



Design and implementation of logistics platform based on a web
server

Case: Sanhan Constructional Material Limited Company

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ABSTRACT

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<p>The objective of this research is to develop a logistics system intended to solve the problem of Sanhan Constructional Material Limited Company. The aim of this system is to provide the clients an order tracking service and introduce the case company's service in order to increase the business. Moreover, this research demonstrates implementation solutions of the basic functions of the logistics system.</p> <p>This research focuses on finding out how the computer science is applied on the transitional enterprise, and the impact it brings to business. Moreover, the implementation of the logistics system in the case company illustrates the importance of computer science in enterprise management and increases the case company's motivation to Active Server Page (ASP) development.</p> <p>The constructive research method is the methodology of this research. The constructive method is used to specify the practical problem technically in order to achieve an outcome for the case company.</p> <p>The expected outcome of this research is a logistics management system which is easy to manage and maintain for the case company staff without IT background. In addition, future improvements are suggested as an outcome of this research.</p>	
Keywords: logistics platform, ASP, JavaScript, SQL, order tracking	

ABBREVIATIONS

ASP Active Server Pages

CMS Content Management System

CSS Cascading Style Sheets

HTML Hypertext Markup Language

SQL Structured Query Language

UML Unified Modeling Language

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ABSTRACT

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1 INTRODUCTION

1.1 Background information and motivation

In the trend of economic globalization, technology integration, the huge potential of China's logistics market has provided a good environment for the development of China's logistics industry. "China's logistics industry demonstrated robust growth in 2011. The total logistics value reached 158,400 billion yuan, up by 12.3% year-on-year (yoy) in real terms". (Li & Fung Research Centre 2012.) Moreover, "in 2011, the logistics demand coefficient was 3.4, up from 3.2 in 2010. And the value-added was 3,200 billion yuan, up by 13.9% yoy in real terms". (Li & Fung Research Centre 2012.) According to the surveys done by CEVA and Li & Fung Research Centre, the market size is huge (Li & Fung Research Centre 2012). In order to survive in the logistics field, the enterprises need to improve the efficiency and the management of current service. Information management (hereinafter IM) is critical for the logistics, as it can be leveraged to gain more visibility and integration. In addition, IM also can give a good impression to the client group if the goods can be delivered more efficiently and more accurately. (Janakiraman 2011.)

In this thesis, the name of the case company is Sanhan Constructional Material Limited Company. In the text to follow, Sanhan Company will be used instead of the official name. Sanhan Company is a medium-sized company which was founded in 2009. The company is located in Xuzhou, Jiangsu province, China. Manufacturing constructional material is the main business of the company. Within 2 years' development, the company has grown big enough to supply many construction companies inside the province. Instead of focusing on the production capacity, the delivery management has become an urgent issue for the company. The feedback from customers shows that 55% of the

customers are not satisfied with the quality of transportation. A total of 42% of the customers complained about the delivery time.

These issues do not only exist in Sanhan Company but also in most of the Chinese enterprises. According to the survey of Global Supply Chain Council and CEVA logistics in 2012, the outsourcing of Chinese logistics industry was facing a new challenge concerning varying factors. In the survey, almost half of the respondents pointed out the high cost and reliability of local logistics providers as significant issues. Another major problem reported by half of respondents was the transportation quality. (CEVA & Chain 2012.)

Sanhan Company saw that outsourcing to external partners is no longer an option for the business. They decided to build up their own transportation system to improve their business. Therefore, a transportation management system is needed to increase efficiency of the transportation system.

1.2 Objective and research questions

The objectives of this thesis are to analyze the system requirement, design the logistics platform and design the logical structure of the database for Sanhan Company. The logistics platform should meet the varied needs of the company business and allow for possible future development. This thesis focuses on finding answers to the following research questions:

1. What kind of functions and structure should the system have to meet the case company's needs?

At the design phase, the requirements are necessary to be specified at the beginning. The requirements shape what the system is capable of. The information system is aiming to serve the users' demands. Thus, the requirements analysis is processed by analyzing the business process of Sanhan Company. The requirements cover all the possible operations of information management concerning the business and its administration. Following the requirements analysis, the functional structure is gained by analyzing the business process of Sanhan Company.

2. How can the suggested system be implemented?

The programming language and operating environment are selected by comparing different programming languages and operating system. The performance, compatibility and reality are the key factors of this selection. The aim of this question is to make the designing scheme into an entity. One of the main activities are choosing the programming languages, development tools and operating system. Following the selection phase, the implementation is processed by the suggested scheme with the selected tools and language.

1.3 Thesis structure

This thesis is divided into six chapters. Chapter 2 describes the methodologies which are used in the research. Chapter 3 focuses on analyzing and designing the system. Chapter 4 and chapter 5 focus on discussing the design and implementation of the system in detail.

2 METHODOLOGY

2.1 Research methodology

This thesis is a constructive research of designing and implementing an information system focusing on a case company. Constructive research “Aims at producing novel solutions to practically and theoretically relevant problems”. Besides, constructive research is the most commented method in engineering and company sciences. The outputs of constructive research could be techniques, methods, models, system or other artefacts. Figure1 illustrates the phases of constructive research process. (Helsinki University of Technology 2001.)

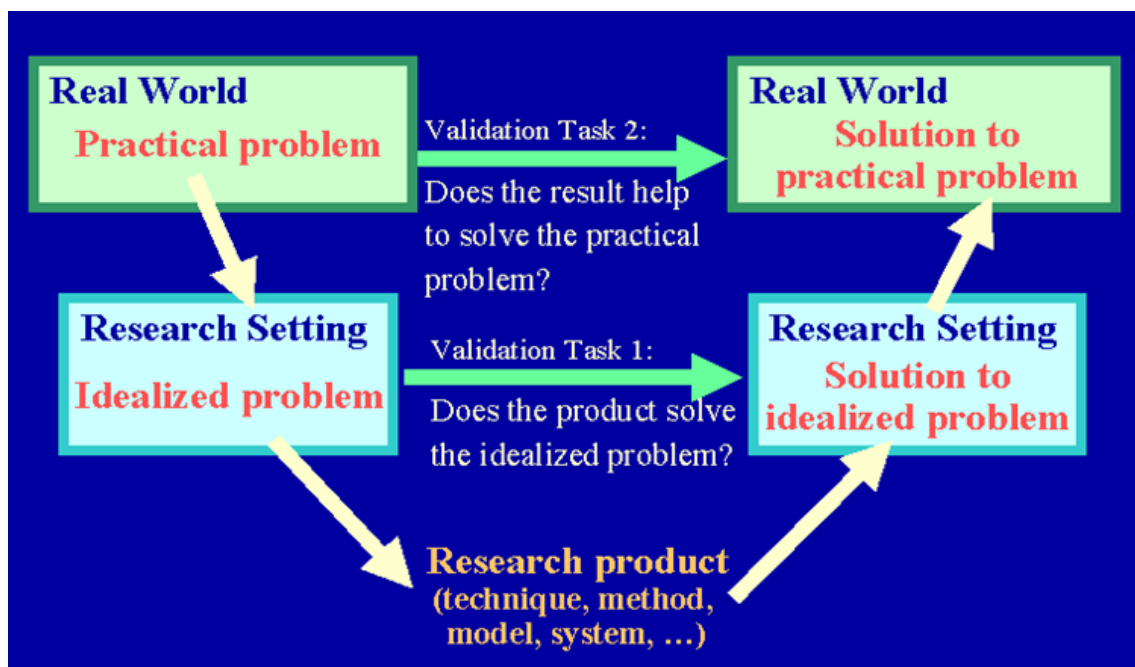


Figure1.Phases of constructive research process (Helsinki University of Technology 2001)

As the picture illustrates, there are five phases in the research process. The first phase is

finding a practical problem in the real world. Analyzing the problem is the second phase in order to obtain an understanding of the topic and the problem. The third phase is producing the solution based on existing knowledge in innovative ways. When the research product is generated, demonstrate how the solution works. Next, the use and performance of the platform is analyzed by applying it to the practical problem. Lastly, the theoretical connections and research contributions are discussed.

The purpose of this research work is intended to solve the logistics tracking problem for Sanhan Company. One of the problems was the fact that, as a small-size enterprise, the delivery was entirely outsourced to a third-party. Because there was no IT department in the company before, the company had no IT facilities and related employees. In order to solve the problem of Sanhan Company, an easy to use and maintain logistics system is needed.

2.2 Development tools

HTML

HTML is the shortened form of Hypertext Mark-up Language. The HTML language is used to create websites allowing anyone who has access to the Internet to view the content. The HTML is a standard created by W3C who is in charge of designing and maintaining the language. HTML tags are used to define the type of the text inside the web page. The web page is basically a text file which directs the browser to display the content with tags. The hypertext could include images, links, music, and applications. (Shannon 2012.)

ASP

“Active Server Pages (ASP) is a server-side scripting environment that one can use to create and run dynamic, interactive Web server applications” (Microsoft ASP 2013). With ASP, one “can combine HTML pages, script commands, and COM components to create interactive Web pages and powerful Web-based applications that are easy to develop and modify.” The ASP web page could include HTML page, text, scripts commands and COM component. Furthermore, to make the website more interesting, interactive content such like forms may be added and create HTML based web application. (Microsoft, ASP 2013.)

CSS

“CSS stands for Cascading Style Sheet. CSSs are used to format the layout of Web pages”. (TechTerms 2013.)The CSS is mainly used to control the elements style of HTML page through creating style table. With CSS, one can make the website outlook more interesting and colourful. (Rouse 2005.)

JavaScript

JavaScript is a script language which is used to control an application through a web browser. JavaScript does not access the local hard drive to store data on the server. JavaScript adds interactivity to the website, such as pop-up notification windows, real-time input validation, and so forth. By using JavaScript, the creator can make users interact with the website. (Chapman 2013; Hamilton 2008.)

SQL

SQL stands for structured query language. SQL is a set of commands written by users to interact with relational database. Most database programs understand SQL. One can say that SQL is the standard of database language. Database-driven software that is created does not seem to use SQL. However, even a click on the software has to be translated into SQL before database understands what the command is. SQL is consisted of three major components data manipulation language, data definition language, and data control language. Each of these components has their own tasks; however, this thesis does not discuss these components further since this is not the main topic of the thesis. (Chapple 2013.)

Dreamweaver

Dreamweaver is a development tool developed by Adobe. The purpose of the software is to let everyone to create their own websites even if one does not have programming knowledge. One does not need to learn HTML and CSS in order to create a website. However, not knowing the programming languages does limit as what one can do with the software. Dreamweaver is a GUI based system with the multiple design templates. The most used one is the half design and half coding view design. This allows users with programming knowledge to have an advantage. In recent years, Dreamweaver has expanded into other territories, as now JavaScript and other coding languages are applicable. (University of Washington, Dreamweaver 2013).

Microsoft Office Access 2010

Microsoft Office Access is a database management tool created by Microsoft. The

development tool is used to manage data. The data is saved in its own format. However, data can be linked into other applications and database programs. Mainly Access is used to import and export data. The tool is convenient as it has ability to understand the data from many other programs. Access can also be used to combine and accumulate and store data. (Microsoft Access 2013.)

UML

UML stands for Unified Modelling Language and is created by Object Management Group in late twentieth century for object oriented program designing. The purpose of creating UML was to establish a stable and a common design language, which can be used by IT professionals. UML equals as a tool for IT professionals as a blueprint is for constructors. Since UML is a language itself and not a methodology, it is not restricted by programming languages. (Bell 2003.) Moreover, the language is simple to understand because of notation system, where everything is drawn as stick figures, boxes, lines along with explanations on the side. Following the procedures set by UML standards, there is little chance for misinterpretation. (Williams 2004.)

In total, there are 7 basic diagrams, that where taught at Kemi-Tornio University of Applied Sciences. In this thesis one was used, use case diagram, and I will cover that in chapter 3.

Photoshop

Photoshop, created by Adobe Systems is the most popular professionally used digital image editing software used by both professionals and beginners (University of Washington, Photoshop 2013). “Some estimates say that Photoshop sales exceed those

of all of its competitors combined” (McClelland 1995). Even though the book is old, Adobe Systems is still leading in the market.

Wide variety of tools gives users endless possibilities. It is possible that every picture that looks professional on posters, brochures, images online are created or edited by Photoshop. Photoshop was created since 1982 and was originally only for Macintosh. Now with 31 years of developing the software has grown so big, that it seems almost impossible to use all tools residing in Photoshop to maximum potential. (University of Washington 2013.) Photoshop in this thesis is used for editing pictures.

ProcessOn

“ProcessOn is an easy-to-use, free and powerful online diagram tool; with ProcessOn you can create professional diagrams, flowcharts, organizational charts, EVC, EPC” (ProcessON 2013). ProcessOn is a free diagramming for drawing all kind of diagrams, which provide real time collaboration service. Moreover, the users are able to work with their coworkers, clients and consultants and communicate with others. In addition, it provides the file management system for the user to management their documents online. (ProcessON2013.)

3 DESIGN AND MODELING

3.1 Requirements analysis

“Requirements analysis, also called requirements engineering, is the process of determining user expectations for a new or modified product” (Rouse 2007). In order to complete the logistics system design and modelling process, the functional specification needed to be generated according to the case company’s requirements. Besides, the system planning could be only started after analyzing all the needs. The requirements also determined the administration privilege to every function inside the system.

According to the current situation and Sanhan Company’s demands, a list of functions had to be involved in the system. Firstly, the system should provide an order tracking service for the clients, and also is able to manage the order information. Secondly, the company information, company services needs to be displayed on a separated page. Thirdly, the system should be able to publish the news and employment information in the system. Fourthly, the system should be able to manage and maintain the all the content in the system, which includes company information, news, services and employment information. Fifthly, the system should provide and login function for the branch office staffs. Lastly, the system should be able to manage and maintain the user account of the branch office.

3.2 System planning

“To model a system the most important aspect is to capture the dynamic behaviour. To clarify a bit in details, dynamic behaviour means the behaviour of the system when it is

running /operating” (TutorialsPoint.com 2013).Based on the use case diagram designed according to the requirements, this logistics system is an internal system which also has some functions for external users. Therefore, the access control is designed to control the access rights of different user groups. The system contains three main functionalities. The use case diagram below illustrates the functionalities and privileges of different user groups.

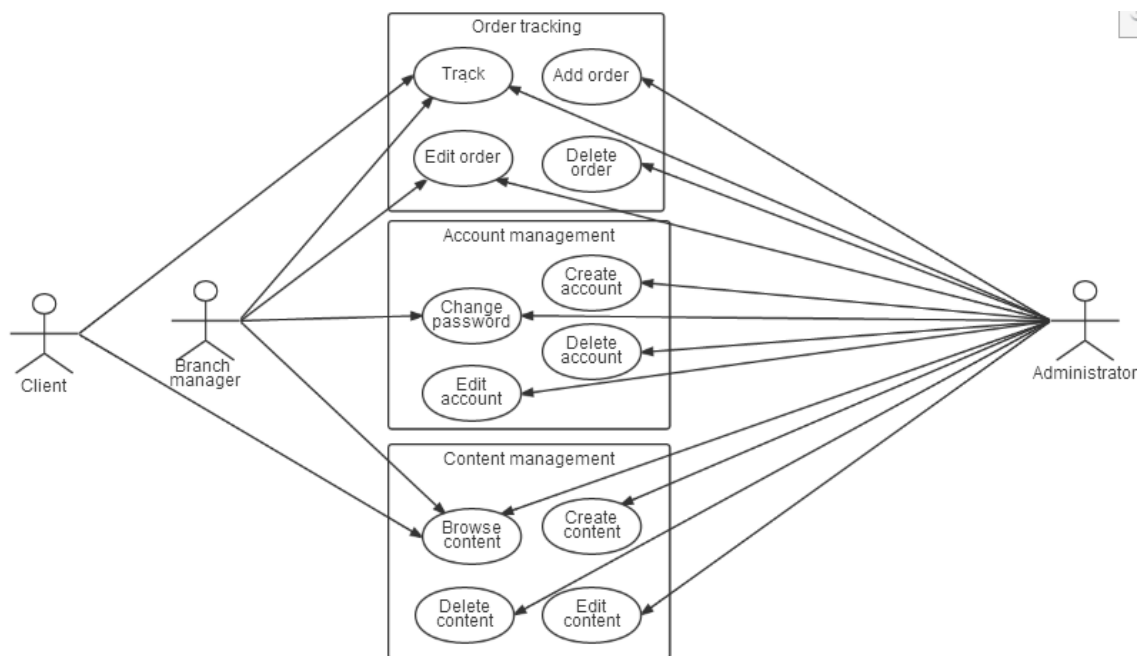


Figure 2.Use case diagram

As the figure above illustrates, the users are separated into 3 groups, client, branch manager and administrator. And all the functions are planned and categorized into three features. The text below will explain the system by features.

Order tracking

In first functionality is the order tracking. The task of this function is to show customers the process and status of orders i.e. where the package is right now and where it is

heading next. This will let the customers feel assured as they know their package is not stuck somewhere. Furthermore, the estimation of package arrival date and time can be calculated. Another function that this order tracking service has is to let the branches including the main company to update the location and write additional information related to the packages. The updating is done by the managers of the company from each branch. Having this function creates credibility and trust between customers and the company. The order tracking also benefits the company and makes the order management easier for staffs as one can find orders by tracking numbers. On the other hand, the branch manager and administrator have access to management functions as the figure 2 illustrates. The branch managers are able to update the packages which are assigned to them, and the administrators are responsible for the order management such as add, edit and delete.

Account management

The second functionality is account management which is only used on administration purpose. Furthermore, there are two kinds of accounts, one is the branch manager account, and the other one is the administrator account. Moreover, the branch manager account is assigned to the branch office manager who is responsible for the order delivery. It gives the branch manager access to the order updating function which is used for updating the package information for the clients. For the administrator account, it has full access to every function within account management which includes add, edit, delete and password changing.

Content management

The third functionality is content management, which is same with Content Management

System. “A content management system (CMS) is a system used to manage the content of a Web site” (Rouse 2011). In order to introduce the company and the services that they provide, the administrator is able to manage and maintain the content. Besides, once the content is added or modified by the administrator, the content will be displayed on the system. Moreover, the client and branch groups only have the right to browse the content.

3.3 System structure

In order to implement the access control, the system is designed in two parts, i.e. user interface and backend. Backend is for the administrator to use and user interface is for clients and branch users. Moreover, all the functions are divided into two parts based on the use of the function.

User interface

A user interface is created for clients and branch staffs. The purpose is to have a visual implementation of the system. With today’s advanced technology, people have already got used to the way the systems are built. Therefore, they expect to have an easy way of how to interact with the system, in this case a website which also has some extrafunctions. The first view is the most important as it will leave the first impression on people. Furthermore, the requirement analysis required the system to be easy to use and easy to maintain. Figure 3 illustrates the structure of user interface.

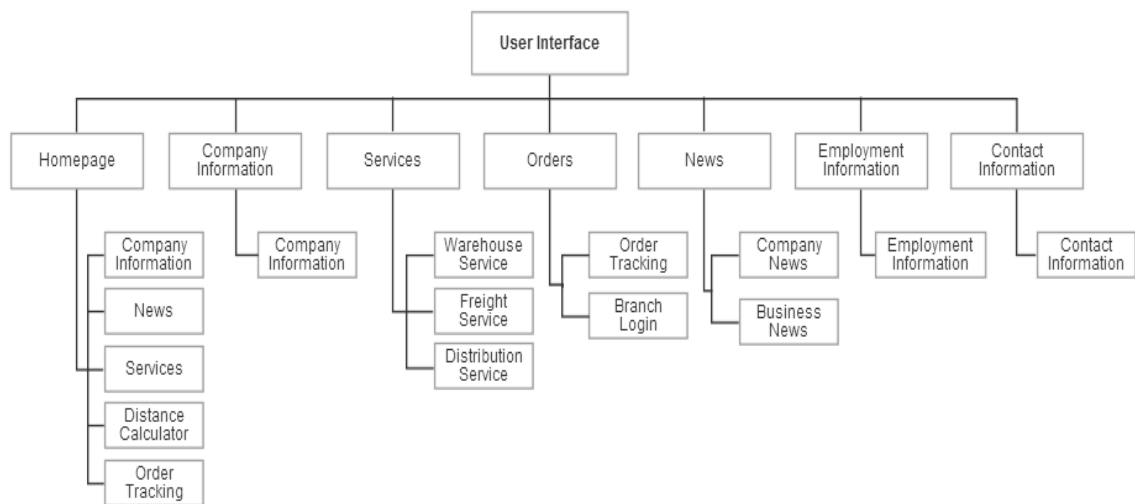


Figure 3.Structure of user interface

As figure 3 shows, the user interface includes the following models:

Order inquiry model

Content model

News model

Administration entry

Backend

The backend is created for the administrator only, and it is used to manage the order and content data. The data are used for order tracking and information display. The entry of backend is placed in the user interface, which in fact is a link to the backend login model. After identification of username and password, the administrator has full access to every administration functions. Moreover, the backend structure is designed as simple as for people without IT background to use. The content management function is split in the sub navigation in the way that it is easy for the administrator to maintain the system. Figure 4 shows the structure of backend.

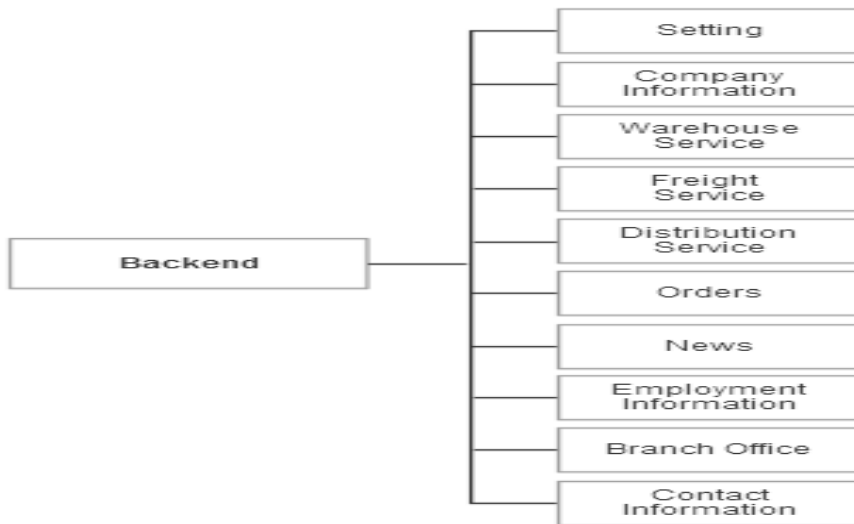


Figure 4.Structure of backend

As figure 4 shows, the backend includes the following models:

Administrator login model

Setting model

Order management model

Content management model

Branch office management model

4 USER INTERFACE MODELS IMPLEMENTATION

4.1 Homepage structure

According to the use of this system and the specific targeted user group, the homepage is designed to show the essential information as the first priority. Furthermore, the structure of the homepage is clear enough for the user to find the information within 3 steps. Figure 5 illustrates the layout of the homepage.

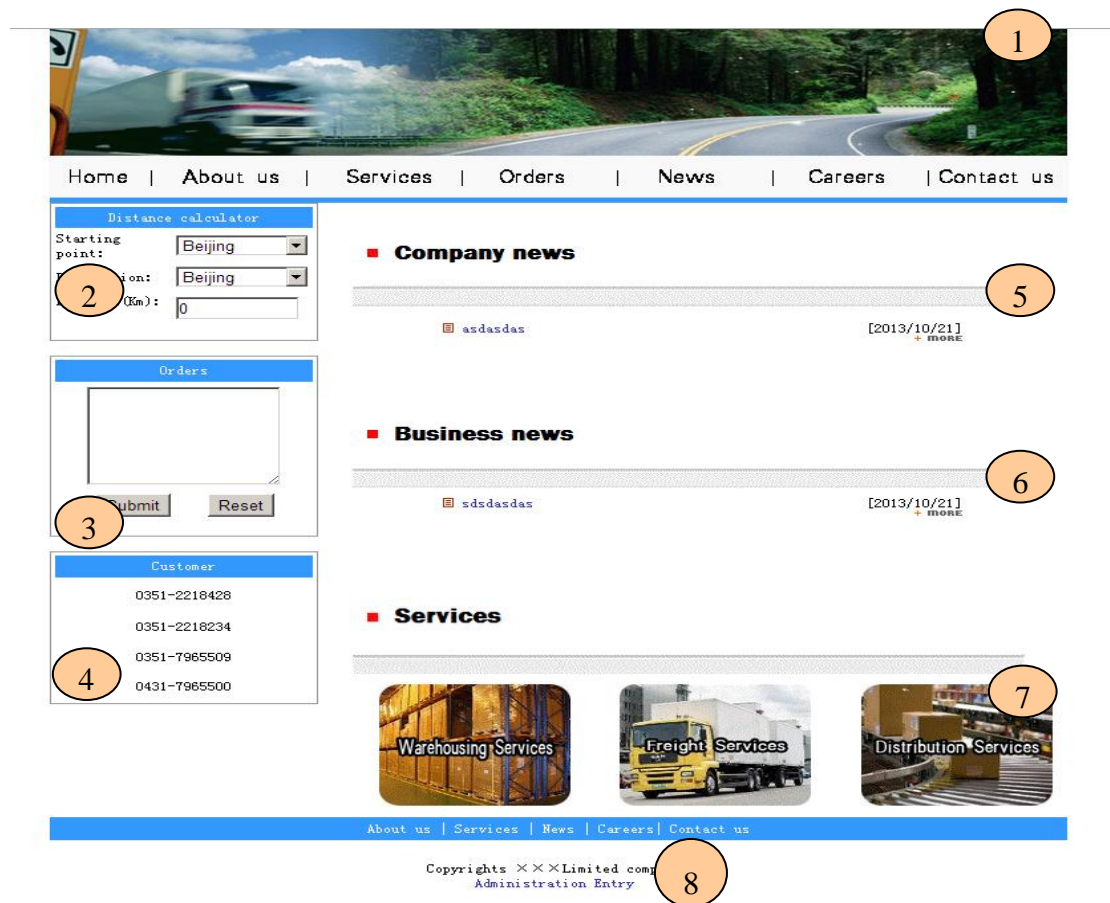


Figure 5.Home page layout

As figure 5 displays, the homepage includes the following functional models:

1. Website navigation: logo and main navigation
2. Distance calculator: to calculate the distance between two cities
3. Quick order tracking: to search the order information by order ID
4. Customer services board: to display the customer service number
5. Company new board: to display the company news
6. Business news board: to display the business news
7. Services model: quick links to different services
8. Administration entry: a link to administration system

4.2 Order tracking model

The order tracking model mainly included order tracking and branch office login. In the order tracking page, users need to type in the correct order number in the input box and click the submit button. When the server receives the order number, the matched information will display in the table below the input box. Figure 6 shows the layout of the order tracking page.

Order number:

Submit Reset

Number	From	Destination	Sent date	Receiver	Receive date	Statu	Note

No order have been found, please check order number.

Figure 6.Order tracking page layout

The code to implement this page is as figure 7.

```

<%
    'acquire order number
if request("order_id")<>""then    'check if order number is empty
order_id=request("order_id")    'assign variable
else
order_id=""    'delete variable value
end if
Set Rs = Server.CreateObject("ADODB.Recordset")    'acquire
record set and inquire matched data
Sql = "Select * Fromyundan where order_id='"&order_id&"'"
Rs.Open Sql,conn,1,1
%>

```

Figure 7.Code 1

The code in figure 7 is to inquire the order information from the database with order number. Before the inquiring the database the scripts will check if the user input is empty.

Branch office login page

In the branch office login page, there are three functions. First, the branch office staffs can check all the detailed information of orders assigned to their branch office. Secondly, it allows the branch office staffs update to their orders. Thirdly, the user password can be changed within this page. This management page is only for the authorized staffs, which means that external users will not have access to manage the data. Figure 8 shows the layout of branch office login page.

Branch Office	
Username:	<input type="text"/>
Password:	<input type="password"/>
<input type="button" value="Login"/>	<input type="button" value="Reset"/>

Figure 8.Branch office login page layout

The code to implement the branch office login page is as figure 9.

```

<% if request("action")="login" then'check if receive the form
  username=request("username")'check the username
  userpwd=request("userpwd")'check the password
  username=trim(request("username"))'delete the space in
  inputs
  password=trim(request("userpwd"))
  fori=1 to len(username)'calculate the length of username
  user=mid(username,i,1)
  if user="" or user="%" or user="<" or user=">" or user="&" or
  user="|" then
    response.write "<script language=JavaScript>" &
    "alert('Please check your username!');" & "history.back()" &
    "</script>"
    response.end
  end if
next
fori=1 to len(password)
pass=mid(password,i,1)
if pass="" or pass="%" or pass="<" or pass=">" or upass="&" or
pass="|" then
  response.write "<script language=JavaScript>" &
  "alert('Please check your possward!');" & "history.back()" &
  "</script>"
  response.end
end if
next%>
<%
setrs=server.createobject("adodb.recordset")
sql="select * from fuser where username='&username&' and
userpwd='&userpwd&'"
rs.open sql,conn,1,3
ifrs.eof then'check the username and password
response.write "<br><br><br><br><font size=2><center>Sorry, The
username or password is incorrect!Please try it
again!<a href=chaxun.asp>Back</a>"
else
session("username")=request("username")'create session variable
session("loc")=1'set the default value
response.Redirect("chaxunguan.asp")
end if
rs.close
setrs=nothing
conn.close
set conn=nothing
end if%>

```

Figure 9.Code 2

After login, the related order information will be shown in a table, and the orders are organized by the time. Figure 10demonstrates the branch office order manage page

layout.

Xuzhou												
Administrator: 1111 Date: 2013/11/7										Change password Logout		
Orders												
Order number	From	Destination	Sending date	Receiver	Receive date	Assigned branch	Reach branch	Branch receiver	Transfer date	Status	Note	Manage
2013110600006	Shanghai	Xi'an	06.11.2013			Xuzhou	Reached	James	06.11.2013	On the way	sdhasuidhasui	Update
2013110400001	Yancheng	Xuzhou	04.11.2013	James	05.11.2013	Xuzhou	Reached	James	05.11.2013	Reached	dfdsfdfsdfs	Update
2013110300002	Shanghai	Yancheng	03.11.2013	Sarah	05.11.2013	Xuzhou	Reached	James	04.11.2013	Reached	yrtyrty546546	Update
2013110300001	Xuqian	Xuzhou	03.11.2013	Lee	04.11.2013	Xuzhou	Reached	Lee	04.11.2013	Reached	to XXX company	Update

Total 1 pages Current page: 1 Prev next

Figure 10.Branch office order manage page layout

Order status updating page

According to the delivering process, the company staffs need to update the status of their clients' orders in order to make it possible for the clients to track. The package is assigned to different branch offices and the branch will deliver the package to final destination. In order to keep the information updated, the branch manager needs to update twice during the whole delivery. The first update is done when the package reaches the branch office. The second update is completed after the package is delivered to its final destination. The layout of the order status updating page displays as figure 11.

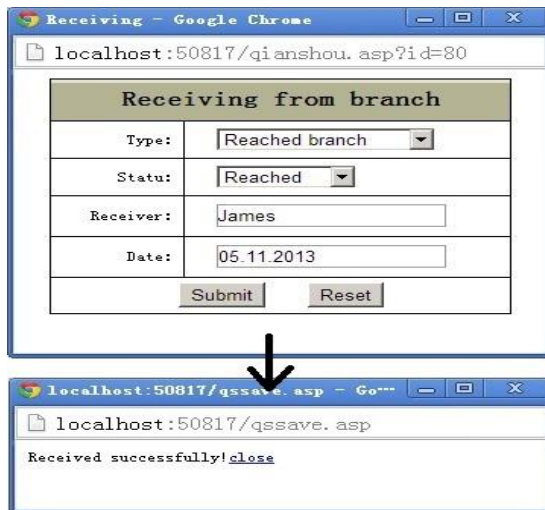


Figure 11.Order status updating page after updating

Password changing page

Inside the order status updating page, the users are also allowed to change their password. There are two restrictions in this function. First, the user is not able to change their username. Secondly, the username and the password cannot have improper characters inside. The script will check the input and inform the user about any wrong operation. The main code involved is as figure 12.

```

<%
if user="" or user="%" or user="<" or user=">" or user="%" or
user="|" then'check if there is improper character inside input
response.write "<script language=JavaScript>" & "
alert('Please check your username!');" & "history.back()" &
"</script>"
response.end
end if
next
fori=1 to len(password)
pass=mid(password,i,1)
if pass="" or pass="%" or pass="<" or pass=">" or upass="%" or
pass="|" then'check if there is improper character inside input
response.write "<script language=JavaScript>" & "
alert('Please check your possward!');" & "history.back()" &
"</script>"
response.end
end if
%>

```

Figure 12.Code 3

4.3 Content model

Concerned with the client user group and potential customer group, the content management model is designed for displaying different types of information for the clients. Moreover, the content information includes company information, services information, employment information and contact information. Hereby, I use service information page as an example to demonstrate. The case company provides three types of logistics services, the warehouse services, freight services and distribution services. The code to implement the model is as figure 13.

```

<#
functionHTMLcode (fString)
if not isnull (fString) then
fString = Replace (fString, CHR (13), "")
fString = Replace (fString, CHR (10) & CHR (10), "</P><P>")
fString = Replace (fString, CHR (10), "<BR>")
fString = Replace (fString, CHR (32), "&nbsp;")
HTMLcode = fString
end if
end function
if request ("newsname")="" then'check if receive the title name
newsname="Warehouse"      'Set to default
else
newsname=request ("newsname")'receive the value assign to title
name
end if
setrs=server.CreateObject ("adodb.recordset")
sql="Select * from news where title='"&newsname&"'"inquire
related information form database
rs.open sql,conn,1,1
#>

```

Figure 13.Code 4

For the news, there are two types of news. The first one is company news which shows the latest news of the company. The other one is business news about logistics industry. Furthermore, the company news can help the customers get the latest information of the company. The business news is to show the customers the latest technology of logistics industry. Figure 14 displays the news page layout and the code to implement is as figure 15.



Figure 14. News page layout

```

<%
-- if not rs.eof then 'check if there is record
-- tel=rs.recordcount'count records
-shum=20
-rs.pagesize=shum'get the page display number
-maxpage=rs.pagecount
-requestpage=clng(request("p")) 'get current page number
-if requestpage="" or requestpage=0 then 'if the page
number is 0, set to 1
-requestpage=1
-end if
  if requestpage>maxpage then'if the page number is bigger
than maximum, set to maximum
-requestpage=maxpage
-end if
-if not requestpage=1 then
-rs.move (requestpage-1)*rs.pagesize
-end if
for i=1 to rs.pagesize and not rs.eof
%>
<tr>
<td width="66%" class="biaodi"><IMG height=9
src="images/xiaonew.jpg"
width=8>
<a href="javascript:" onClick=" window.open('open.asp?id=
("id") %>', '', 'scrollbars=yes,width=300,height=300') "><rs (
"title") %>
</a>
</td>
<td align=right width="34%" class="biaodi">[<rs ("time") %>]
</td>
</tr>
<%
Rs.MoveNext
if rs.eof then exit for
next
Rs.Close
Set Rs=Nothing
else
response.Write ("No news")
end if
%>

```

Figure 15. Code 5

In the homepage, there is a dynamic news board displaying the list of news. The news are categorized by different types and displayed in same time. Figure 16 demonstrates the layout of news board in homepage.



Figure 16. Layout of news broad in home page

By clicking the news title a new windows will pop out with detailed information. The pop-out windows shows like figure 17 and the code to implement is as figure 18.

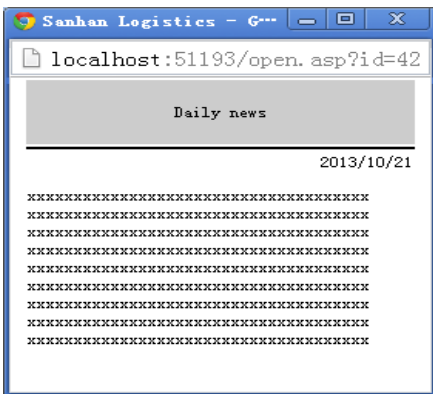


Figure17. News pop-out windows

```

<script>
<a href="javascript:" onClick=" &_
window.open (
'open.asp?id=<%=rs("id")%>', '', 'scrollbars=yes,width=400,height=3
50') "><%=rs("title")%></a>
</script>
<script>
setrs=server.CreateObject("adodb.recordset")
sql="Select * from new where id=" & request("id") 'Inquire the
news through id
rs.open sql,conn,1,1
</script>

```

Figure 18. Code 6

4.5 Administration Entry

From security concerning, the administration entry is designed to be away from the user sight, because the administration side is used to management and maintain the whole website. The administration entry is placed in the bottom of the home page. Besides, the user needs to log in with the correct user name and password. Figure 19 illustrates the layout of administration entry.

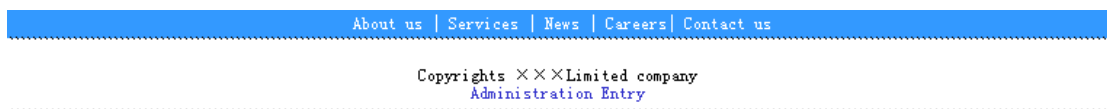


Figure 19.Administration entry layout

5 ADMINISTRATION MODELS IMPLEMENTATION

5.1 Functional structure

The administration side is designed to be very simple. There are only two parts that are displayed on the page at the same time. First, the main navigation bar is always showing on the top of the page. Figure 20 illustrates the administration side layout.

The screenshot shows the administration interface with a navigation bar at the top containing links: Initialization, About us, Warehouse, Freight, Distribution, Orders, News, Careers, Branch, Contact us, and Quit. Below the navigation bar are two main sections:

Section 1 (labeled '1'): Contains two forms. The left form, titled "Branch manage", has fields for "Branch name" (set to "Xuzhou"), "Change name", and "Add branch", with "Delete", "Edit", and "Add" buttons respectively. The right form, titled "Branch", has fields for "Branch name" (set to "Xuzhou"), "Username", and "password", with "Delete", "Edit", and "Add" buttons respectively.

Section 2 (labeled '2'): Contains a table with a "Branch" dropdown menu set to "All branch". The table has columns for "Username", "Branch", and "Manage".

Username	Branch	Manage	
1111	Xuzhou	Edit	Delete
2222	Suzhou	Edit	Delete
3333	Sugian	Edit	Delete
4444	Yancheng	Edit	Delete
5555	Shanghai	Edit	Delete

At the bottom right of the table, it says "Total 1 pages Curr page: 1 Prev Next".

Figure 20.Administration side layout

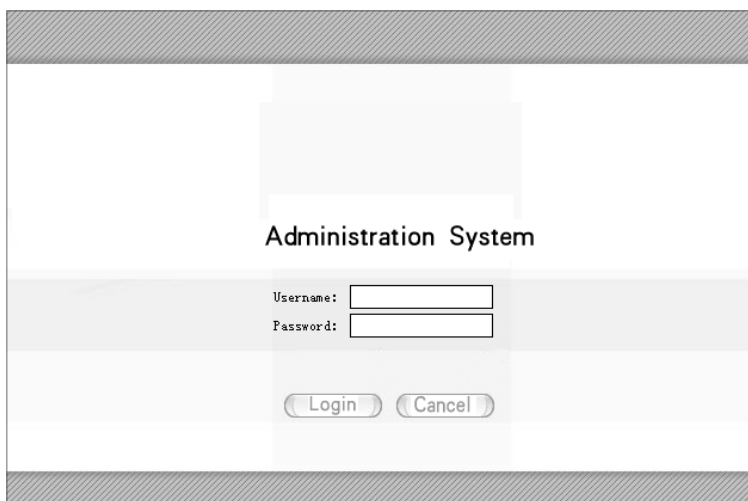
The administration functional models:

- Administration login model: login function
- Sitting model: use to change the administrator and system information
- Content management model: use to modify the information in sub navigations which includes company introduction, logistics services, employment and contact information.
- Order management model: includes order inquire, add, edit and delete functions
- News management model: includes news inquire, add, edit and delete functions

- Branch office management model: includes branch office and staff accounts management functions
- Logout

5.2 Administration login model

Once the user enters to administration side, the system will request the user to login with correct user account and password. The administration login model is used to verify the username and password. Figure 21 demonstrates the administration login page layout and figure 22 is the code to implement.



The image shows a screenshot of a web application's administration login page. The page has a light gray background with a darker gray header and footer. In the center, there is a white rectangular area containing the text "Administration System" in bold. Below this text, there are two input fields: "Username:" followed by a text box, and "Password:" followed by a text box. At the bottom of the white area, there are two buttons: "Login" and "Cancel", both with rounded corners and a light gray background.

Figure 21.Administration login page layout

```

<% if request("action")="login" then      'check if receive
login commend
admin_name=request("admin_name")      'check username
username=trim(replace(request("admin_name")," ",""))
'delete the space in inputs
password=trim(replace(request("admin_name")," ",""))
fori=1 to len(username)  'calculate the length of username
user=mid(username,i,1)  'check if there is improper character
inside input
if user="" or user="%" or user="<" or user=">" or user="%" or
user="|" then
response.write "<script language=JavaScript>" &
"alert('Please check your username!');" & "history.back()" &
"</script>"
response.end
end if
next
fori=1 to len(password)  'calculate the length of password
pass=mid(password,i,1)
if pass="" or pass="%" or pass="<" or pass=">" or upass="%"
or pass="|" then
response.write "<script language=JavaScript>" &
"alert('Please check your password!');" & "history.back()" &
"</script>"
response.end
end if
next%>
<%set rs=server.createobject("adodb.recordset")
sql="select * from admin where admin_name='&admin_name&
'"andadmin_pwd='&admin_pass&'"
rs.open sql,conn,1,3
ifrs.eof then
response.write "<br><br><br><br><font
size=2><center>>Sorry, The username or password is
incorrect!Please try it again!<br><br><br><br><a
href=index.asp>Back</a>
</font>"
else
session("admin_name")=request("admin_name")  'create
session variable
response.Redirect("admin.asp")      'jump to specific
pages
end if
rs.close
setrs=nothing
conn.close
set conn=nothing
end if
end if %>

```

Figure 22.Code 7

After the user inputs username and password and clicks 'login', the scripts will send login request to the server. Then, the script will trim the input and check the form. The related notifications will display to guide the user to address their input again. After all, the username and password will send to database to verify the information. In the end, the scripts will create session variable and redirect the user to pervious page.

5.3Order management model

The order management model is designed for administrator to manage and maintain the

order data. Furthermore, there are 4 functions involves in this model, which includes inquire, insert, edit, and delete. The inquire function is also applied to track the order in the user interface. Figure 23 displays the layout of order inquiry page in backend and figure 25 displays the code to implement.

Figure 23.Layout of inquiry page in backend

```

<%
if request("del")<>" then
sql1="delete from yundan where id=" & request("del")
conn.execute(sql1)
end if
if request("pp")<>" then
set rs=server.CreateObject("adodb.recordset")
sql="select * from yundan where nid=" & request("bianhao") & ""
rs.open sql,conn,1,1
else
set rs=server.CreateObject("adodb.recordset")
sql="select * from yundan order by time desc"
rs.open sql,conn,1,1
End If
%>

```

Figure 24.Code 8

As figure 23 displays, on the top of the page, there is an input box where allows the user to search the order data by order number. When the user submits the order number, the script in figure 24 will inquire the data from database, and then displays the information in the table below. In figure 23, the edit and delete function are placed in the last two cells of the order table.

The insert function is placed below the order inquiry input box, which is used to insert order data to the database. When the user click the add button, an order add form will

pop out as a new window. Figure 25 illustrates the layout of order add page and figure 26 displays the code to implement.

Add order	
Order number:	<input type="text" value="000000"/>
From:	<input type="text"/>
Destination:	<input type="text"/>
Sending date:	<input type="text"/>
Assigned branch:	<input type="text" value="- Choose branch -"/>
Note:	<input type="text" value="null"/>
<input type="button" value="Submit"/> <input type="button" value="Reset"/> <input type="button" value="Back"/>	

Figure 25. Order insert page layout

```

<#
set rs2=server.CreateObject("adodb.recordset")
sql2="select * from yundan where time like '"&date()&'"
rs2.open sql2,conn,1,1
if not rs2.eof then t=year(date)*1000000000+month(date)*
10000000+day(date)*100000+rs2.recordcount+1
else
t=year(date)*1000000000+month(date)*1000000+
day(date)*100000+1
end if
if request("post")<>"" then
call writ
end if
function writ
if request("start")<>"" and request("destination")<>""
and request("stime")<>"" and request("note")<>"" then
set rs=server.CreateObject("adodb.recordset")
sql="select * from yundan"
rs.open sql,conn,1,3
rs.addnew
rs("order_id")=t
rs("start")=request("start")
rs("destination")=request("destination")
rs("stime")=request("stime")
rs("branch")=request("branch")
rs("branch_sta")="On the way"
rs("final_sta")="On the way"
rs("note")=request("note")
rs("time")=date()
rs.update
rs.close
response.Write("<script
language=javascript>alert('Submitted
successfully! ');location='yundanadd.asp'</script>")
else
response.Write("<script
language=javascript>alert('Please fill with full
information! ');location='javascript:history.go(-1)'"</script>")
end if
end function>

```

Figure 26. Code 9

As figure 25 displays, the user need to fill in the order information in order insert page, which includes package send place, destination, date and assigned branch. When user

submits the form, the scripts in figure 26 will first check if the basic information is empty. Then, the script will generate the order number and insert the data into database. In addition, the layout of the edit function is using the same layout of order add, and the code is also similar as figure 26.

5.4 Content manage model

The content manage model is used to maintain the information which displays on the user interface. Moreover, the contents are includes company information, services, news and employment information. The related link share designed in the sub-navigation. Because the content management pages are use the similar layout and script, hereby I will explain with the news manage page. Figure 27 demonstrates the news manage page layout and figure 28 displays the code to implement.

Search by key word: <input type="text"/> <input type="button" value="Search"/>					
Add 信息					
ID	Title	Type	Date	Manage	
				Edit	Delete
Total 10 Pages Curr page: 1 Prev Next					

Figure 27.News manage page layout

```

<%
if request("del")<>" " then
sql1="delete from new where id=" & request("del")
conn.execute(sql1)
end if
if request("pp")<>" " then
set rs=server.CreateObject("adodb.recordset")
sql="select * from new where title like '%" & request(
"news_id") & "%'"
rs.open sql,conn,1,1
else
set rs=server.CreateObject("adodb.recordset")
sql="select * from new"
rs.open sql,conn,1,1
End If
%>

```

Figure 28.Code 10

In figure 28, the table at in the bottom shows a table of news information, which includes new id, title, news type and update date. The code in figure 29 allows the user to inquiry the news by key word. And user can also add, edit and delete the news from this page. Figure 30 displays the content editing page layout.

Title:	<input type="text"/>
Type:	Company news
Content:	<div style="border: 1px solid black; height: 150px;"></div>
<input type="button" value="Submit"/> <input type="button" value="Reset"/> <input type="button" value="Back"/>	

Figure 29.Content editing page layout

In content editing page, the user can edit the title and content of the news. Moreover, when user edits the content, the original title and content will be displayed. User can also change the news type. Lastly, the buttons below are used for submit, reset and go back to pervious page.

5.5 Branch office manage model

The branch office manage model is used for managing user account and branch office information. Moreover, all the functions are divided into two parts. The first part is branch office management, it includes branch office add, edit and delete. The second part is branch user account management, which includes user account add, inquiry, edit and delete. Figure 31 illustrates the branch office manage page layout.

Branch manage		Branch	
Branch name:	- Choose branch - <input type="button" value="Delete"/> <input type="button" value="Add"/>	Branch name:	- Choose branch - <input type="button" value="Add"/>
Change name:	<input type="text"/> <input type="button" value="Edit"/>	Username:	<input type="text"/>
Add branch:	<input type="text"/> <input type="button" value="Add"/>	password:	<input type="text"/> <input type="button" value="Add"/>

Branch			
Branch	Username	Branch	Manage
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Total <input type="text"/> pages Curr page: <input type="text"/> Prev Next: <input type="text"/>			

Figure 30.The branch office manage page layout

As figure 31 illustrates, the branch office manage function is on the top-left of the page, and the branch user account manage function is on the top-right of the page. Below these two functions is the branch user inquiry function which is used to maintain the branch users under specific branch.

6 CONCLUSIONS

As an essential part of modern logistics, the modern logistics platform and logistics operations are dependent of each other. A logistics platform can be an advantage or a disadvantage. When the platform is high-end enough to support the fast operation of the logistics company, it can be considered as beneficial. However, as the operation load becomes too much and the management system is out-of-date, the business may be restricted. For a safe transportation is mandatory to have the support of a logistic platform such as the one taken in discussion. Customers and transportation companies will be able to appreciate in real time where the merchandise is and how long will take to be delivered.

The main objective of this development research was to solve the practical problem in Sanhan Company, regarding their logistics information management. The outcome of this research work is logistics system for Sanhan Company which provides fundamental logistics support. In conclusion, the development was conducted by the implementation process. As results, the system structure and the system framework were created. In the end, all the functions were inserted into the system framework.

The implementation was mainly focused into two aspects. The first one was to reduce the client side burden. The solution for reducing clients' burden is to build a system based on Browser/server structure. By doing so, the clients do not waste time with downloads and updates. Along with the database system, a model of "Zero Configuration" can be achieved. Doing so, the clients no longer need to care about maintaining their client side software. Moreover, the updating and maintaining is easier, as only the company needs to take care of maintenance. The second aspect focused on

was expansibility. The modularized solution was applied on the implementation. The sub-functions could be upgraded and maintained individually. Every function has their own task and is further divided into sub-functions. The sub-functions can also be recombined in another function model, which provides further possibilities for future development.

Due to time limit within writing this thesis, only the basic functionalities and design has been implemented. However, there are spaces for improvements, such as the notification functions which can inform the clients when the package arrives. The inventory function is able to manage and maintain material data in the system. The distribution function allows the company staff to calculate the cost of assembling and produces order information.

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