Marketing Feasibility for Online Logistics Service

by

Mr. Yongyut Lorlerlert

A Final Report of the Three-Credit Course
CE 6998 Project

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

November 2004

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ABSTRACT

This project is concerned to study the market feasibility of online Logistic Service which is new trend of E-application. The study will cover the current market space, evaluation of existing function by many carriers and also the company. Besides, the research would find the method to provide the highest satisfaction to the customer due to the existing web site might be required to improve for fully utilization.

To study market feasibility in this project, the research has gathered both primary data by launching 222 sets of questionnaire to all current group of customers and also secondary data from reliable sources such as text books, journals, articles and also related website from both private and public which are included for all related information to support this study.

After the research has been conducted and summarized for both primary and secondary data, the response to this study has shown and indicated positive side which will support the continue service on the market space via company web site. However, the next decision for direction to implements are also significant as many requirement are required to fulfill the customer's need and also enhance the customer delivery value: the main company's purpose to study this project.

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I. INTRODUCTION

1.1 Background of the Project and Company

Since the new technology has become and taken an important role of Business transactions which almost current businesses have rapidly changed to new era of digital firm. N.Y.K. as the one of the leading carrier in the world realize for this coming change and impact to the new age of company model. To stand alone in the tradition one might not take the lead in the business metaphor; then new implementation of service via an online has been created to expand and compatible with the current time and place of world's arena. The name is called for this project as "Pegasus Project" which all tradition will be implied on the network step to step for the beginning as usual service.

To study the market feasibility of this project is also concerned due to many units of money has been invested to develop and to create the customer delivery value and to reflect the company but also the extend of wide range service to all customers 24 x 7 with their preferable features will create the customer's satisfaction in the same way. As some web sites might not provide and create the service to their customer which let the company loses their opportunity and waste their time and cost. Then this project will study the market feasibility of this project which can support the management to decide for what the direction or model should be improved to create the value to customer and also the company.

Nippon Yusen Kaisha (NYK) is Japan's leading company with one of the world's largest and most efficient fleets of container and conventional vessels, tramp and specialized carriers and tankers, the company has long history in Thailand for almost a century.

NYK group operation in this country continues to expand its transportation activities with emphasis on development of comprehensive land, sea and air transport and logistics services on an integrated systematic basis. With the strong growth rate of Thailand, NYK is confident to grow and committed to its quality service for the benefits of customers.

The history of NYK Line could be dated back nearly 110 years since its first formation in Japan. In 1969, N.Y.K. (Thailand) Co., Ltd. and N.Y.K. Logistics Service (Thailand) Co., Ltd have been established mainly to operate land transport and related service. N.Y.K. Shipping agency's business nowadays, and NYK group represent one of the largest networks in handling various kinds of transport services in Thailand.

Since the beginning of 2002, NYK has decided to expand their market opportunity through the other media which can provide full service to the clients all 24 hours a day and 7 days week in anywhere on the world. The Logistics online has emerged at that period of time. All the paper formats have been transformed into the digitized format which clients can save their time and mitigate the mistake of documentation process. The manual activities would be taken place with many features on the web site i.e. rate inquiry, booking, cargo tracing, schedule, report and so on. Besides the normal activities, their concern parties would gain the benefit from the web site which all necessary information would be posted as the basis solution.

The constraints of this study are the lack of computer knowledge by clients and equipment availability which NYK would consider as first priority for this feasible study. Even the new technology would be implied in the proper manner but almost the transactions still need traditional style which will be determined to the successful of this project as well. Each stage of implementation requires the understanding of clients as the online logistics will be dynamic and once the new functions have been introduced, they would be left behind of this new technology.

1.2 Objectives of the Project

This market feasibility study is to carry out the possibility of the new project, which will be carefully and attentively done by a research team. Although the decision is not purely based on this research, but this research is still an important document to support the decision.

(1) To study the market feasibility for implementing Web-based logistics service.

(2) To acquire the exact number of interested customers for this new implementation of online logistics.

(3) To support the management decision for continuous of online-logistics and supply chain.

1.3 Scope of the Project

This market feasibility study covers mainly on the online logistics, service and availability of feature function of Logistics or Supply Chain.

1.4 Deliverables

This market feasibility study is to support the decision of developing a new E-Commerce project of NYK Shipping Service Co., Ltd.

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II. LITERATURE REVIEW

2.1 Marketing Paradigm

Marketing, more than any other business function, deals with customers. Understanding, creating, communicating, and delivering customer value and satisfaction are at the very heart of modern marketing thinking and practice. The simplest definition is this one: Marketing is the delivery of customers by promising superior value and to keep current customers by delivering satisfaction. (Kotler and Armstrong 1999)

What does the term marketing mean? Many people think of marketing only as selling and advertising. It is no wonder every day we are bombarded with television commercials, newspaper ads, direct-mail campaigns, Internet pitches, and sales calls. However, selling and advertising is only the tip of the marketing iceberg. Although they are important, they are only two of many marketing functions and are often not the most important ones. (Kotler and Armstrong 1999)

Today, marketing must be understood not in the old sense of making a sale "telling and selling" but in the new sense of satisfying customer needs. Selling occurs only after a product is produced. By contrast, marketing starts long before a company has a product. Marketing is the homework that managers undertake to assess needs, measure their extent and intensity, and determine whether a profitable opportunity exits. Marketing continues throughout the product's life, trying to find new customers and keep current customers by improving product appeal and performance, learning from product sales results, and managing repeat performance. If the marketer does a good job of understanding consumer needs, develops products that provide superior value and prices, distributes, and promotes them effectively, these products will sell very easily. Thus, selling and advertising are only part of a larger "marketing mix" a set of marketing tools that work together to affect the marketplace. (Kotler and Armstrong 1999)

We define marketing as a social and managerial process whereby individuals and groups obtain what they need and want through creating and exchanging products and value with others. To explain this definition, we will examine the following important terms: needs, want, and demands; products and services; value, satisfaction, and quality; exchange, transactions, and relationships, and markets. (Kotler and Armstrong 1999)

2.2 Define Internet technology, E-marketing and E-Commerce

The Internet is a voluntary undertaking. The network connected to the Internet have all agreed on certain communication protocols regarding how packets are sent and received , e-mail addressing, and so on. There are groups and committees that work on this cooperation, such as the Internet Engineering Task Force, the Internet Assigned Number Authority, the Federal Networking Council, Network Information Centers, the Internet Architecture Board, and the Internet Society. One of these groups that a business is likely to communicate with is InterNic (currently operated by Network Solutions, Inc.), which keeps track of, and avoids duplication of, top-level Internet addresses (domain names). Applications and fees must be paid if you want your business to have a unique top-level address (through you can also provide access to your business using your Internet service provider's site address).

A network joining the Internet becomes part of the Internet, but retrains control and ownership of its own network. Control is therefore shared among the thousands of networks currently connected to the Internet. Businesses joining the Internet often find that this cooperative venture is different from any other organization that they work with. It has an unusual history, and is not governed in the way that other organizations are. On the Internet, there is a significant community culture of cooperation, sharing data, and providing services and information for free. In the United State, however, it is good to remember that in general, no matter how the data is stored, transferred, or displayed, its ownership is retained by the group or individual that provides it, unless that ownership is specifically waived (Jill and Matthew 1997)

Internet marketing or Internet-base marketing can be defined as the use of the Internet and related digital technologies to achieve marketing objectives and support the modern marketing concept. These technologies include the Internet media and other digital media such as wireless mobile, cable and satellite media.

In practice, Internet marketing will include the use of a company web site in conjunction with online promotional techniques such as search engines, banner advertising, direct e-mail and links or services from other web sites to acquire new customers and provided service to existing customers that help develop the customer relationship. However, for Internet marketing to be successful there is a necessity for integration with traditional media such as print and TV and this will be a consistent theme in this book. (Dave, Richard, Kevin and Fiona 2003)

E-marketing or Electronic marketing can be considered to have a broader scope since it refers to the Internet, interactive digital TV and mobile marketing together with other technology approaches such as database marketing and electronic customer relationship management (CRM) to achieve marketing objectives. It has both internal and external perspectives considering how internal and external marketing processes

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and communications can be improved through information and communications technology. As with many terms with the "E" prefix, we need to return to an original definition of the topic to more fully understand what e-marketing involves. (Dave, Richard, Kevin and Fiona 2003)

E-Commerce (EC) applications were first developed in the early 1970s with innovations such as electronic fund transfers (EFT). However, the extension of the applications was limited to large corporations, financial institutions, and a few daring small businesses. Then came electronic data interchange, known as EDI (Electronic Data Interchange), which expanded from financial transactions to other types of transaction processing, thus enlarging the pool of participating companies from financial institutions to manufacturers, retailers, services, and many to other types of businesses. More new EC applications followed, ranging from stock trading to travel reservation systems. Such systems were described as IOS applications, and their strategic value was widely recognized. (Efraim, David, Jae, Merrill and Michael 2002)

As the internet became more commercialized and users flocked to participate in the World Wide Web in the early 1990s, the term electronic commerce was coined and EC applications rapidly expanded. One reason for the rapid expansion of E-commerce was the development of new networks, protocols, software, and specifications. The other reason was the increase in competition and other business pressures. (Efraim, David, Jae, Merrill and Michael 2002)

2.3 Definition of Supply Chain and E-logistics?

A supply chain consists of all stages involved, directly or indirectly, in fulfilling a customer request. The supply chain not only includes the manufacturer and suppliers, but also transporters, warehouses, retailers, and customers themselves. Within each organization, such as a manufacturer, the supply chain includes all functions involved in filling a customer request. These functions include, but are not limited to, new product development, marketing, operations, distribution, finance, and customer service. (Sunil and Peter, 2001)

E-business is the commerce term that is defined by some as describing transaction conducted between business partners. When this definition of commerce is used, some people find the term electronic commerce to be fairly narrow. Thus, many use the term E-business. E-business refers to a broader definition of E-commerce, not just the buying and selling of goods and services, but also servicing customers, collaborating with business partners, and conducting electronic transactions within an organization. According to Lou Gerstner, IBM's CEO, "E-Business is all about time cycle, speed, globalization, enhanced productivity, reaching new customers and sharing knowledge across institutions for competitive advantage". (Efraim, David, Jae, Merrill and Michael 2002)

2.4 Integrated Logistics System (ILS)

The market logistics task calls for integrated logistics systems, involving materials management, material flow systems, and physical distribution, abetted by information technology (IT). Third-party suppliers, such as FedEx Logistics Services or Ryder Integrated Logistics, often participate in designing or managing these systems.

Information systems play a critical role in managing market logistics, especially computers, point-of-sale terminals, uniform product bar codes, satellite tracking, electronic data interchange (EDI), and electronic funds transfer (EFT). These developments have shortened the order-cycle time, reduced clerical labor, reduced the error rate in documents, and provided improved control of operations. They have

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enabled companies to make promises such as "the product will be at dock 25 at 10:00 A.M. tomorrow," and control this promise through information. Consider the following two examples. (Phillip Kotler)

Marketing logistics involves several activities. The first is sales forecasting, on the basis of which the company schedules distribution, production, and inventory levels. Production plan indicate the materials the purchasing department must order. These materials arrive through inbound transportation, enter the receiving area, and are stored in raw-material inventory is the link between customer orders and manufacturing activity. Customers' orders draw down the finished-goods inventory level, and manufacturing activity builds it up. Finished goods flow off the assembly line and pass through packaging, in-plant warehousing, shipping-room processing, outbound transportation, field warehousing, and customer delivery and servicing. (Phillip Kotler)

2.5 Key Concept of Online Customer Relationship Management (CRM)

The application of technology to achieve customer relationship management (CRM) is a key element of e-marketing. Building long-term relationship with customers is essential for any sustainable business. Failure to build relationships largely caused the failures of many dot coms following huge expenditure on customer acquisition. Research summarized by Reichheld and Schefter (2000) show that acquiring online customers is so expensive (20-30% higher than for traditional businesses) that start up companies may remain unprofitable for at least 2 to 3 years. The research also shows that by retaining just 5% more customers, online companies can boost their profits by 25% to 95%. (Dave, Richard, Kevin and Riona, Prentice Hall 2003)

Benefit of online relationship marketing

Using the Internet for relationship marketing involves integrating the customer database with web sites to make the relationship targeted and personalized. Through doing this marketing can be improved as follows.

(1) Targeting more effectively

Traditional targeting, for direct mail for instance, is often based on mailing lists compiled according to criteria that mean that not everyone contacted is in the target market. For example, a company wishing to acquire new affluent consumers may use postcodes to target areas with appropriate demographics, but within the postal district the population may be heterogeneous. The result of poor targeting will be low response rates, perhaps less than 1 percent. The Internet has the benefit that the list of contacts is self-selecting or pre-qualified. A company will only aim to build relationships with those who have visited a web site and expressed an interest in its products by registering their name and address. The mere act of visiting the web site and browsing indicates a target customer. Thus the approach to acquiring new customers with whom to build relationships is fundamentally different, as it involves attracting the customers to the web site, where the company provides an offer to make them register. All of those who register are interested in the product (or offer). This is very different from contacting many customers, only a small proportion of who may be interested.

(2) Achieve mass customization of the marketing messages

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This tailoring process is described in a subsequent section. Technology makes it possible to send tailored e-mails or provide tailored web pages to smaller groups of customers.

(3) Increase depth, breadth and nature of relationship

The nature of the Internet medium enables more information to be supplied to customers as required. For example, special pages such as Dell's Premier Pages can be set up to provide customers with specific information. The nature of the relationship can be changed in that contact with a customer can be made more frequently. The frequency of contact with the customer can be determined by customers whenever they have the need to visit their personalized pages or they can be contacted by e-mail by the company.

(4) A learning relationship can be achieved using different tools throughout the customer lifecycle.

For example: tools summaries products purchased on site and the searching behavior that occurred before these products were bought; online feedback forms about the site or products are completed when a customer requests free information; questions asked thought forms or e-mail to the online customer service facilities; online questionnaires asking about product category interests and opinions on competitors; new product development evaluation commenting on prototypes of new products.

(5) Lower Cost

Contacting customers by e-mail or through their viewing web pages costs less than using physical mail, but perhaps more importantly, information only needs to be sent to those customers who have expressed a preference for it, resulting in fewer mail-outs. Once personalization technology has been purchased, much of the targeting and communications can be implemented automatically.

Despite these benefit, it should be noted that in 2000, it was reported that around 75% of CRM projects failed in terms of delivering a return on investment or completion on time. This is not necessarily indicative of weaknesses in the CRM concept; rather it indicates the difficulty of implementing a complex information system that requires substantial changes to organizations' process and major impact on the staff that conduct them. Such failure rates occur in many other information systems projects. (Dave, Richard, Kevin and Riona, Prentice Hall 2003)

2.6 The Impact of E-Business on Supply Chain Performance

If a firm is to exploit the advantages of setting up an E-Business fully, it must understand the key differences between using the Internet and other channels for the flow of information, products, and funds. A company must identify the value created by using the Internet before replacing other channels. (Sunil and Peter, 2001)

Revenue Impact of E-business

An E-business allows a firm or supply chain to exploit the following revenue enhancing opportunities:

(1) Offering Direct Sales to Customer

(2) Providing 24-hour access from any location

(3) Aggregating information from various sources

(4) Speeding up time to market

(5) Implementing flexible pricing

(6) Allowing price and service discrimination

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Aggregating Information from Various Sources

An E-business allows a firm to increase sales by offering information regarding a very large selection of products. For example, Dell offers customers a very large selection of computers and peripherals. Offering the same selection at a retail store would require a huge site with a correspondingly huge amount of inventory. Marking a large variety available does not necessarily mean that a customer will be able to access all the variety offered. Firms have often gone overboard by offering seemingly limitless variety without giving customers the tools to navigate the site and quickly identify what they want. The ability to offer a large selection is effective only if appropriate search tools are provided. Without good search tools and intelligent product recommendations, a large inaccessible selection of products is of little value. (Sunil and Peter, 2001)

Providing Personalization and Customization of Information

The Internet offer an E-business the ability to use personal information to intelligently guide each customer's buying experience an increase sales. Some E-businesses use information on birthdays and other events provided by customers to send reminders and purchase recommendations. In a B2B environment, firms can set up customer-specific sites to display information on products that the customer buys most frequently. Available technologies allow an E-business to use existing preferences and a customer's historical purchases to rank currently available choices in term s of each individual customer's preference. The Internet thus offers the potential of creating an individualized buying experience for each customer, which can increase the look-to-buy ratios significantly compared with a physical store. (Sunil and Peter, 2001)

Speeding Up Time to Market

A firm with an E-business can increase revenues by introducing new products much faster than a firm that uses physical channels. A firm selling PCs through physical channels must produce enough units to stock the shelves at each distributor or retailer and arrange for these units to reach these stores. This requires considerable time and effort. An E-business, in contrast, introduces a new product by making it available on the Web site. The distribution lag to fill the physical channels is not present. A new product can be made available as soon as the first unit is produced. This is evident in the computer industry where Dell often introduces new products earlier than it competitors using traditional channels. The advantage is also evident for firms like W.W. Graïnger. Using traditional marketing, Grainger has to print new catalogs and send them to customers to give them information regarding new products. On the other hand, information regarding a new product can be added to the Grainger Web site as soon as it becomes available. (Sunil and Peter, 2001)

Implementing Flexible Pricing

An E-business can easily alter prices over time by changing one entry in the database linked to its Web site. This ability allows an E-business to maximize revenues by setting prices based on current inventories and demand. The airlines provided a good example of this ability; they make last-minute low-cost fares available on the Web on routes with unsold seats. Dell also changes prices for different PC configurations regularly based on demand and component availability. Firms can change prices at an E-business much more easily than via most traditional channels. If Dell and L.L. Bean were to use catalogs to convey a discount in prices, they would have to print new catalogs and mail them to potential customers. With an E-business, however, they update only the price on their Web site. (Sunil and Peter, 2001)

III. RESEARCH METHODOLOGY

The purpose of this section is to describe the research methodology and provide step-by-step procedure of how this study is conducted. This research includes data collection technique, method, sampling size, and preliminary survey. Research methodology is defined as a part in the body of the report that explains the research survey, sampling result and other technique for gather data which is required for process and analysis.

3.1 Research Method

The data for this research will be collected by survey method which this survey is the research technique in which information is gathered from a sample of people use of a questionnaire that is a method of data collection based on communication with a representative sample of the target respondents.

The sample survey method will be used because it is considered the most appropriate for this project. Moreover, it is quick, inexpensive, and efficient and can reach target group effectively. The central objective of survey via questionnaire is to direct to the company prospected group and the company can interpret that data for market feasibility.

3.2 Research Instrument

The questionnaires have been used by the researcher for this project. The researcher has decided to launch and gather raw data with questionnaires approximated 222 sets by varieties of communication media fax, e-mail and mail to all prospected customers.

The questionnaires will composed of 2 parts which are as following these:

Part 1

This part of questionnaire will cover the personal data and also the demography, company profile from correspondent which supports the research to know for exact target users on the studied web site.

Part 2

This part of questionnaire will collect information from respondents about the Internet usage, required feature, problem and function on the web.

Collection of Data

The researchers will collect all the data by using both primary data and secondary data. For the primary data, all of them will be collected by provided questionnaire which will gather from all current company's customers approximate 222 samples.

The secondary data has also been collected from journals, articles, newspaper, competitor web site and journal on the related web sites.

With both types of data source will support and create more reliable of research that could lead to hit the customer's requirement and effective of the implemented project respectively.

3.3 Preliminary the Survey

As this survey would conduct the questions that will inquiry from current customers and also require necessary feature on the web site to serve and fulfill their problems as much as possible. The study of the market feasibility in this project will not be specific on each area or serve a particular group of customers as almost the question would require the basic requirements and the board of directors would discuss to conclude all appropriated required features on the company web site.

The web site feature would be separated into 3 mains parts as below:

(1) Basic Requirement

(2) Specification Requirement

(3) Confidential Requirement

Basic Requirement

The Basic Requirement would be the general inquiries of company information that almost the customers can gather those kinds of information for their purposes which would list as below:

(1) Vessel Schedule

The time table of each vessel those would depart and arrive to any ports under NYK Service.

(2) Container Specification

This information would provide the dimension of containers for each type i.e. Reefer Container, Dry Container, Flat Rack Container, Open Top Container. The customer can gather this information to calculate for their stuffing in each type of box and measure for their package.

(3) Vessel Information

As some countries might require exporter or origin side declare the age of each booked vessel or Nationality due to law and regulation of each country.

(4) NYK Branches and Agents

This feature would provide the name and address of branches and agents in any countries those NYK have provided the service. All the customer could contact for prepare document and arrange the exported cargo.

(5) General Term and Condition of Each Country

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Each country would provide the distinguished Laws and regulations which this feature will provide general export and import laws and regulations as the guide line for all customers. For instance, loaded capacity of truck in Thailand is acceptable at 21 tons (21,000 kilograms.) whereas the other countries might allow loading at more or less. Another condition for Dangerous Cargo in each way port countries or destination might not accept that kind of Dangerous Cargo (Chemical or Weapon etc.)

(6) Update News and Announcement

This feature will provide new service or any updated issue from any part of the world which the customer can know and plan for their export. Besides this provided feature the customers can open their view point with related information. For instance the Leam Chabang Sea port is one of top twenty ports is required to install the scanner to inspect the containers which will deliver to the United Stated and vise versa.

Specification Requirement

All the specification transaction will be provided and served the entire customers, and the customers need to register with the NYK system before their access to create or communicate with the Company. Almost the functions would be service as customization which is provided as below:

(1) Cargo Tracing

All the customers can track their containers or cargo via the web site which this function will support and inform the customer for where is their cargo on the transit. The system will require key attribute from the customer to investigate for those cargos or container on each routing.

(2) Create / Amend / Cancel Booking

This function will reduce the process of the customer to create a booking which is used telephone, or fax in the paper base format. To create any booking via electronic form would mitigate some problems of details as some shipping documents have a lot of details and information which are quite significant in term of export or import documents. The system will support the customers by creating and keeping their template of booing format and it will be reused for next purpose which the customers need to revise some points from previous times. Besides booking, this function will provide the amendment and cancellation functions which can fulfill the customer's requirement.

(3) View / Draft Bill of Lading

The customer can view or draft their shipping documents via the web site or any required format (i.e. PDF format) in digitized form which is quite clear and easy to be proved before release the original of bill of lading. After they submit the booking via an online, then the system will transform all submitted data to the system for crate a bill of lading. With this function, the mistake and time consumed will be sliced down due to the system will support and all information will be direct from customer to the system.

(4) Print Out Bill of Lading

This function has been created to serve full digitized format as some countries can accept an E-signature that will sign on the digital bill of lading whereas Thailand does not fully accept this kind of format. For the time being, most customers still prefer to use traditional bill of lading which they have to contacted to the carriers office to issue but this system is provided and full served if the E-signature is wide range for usage in coming future.

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(5) Cargo Status

Cargo Status will provide all details of information via online which provide only person who has been authorized. The customer or authorized concerned parties would access to the system and view their information i.e. shipper, consignee, vessel, mother vessel, product detail, mark, term and condition, and so on. This status will be valid until the end of the cargo has arrived the destination completely which the customers at destination might not contact their suppliers to query for this information as the system would properly express all necessities.

(6) Notification

Once the cargo is in transit and delivery on the vessel 24 hours a day until they arrival at destination, some customers might not exactly know where are their cargo in particular places if they do not access to NYK web site. To mitigate their anxiety, the system will create the notification e-mail and send to all concerned parties whom customer has noticed for each shipment. The entire terminals or Inland Container Depots or some revised information of their shipments, the system will be sent and updated for all receivers anytime that the shipment is updated.

(7) Exceptional Report

The system can create an exceptional report for all processes to the customers. The report will express all the processes from the booking created until the empty container has been return to NYK yard at destination. This function would serve all the customers who require creating a report of each shipment which would completely fulfill their requirement.

Confidential Requirement

The customer will be allowed to create and change their information due to security system. They would be given the master key to adapt within their organization purpose which will cover the assigned users and update concern parties. With this function, the customer will terminate or create their group and set up their own personal shipment detail for company purpose.

3.4 Sample Size Analysis

To determine the sample size of this research, the researcher has referred; Taro Yamane's sample size for specified Confidence Limits Precision. The sampling attributes in Percent is shown as below (table 3.1 and appendix B for original table)

This below table will determine the exact sample size that required for a number of each size of population.

Table 3.1. Sample Size for Specified Confidence Limits and Precision.

Size of	Sample Size (n) for Precision (e) of					
Population (N)	+/-1%	+/-2%	+/-3%	+/-4%	+/-5%	+/-10%
500	n/a	n/a	n/a	n/a	222	83
1,000	n/a	n/a	n/a	385	286	91
1,500	n/a	n/a	638	441	316	94
2,000	n/a	n/a	714	476	333	95
2,500	n/a	1,250	769	500	345	96
3,000	n/a	1,364	811	517	353	97
…	…	…	…	…	…	…
10,000	5,000	2,000	1,000	588	385	99

Source of Information : Statistics an Introductory Analysis by Taro Yamane

IV. DATA ANALYSIS

After the questionnaires have been collected from prospected customers, the researcher has gathered those information and formulation all questionnaire as below topics which are composed of survey result from primary data and secondary data acquired from related article, journals and concerned web sites.

4.1 Survey Result

222 sets of questionnaires have been launched to all prospected customers potential to use this new system, to the study of the market feasibility in this project.

The result of the survey will be illustrated in both Part I: Personal and Company Information and Part II: Marketing Research for Internet Application Usage in the tables and graphic format.

Part I: Personal and Company Information

The genders of the users representing internet users are 82 male respondents and 140 female respondents.

Table 4.1. Gender of Respondents.

Gender	Respondents	Percent
Male	82	36.94%
Female	140	63.06%
Total	222	100.00%

The questionnaire has queried the respondents due to what extent of age group of current prospected customer who will be current NYK Website user. Users have been divided into 7 intervals. The highest frequency group is the range of 26 – 30 years

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by 72 respondents or 32.43%. The second is 21 – 25 years, followed by 31 – 35 years, 36 – 40 years, 41 – 45 years age less than 20 years and more than 45 years respectively which is illustrate in Table 4.2.

Table 4.2 . Age of Respondents.

Age	Respondents	Percent
<20	12	5.41%
21-25	64	28.83%
26-30	72	32.43%
31-35	35	15.77%
36-40	22	9.91%
41-45	12	5.41%
>45	5	2.25%
Total	222	100.00%

The level of prospected customers have been categorized into a group of prospected users. The Corporate Management covers the top level management whereas the Operating Management and Operating Personnel will be the groups of middle management and first line management. The researcher have also expanded the other 3 groups which some companies might hire some outsource staff or part time staff to take care this process. Some small companies are mostly operated by owner which are also included and the rest of undefined for prospect customers. They are shown in Table 4.3 Most are operating Personnel at 50.00% and the least is the corporate Management at 1.35%.

Table 4.3. Title and Level of Respondents.

Title and Level	**Respondents**	**Percent**
Corporate Management	3	1.35%
Operating Management	14	6.31%
Operating Personnel	111	50.00%
Outsourcing Officer	34	15.32%
Owner	37	16.67%
Other	23	10.36%
Total	222	100.00%

Most NYK customers are standing in the particular variety business industries. Each industry will have diversity of requirement and NYK has realized for this customization. To serve and provide the proper service would require knowing the nature of each business which will lead to provide the appropriated function for each group. At present, NYK has focused 5 main industries such as Automobile, Foods, Chemical, Electronic and Textile & Garment. However, the company has also opened the market to other industries which is likely small portion. They are shown in Table 4.4.

Table 4.4. Business Industry of Respondents.

Business Industry	**Respondents**	**Percent**
Automobile	13	5.86%
Foods	87	39.19%
Chemical	31	13.96%
Electronic	32	14.41%
Textile & Garment	27	12.16%
Other	32	14.41%
Total	222	100.00%

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Another categories applied for this implementation is the shipment volume. NYK surveys to find the group of customers who might have a hugh shipment volume a month that might require for special condition of logistics and provided the appropriated to smooth their shipments periodically. They largest volume is 0-100 teus at 42.34% while the smallest volume is > 1000 teus, as shown in Table 4.5.

Table 4.5. Shipment Volume.

Shipment Volume	Respondents	Percent
0-100 teus	94	42.34%
101-300 teus	58	26.13%
301-500 teus	37	16.67%
501-1000 teus	23	10.36%
>1000 teus	10	4.50%
Total	222	100.00%

Remark: 20' container represents 1 teu whereas 40' could represent 2 teus

The global business might encounter differentiations of rules and regulations. Destinations of shipments ordered by customers will support us as to properly provide an appropriated information and service to them.

With 911 tragedy (2001), US customs imposed a lot of implementation in order to counter the terrorist possible attack. To provide an update rules and regulations on the web site might mitigate some unexpected problem. Not only for US but also other areas of each destination will have different requirement. The smart carrier would provide this type of service as basic requirement. However, in case the customers would need special or more specific requirement, the agent or branch of NYK in those countries would stand by for serving customer at anytime.

Table 4.6 shows 21.24% of cargo still export to North America which will directly comply with the US custom and the second is East Asia which encompassed China, Japan, Korea and so on where they might require the different service types.

Table 4.6. Trade Service.

Trade Service	Respondents	Percent
North America	154	21.24%
Central and South America	22	3.03%
Europe	98	13.52%
South Africa	18	2.48%
Middle East	34	4.69%
West Asia	79	10.90%
East Asia	144	19.86%
South East Asia	97	13.38%
Oceania	67	9.24%
Other	12	1.66%
Total	725	100.00%

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Part II: Marketing Research for Internet Application Usage

In the Part II, the question would be in the style of internet usage which could help NYK forecast for current customer premise and practicality which support the company to provide the user friendly web site and on the other hand to fill the gap of incomplete service.

NYK appreciates to observe some portions of the current customers who have provided their own web site on the network. The result has shown approximate three fourth of all samples still provide nothing for their own web site as shown in Table 4.7.

Table 4.7. Customer Website.

Customer's Web	**Respondents**	**Percent**
Yes	57	25.68%
No	165	74.32%
Total	222	100.00%

This question asks customers whether their companies allow them to access an Internet within their organization. Fortunately, most big groups of customers are not blocked to access Internet in their organization. 164 respondents are not blocked whereas the rest 58 respondents are blocked as shown in Table 4.8.

Table 4.8. Allowance for Internet Access.

Allowance Internet Access	**Respondents**	**Percent**
Yes	164	73.87%
No	58	26.13%
Total	222	100.00%

To know the frequency of user's habit to access internet would support us for tendency to access our Web site, the result has represented for approximate more than 50% of current prospected users could access the website everyday whereas the group of seldom is still existing in the current of IT flourishing market as shown in Table 4.9.

Table 4.9. Usage Frequency of Internet by Respondents.

Usage Frequency	Respondents	Percent
Every day	122	54.95%
Twice a week	47	21.17%
Once a week	25	11.26%
Twice a month	17	7.66%
Once a month	9	4.05%
Seldom	2	0.90%
Total	222	100.00%

To communicate via electronic format is required for E-logistics as this question would simplify for the current customers who participate in digital format in their organization and what type is still valid for the current period of time as below Table 4.10 The current type of digital formation is available.

Table 4.10. Current Digital Formation.

Digital Formation	Respondents	Percent
Electronic Mail	201	41.70%
Electronic Data Interchange	43	8.92%
Internet Access	204	42.32%
Private Application Media	11	2.28%
Other	23	4.77%
Total	482	100.00%

This research has aimed at whether the main current customers are aware of existing NYK website or not. Most customers are aware of NYK website existing which could support us to promote and mitigate some problems leading them away from NYK website as shown in the table 4.11.

Table 4.11. Used and Visited NYK Website.

Used NYK Website	Respondents	Percent
Yes	159	71.62%
No	63	28.38%
Total	222	100.00%

As early purpose to mitigate and generate the users of Website to know the exact problem, which will direct the company to solve and provide appropriated solution required all current customers who turn back for our website and the company would know exactly for which part is the most problematic to all current unused customers. It is shown in Table 4.12.

Table 4.12. Unsatisfaction Factor to use NYK Web site.

Unsatisfaction Factor	Respondents	Percent
Complicate System	15	23.81%
Low Speed	8	12.70%
Lack of Equipment	5	7.94%
Inconvenience to access	27	42.86%
Unrealizable	5	7.94%
Lack of Knowledge	3	4.76%
Total	63	100.00%

The current function that the customer gain the benefit from the web site normally provided and some of function might be obsolete and required updating shown in table 4.13. Most current functions are applicable. However, to be the leader of E-Logistic, it might not serve only current market but generalization will turn the company the leader in the business industry.

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Table 4.13. Required Features on the Website.

Required Feature	Respondents	Percent
Vessel Schedule	199	33.11%
Container Specification	47	7.82%
Vessel Information	84	13.98%
Oversea Branch	79	13.14%
Term and Condition	102	16.97%
News	32	5.32%
Other	58	9.65%
Total	601	100.00%

The benchmark of E-Logistics is to maintain and serve beyond the customer expectation. The new technology would provide facility to both carriers and customers with a click. This question will provide the further requirement beyond customer's premise from current request and it would create the customer's satisfaction as shown in Table 4.14.

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Table 4.14. Specification Requirement from NYK.

Specification Requirement	Respondents	Percent
Cargo Tracing	79	13.69%
Create / Amend / Cancel booking	48	8.32%
View / Draft Bill of Lading	40	6.93%
Print out Bill of Lading	20	3.47%
Cargo Status	97	16.81%
Notification	154	26.69%
Exceptional Report	127	22.01%
Other	12	2.08%
Total	577	100.00%

To know the current feature and appeal from customer view points would support the evaluation of the existing web site. Which level can gain an attraction from customer as shown in table 4.15. It illustrates the web component and most web sites standing on the middle level. The company needs to develop and provide more features in order to gain more intention from users.

Table 4.15. Web Component.

Web Component	**Poor**	**Percent**	**Fair**	**Percent**	**Good**	**Percent**	**Total**	**Percent**
Design	2	0.90%	129	58.11%	91	40.99%	222	100.00%
Speed	47	21.17%	153	68.92%	22	9.91%	222	100.00%
Search function	49	22.07%	145	65.32%	28	12.61%	222	100.00%
User Friendly	84	37.84%	114	51.35%	24	10.81%	222	100.00%
Security system	7	3.15%	130	58.56%	85	38.29%	222	100.00%
Respond rate (officer)	24	10.81%	170	76.58%	28	12.61%	222	100.00%
Accuracy information	2	0.90%	37	16.67%	183	82.43%	222	100.00%
Completeness of web	42	18.92%	148	66.67%	32	14.41%	222	100.00%
Total	**257**	100.00%	**1026**	100.00%	**493**	100.00%	**1776**	100.00%

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4.2 Secondary Data

The researcher has gathered this information from many sources that could comply for this project as below:

Due to the restriction of EU (The European Union) has implied the regulation for all import and export cargos from any origin to this area. It would direct affect as the volume of export has been continue decline. The general reason of this restriction is the protection of local products which could not compete with the world market especially from the East side like Asia and South East Asia. However the other reason is rely on the main security process since the September 11, 2001 which US has faced the terrorist attack. The European Union which composes of members 15 countries are agreed in the conference in order to brush up Security issue that require and apply as US Custom which is become a bench mark of all area. The official application has been established in the formal forum as the random checking and declaration of product is required and become critical issue. (Logistics Manager's Article , March 2004)

On behalf of Thailand which is the one of Asia country that has both exported and imported to the EU market. The exporter could not deny to accept this procedure due to the application will direct impact to the process of declare for exported documents. Nonetheless, It would have a period of time to monitor as this application would be suitable in the practical or not. As the nature and process of business contract might not apply for the time being.

Table 4.16. Top 10 Export Items.

Description	2000	2001	2002	2003
Computer and peripheral	1535.40	1582.70	1367.80	1018.70
Automobile and parts	687.20	1027.60	979.20	692.50
Circuit and Chip	944.50	718.50	702.60	621.60
Garment	695.40	612.00	581.30	461.80
Jewelry & Ornament	522.80	523.50	558.90	456.30
Air Condition and parts	394.40	353.00	325.40	399.50
Home Appliance	407.30	247.20	319.30	292.20
Footwear	302.30	322.90	288.40	213.30
Rubber Product	195.80	204.50	223.70	204.70
Parawood	156.90	140.80	175.60	179.50
total 10 items	5842.00	5732.70	5522.20	4540.10
Other	5159.30	4819.30	4692.50	4043.50
Grand Total	11001.30	10552.00	10214.70	8583.60

Table 4.17. Top 10 Import Items.

Description	2000	2001	2002	2003
Industrial Machine	939.00	1348.00	1340.00	1122.30
Chemical	737.10	792.90	808.20	705.90
Electronic Machine	662.20	1352.90	925.30	462.50
Circuit	486.30	391.50	282.10	264.90
Medical Product	218.10	243.80	251.70	236.40
Steel	151.30	195.50	167.20	211.30
Automobile Component	196.20	277.10	275.90	202.30
Gold and Silver	340.20	343.10	316.40	184.30
Science Equipment	187.00	189.50	196.30	165.60
Metal product	156.60	216.00	174.40	146.50
Total 10 items	4074.00	5350.30	4737.50	3702.00
Other	2249.60	2220.10	2301.10	1801.20
Grand Total	6323.60	7570.40	7038.60	5503.20

Source of Information : Custom Department & Logistics Manager Press

To protect all the benefit and avoid violation with the new regulations, the way out of duplicated and complicated documents could be applied with EDI (Electronic Data Interchange). The system itself would support all requirements and also to mitigate the unexpected problem. It could record and keep in the personal information and retrieve to investigate later. In term of technology, all exporters might be served for the current one. However the production depended on each unit might be more serious than this implication because the quality is key to business in this destination.

Table 4.18. EDI Application.

EDI Application	2000	2001	2002	2003
Export	120	574	1489	3787
Import	1287	3768	5872	9544

Thai Shipper and Their Carriers

The continuous development is the main metaphor of service industry. The tradition of service will be taken place with the new advanced technology all the time. However, to evaluate the service quality with the carrier is the main issue to determine and ranking their place in the customer's mind which the result of the survey is likely interested and gaining a lot of attention for changing customer in the era of digital period.

Half of the shipper (Exporter) or consignees (Importer) still satisfy with the current service by their carriers, whereas the rest of 50% express the troublesomeness and are ready to swap to other agents without hesitation. The survey has shown the main factor that the customers are willing to change for other on the basis of the uncertain freight and surcharge during the quarter. Normally, the freight and surcharge will be subject to revise in every quarter. Due to the world economic crisis which directly affects to transport industry similar to many surcharges which would be subject on the monthly basis compared with the practice on quarter basis. This fluctuated surcharge (Bunker Adjustment Factor, Currency Adjustment Factor, War Risk Surcharge, Peak Season or even General Rate Increase) will direct all both exports and imports to determine their costs of buying and selling. In addition, the limited spaces on the vessels are shared by the countries of high potentials like China. To guarantee the place on the vessel, it needs to submit the forecast of their production in advance. This requirement might not affect the Oligopoly business due to the contract has been signed in a year term whereas this impact will affect all middle and small business units which could not forecast and sign a year contract.

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However, to mitigate these kinds of problem, most middle and small business units, the RFP (Request for Proposal, see the procedure on the next paragraph) is required to be the center modes for communication between customers and carriers. To provide all basic detail or information of their business to the carrier, they would support the carrier to provide them proper service. With this approach, both parties would require to communicate via the electronic media and can operate real time. Most carriers right now could provide these kinds of service on their web site which the customers will be served with appropriated service and mitigate the problem for the time being.

Writing Procedure for RFP (Request for Proposal) for Ocean Transportation

The right procedure to apply the RFP is required from each involved parties. Normally, the process would be communicated between customers and carrier for personal service. The response of all process would not take longer than 30 days accepted as normal practice.

To provide the RFP, the customer should mention about their business industry information that would support carrier to provide suitable service is listed below:

Company Information

(1) Company Profile: main business, affiliated company, objective, contact address, officer in charge etc.

(2) Basic Requirement: expected from logistics service or transportation service, export and import knowledge, tariff and surcharge, experience about export and import, information technology support and provided in company.

(3) Price Demand : separated price, package price or price in quantity

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(4) Lawsuit : term and condition

(5) Commodity's Knowledge: specification of commodity, nature, type of commodity, package, weight per each type of package, any special's requirement to treat that particular product etc.

Customer's request for Carrier's Respond

(1) Freight and Surcharge: To determine freight and surcharge for each required destination and applicable of surcharge in each period of time.

(2) Rule and Regulation: Term of each destination's requirement and applicable laws and rule of each routing or service.

(3) Service Procedure : Term of payment and process to provide all require document or any request certify for export or import

(4) Logistics service: Warehouse and other type of provided service to all the export or import process.

(5) Information Technology service: The function that could provide via electronic media.

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V. MARKET FEASIBILITY

5.1 Market Analysis

The researcher has simplified all acquired answer from questionnaire, primary data to analyze with below question from Part 1 and Part 2 which will lead to specific purpose of user and required each function and feature.

Part I : Personal and Company Information

Question no. 1 Gender of respondents

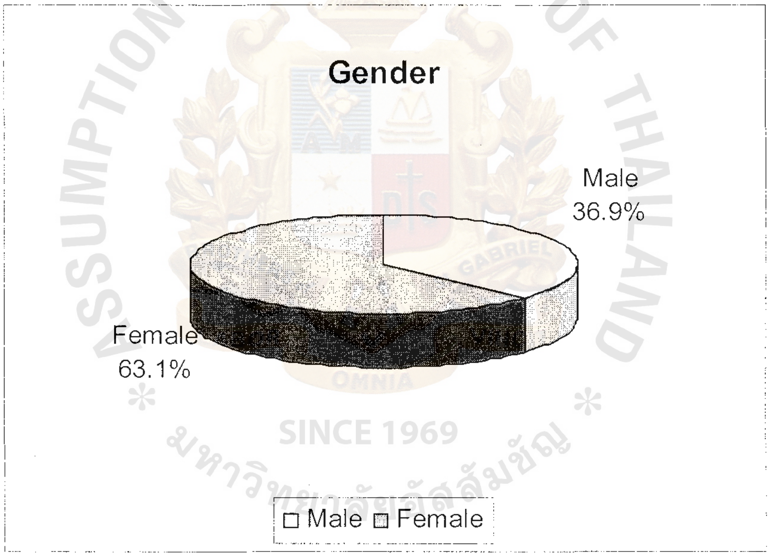

Figure 5.1. Gender.

This question will lead the researcher know the portion of the users which the result has represented 63.1% for female users whereas 36.9% for the male. This interprets that most in charge officers are female and the document task might require more circumspect.

Question no. 2 Age of respondents

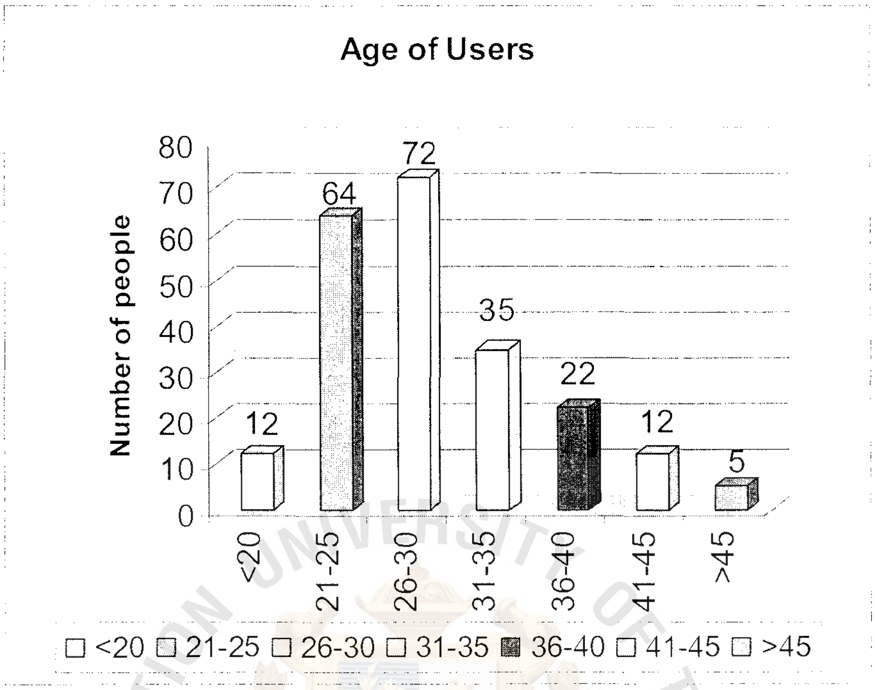

Figure 5.2. Age of Respondents.

This result interprets that most officers in charge are range between 26 – 30 years old which is represent 32.43%. The second group is ranged between 21 – 25 years old that is 28.83%. The third group is ranged between 31 – 35 years old which is 15.77%. The rest are less than 20 years old, 36 – 40 years old, 41 – 45 years old and more than 45 years old which are 5.41%, 9.91%, 5.41% and 2.25% respectively.

The research concludes for that most respondents who are NYK's potential users would be ranged between 21 – 36 years.

Question no. 3 Title of respondents

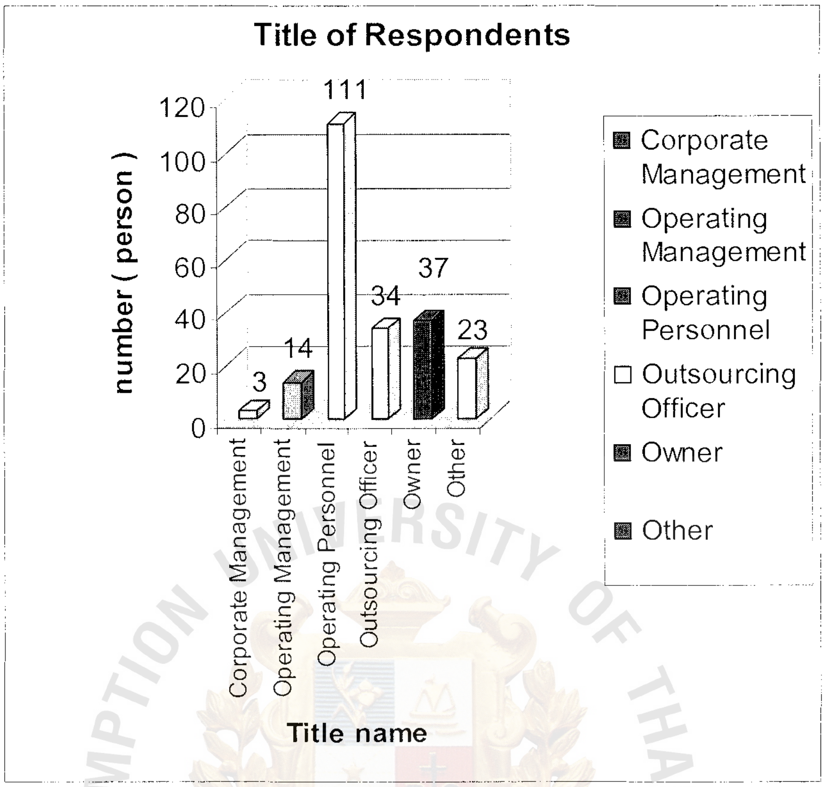

Figure 5.3. Title of Respondents.

After the data has been processed, the outcome has represented the Corporate Management level is 1.35%, Operating Management level is 6.31%, Operating Personnel is 50.00%, Outsourcing Officer is 15.32%, Business owner is 16.67% whereas other levels are 10.36%. This information would represent the role of the respondents in their company will mostly be assigned to the Operating Personnel. This information will support our web developer of NYK to design and provide appropriated feature and function to serve these biggest groups of customers.

Question no. 4 Business Industry of respondent

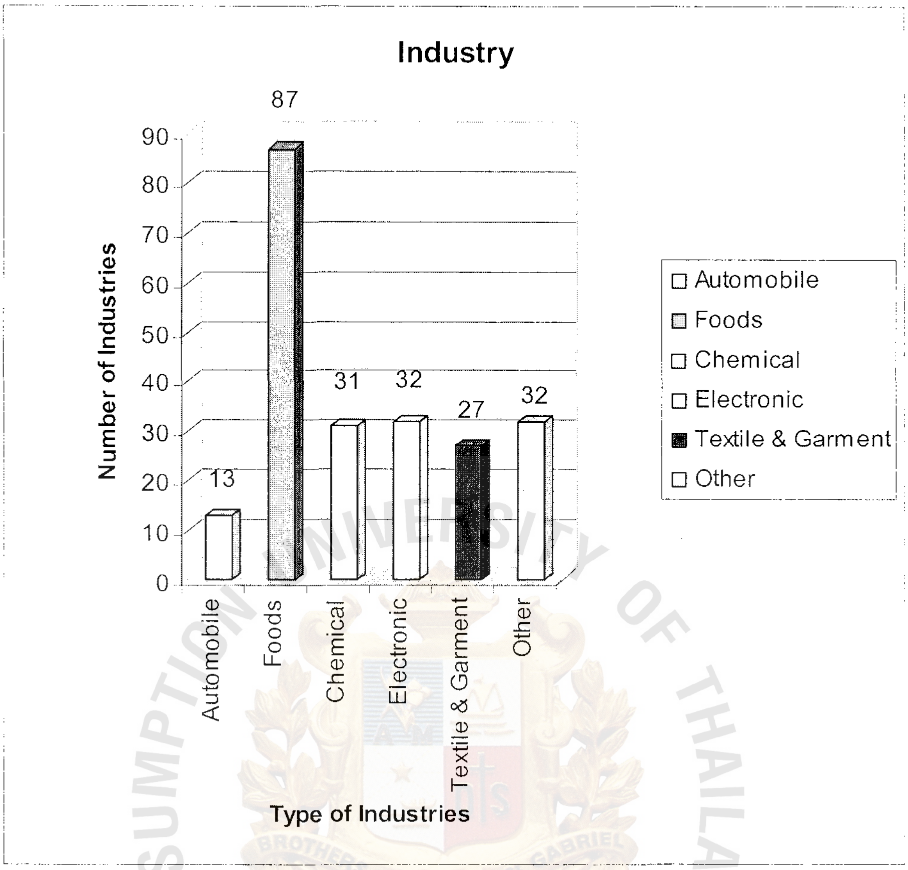

Figure 5.4. Business Industry.

This survey is conducted among current customers of NYK who are running in varieties of business industry. To observe and study for their practice due to this project implementation, the company has categorized them into each group that would represent the basic requirement for each business industry and their feed back for this project.

The outcome has shown that the leading is Foods Industry that is 39.19%, Electronic is 14.41%, Chemical is 13.96%, Textile and Garment is 12.16%, Automobile is 5.86% and other are 14.41%. With this information, it represents only which industry

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has participated most. Automobile is fewer portions but does not mean the volume of this business is representing a small group of business characteristics.

Question no. 5 Shipment Volume

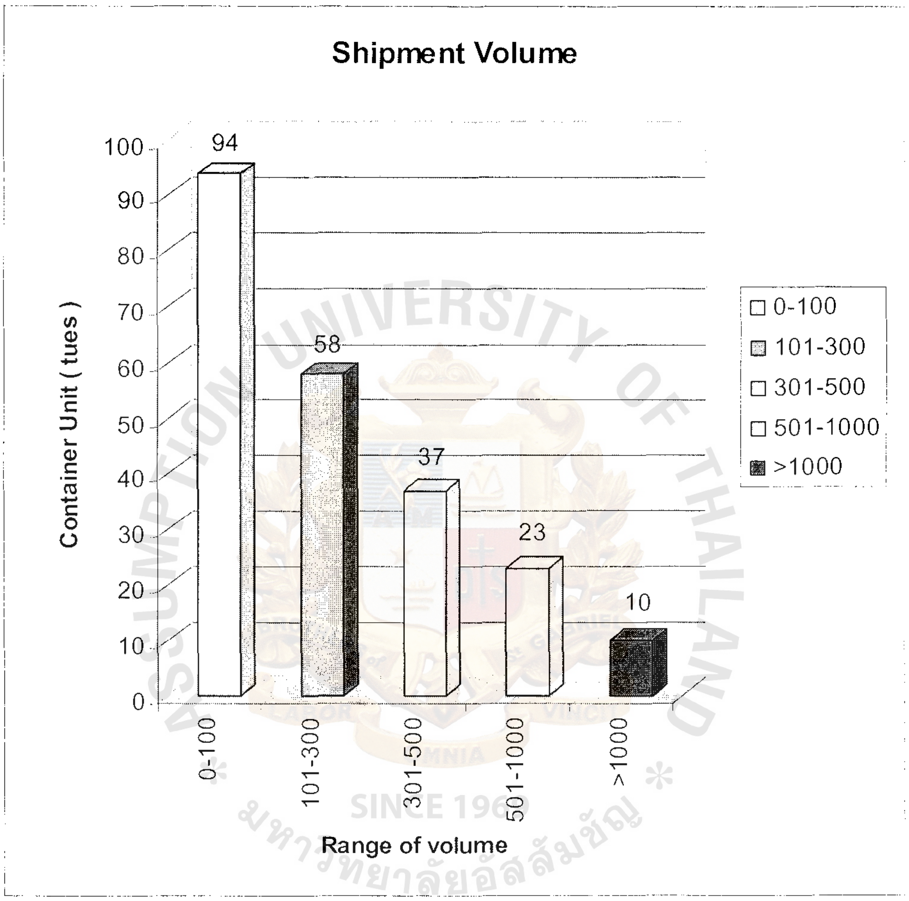

Figure 5.5. Shipment Volume.

This question will lead the result to how is their size in the industry as early mentioned. The Automobile Industry might enormously be manufactured but it should show the large volume. To understand their business character, it supports us to provide customized solution or service.

The outcome of this question is represent 0 -100 container for 42.34%, 101 – 300 containers is 26.13%, 301 – 500 containers is 16.67%, 501 -1000 is 10.36% and more than 1000 containers is 4.50%. The graph would illustrate in slide down from big portion group to small portion group.

Question no. 6 Routing Service (Destination Trade)

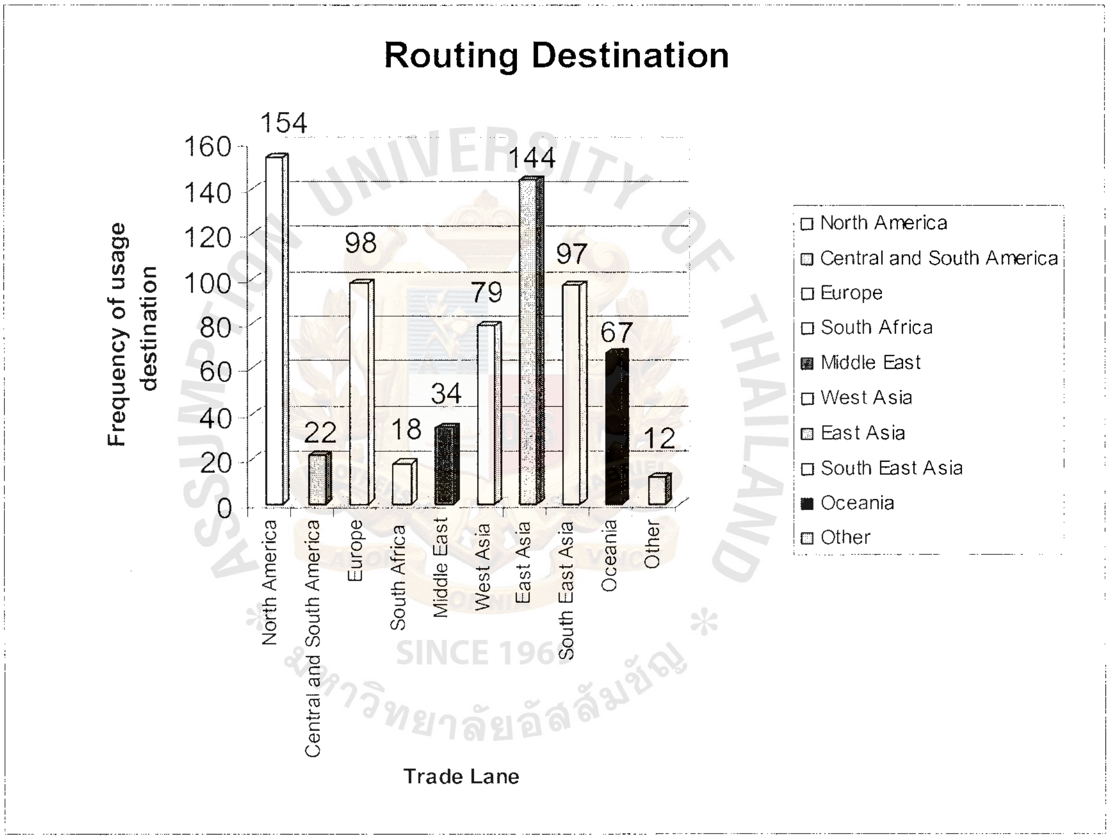

Figure 5.6. Routing for each destination.

Some destinations might require different term and condition. Sometimes, rule and regulation might not similarly be applied. The entire picture for Thailand market in each routing will support the company to know what is/are exactly requirement among the diversity of customer. Their business industry and routing service are needed for this project.

The North America is ranked number 1st at 21.24%, The 2nd is East Asia which is 19.86%. Europe is the 3rd at 13.52%. The 4th one is South East Asia at 13.38% whereas the rest of West Asia, Oceania, Middle East, Central and South America, South Africa and other destination are 10.90%, 9.24%, 4.69%, 3.03%, 2.84% and 1.66% respectively.

Therefore the researcher could summarize all the above results, that most users who participate in web site would be called the main target of this study. The result has been concluded that female with the age range between 21 – 36 years are in the Operating Personnel position are the target users, whereas foods industry is the main target industry group.

Part II: Market Research for Web Internet Application Usage

Question no. 1 Query for Customer Company's website

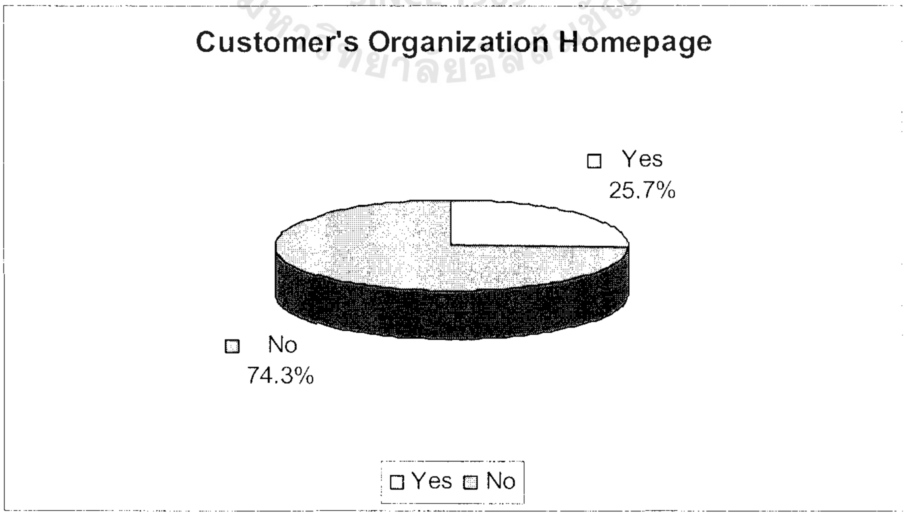

Figure 5.7. Customer's Organization Homepage.

This question would support NYK in term of persuading customers to use the web site and insiders of the customer's web site might provide some useful information for us to create the appropriated information or solution to them.

The survey has shown approximate one-fourth of total participants who have their own company's web sites which is 25.70% whereas the rest is represented of 74.3% which their companies do not provide web sites.

To interpret this information, the researcher would claim that most companies have their own web sites and they are large companies which is shown in the Part I. Small portions of large companies have their own web sites.

Question no. 2 Allowance access Internet within organization.

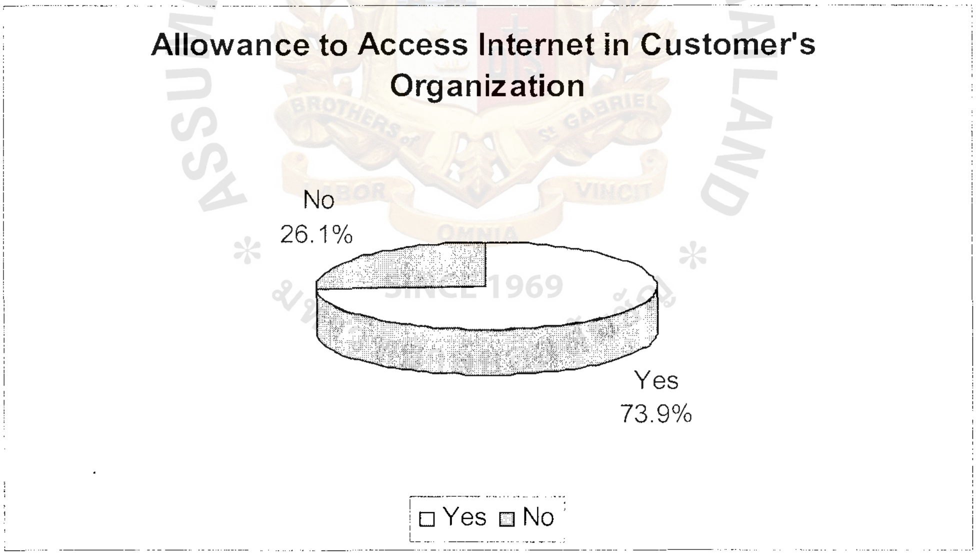

Figure 5.8. Allowance to Access Internet.

To study the portion of potential customers will indicate the feasibility of this study. A number of users would be sufficient to implement any new project to the market. In case the outcome of respondents are less than prediction, many companies might reconsider their particular projects in term of worth to the value of investment. The survey will support the management to make a decision on specific study or project that is possible to be launched to the market.

This study shows positive result in term of an amount of respondents who are allowed to access the network within their organization. The ratio is 73.87% whereas 26.13% are not authorized to access the Internet within their own organization.

Question no. 3 Usage frequency of Internet

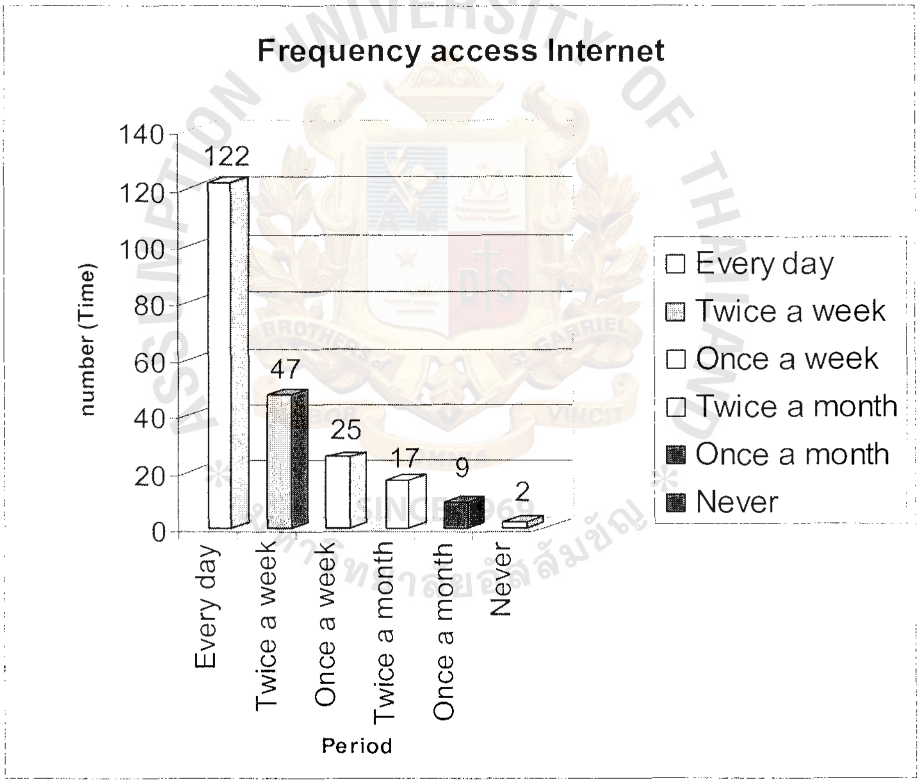

Figure 5.9. Usage Frequency.

This question will conduct the frequency usage of Internet among the prospected users. It might be required to see the rate of access that will simplify the possibility to access and update information from their expect web site. This might include NYK web site as well.

The result has indicate the big group of respondents access an Internet every day at 54.95%, Twice a week at 21.17%, Once a week at 11.26%, Twice a month at 7.66%, Once a month at 4.05% and Seldom at 0.90%. Most are viable for expansion.

Question no. 4 Digital Formation.

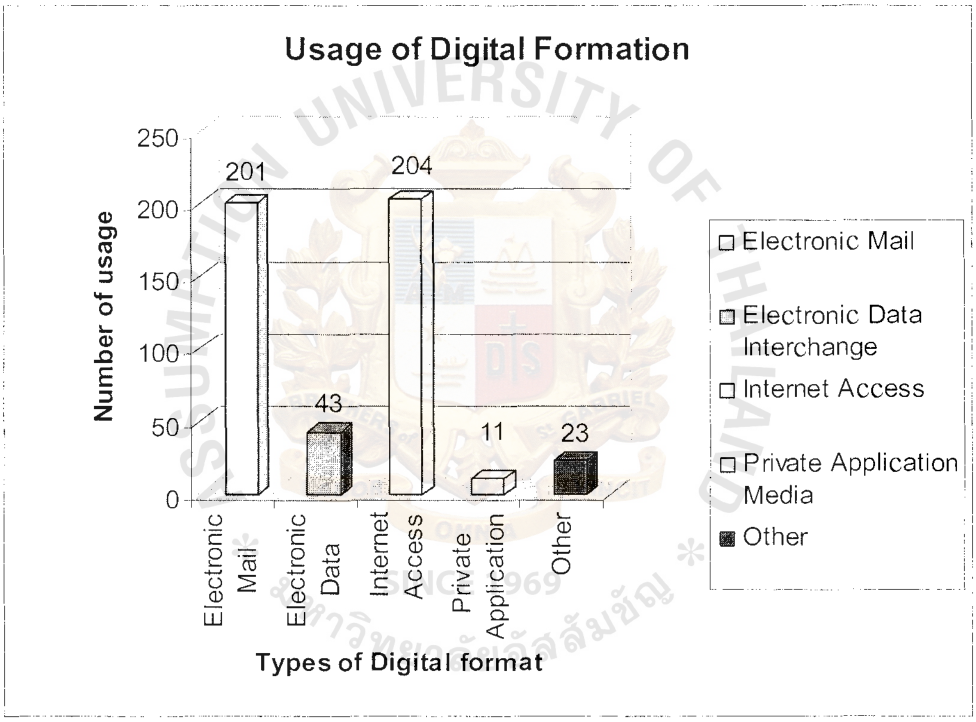

Figure 5.10. Usage of Digital Formation.

Besides access Internet, the research requires for other digital formation that all respondents have used as some companies might not allowed their officers to access an Internet but the other media might serve them and reduce the gap of service. NYK would pave other medias that could supply the customers who could not access or gather information via web site.

The result has shown both basic practices of Internet and Electronic Mail are 42.32% and 41.70% respectively, whereas other medias like EDI (Electronic Data Interchange) are 8.92%, Private Application Media is 2.28% and other medias are 4.77%. With this information, NYK might plan for each phase that could take the rest respondents who are not provided Internet to gain the benefit of NYK's implementation as well.

Question no. 5 Used NYK Website

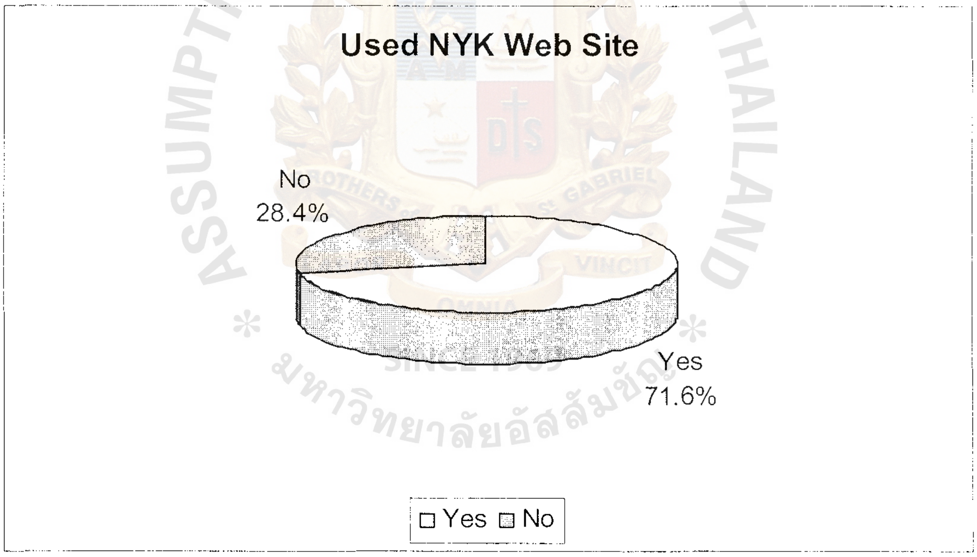

Figure 5.11. Used NYK Website.

Some shippers might try to use NYK web site for the pilot phase which they could evaluate our web site in term of usability and require information on the system.

This group will take the key factor to use what will provide the effective feed back on evaluation of NYK's website.

71.62% have used NYK's website for their purpose whereas the rest 28.38% have never used the benefit from NYK's website.

Question no. 6 Unsatisfaction Factor of used NYK's Website

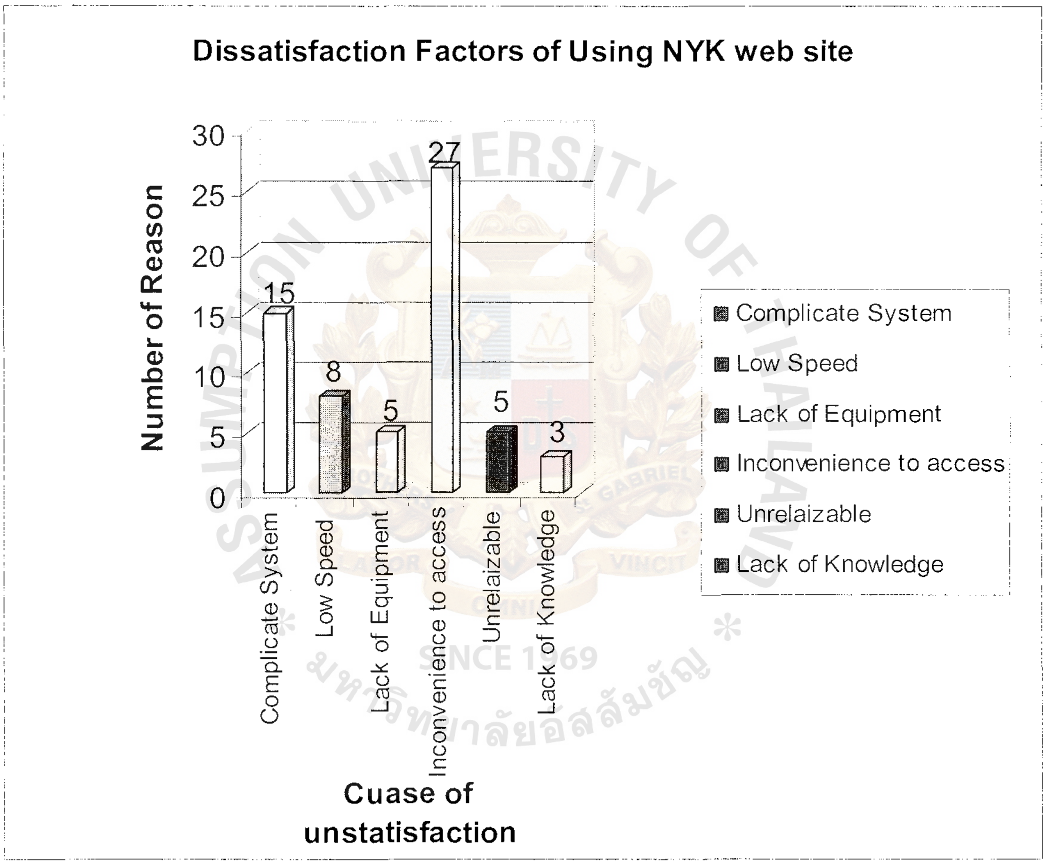

Figure 5.12. Unsatisfaction Factor of used NYK's Website.

To indicate the causes of factor dissatisfy the groups who are not appreciated to use NYK's web site. The researcher has used the question of specific problems that they are facing and to pin point the cause those will support us solve and provide the right solution to all of them.

The survey has indicated for most effective cause that respondents turn away from website is Inconvenience to Access at 42.86%. The next is Complicate System at 23.81%. Low speed is 12.70%. Unrealizable is 7.94%. Lack of supported equipment is 7.94% and 4.76% is lack of knowledge to use the Internet.

Question no. 7 General usage function

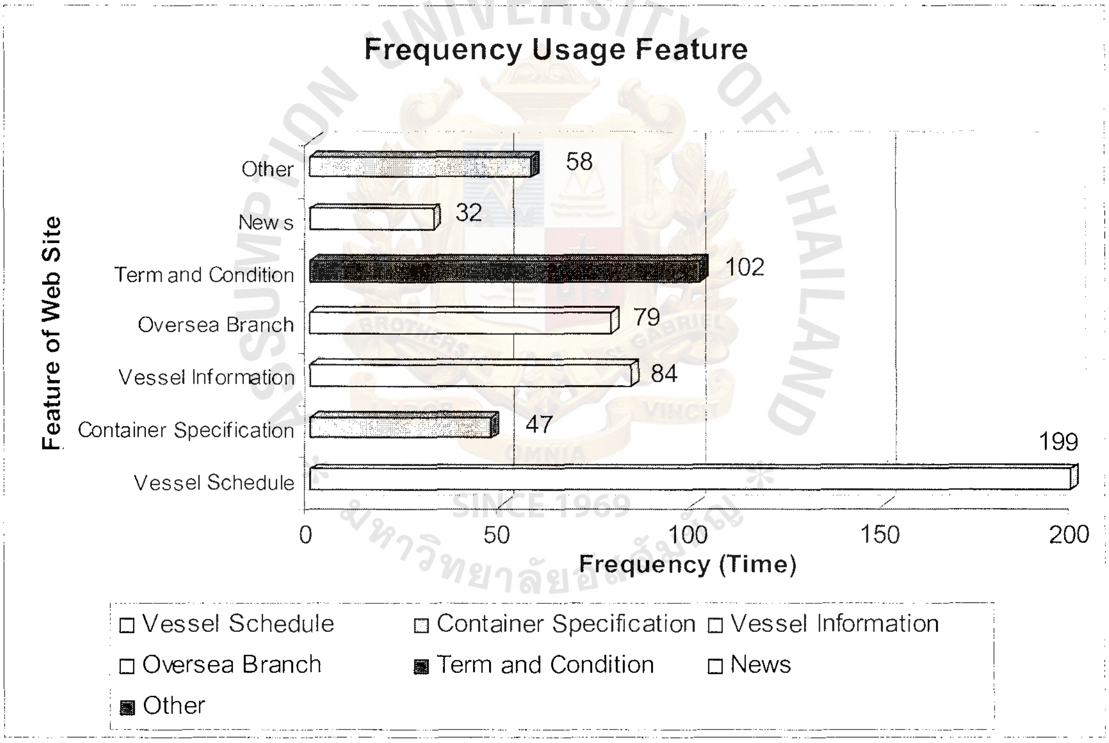

Figure 5.13. General Usage Function.

The customers are normally accessing the carrier web site to acquire general information. All carrier website might provide general information but the survey has illustrated only 23.81% (reference from Figure 5.12, complicate system)could not gather information they are looking for. It indicates that easy-access is required for prospected companies in relation to new future function.

The survey has shown 33.11% most require on vessel schedule. Another function are term and condition perform at 16.97%, Vessel Information is 13.98%, Oversea Branch at 13.14%, Container Specification is 7.82%, News represent at 5.32% and Other function at 9.65%, respectively.

Question no. 8 Specification Requirement

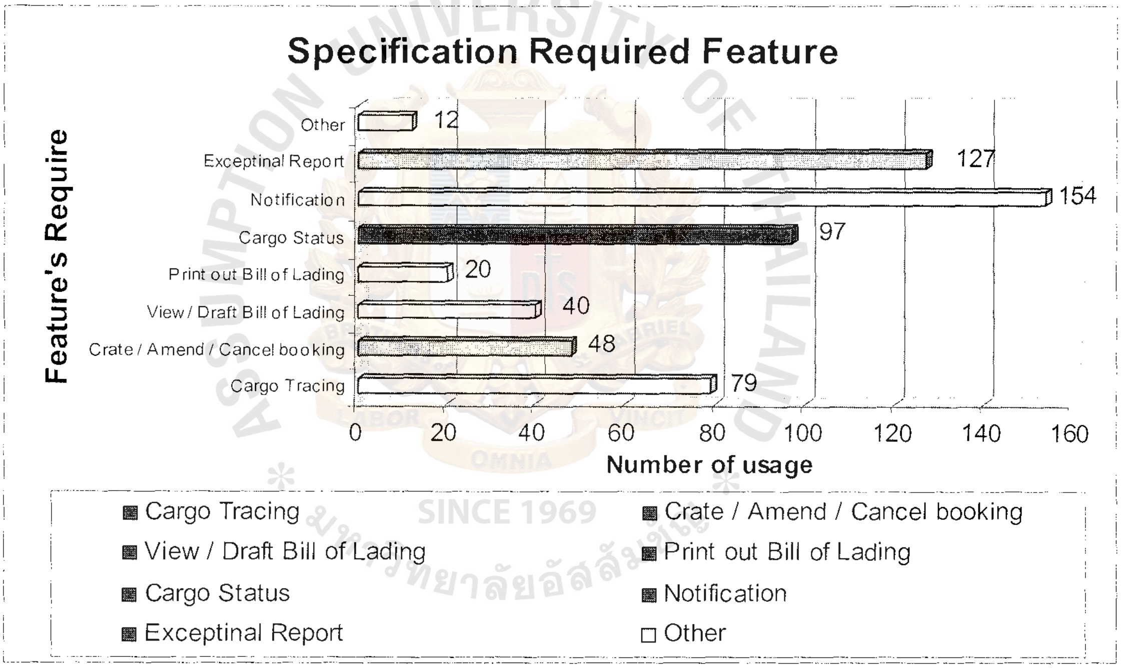

Figure 5.14. Specification Requires Feature.

Besides general information provided and most the customer would get benefits and comfortability from the web site. The other transactions are also requested due to the implication of E-commerce would not limited and the boundary is expanded every minute on the basis of many sectors household, business or even government sector which tries to implement their capability on the web.

All entire practical tradition will be consumed by time with new rapid changes of technology. Not only general information daily required but the new function is claimed more complicated. Due to this matter, NYK attempts to introduce new function to continuously serve entire customers. Then this question has been set up to study the feasibility of specific feature which will represent the current Thailand's market.

The survey has show an interesting result. The most requirement for specific function is Notification which is 26.69%. Exceptional Report 22.01%, Cargo Status is16.81%. All top 3 functions are under operation, The function concerns about documentation part shown 8.32% for create booking, 6.93% for Bill of Lading and 3.37% for print out bill of lading. With this new information, the cargo tracing included in operation section is also higher than the paper part which is 13.69% and the other is 2.08%.

Most Thai's customers still are less concerned for digitized format for paper form which is famous in abroad. However, it would be increasing after the laws and commercial bank accept this kind of format as the bill of lading. It still requires tradition signature instead of E-signature like in some countries.

Question no. 9 Web Component.

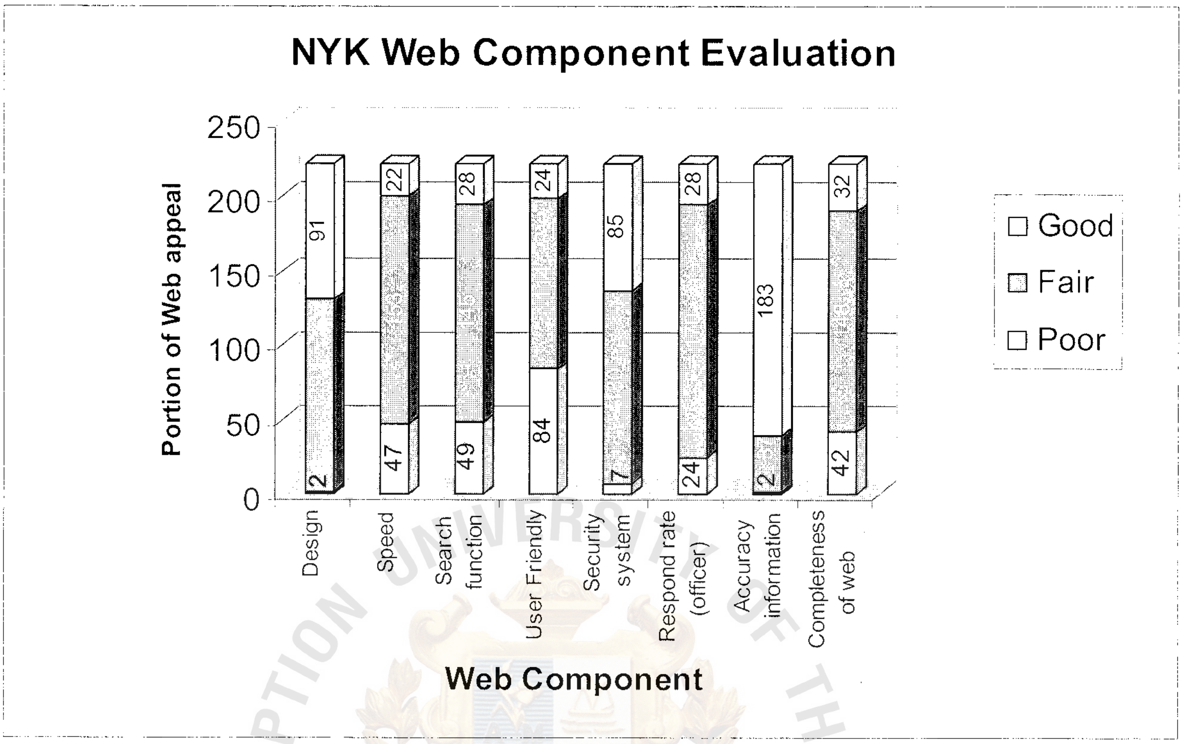

Figure 5.15. Web Component.

To evaluate the appearance of web is also taken an important role due to the web site might not provide to achieve full utilization as the customer might be inconvenient to use or sometimes, they could not find what they are looking for because of complication and so on.

In this question, all useful comments from customers will help NYK evaluate the current web site which will be improved for useful function. As website is not only required good appear once but usability is also concerned. The outcome has been posted as design has been noted at 60.0% by average, and Good design is 40.990% whereas poor is 0.90%. In term of speed, the average of speed is 68.92% where good and poor are 9.91% and 21.17% respectively. The complicated search function portion

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still represent approximately one-forth, which will affect user friendly which represents difficulty of usage over one-third at 37.84%. The most portion for security is quite acceptable by customers at 38.29% for good and 58.56% by average. The response of operation officer through the web is rating at 12.61% for good and 76.58% by average whereas poor is 10.81%. Another outstanding information accuracy has been adopted by customer more than 95% by 82.43%, 16.67% and 0.90% for good, average and poor respectively. For the completeness of web site the average is 66.67% where Good and poor are not different from each other which are 14.41% and 18.92% respectively.

Almost the whole picture of NYK web site would be developed for user friendly, search function, speed and some other functions which are normally used instead of concerning only the appearance which could attract the customer's attention.

5.2 Market Feasibility

In order to study of maintaining and evaluating the existing system which might be obsolete to all customers due to technology changes and new implementation has been launched into the market. NYK a leader of shipping line has realized the coming revolution and attempted to develop and to conduct the function which will support the logistics and related activities. To conduct the survey and to study other sources which are available right now in journals, articles and also from related website which provide related information will support NYK for their website update and to understand for current situation. To provide the appropriated service which would cover most group of customer's requirement, it is important to know the characteristics of each group of customer in order to customize them and to serve the right service. The current technology is rapidly changing, the company tries to evaluate and to update information

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technology is rapidly changing, the company tries to evaluate and to update information which will help the management determine the vision and overview of plan to achieve future plan.

After survey and all information have been gathered in order to study the market feasibility of this project, the researcher has studied and found some information those will support and develop current web site which will increase CDV (Customer Deliver Value). The first reason of project possibility is whether the existing customer are realized on availability of NYK web site. The survey indicates more than 70% of all 222 respondents have used NYK's website even the function is likely generalized. However, it can represent the possibility to expand for other functions. Second, most customer's companies have used and changed to used the digitized format which will take place the paperless office in future due to the portion of using electronic format is likely indicated, more than 50%. Third, the survey has indicated comments and recommendations that an update function is the most required due to the web site will be wasted if information on the system is out of date and to provide some navigation (Breadcrumb) on the web site will let them know their current page. Besides this request, the survey has found that complication of usage and to maintain the usage rate with customer, comments are responsive rate is low during office hour because of cannot enhance satisfaction.

To understand the whole picture of this implementation, the researcher has provided and summarized the SWOT analysis with other carrier website in order to know current positioning of the company web site. It could support us solve the right problem in a manner of right solution.

SWOT Analysis

Strength

(1) The website itself is well-known and gain the reputation of the company.

(2) The security System could guarantee reliable system.

(3) The world wide transaction can trace within a few seconds.

(4) The reliable system is backed up by Regional office in Singapore.

(5) The service will cover all trade as global logistics

Weakness

(1) The complicated system and web site.

(2) The website will serve only company's customers.

(3) Low responsiveness in the office hours

(4) The web site is difficult to use and required basic knowledge to use.

(5) A website is messy information.

Opportunities

(1) The communication can be accessed from anywhere in the world.

(2) The web site can apply for many regions in the world.

(3) The basic necessary information are posted on the web

Threat

(1) Some features might not suit some regions.

(2) The limitation of language as the web site provides only English and Japanese

(3) Laws and regulations in some countries might not serve the website utilities for well-equipped functions.

To implement the effective plan after study market feasibility of this project, the implementation would be subject into 2 periods, i.e. short term and long term.

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Short Term Implementation

The company is requested by users to develop the current function in order to maintain and expand the growth of this market in the future. The user friendly is required for entire function as the customers might not be familiar with the web site at the beginning period of usage. To provide the manual or guide line or tutorial on the web to access and use will be helpful to gain the benefit from the web site.

Long Term Implementation

Some special requirement might suit one region, in order to standardize the global service, NYK might be required to sum up most required functions in the beginning period and the special function which might not be used during phase one . They will be applicable and developed in the future. However, each business might require the functions that suit their business characteristics but the logistics requires to look to the entire picture. NYK tries to serve all levels and business types in order to maintain the global standard being one of leading shipping line company.

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VI. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

Since the new technology has been introduced and complied with the business, not only the related new businesses would be affected in term of changing, adapting and preparing to this new implementation but also the old fashion business which operates over a century will also affect of this matter. In the period of the digital firm flourishing, almost the business is aiming and developing themselves from day by day operation. As the digital format could support them safe time and cost in the manner of an appropriated solution. To take the lead in a high gear is not required only the good management or an excellent concept but the tools that could support and lead the company successful has taken the significant role in the current business as well.

This market feasibility study would be counted as the indicator of company's current situation. It will measure and calibrate the company for survival in the high competition of the market world as the globalization will break all the walls of market trade. To provide full range of service in both brick and click business, the information technology system factor won't be missed. The current customers are also looking for the solution which could facilitate and provide them the highest benefit. The new virtual company is not far from the dream even today or tomorrow.

In Implementation the correct direction requires the reliable information to support as being referred in secondary sources. The trend of the Electronic (E) is more fashionable in the new era of the company. Any transactions or practices try to refer with E-application. This reference would conceptualize that whether that operation or business should comply and adapt for their purposes for the time being or not. It is the question for Management team to consider.

St. Gabriel's Library, Au

In Research Methodology, the research has gathered information from both primary data and secondary data. The primary data would be provided information by launching 222 sets of questionnaire based on Yamane's theory for sampling size and it has represented approximated 44.4% of total population targeted in Thailand. The secondary data are collected from related Journal, Articles and Website from both related involved private and public organizations. The result of the methodology will be illustrated in the percentage of feasibility for each question. Finding likely answer the objectives of this study.

Finding are positive due to most the customers are realizing the existing of company website by over 70%. Besides the awareness of web site over 50% of users have implemented their digitize format which might be the sign to represent the possibility of growing web site uses as the other tools in their companies.

However there are some features needed to be improved due to the web site might not suit all requirements at a time. To maintain the standardized customer relationship and customer deliver value as one for all is an important consideration by the management team to imply and to expand this kind of service in any directions. This survey would at least encourage them an idea of direction to continue implement web site because the existing website might not be longer served them overtime. It needs to implement step by step and to fulfill customer's requirement as key to expand the market place relevant to the project study.

6.2 Recommendations

After the survey has been conducted and gained finding, it would represent the possibility to apply this web application to the market space because new technology becomes gigantic trends in many businesses including Shipping Line. However, the

Supply Chain or Logistics has emerged in the world for many centuries. To comply with new technology might require a period of time to adjust as some types of business characteristics are running over a decade or a century on the traditional style. It requires most man power or sometimes called labor to operate because some countries still use traditional practice instead of implying full range of new technology.

However, Internet has become a significant role of today's businesses. Even though it has been introduced over decades ago but all countries or business industries could not adopt this kind of technology as some area still could not get full utilization from them. To comply all of the technology with the logistics business, it is required such a period of time used by all of stakeholders who are concerned in each industry which are totally required different time frame for implementation. Some of them might be ready for immediate application whereas some are waiting for further study to see consequences before application. The E-application of Logistics would not be effective if one or some of the process would not provide the full range. As some existing system might not be viable to the entire process. The management would consider cause and affect, pros and cons before step further to invest without response and sufficient study. It will be time consuming and wasting. To comply some or all requirements, it needs overviews and necessary plan to meet a big group or concerned users who try to bridge the same standard. It will lead to the success of this implementation.

Besides, the culture or nature of each area would have diversity of request to fulfill their needs. The web developer requires understanding and providing the function which is compatible to their culture and consequently, the system needs to serve all remaining users as well. To prepare or to provide the global service is not concerned only specific requirement. It would comply for all over time and the system still needs to exist in that technology. It is not only time consuming, and investing money but also the skill and man power in generating the new implementation to serve all customers at a time. The management has to compare these incidents in order to decide whether shall this project should be applied or not. If so, how should they start to serve and to provide.

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APPENDIX A

QUESTIONNAIRE

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NYK LINE

This questionnaire is part of evaluate of NYK web site created by NYK Line. The Pegasus project team would greatly appreciate your cooperation completing this questionnaire below. All information given in this questionnaire will be strictly confidential.

Part I: Personal & Company information

Name : ____________________

Company : ____________________

Telephone : ____________________

E-mail : ____________________

1. Gender:
   ☐ Male ☐ Female

2. Please determine for what range is belong to your age.
   ☐ Less than 20 year old (<20)
   ☐ 21 – 25 years old
   ☐ 26 – 30 years old
   ☐ 31 – 35 years old
   ☐ 36 – 40 years old
   ☐ 41 – 45 years old
   ☐ More than 45 years old (> 45)

3. Please identify for what are your level /title in your company.
   ☐ Corporate Management
   ☐ Operating Management
   ☐ Operating Personnel
   ☐ Outsourcing Officer
   ☐ Owner
   ☐ Other (please specify ____________________)

4. Please specify your current business industry in the market
   ☐ Automobile
   ☐ Foods
   ☐ Chemical
   ☐ Electronic
   ☐ Textile and Garment
   ☐ Other (please specify ____________________)

5. From previous question, how much do the volume that your company exports by using container(s) **per month**.
   ☐ Less than 100 teus
   ☐ 101 – 300 teus
   ☐ 301 – 500 teus
   ☐ 501 – 1000 teus
   ☐ More than 1000 teus
   Remark: 20'container could count as 1 teu whereas 40' could count as 2 teus

6. How many routing that you are using and how many times do that service have been used per month?
   ☐ North America (USA, Canada)
   ☐ Central and South America
   ☐ Europe (both East and West)
   ☐ South Africa
   ☐ Middle East
   ☐ West Asia (India, Pakistan, Sri Lanka etc)
   ☐ East Asia (China, Korea Japan)
   ☐ South East Asia (Thailand, Singapore etc)
   ☐ Oceania (Australia, New Zealand)
   ☐ Other Destination (please mention____________)

Part II: Marketing Research for Internet Application Usage

1. Does your company have your own web site or not?
   ☐ Yes ☐ No
   (If answer is Yes please specify your company home page)
   http://www.____

2. Does your company allow you to access Internet within your organization or not?
   ☐ Yes ☐ No

3. How often do you use Internet?
   Frequency:
   ☐ Every day
   ☐ Twice a week
   ☐ Once a week
   ☐ Twice a month
   ☐ Once a month
   ☐ Never

4. What type of Digitized format that you are using right now?
   ☐ Electronic Mail (E-mail)
   ☐ Internet Access
   ☐ Other (please specify ____________________________)
   ☐ Electronic Data Interchange (EDI)
   ☐ Private Application Media

5. Have you ever used NYK web site or not?
   ☐ Yes (skip to question no. 7) ☐ No

APPENDIX B

SUPPLEMENTARY

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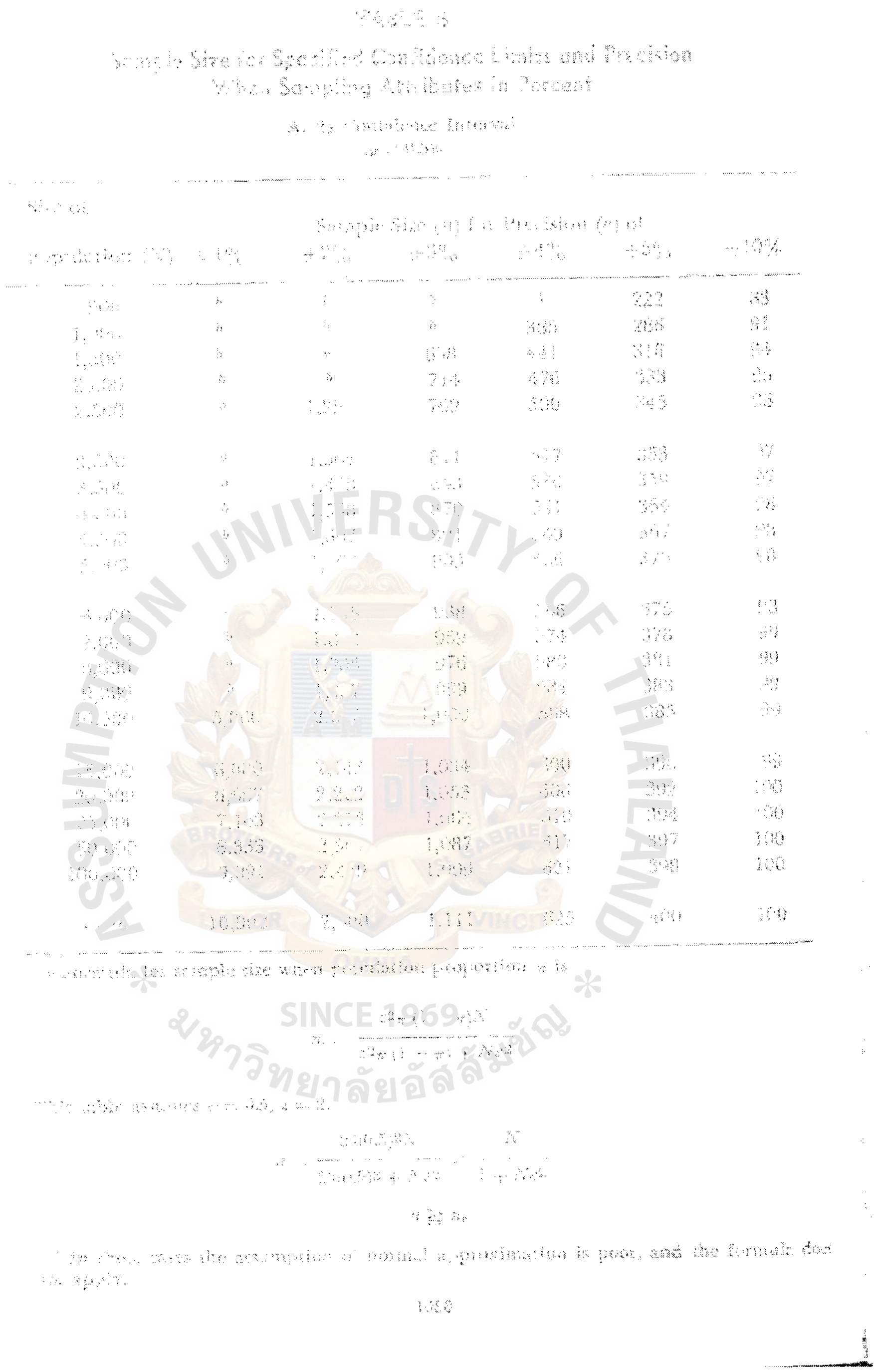

TABLE 6

Sample Size for Specified Confidence Limits and Precision When Sampling Attributes in Percent

A. 95% Confidence Interval

p = 50%

Size of Population (N)	Sample Size (n) for Precision (e) of ±1%	±2%	±3%	±4%	±5%	±10%
500	a	a	a	a	222	83
1,000	a	a	a	385	286	91
1,500	a	a	638	441	316	94
2,000	a	a	714	476	333	95
2,500	a	1,250	769	500	345	96
3,000	a	1,364	811	517	353	97
3,500	a	1,458	843	530	359	97
4,000	a	1,538	870	541	364	98
4,500	a	1,607	891	549	367	98
5,000	a	1,667	909	556	370	98
6,000	a	1,765	938	566	375	98
7,000	a	1,842	959	574	378	99
8,000	a	1,905	976	580	381	99
9,000	a	1,957	989	584	383	99
10,000	5,000	2,000	1,000	588	385	99
15,000	6,000	2,143	1,034	600	390	99
20,000	6,667	2,222	1,053	606	392	100
25,000	7,143	2,273	1,064	610	394	100
50,000	8,333	2,381	1,087	617	397	100
100,000	9,091	2,439	1,099	621	398	100
∞	10,000	2,500	1,111	625	400	100

The sample size when population proportion p is

$$n = \frac{z^2 pqN}{e^2(N-1) + z^2 pq}$$

This table assumes p = .50, z = 2.

$$n = \frac{4(0.5)(0.5)N}{4(0.5)(0.5) + e^2(N-1)} = \frac{N}{1 + Ne^2}$$

$$q = 1 - p$$

a In these cases the assumption of normal approximation is poor, and the formula does not apply.

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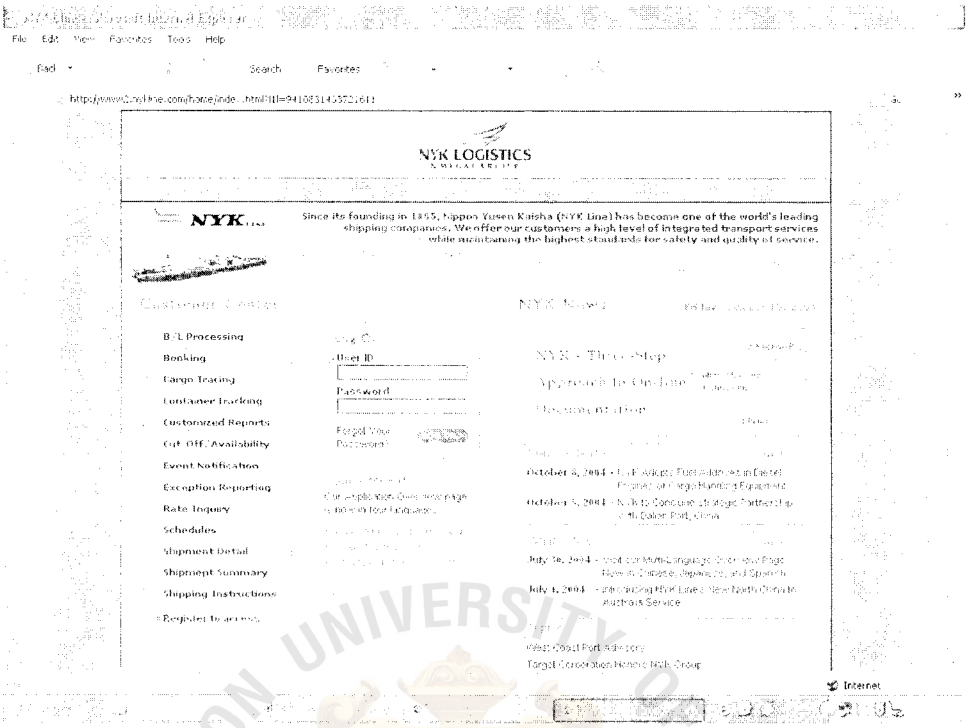
Figure B.1. Sample Size for Specified Confidence Limits and Precision.


File Edit View Favorites Tools Help
Back Search Favorites
http://www2.nykline.com/home/index.html?ID=9410831453721611
NYK LOGISTICS
NYK
Customer Center
B/L Processing
Booking
Cargo Tracing
Container Tracking
Customized Reports
Cut-Off/Availability
Event Notification
Exception Reporting
Rate Inquiry
Schedules
Shipment Detail
Shipment Summary
Shipping Instructions
Register to access
User ID
Password
Forgot Your Password?
NYK News
Internet

Since its founding in 1885, Nippon Yusen Kaisha (NYK Line) has become one of the world's leading shipping companies. We offer our customers a high level of integrated transport services while maintaining the highest standards for safety and quality of service.

NYK - Three-Step Approach to On-line Documentation

Our Application Overview page is now in four languages.

October 8, 2004 - NYK Adopts Fuel Additives in Diesel Engines of Cargo Handling Equipment

October 5, 2004 - NYK to Conclude Strategic Partnership with Dalian Port, China

July 16, 2004 - Visit our Multi-Language Overview Page Now in Chinese, Japanese, and Spanish

July 1, 2004 - Introducing NYK Line's New North China to Australia Service

West Coast Port Advisory

Target Corporation Honors NYK Group

Figure B.2. NYK Web Site.

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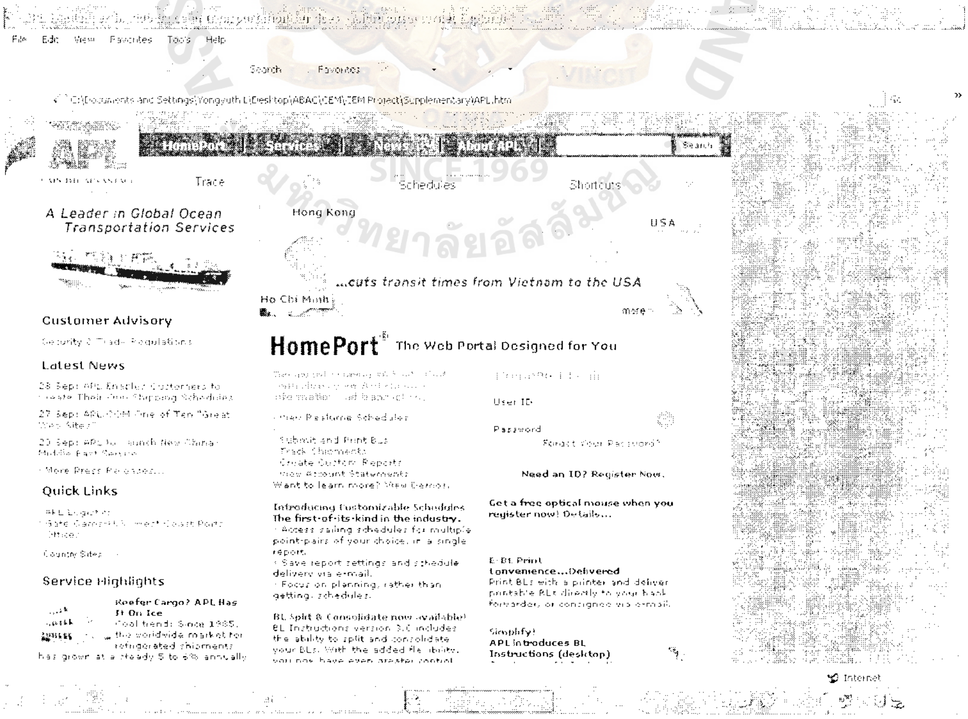
File Edit View Favorites Tools Help
Search Favorites
C:\Documents and Settings\Yongyuth L\Desktop\ABAC\CEM\CEM Project\Supplementary\APL.htm
APL
HomePort
Services
News
About APL
Search
Trace
Schedules
Shortcuts
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USA
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more
User ID
Password
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...cuts transit times from Vietnam to the USA

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Submit and Print BLs
Track Shipments
Create Custom Reports
View Account Statements
Want to learn more? View Demos.

Need an ID? Register Now.

Get a free optical mouse when you register now! Details...

Introducing Customizable Schedules
The first-of-its-kind in the industry.
- Access sailing schedules for multiple point-pairs of your choice, in a single report.
- Save report settings and schedule delivery via e-mail.
- Focus on planning, rather than getting, schedules.

BL Split & Consolidate now available!
BL Instructions version 3.0 includes the ability to split and consolidate your BLs. With the added flexibility, you now have even greater control

E-BL Print
Convenience...Delivered
Print BLs with a printer and deliver printable BLs directly to your bank, forwarder, or consignee via e-mail.

Simplify!
APL introduces BL Instructions (desktop)

Figure B.3. APL Web Site.

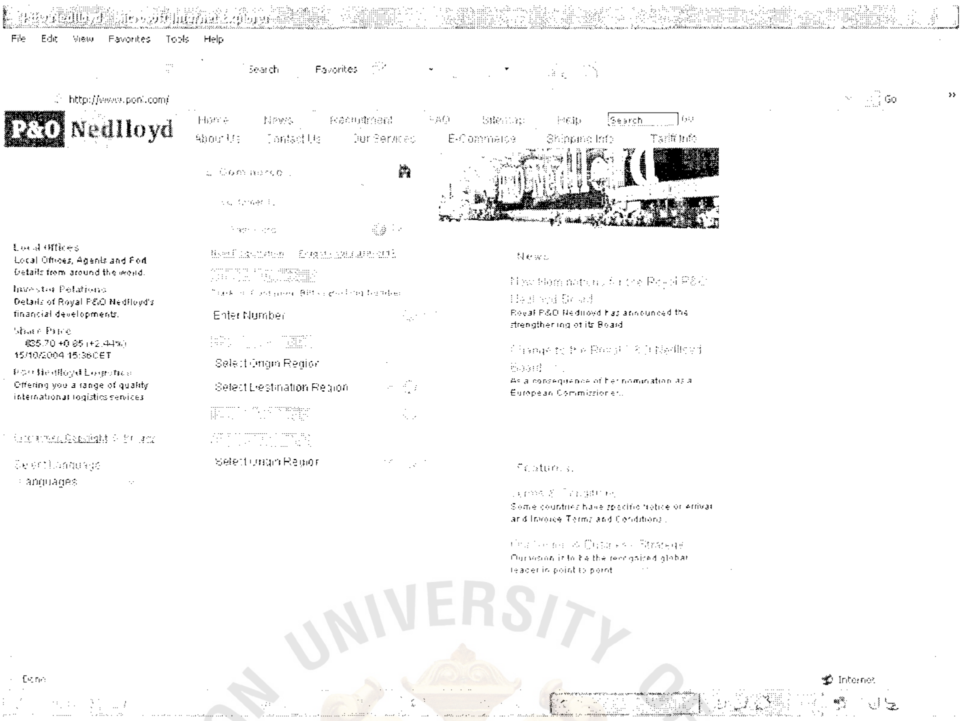

File Edit View Favorites Tools Help
Search Favorites
http://www.ponl.com/
Go
P&O Nedlloyd
Home News Recruitment FAQ Sitemap Help Search
About Us Contact Us Our Services E-Commerce Shipping Info Tariff Info
Local Offices
Local Offices, Agents and Port Details from around the world.
Investor Relations
Details of Royal P&O Nedlloyd's financial developments.
Share Price
P&O Nedlloyd Logistics
Offering you a range of quality international logistics services
Select Language
Languages
Enter Number
Select Origin Region
Select Destination Region
Select Origin Region
News
Royal P&O Nedlloyd has announced the strengthening of its Board
As a consequence of her nomination as a European Commissioner...
Features
Some countries have specific notice of arrival and Invoice Terms and Conditions.
Our vision is to be the recognised global leader in point to point
Done
Internet

Figure B.4. P&O Nedlloyd Web Site

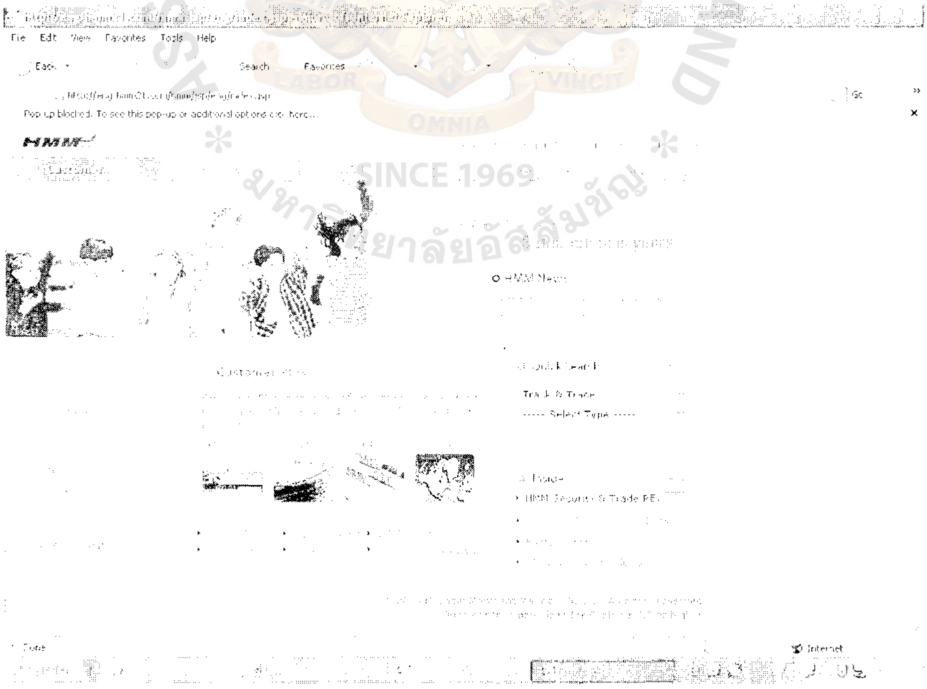
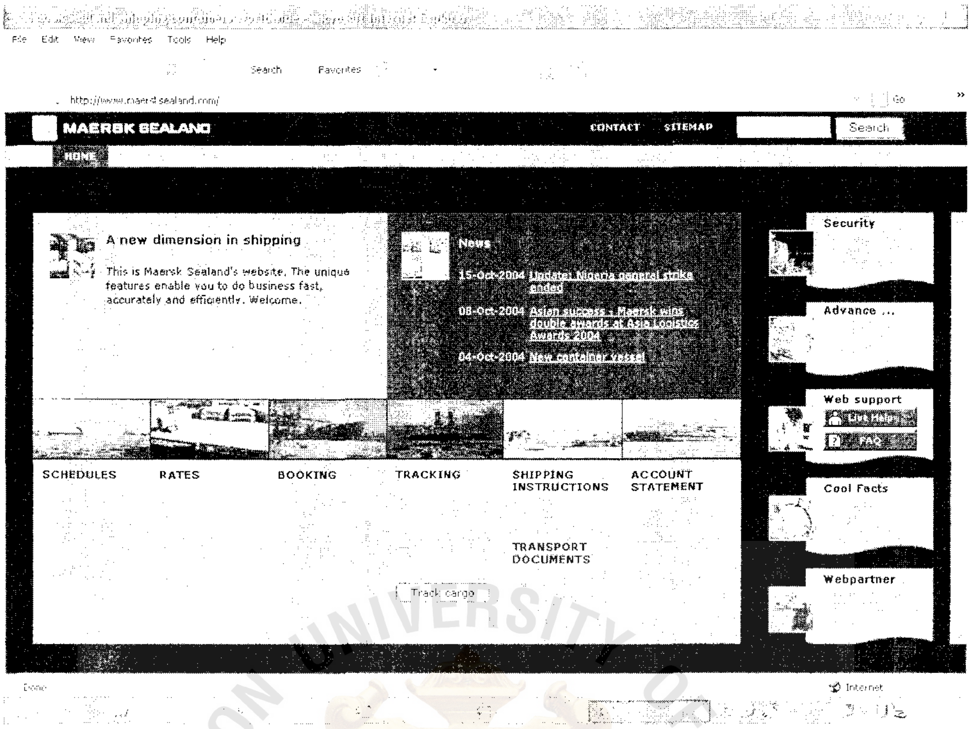

File Edit View Favorites Tools Help
Back Search Favorites
Go
Pop-up blocked. To see this pop-up or additional options click here...
HMM
HMM News
Quick Search
Track & Trace
----- Select Type -----
Done
Internet

Figure B.5. Hyundai Merchant Marin Web Site


File Edit View Favorites Tools Help
Search Favorites
http://www.maersksealand.com/
Go
MAERSK SEALAND
CONTACT
SITEMAP
Search
HOME
News
Security
Advance ...
Web support
FAQ
Cool Facts
Webpartner
SCHEDULES
RATES
BOOKING
TRACKING
SHIPPING INSTRUCTIONS
ACCOUNT STATEMENT
TRANSPORT DOCUMENTS
Track cargo
Done
Internet

A new dimension in shipping

This is Maersk Sealand's website. The unique features enable you to do business fast, accurately and efficiently. Welcome.

15-Oct-2004 Update: Nigeria general strike ended

08-Oct-2004 Asian success : Maersk wins double awards at Asia Logistics Awards 2004

04-Oct-2004 New container vessel

Figure B.6. Maersk Sealand Web Site.

File Edit View Favorites Tools Help
Back
Search Favorites
http://www.hanjin.com/home/main.jsp
Go
LOGIN
QUICK TRACK & QUICK SCHEDULE
HANJIN
Done
Internet

Figure B.7. Hanjin Web Site

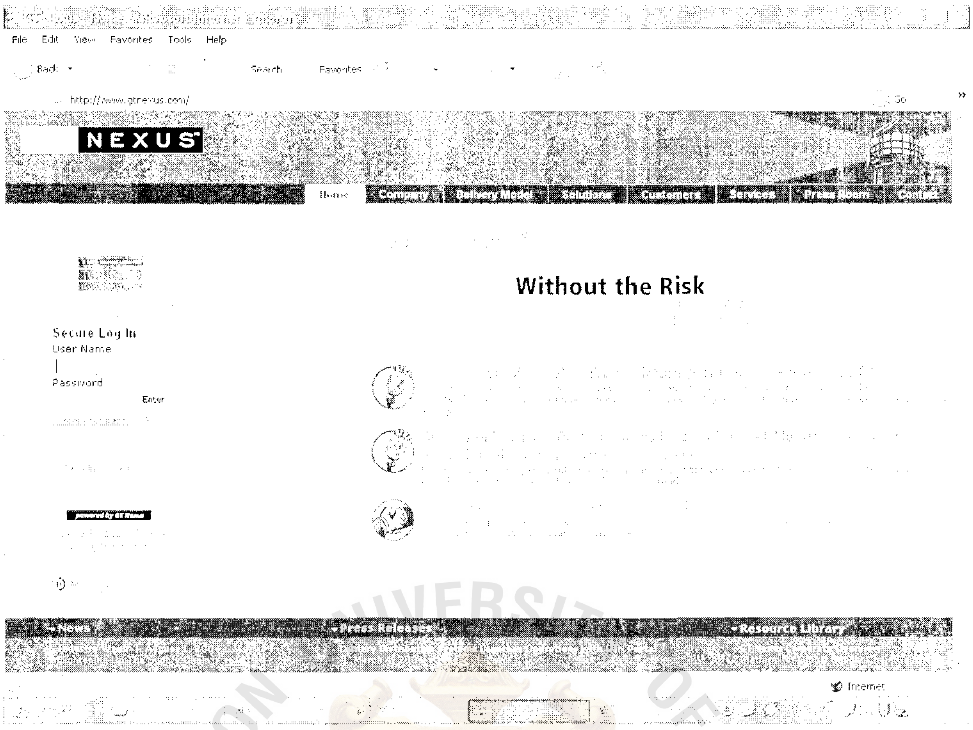

File Edit View Favorites Tools Help
Back
Search
Favorites
http://www.gtnexus.com/
Go
NEXUS
Home
Company
Delivery Model
Solutions
Customers
Services
Press Room
Contact
Without the Risk
Secure Log In
User Name
Password
Enter
powered by GT Nexus
News
Press Releases
Resource Library
Internet

Figure B.8. GT NEXUS Web Site.

ASSUMPTION UNIVERSITY OF THAILAND
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7. http://www.gtnexus.com

8. http://www.customs.go.th

9. http://www.yahoo.com

10. http://www.google.com

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