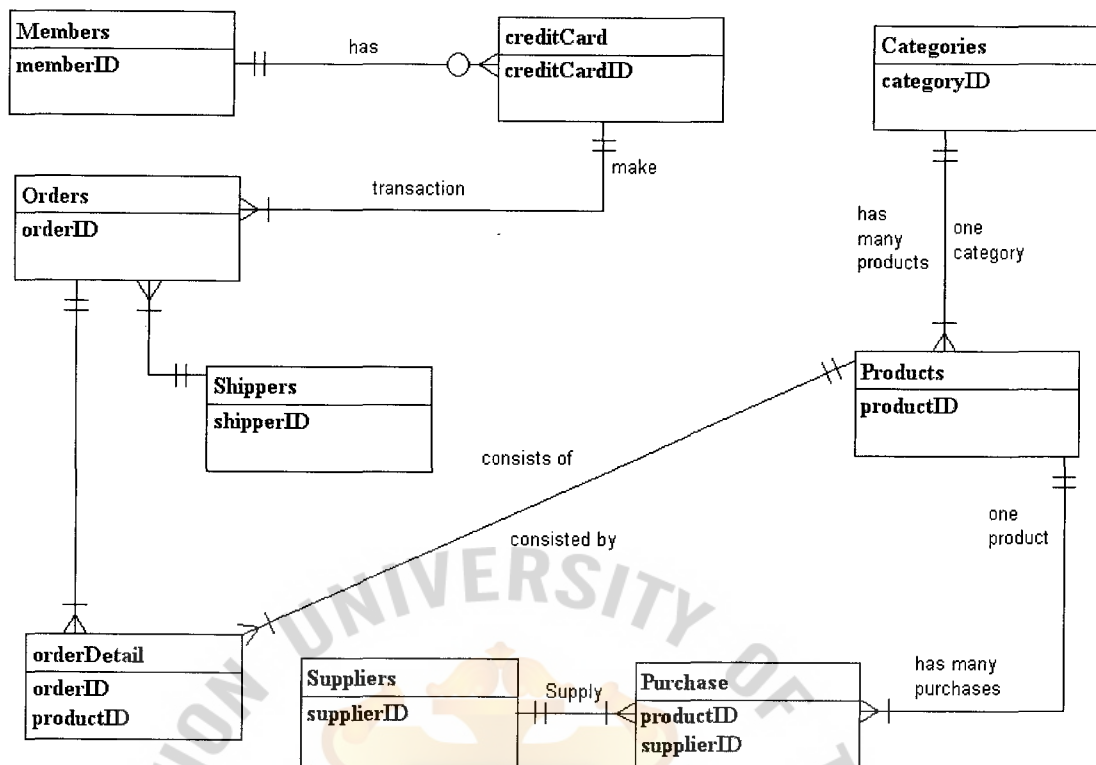


Figure B.2. Key-Based Data Model of ER Diagram

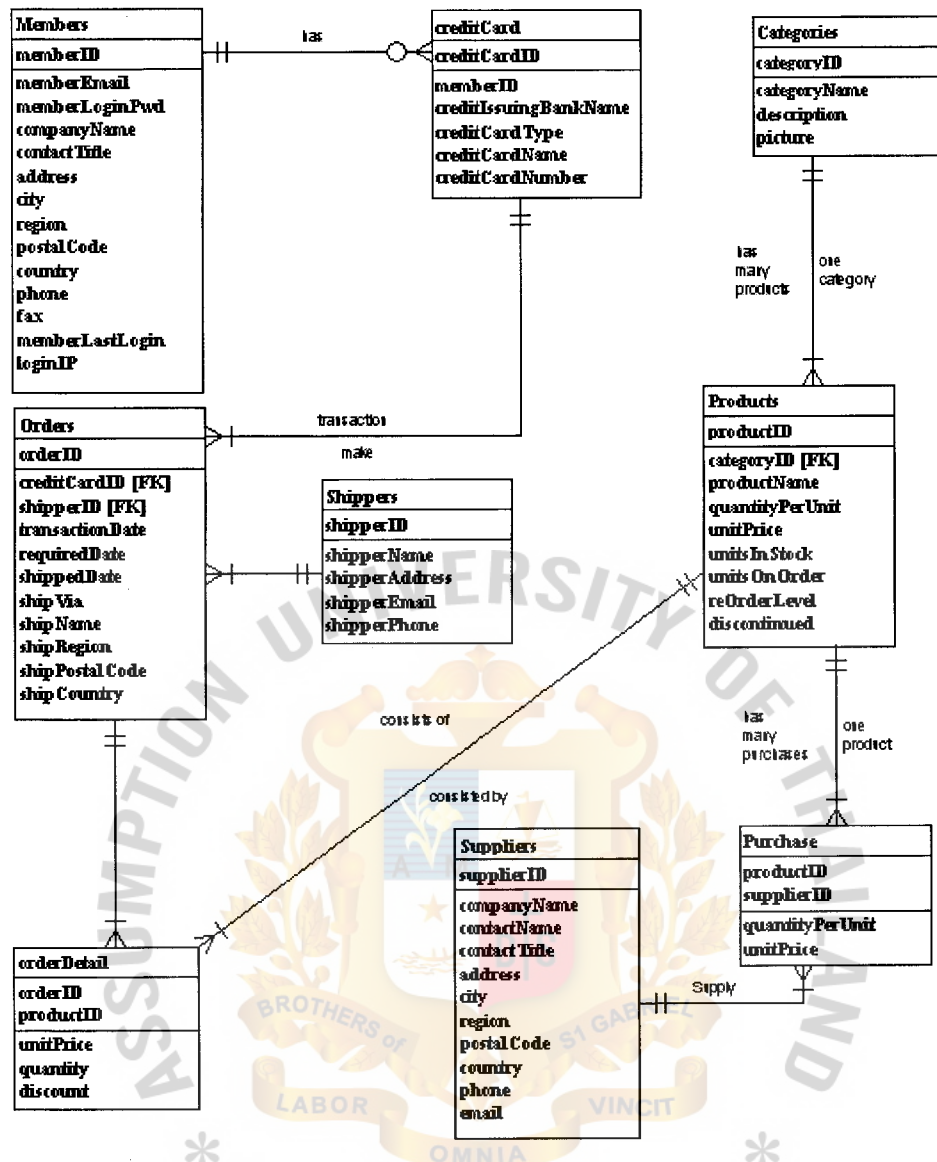


Figure B.3. Fully Attributed Data Model of ER Diagram of Online Shopping System



APPENDIX C

DATABASE DESIGN

Table C1. Structure of Member Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to Table	Check	Key Type
1	Member_ID	int	y	y		CreditCard		PK
2	Member_Fname	varchar(40)						
3	Member_Lname	varchar(40)						
4	Member_DOB	datetime						
5	Member_Gender	char(1)					F,M	
6	Member_Address	nvarchar(50)						
7	Member_Street	nvarchar(30)		y				
8	Member_Amphur	varchar(20)		y				
9	Member_Province	varchar(25)		y				
10	Member_Country	varchar(25)						
11	Member_Zipcode	varchar(5)						
12	Member_Tel	varchar(10)		y				
13	Member_Email	nvarchar(30)					@	
14	Member_Password	char(10)						
15	Member_CompanyName	varchar(20)		y				
16	Member_ContactTitle	varchar(30)		y				
17	Member_CreateDate	datetime					getdate()	
18	Member_LoginIP	char(15)					0.0.0.0 - 255.255.255.255	

Table C.2. Structure of CreditCard Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to Table	Check	Key Type
1	CreditCard_ID	int	y	y				PK
2	Member_ID	int			y			FK
3	CreditCard_IssuingBank	varchar(35)			y			
4	CreditCard_Type	varchar(20)			y			
5	CreditCard_CVV	char(3)			y		0-9	
6	CreditCard_Number	char(16)			y			
7	CreditCard_Hname	varchar(40)			y			
8	CreditCard_ExpDate	char(4)			y		mmyy	
9	PaymentType	varchar(10)						

Table C.3. Structure of Order Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to Table	Check	Key Type
1	Order_ID	int	y	y		Order_Detail		PK
2	Member_ID	int			y			FK
3	Shipper_ID	int			y			FK
4	Order_Date	datetime					getdate()	
5	Require_Date	datetime			y			
6	Ship_Via	varchar(20)						
7	Ship_Name	varchar(20)						
8	Ship_Region	varchar(20)						
9	Ship_PostalCode	varchar(5)						
10	Ship_Country	varchar(25)						
10	Ship_Status	varchar(20)						

Table C.4. Structure of OrderDetail Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	Order_ID	int		y				PK
2	Product_ID	int		y				PK
3	Unit_Price	money						
4	Quantity	int						
5	Discount	tinyint						

Table C.5. Structure of Shipper Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to Table	Check	Key Type
1	Shipper_ID	int	y	y				PK
2	Shipper_Name	varchar(30)						
3	Shipper_Address	varchar(50)						
4	Shipper_Email	nvarchar(30)						
5	Shipper_Phone	nvarchar(10)						

Table C.6. Structure of Supplier Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to Table	Check	Key Type
1	Supplier_ID	int	y	y		Purchase		PK
2	Company_Name	varchar(30)						
3	Contact_Name	varchar(50)						
4	Contact_Title	nvarchar(30)						
5	Address	nvarchar(50)						
6	City	varchar(20)						
7	Reigon	varchar(20)						
8	PostalCode	nvarchar(5)						
9	Country	varchar(25)						
10	Phone	nvarchar(10)						
11	Email	nvarchar(30)						

Table C.7. Structure of Purchase Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to Table	Check	Key Type
1	Product_ID	int	y	y				PK
2	Supplier_ID	varchar(30)		y				PK
3	QuantityPerUnit	varchar(50)						
4	UnitPrice	nvarchar(30)						

Table C.8. Structure of Categories Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to Table	Check	Key Type
1	Category_ID	int	y	y		Product		PK
2	Category_Name	varchar(30)						
3	Description	varchar(150)						
4	Picture	image						

Table C.9. Structure of Product Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to Table	Check	Key Type
1	Product_ID	int	y	y				PK
2	Category_ID	varchar(30)			y			FK
3	Product_Name	varchar(50)						
4	QuantityPerUnit	nvarchar(30)						
5	UnitPrice	nvarchar(10)						
6	UnitInStock	varchar(50)						
7	UnitOnOrderLevel	nvarchar(30)						
8	reOrderLevel	char(1)					0,1	
9	Discontinue	char(1)					0,1	



APPENDIX D

PROCESS SPECIFICATIONS

Table D.1 Process Specification of Process 1.0

Items	Description
Process Name:	Search Product
Data In:	(1) Product Request from Non Member (2) Product Request from Member (3) Product Information from Inventory
Data Out:	(1) Product Response to Non Member (2) Product Response to Member
Process:	(1) Receive product request from non member and member (2) Retrieve product information from inventory database (3) Send product information back to non member and member
Attachment:	(1) Non-Member (2) Member (3) Inventory Database

Table D.2 Process Specification of Process 1.1

Items	Description
Process Name:	Retrieve Product
Data In:	(1) Product Information Request from Non Member (2) Product Information Request from Member (3) Product Information from Inventory (4) Product Detail Information from Product Detail
Data Out:	(1) Product Response to Non Member (2) Product Response to Member
Process:	(1) Receive product request from non member and member (2) Retrieve product information from inventory database (3) Send product information back to non member and member (4) Retrieve product detail information from product detail database
Attachment:	(1) Non-Member (2) Member (3) Inventory Database (4) Product Detail Database

Table D.3. Process Specification of Process 1.2

Items	Description
Process Name:	Product Report
Data In:	(1) Product Information from Inventory (2) Product Detail Information from Product Detail
Data Out:	(1) Report of Product Information
Process:	(1) Retrieve product information from inventory database (2) Retrieve product detail information from product detail database (3) Generate report of product information to the manager
Attachment:	(1) Member (2) Inventory Database (4) Product Detail Database



Table D.4. Process Specification of Process 2.0

Items	Description
Process Name:	Manage Registration
Data In:	(1) Registration Form (2) Member Login Email and Password (3) Member Data Change Form (4) Member Information from Member Database
Data Out:	(1) Registration Confirmation (2) Authorization (3) Member Data (4) Update Member Data
Process:	(1) If the customer is a non-member, do step 2 else the customer is existing member, do step 4 (2) Send registration form from non-member to the manage registration system. (3) Save the customer record to the member database. (4) Send the member email and password. (5) Validate the member email and password. (6) Send the member data change form (7) Update the member data of the existing member data. (8) Save the member information in the member database. (9) Confirm complete registration to non-member. (10) Generate report of member information to the manager by time trigger.
Attachment:	(1) Non-Member (2) Member (3) Manager (4) Member Database

Table D.5. Process Specification of Process 2.1

Items	Description
Process Name:	New Member
Data In:	(1) Registration Form
Data Out:	(1) Registration Confirmation (2) Member Information
Process:	(1) Receive the registration form from the non-member. (2) Save the member information in the member database. (3) Send back the registration confirmation to the non-member.
Attachment:	(1) Non-Member (2) Member Database

Table D.6. Process Specification of Process 2.2

Items	Description
Process Name:	Verify Member
Data In:	(1) Member Email and Password from Member (2) Member Email and Password from Member database
Data Out:	(1) Validate Member Email and Password
Process:	(1) Send member email and password from member (2) Retrieve the member data from the member database. (3) Validate the member email and password. (4) Inform valid or invalid status of member email and password.
Attachment:	(1) Member (2) Member Database

Table D.7. Process Specification of Process 2.3

Items	Description
Process Name:	Update Member Data
Data In:	(1) Update Member Information
Data Out:	(1) Member Information
Process:	(1) Receive member information change form. (2) Send updated member data to member database.
Attachment:	(1) Member (2) Member Database

Table D.8. Process Specification of Process 2.4

Items	Description
Process Name:	Member Report
Data In:	(1) Member Information
Data Out:	(1) Report of Member Information
Process:	(1) Receive member information from member database. (2) Generate report of member information to the manager.
Attachment:	(1) Member (2) Member Database

Table D.9. Process Specification of Process 3.0

Items	Description
Process Name:	Manage Order
Data In:	(1) Member Order (2) Make Payment
Data Out:	(1) Payment Information (2) Quantity Sold (3) Order Detail (4) Payment (5) Report of ordered information
Process:	(1) Response to customer payment information. (2) Save the ordered information in the member order database. (3) Receive the customer payment. (4) Receive payment request from financial department. (5) Save the quantity of product sold in the product sold database (6) Generate report of ordered information to the manager.
Attachment:	(1) Member (2) Financial Department (3) Manager (4) Member Order Database (5) Product Sold Database (6) Payment Database

Table D.10. Process Specification of Process 3.1

Items	Description
Process Name:	Verify Member
Data In:	(1) Member Email and Password (2) Member Email and Password from Member Database
Data Out:	(1) Validate Member Email and Password
Process:	(1) Request the member email and password from member. (2) Retrieve the member email and password from member database. (3) Verify member email and password. (4) Inform valid or invalid status of member email and password.
Attachment:	(1) Member (2) Member Database



Table D.11. Process Specification of Process 3.2

Items	Description
Process Name:	Member Order
Data In:	(1) Member Order (2) Member Email
Data Out:	(1) Member Order Detail (2) Quantity Sold (3) Shipping Information
Process:	(1) Receive member order from the existing customer. (2) Insert member order and quantity of product sold. (3) Save the shipping information of the product.
Attachment:	(1) Member (2) Member Database (3) Member Order Database (4) Product Sold Database (5) Shipping Information Database

Table D.12. Process Specification of Process 3.3

Items	Description
Process Name:	Member Payment
Data In:	(1) Response Member Payment Information (2) Payment Information
Data Out:	(1) Request Member Payment Information (2) Member Payment Information to Financial Department (3) Member Payment Information to Member Payment Database
Process:	(1) Receive member payment (2) Send member payment information to financial department (3) Retrieve member payment information to member payment Database (4) Insert the member payment information to member payment.
Attachment:	(1) Member (2) Financial Database (3) Member Payment Database

Table D.13. Process Specification of Process 3.4

Items	Description
Process Name:	Member Ordered Report
Data In:	(1) Member Payment Information (2) Shipping Information (3) Quantity Sold (4) Member Order Detail (5) Member Information
Data Out:	(1) Report of Member Ordered Information
Process:	(1) Retrieve the member payment information from member payment. (2) Retrieve the member information from member database. (3) Retrieve the member shipping information. (4) Retrieve the product sold information. (5) Generate the report of member ordered information.
Attachment:	(1) Manager (2) Member Database (3) Member Payment Database (4) Product Sold Database (5) Member Order Database

Table D.14. Process Specification of Process 4.0

Items	Description
Process Name:	Manage Delivery Information
Data In:	(1) Delivery Confirmation (2) Product ID (3) Quantity Sold (4) Member Order Detail (5) Delivery Detail
Data Out:	(1) Delivery Request (2) Delivery Information (3) Report of Delivery Information
Process:	(1) Retrieve the delivery confirmation from product inventory. (2) Retrieve the product id from product inventory (3) Retrieve quantity sold of product information. (4) Retrieve delivery information. (6) Insert the delivery information to the shipper database. (7) Generate the report of delivery information.
Attachment:	(1) Manager (2) Shipper Database (3) Inventory Database (4) Product Sold Database (5) Inventory Control Department (6) Member Order Database

Table D.15. Process Specification of Process 4.1

Items	Description
Process Name:	Retrieve Delivery Report
Data In:	(1) Product Information (2) Shipping Information (3) Member Order Information (4) Quantity Sold
Data Out:	(1) Delivery Request
Process:	(1) Retrieve the delivery product information from shipper information (2) Retrieve the product information from the inventory database. (3) Retrieve quantity sold of product information. (4) Retrieve member ordered information from the member order database. (5) Send the delivery information to the inventory control department.
Attachment:	(1) Shipper Database (2) Inventory Database (3) Product Sold Database (4) Inventory Control Department (5) Member Order Database

Table D.16. Process Specification of Process 4.2

Items	Description
Process Name:	Update Delivery Information
Data In:	(1) Delivery Confirmation (2) Member Order Information
Data Out:	(1) Delivery Information
Process:	(1) Receive the delivery confirmation from inventory control department (2) Retrieve the member order information from the member order information database. (3) Update the delivery information to the shipper database.
Attachment:	(1) Shipper Database (2) Inventory Control Department

Table D.17. Process Specification of Process 4.3

Items	Description
Process Name:	Delivery Report
Data In:	(1) Delivery Information (2) Member Order Information
Data Out:	(1) Report of Delivery Information
Process:	(1) Retrieve the member order information from the member order information database. (2) Retrieve the delivery information from the shipper database.
Attachment:	(1) Shipper Database (2) Member Order Database (3) Manager

Table D.18. Process Specification of Process 5.0

Items	Description
Process Name:	Manage Supplier
Data In:	(1) Reorder Product List (2) Purchase Order (3) Supplier Payment Information (4) Product Return Information
Data Out:	(1) Quantity of Product Available (2) Report of Supplier Payment (3) Quantity of Product Bought (4) Supplier Information (5) Supplier Order
Process:	(1) Receive the reorder product list from inventory database. (2) Receive the purchase order from the inventory control department. (3) Receive the supplier payment information from the financial department (4) Receive the return product information. (5) Insert the quantity of product bought to the purchase database. (6) Insert the supplier information to the supplier database. (7) Generate the report of supplier information (8) Retrieve the available stock information. (9) Send the require product list to the supplier.
Attachment:	(1) Inventory Database (2) Supplier Database (3) Manager (4) Financial Department (5) Purchase Database

Table D.19. Process Specification of Process 5.1

Items	Description
Process Name:	Check Inventory
Data In:	(1) Quantity of Product
Data Out:	(1) Available Product Information
Process:	(1) Retrieve the available product from the inventory database. (2) Send the quantity of product available back to the inventory control department.
Attachment:	(1) Inventory Database (2) Inventory Control Department

Table D.20. Process Specification of Process 5.2

Items	Description
Process Name:	Supplier Order List
Data In:	(1) Purchase Order List
Data Out:	(1) Supplier Order
Process:	(1) Receive purchase order List from the inventory control department. (2) Send the list to the supplier.
Attachment:	(1) Supplier (2) Inventory Control Department

Table D.21. Process Specification of Process 5.3

Items	Description
Process Name:	Supplier Invoice Information
Data In:	(1) Supplier Invoice Information (2) Supplier Information
Data Out:	(1) Quantity of Product Information
Process:	(1) Receive the purchase information from the financial department. (2) Record the supplier information and quantity of product.
Attachment:	(1) Financial Department (2) Supplier Database (3) Purchase Database

Table D.22. Process Specification of Process 5.4

Items	Description
Process Name:	Add Product Information
Data In:	(1) Product Information
Data Out:	(1) Product Detail
Process:	(1) Receive the product information from the inventory control department. (2) Insert the product information and product detail in inventory and product detail database respectively.
Attachment:	(1) Inventory Database (2) Inventory Control Department (3) Product Database

Table D.23. Process Specification of Process 5.5

Items	Description
Process Name:	Return Product Information
Data In:	(1) Product Return Information
Data Out:	(1) Quantity of Return
Process:	(1) Receive the return product information from financial department. (2) Insert the quantity of return product to the purchase database.
Attachment:	(1) Purchase Database (2) Financial Department

Table D.24. Process Specification of Process 5.6

Items	Description
Process Name:	Supplier Payment Information
Data In:	(1) Supplier Payment Information
Data Out:	(1) Payment Information
Process:	(1) Retrieve supplier payment information from a financial department (2) Update the supplier payment information in the supplier database.
Attachment:	(1) Inventory Database (2) Inventory Control Department

Table D.24. Process Specification of Process 5.7

Items	Description
Process Name:	Supplier Payment Report
Data In:	(1) Quantity of Product (2) Purchase Information (3) Product Detail Information (4) Supplier Payment Information
Data Out:	(1) Report of Supplier Detail Information
Process:	(1) Retrieve the quantity of product, purchase information, product detail information, supplier payment information. (2) Send the all information to the manager for generate the report.
Attachment:	(1) Manager (2) Supplier Database (3) Product Database (4) Inventory Database (5) Purchase Database





Table E.1. Data Dictionary of the Online Shopping Systems Database

Field Name	Meaning
Member_ID	Member Auto Generate ID
Member_Fname	Member First Name
Member_Lname	Member Last Name
Member_DOB	Member Date of Birth
Member_Gender	Member Gender
Member_Address	Member Address
Member_Street	Member Street
Member_Amphur	Member Amphur
Member_Province	Member Province
Member_Country	Member Country
Member_Zipcode	Member Country Zipcode
Member_Tel	Member Contact Telephone Number
Member_Email	Member Contact Email Address
Member_Password	Member Login Password
Member_CompanyName	Member Company Name
Member_ContactTitle	Member Contact Title
Member_CreateDate	Member Create Date
Member_LoginIP	Member Login IP address
CreditCard_ID	Credit Card Identity Number
CreditCard_IssuingBank	Credit Card Issuing Bank
CreditCard_Type	Credit Card Type

Table E.2. Data Dictionary of the Online Shopping Systems Database

Field Name	Meaning
CreditCard_CVV	Credit Card The Last Three Digits in the back
CreditCard_Number	Credit Card Number 16 Digits
CreditCard_Hname	Credit Card Holder Name
CreditCard_ExpDate	Credit Card Expire Date
PaymentType	Payment Method of the shopping
Order_ID	Order Auto Generate ID Number
Order_Date	Transaction Date
Require_Date	The date that is committed to deliver the product.
Ship_Via	Ship via Air, Ship, Car, Post
Ship_Name	The name of shipment
Ship_Region	Delivery Region
Ship_PostalCode	Delivery Postcode
Ship_Country	Delivery Country
Ship_Status	Delivery Status
Unit_Price	One unit price of the product
Quantity	Total quantity of the product
Discount	Discount of the product
Shipper_ID	Shipper Auto Generate ID Number
Shipper_Name	Shipper Name
Shipper_Address	Shipper Address

Table E.3. Data Dictionary of the Online Shopping Systems Database

Field Name	Meaning
Shipper_Email	Shipper Email
Shipper_Phone	Shipper Phone
Supplier_ID	Supplier Auto Generated ID Number
Company_Name	Supplier Company Name
Contact_Name	Supplier Contact Name
Contact_Title	Supplier Contact Title
Address	Supplier Address
City	Supplier City
Reigon	Supplier Region
PostalCode	Supplier Postal Code
Country	Supplier Country
Phone	Supplier Phone
Email	Supplier Email
Category_ID	Product Category Auto Generate ID Number
Category_Name	Product Category Name
Description	Product Detail Description
Picture	Product Picture
UnitInStock	Available Unit in the Inventory
UnitOnOrderLevel	Define the order level
reOrderLevel	Reorder Status
Discontinue	The product is stock on hold or no more stock



APPENDIX F

REPORT DESIGN

Member List Report

Dual Sports Ball Company Limited
80/214(10B13), Soi Ladprao 4, Ladprao Rd.
Chatuchak, Bangkok 10900, Thailand
Tel: 02-222-8888, Fax: 02-222-8888
Email: admin@dualsportsball.com

Report ID: R0608001
Date: 20/08/2006 10:30:08 AM

MemberID	First Name	Last Name	Country	Contact Phone	Email Address	Detail
000000008	Thandar	Aung	Myanmar	951-057-60113	thandar@gmail.com	Detail
000000009	Soe	Kyi Thein	Myanmar	959-785-21340	skthein@gmail.com	Detail
000000010	Hoang	Anh Linh Nguyen	Philippine	639-178-10534	anhlinh@gmail.com	Detail
000000011	Rodney	Moore	USA	601-430-23433	rodney@yahoo.com	Detail
000000012	Ken	SaiTip	Thailand	668-956-70070	ken@saitip.net	Detail
000000013	Sopa	Klungpal	Thailand	668-999-45777	sopa@gmail.com	Detail
000000014	Thiha	Aung	Myanmar	951-543-2144	thiha@gmail.com	Detail
000000015	Kyaw	Kyaw Win	Australia	614-809-43231	aroon@gmail.com	Detail
000000016	Thandar	Oo	Australia	614-888-77777	thandaroo@gmail.com	Detail
000000017	Mya	Mya Sein	USA	601-234-64431	sein@msn.com	Detail
000000018	Myo	Zaw	USA	601-555-42890	myozaw@xmail.net	Detail

Figure F.1. Report of Member Information

Member Detail List Report

Dual Sports Ball Company Limited
80/214(10B13), Soi Ladprao 4, Ladprao Rd,
Chatuchak, Bangkok 10900, Thailand
Tel: 02-222-8888, Fax: 02-222-8888
Email: admin@dualsportsball.com

Report ID: R0608002
Date: 20/08/2006 10:30:08 AM

MemberID	Address	Shipping Address	CreateDate	LastLoginDate
000000008	No.100, Bogyoke Rd, Kyaikhto, Myanmar	No.100, Bogyoke Rd, Kyaikhto, Myanmar	10/1/2005	10/8/2006
000000009	145/8 Sukaswat Bangkok 10230	145/8 Sukaswat Bangkok 10230	10/1/2005	11/8/2006
000000010	84/9 Bangruk Satom Bangkok 10500	84/9 Bangruk Satom Bangkok 10500	12/1/2005	12/8/2006
000000011	190/4 Rarnkumhang Bangkok 10310	190/4 Rarnkumhang Bangkok 10310	13/1/2005	13/8/2006
000000012	12/10 Lanluang Bangkok 10311	12/10 Lanluang Bangkok 10311	14/1/2005	14/8/2006
000000013	29 Talardproo Thhongburi Bangkok 10600	29 Talardproo Thhongburi Bangkok 10600	15/1/2005	15/8/2006
000000014	38 Sainkanthar, Yangon, Myanmar	38 Sainkanthar, Yangon, Myanmar	16/1/2005	16/8/2006
000000015	34/10 Pravate Srinakarin Bangkok 41520	34/10 Pravate Srinakarin Bangkok 41520	17/1/2005	17/8/2006
000000016	145/8 Sukaswat Bangkok 10230	145/8 Sukaswat Bangkok 10230	18/1/2005	18/8/2006
000000017	9/8 Rongmuang Bangkok 10400	9/8 Rongmuang Bangkok 10400	19/1/2005	19/8/2006
000000018	113/71 Moo 14 Sukapiban 1 Bangkok	113/71 Moo 14 Sukapiban 1 Bangkok	20/1/2005	20/8/2006

Figure F.2. Report of Member Detail Information



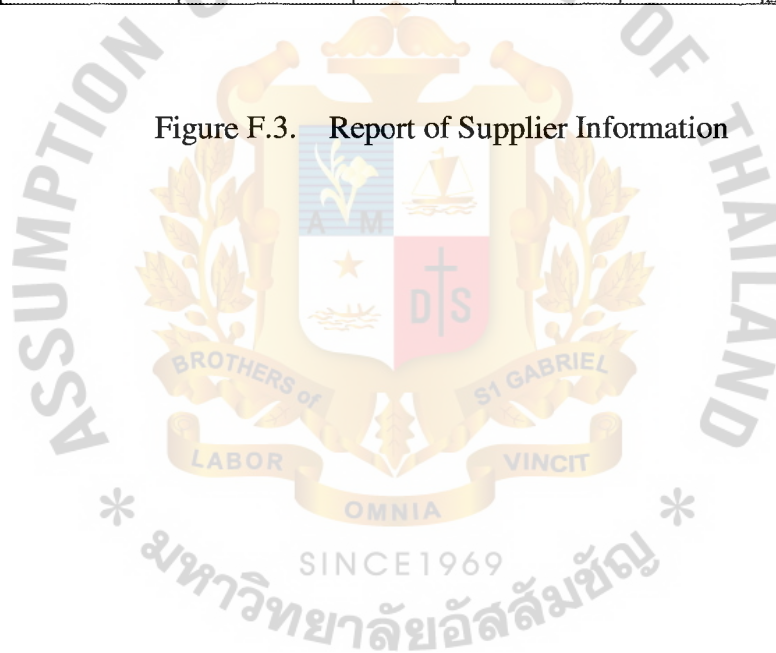
Supplier List Report

Dual Sports Ball Company Limited
80/214(10B13), Soi Ladprao 4, Ladprao Rd,
Chatuchak, Bangkok 10900, Thailand
Tel: 02-222-8888, Fax: 02-222-8888
Email: admin@dualsportsball.com

Report ID: R0608003
Date: 20/08/2006 10:30:08 AM

Supplier ID	Company Name	Contact Person	Country	Contact Phone	Fax	Email Address
10100001	Dual Co. Ltd.	Mr Bobby	Thailand	0257-60113	0257-60114	dual@dual.com
10100002	SinaptiQ Co. Ltd	Mr. Rodney	Thailand	0278-21340	0278-21341	rodney@sinaptiq.com
10100003	PaySbuy Co. Ltd	Mr. Suchote	Thailand	0217-10534	0217-10535	suchote@paysbuy.com
10100004	KMD Co. Ltd	Mr. Hla Naing	Thailand	0230-23433	0230-23434	hlanaing@kmd.com.sg
10100005	CICC Co. Ltd	Mr. Ryan	Thailand	0256-70070	0256-70071	ryan@cicc.com
10100006	WaxMax Co. Ltd	Mr. Paolo	Thailand	0299-45777	0299-45778	paolo@waxmax.com

Figure F.3. Report of Supplier Information



Product List Report

Dual Sports Ball Company Limited
80/214(10B13), Soi Ladprao 4, Ladprao Rd,
Chatuchak, Bangkok 10900, Thailand
Tel: 02-222-8888, Fax: 02-222-8888
Email: admin@dualsportsball.com

Report ID: R0608004
Date: 20/08/2006 10:30:08 AM

ProductID	Product Name	Purchase Qty	Sold	UnitPrice	UnitInStock	Detail
20100000101	Professional Grade Tennis Balls	100	20	149	80	Detail
20100000101	Golden Lion Golf Balls	100	25	59	75	Detail
20100000101	Eight Ball Professional Billiard	50	10	99	40	Detail
20100000101	Professional Quality Footballs	100	30	50	70	Detail
20100000101	Beckham Signature Soccer balls	100	55	69	45	Detail
20100000101	NBA All Star Basketballs	100	20	79	80	Detail
20100000101	Magic Medicine Balls	30	8	99	22	Detail

Figure F.4. Report of Product Information

Product Detail Report

Dual Sports Ball Company Limited
80/214(10B13), Soi Ladprao 4, Ladprao Rd,
Chatuchak, Bangkok 10900, Thailand
Tel: 02-222-8888, Fax: 02-222-8888
Email: admin@dualsportsball.com

Report ID: R0608005
Date: 20/08/2006 10:30:08 AM

ProductID : 20100000101
Product Name : Beckham Signature Soccer balls
ProductionDescription : Signed Football
ProductType : Each
Category : Team Sports Ball
ReOrderLevel : 5
Discontinue : 0

Picture :

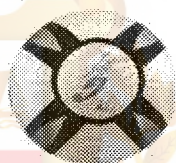


Figure F.5. Report of Product Detail Information

Category List Report

Dual Sports Ball Company Limited
80/214(10B13), Soi Ladprao 4, Ladprao Rd,
Chatuchak, Bangkok 10900, Thailand
Tel: 02-222-8888, Fax: 02-222-8888
Email: admin@dualsportsball.com

Report ID: R0608006
Date: 22/09/2006 10:30:08 AM

CategoryID	CategoryName	Description
301000008	Team Sports Ball	A group of people can use the category that footballs, basketball, ..
301000009	Individual Sports Ball	The balls for individual just like golf balls, tennis ball, eight balls, ...
301000010	Special Sports Ball	The balls for sepcial medical support

Figure F.6. Report of Category List Information



Purchase List Report

Dual Sports Ball Company Limited
80/214(10B13), Soi Ladprao 4, Ladprao Rd,
Chatuchak, Bangkok 10900, Thailand
Tel: 02-222-8888, Fax: 02-222-8888
Email: admin@dualsportsball.com

Report ID: R0609007
Date: 22/9/2006 10:30:08 AM

Product Name	Supplier Name	Purchase Qty	UnitPrice	Amount
Professional Grade Tennis Balls	WaxMax Co. Ltd	100	80.00	8,000.00
Golden Lion Golf Balls	WaxMax Co. Ltd	100	80.00	8,000.00
Eight Ball Professional Billiard	WaxMax Co. Ltd	50	40.00	2,000.00

Total Amount	=	18,000.00
VAT 7%	=	1,260.00
WH 3%	=	540.00
GrandTotal (Baht)	=	19,800.00

Figure F.7. Report of Purchase List Information

Daily Order List Report

Dual Sports Ball Company Limited
80/214(10B13), Soi Ladprao 4, Ladprao Rd,
Chatuchak, Bangkok 10900, Thailand
Tel: 02-222-8888, Fax: 02-222-8888
Email: admin@dualsportsball.com

Report ID: R0609008
Date: 20/09/2006 10:30:08 AM

OrderID	CustomerName	OrderDate	OrderToal	Email Address	Detail
901000001	Thandar Aung	20/9/2006	200.00	thandar@gmail.com	Detail
901000002	Rodney Moore	20/9/2006	156.00	rodney@sinaptig.com	Detail
901000003	Hoang Anh Linh Nguyen	20/9/2006	199.00	anhlinh@gmail.com	Detail

Figure F.8. Report of Daily Order List





www.dualsportsball.com

Order Detail List Report

Dual Sports Ball Company Limited 80/214(10B13), Soi Ladprao 4, Ladprao Rd, Chatuchak, Bangkok 10900, Thailand Tel: 02-222-8888, Fax: 02-222-8888 Email: admin@dualsportsball.com	Report ID: R0609009 Date: 20/09/2006 10:30:08 AM
--	---

CustomerID	901000002	Order Date:	20/9/2006
CustomerName	Rodney Moore	Expected Date:	22/9/2006
CustomerEmail	rodney@sinaptiq.com	Delivery Type	Normal
Billing Address:	7th Floor, Software Park Building 99/28 Chaeng Wattana Rd, Klong Gleua, Pakkred, Nonthaburi, 11120, Thailand	Shipping Address:	7th Floor, Software Park Building 99/28 Chaeng Wattana Rd, Klong Gleua, Pakkred, Nonthaburi, 11120, Thailand

No.	ProductID	Product Name	Quantity	Price(THB)	Line Total (THB)
1	20100000101	Beckham Signature Soccer balls	2	69.00	138.00
2	20100000101	Magic Medicine Balls	1	99.00	99.00

Payment Method : Credit Card

Adjusted THB	0.00
Amount THB	237.00
VAT 7% THB	16.59
WH 3% THB	7.11
Total Amount THB	260.70

Figure F.9. Report of Order Detail Information

Delivery List Report

Dual Sports Ball Company Limited
80/214(10B13), Soi Ladprao 4, Ladprao Rd,
Chatuchak, Bangkok 10900, Thailand
Tel: 02-222-8888, Fax: 02-222-8888
Email: admin@dualsportsball.com

Report ID: R0609010
Date: 20/09/2006 10:30:08
AM

Shipping Expected Date : 22/09/2006

ShipperID	ShipperName	Contact Person	Shipping Address	Shipping Status	ShipVia	Shipping Date
80800001	Mr. Dobby	Ms Thandar	No.100, Bogyoke Rd, Kyaikhto, Myanmar	Late Success	Air	24/9/2006
80800002	Mr. Johan	Mr Soe Kyi Thein	145/8 Sukaswat Bangkok 10230	Success	Post	22/9/2006
80800003	Mr. Ryan	Ms Hoang Anh Linh Nguyen	84/9 Bangruk Satom Bangkok 10500	Success	Post	22/9/2006

Figure F.10. Report of Delivery Information

Figure F.9. Report of Delivery Information



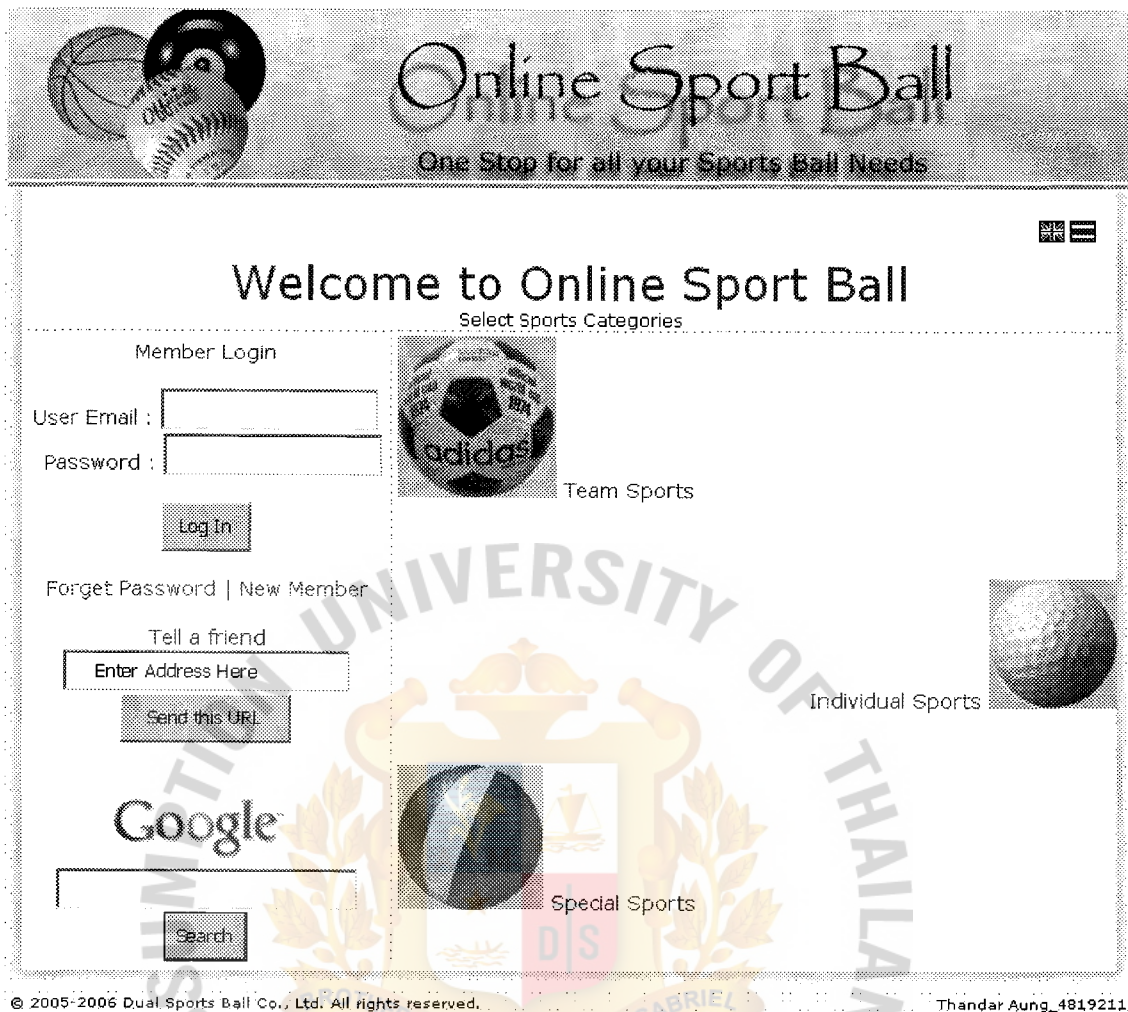


Figure G.1. Web Interface Design of Main Screen

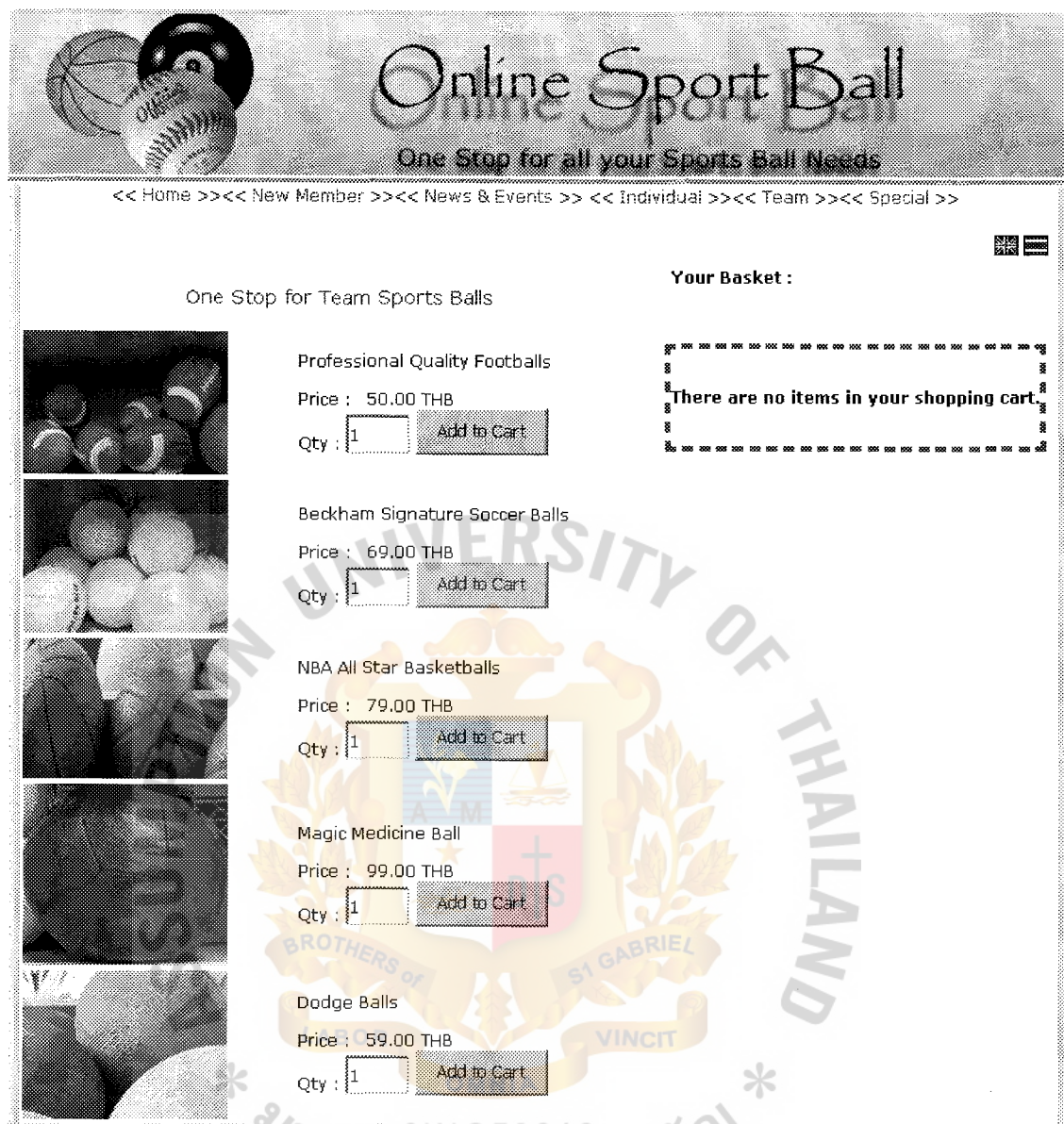


Figure G.2. Web Interface Design of Team Sports Screen



APPENDIX G
WEB INTERFACE DESIGN

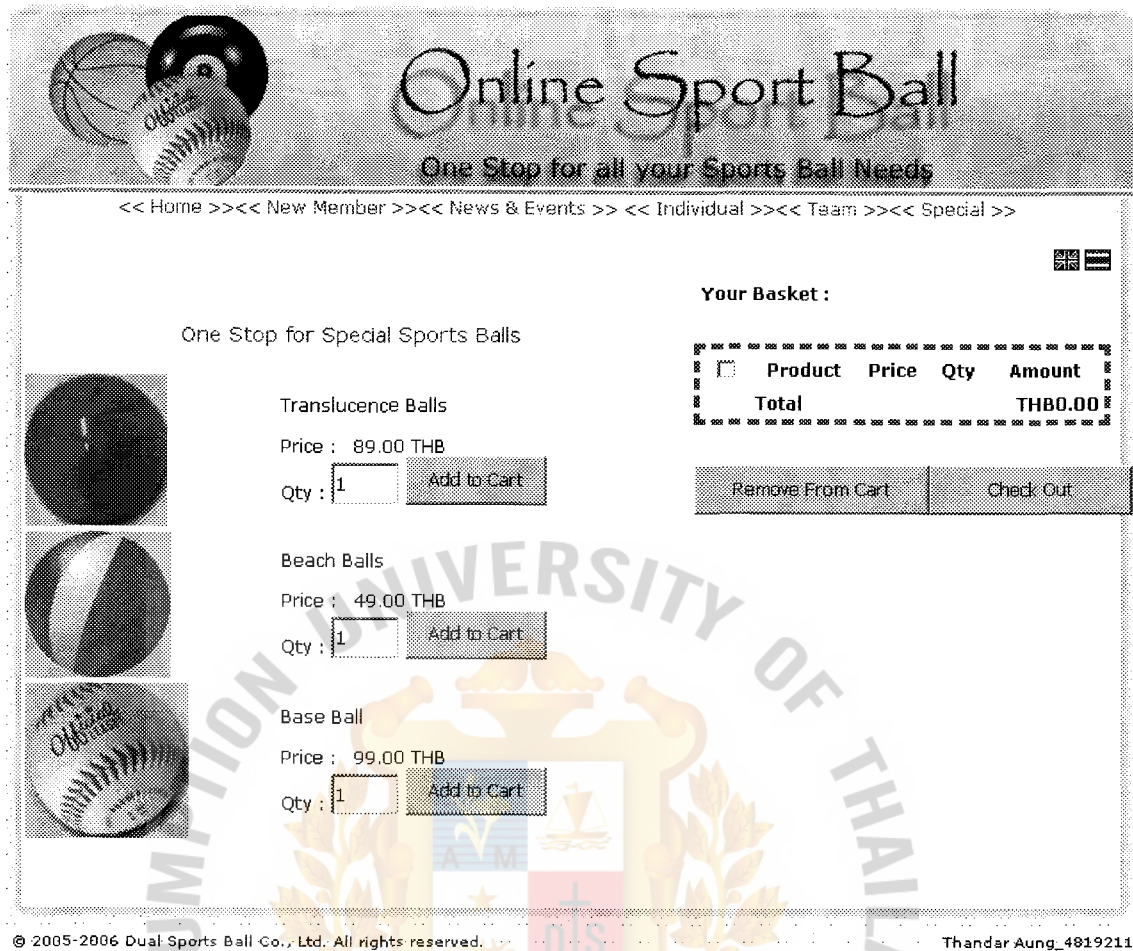


Figure G.3. Web Interface Design of Special Sports Screen

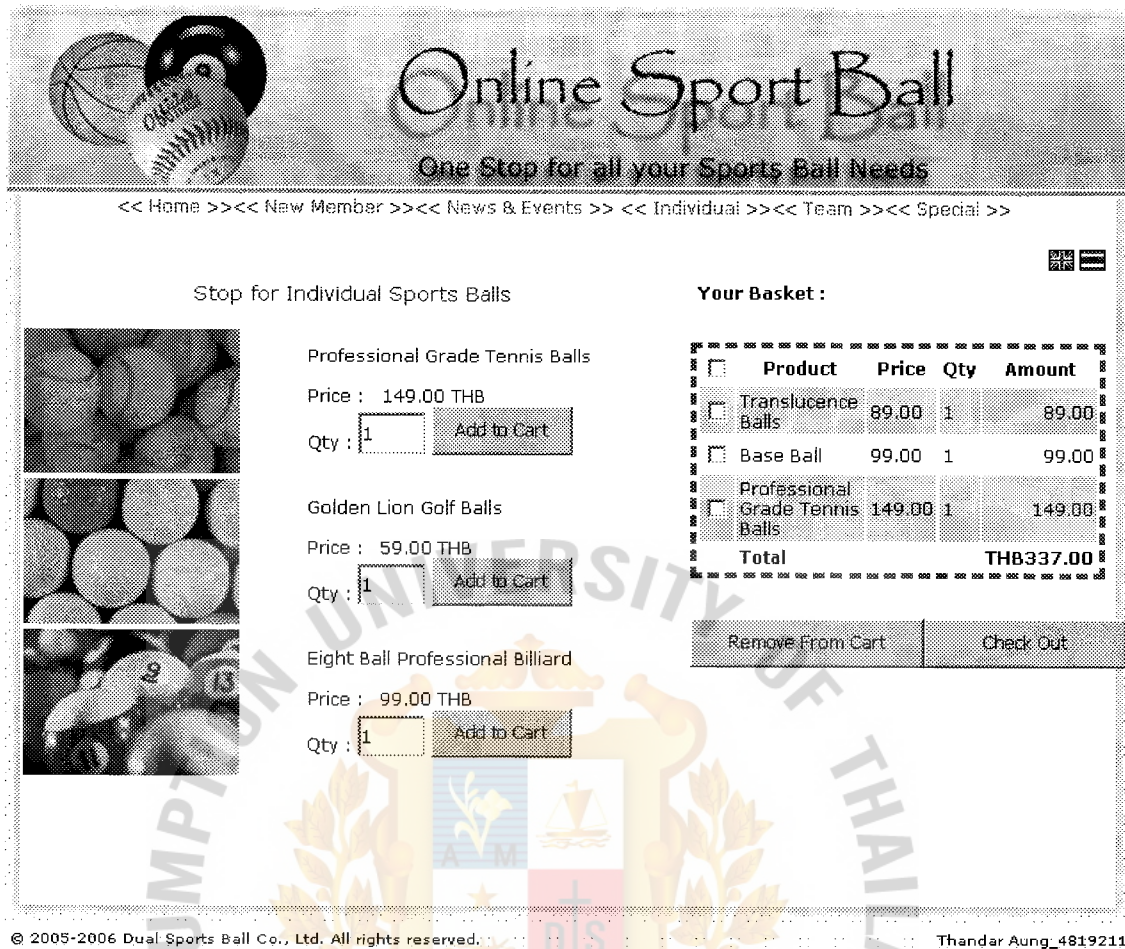
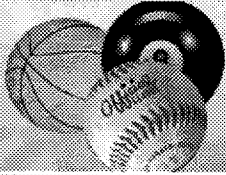


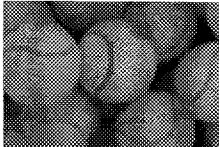
Figure G.4. Web Interface Design of Individual Sports Screen



Online Sport Ball

One Stop for all your Sports Ball Needs

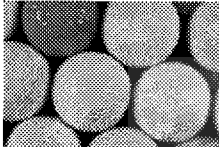
[<< Home >>>](#)
[<< New Member >>>](#)
[<< News & Events >>](#)
[<< Individual >>>](#)
[<< Team >>>](#)
[<< Special >>](#)



Professional Grade Tennis Balls

Price : 149.00 THB

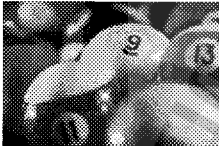
Qty :



Golden Lion Golf Balls

Price : 59.00 THB

Qty :



Eight Ball Professional Billiard

Price : 99.00 THB

Qty :

Your Basket :

<input checked="" type="checkbox"/>	Product	Price	Qty	Amount
<input checked="" type="checkbox"/>	Translucence Balls	89.00	1	89.00
<input checked="" type="checkbox"/>	Base Ball	99.00	1	99.00
<input checked="" type="checkbox"/>	Professional Grade Tennis Balls	149.00	1	149.00
Total				THB337.00

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Thandar Aung_4819211

Figure G.5. Web Interface Design of Individual Sports with Shopping Cart Screen

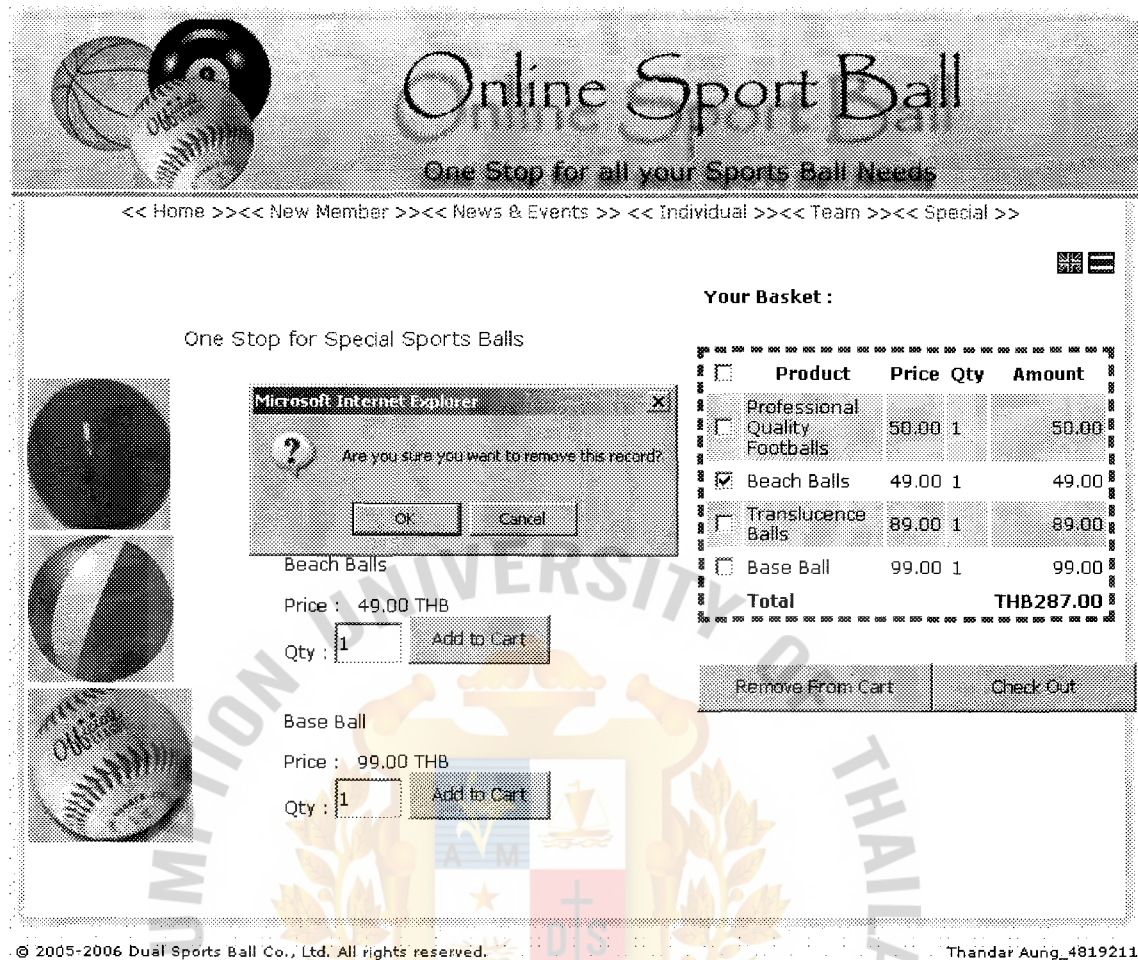



Figure G.6. Web Interface Design of Remove the Shopping Cart Screen



Online Sport Ball


One Stop for all your Sports Ball Needs


[<< Home >>>](#)
[<< New Member >>>](#)
[<< News & Events >>](#)
[<< Individual >>>](#)
[<< Team >>>](#)
[<< Special >>](#)

Payment Detail

This is the secure payment processor for your seller, Online Sport Ball Co.Ltd. Please verify the purchase information and enter your credit card details below.

Payment To : Online Sport Ball
Invoice No. : 061024185833
Payment For : Shopping in Dual Sport Ball
Amount : 119.00 THB

Card No. :


CVV2/CVC2 :


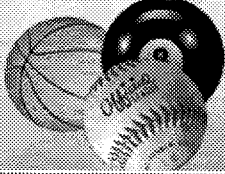
Expire(mmyy) :

Shipping Address :

Contact Person :

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 Thandar Aung_4819211

Figure G.7. Web Interface Design of Payment Screen



Online Sport Ball

One Stop for all your Sports Ball Needs

<< Home >><< New Member >><< News & Events >> << Individual >><< Team >><< Special >>

Payment Detail

This is the secure payment processor for your seller, Online Sport Ball Co.Ltd. Please verify the purchase information and enter your credit card details below.

Payment To : Online Sport Ball
Invoice No. : 061024185833
Payment For : Shopping In Dual Sport Ball
Amount : 119.00 THB

Card No. :


CVV2/CVC2 :


Expire(mmyy) :
 Invalid Expire Date

Shipping Address :

Contact Person :

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 Thandar Aung_4819211

Figure G.8. Web Interface Design of Payment with Invalid Expire Date Screen

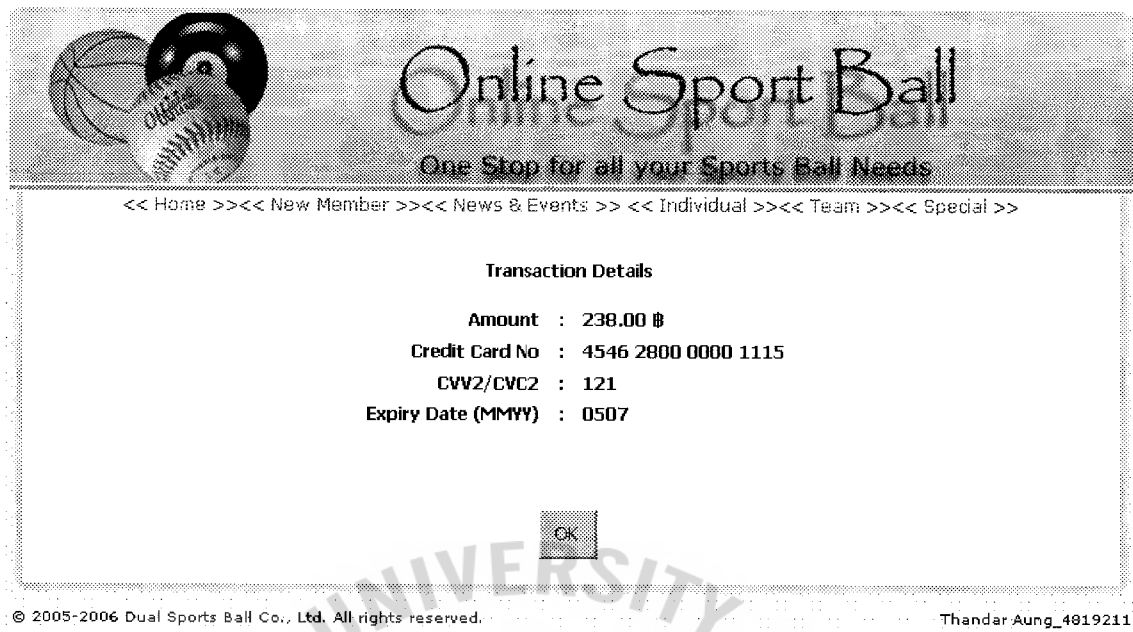
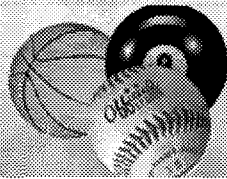


Figure G.9. Web Interface Design of Payment Detail Screen





Figure G.10. Web Interface Design of Sport News and Events Screen



Online Sport Ball

One Stop for all your Sports Ball Needs

<< Home >><< New Member >><< News & Events >> << Individual >><< Team >><< Special >>

Welcome to our valuable member (free membership fee)

* means you must fill

First Name : *

Last Name :

Date of Birth : / / eg. dd/mm/yyyy

Gender : ☒ Female ☐ Male

Address :

Street :

Amphur :

Province :

Country : Select One

ZipCode :

Telephone : *

Email : eg. name@yahoo.com *

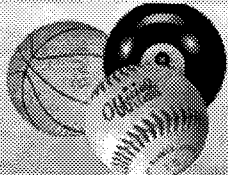
Password : *

Confirm Password : *

Company Name :

Contact Title :

Figure G.11. Web Interface Design of New Member Screen



Online Sport Ball

One Stop for all your Sports Ball Needs

<< Home >><< New Member >><< News & Events >> << Individual >><< Team >><< Special >>

Admin Login

User Email :

Password :

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Figure G.12. Web Interface Design of Admin Login Screen





Figure G.13. Web Interface Design of Admin Control Panel Screen

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17. <http://www.csharpfriends.com>

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