INFLUENCING FACTORS OF SURVIVAL ISPs IN COMPETITIVE ENVIRONMENT

by

Ms. Kanchana Sribenjarat

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

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

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Academic Year	November 2001

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ABSTRACT

The researcher has conducted a study on influencing service quality factors of Thailand ISP (Internet Service Provider) in relation to the ISP survival. The main problems of this study are to find out the association between the influencing service quality factors and the survival of the ISP in the competitive environment. This research conducted the survey by distributing questionnaires to 400 Internet users in 4 main areas in Bangkok. The potential targets are expected to be located in Pantip Plaza, Seri Center, IT Mall fortune town, and Tawanna IT City. From the correlation test in SPSS by using crosstabs with Pearson Chi-square test the researcher found out that five variables of the Hypothesis are related to the ISP survival, which are as follows:

(1) Tangibles refer to the ISP infrastructure that enables the connection between customer and ISP.

(2) Access refers to the ease connectivity to the server.

(3) Competence refers to the speed of transferring information and ability to compete with competitors.

(4) Responsiveness refers to the willingness of the ISP in helping customer and providing prompt service.

(5) Understanding the customer refers to the distribution of product package and product segmentation.

In this research was found that out of this five variables, Understanding the customer (Availability of Product, Promotion, Advertising, and Product Segmentation based on usage rate). Understanding the customer has proven to have the strongest relationship towards ISP survival. The value that has the lowest relationship towards the ISP survival is Access (re-connect to server and rarely downs).

ACKNOWLEDGEMENTS

I would like to thank Mr. Smith Tungkasmit for his valuable insights and comments towards this research and most importantly for his practical knowledge in conducting this research.

I also have to thank my Advisory Committee members: Prof.Dr. Srisakdi Charmonman, Dr. Chamnong Jungthirapanich, and Dr. Duangnaid Narksomboon for their advice and comments through out my research.

I would like to give special thanks to my family for their encouragement. My sisters and my brothers who help me to collect the data from the survey and help me in coding the data and my parents who support me to achieve my educational goals.

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I. INTRODUCTION

1.1 Significance

The development of the Internet in Thailand began in mid 1987. A year later, the Australian International Development Plan (EDP) assisted Prince of Songkhla University (PSU) in the south of Thailand in setting up dial-up e-mail connectivity to the University of Melbourne. It was in 1993 that the Internet was first opened to commercial use. Before that, it was only used by the nonprofit sectors, such as academic, state, and military institutions. By 1995, the usage had grown extensively; the Internet Commercialized and expanded outside the academic realm to the general population. Currently, the Internet is available in almost every big city in Thailand, especially where universities are located. Anyone who can afford it can utilize the commercial Internet Services that are available and growing throughout the country

As the economic developments in recent years has seen the rapid increase in the IT sector (Computing & Communications), therefore, much of the investments have been directed towards the improvement of the technological industry. This trend also includes the Internet industry.

Nowadays the number of Thai people using Internet is five times greater than three years ago. Number of Internet Users In the most recent study of Internet use here to date (Bangkok Post on September 22, 1999), the Thailand Development and Research Institute (TDRI) predicts that the number of users will reach 2.7 million users by the year 2005, more than four times today's estimated user base The result also showed that the National Economic and Social Development Board's aim of having 12 million Internet subscribers, or 20 percent of the population, in the year 2008.

Though we are aware whether the forecast proves correct would depend on a number of major factors, including government policy to seriously promote Internet usage within schools and government agencies, and liberalizing the market by ending the current ISP licensing system or whether the ISPs will get financial assistance from foreign investors and stock markets, so the number of users will keep on increasing and the internet usage situation in Thailand will be improved day by day.

Currently, There are 22 private ISPs in active operation in Thailand as follows:

(1) A-net

(2) Asia Access Internet Service

(3) Asia Infonet

(4) A New Corporation

(5) C.S. Communications

(6) Cable & Wireless Network (Thailand)

(7) Chomanan Worldnet

(8) Data Line Thai

(9) E-Z Net

(10) Far East Internet

(11) Internet Thailand

(12) Jasmine Internet

(13) KSC Commercial Internet

(14) Loxley Information Service

(15) Pacific Internet (Thailand)

(16) Roynet

(17) Samart CyberNet

(18) Siam Global Access

(19) S awadee Internet Service

(20) The Idea Net

(21) Vianet

(22) Worldnet & service (appricot)

ISP Survival under the Economic Recession

For the service-based companies, the influencing service quality factors are the lifeblood that supports the competitive advantage and long term profitability. This comes out with the company survival.

In addition, the interview with executives of five ISP by Internet Today magazine reveals that the economic recession has a vital effect on their business. Most of them agree that the economic recession forced them into the difficulties because they have to pay for the higher leased-line cost. The cost of the leased-line increases about 40% from the devaluation of currency, associate with the domestic economic recession, the ISP lose their sale.

Dimensions of Influencing Service Quality Factors

This research is founded on the list of influencing service quality factors dimensions suggested by A. Parasuraman, Valarie A. Zeithaml, and Leonard L. Berry to be a good starting point for providing more details to a description of influencing service quality factors. They describe the dimensions of service quality factors as Reliability, Responsiveness, Competence, Access, Courtesy, Communication, Credibility, Security, Understanding the Customer, and Tangibles.

Although the service quality factors model suggested by A. Parasuraman, Valarie A. Zeithaml, and Leonard L. Berry (1990) has proposed 10 dimensions of service

quality factors; due to the context in this research, which is about influencing service quality factors were provided by Internet Service Provider (ISP), Tangible, Competence Responsiveness, Access, and Understanding the customers are selected to match this research study.

1.2 Objectives

(1) To investigate whether the influencing factors is related to the survival of ISPs in high competitive environment.

(2) To find out the associate between the influencing factors and the profit (as a measurement of ISP survival) of the ISP.

1.3 Background

During the past year the Internet Service Providers (ISP) have been experiencing difficulties in competing and furthermore surviving in the fast changing Internet industry. The researcher decided to conduct this research that will reveal the influencing service quality factors that would constitute to the five aspects of service quality which are Tangibles — the ISPs infrastructure that enables the connection between customer and ISPs (number of phone lines and network), Access — approachability and ease of connectivity (easy to dial-up and number always free), Competence — possession of the company ability to compete with it competitors (upload / download of the information, e-mail capacity and call rate charge), Responsiveness — the willingness to help customers and provide prompt service, Understanding the customer — making the effort to know customers and their needs (availability of product, promotion, advertising, product segmentation base on usage rate). Once, these factors are identified each ISP will be able to formulate the appropriate strategies in order to match the perceived service and expected service.

Finally, this will help ISPs to compete and survive in the competitive environment.

1.4 Scope

This research covers the study how ISPs survive in high competitive environment that will include definitions, theories, and the survey methodology to identify influencing service quality factors of survival ISPs in Business Thailand.

The target population is defined as general people around those four areas (Panthip Plaza : Petchburi road, Tawanna IT city : Bangkapi, IT mall Fortune Town : Ratchadapisek road and Seri Center : Srinakarin road) who will be asked first whether they are using Internet or not. Then, the quota sampling will be employed because only persons who use Internet will be selected in answering the questionnaire based on judgmental basis 100 questionnaires for each area.

1.5 The Hypothesis Statements

A hypothesis is an assumption or speculation of population parameter to a possible answer to a research question. The characteristics of hypothesis are (Green,Tull,and Albaum 1988):

(1) Hypothesis should be a statement about the relation between 2 or more variables.

(2) Hypothesis should carry clear statement for testing relation. Variables must be measurable.

A hypothesis testing consists of 6 steps as follows:

Step one: Formulate the null hypothesis Ho.

Step two: Formulate the alternative H_1 in statistical teens

Step three: Set the level of the significance and the sample size n.

Step four: Select the appropriate test statistic and the reject rule.

Step five: Collect the data and calculate the test statistic.

Step six: If the calculated value of the test statistic falls in the rejection region, then reject Ho if the calculated value of the test statistic doesn't fall in the rejection region, then do not reject H_o (Billingsley and Huntsberger 1996).

As this research is to study influencing service quality factors of ISPs survival, therefore the researcher sets 17 hypotheses to match on this research for analyzing influencing service quality factors of ISPs survival as follows:

First:

H_o: There is no relationship between number of telephone line and ISP survival.

H_1: There is relationship between number of telephone line and ISP survival.

Second:

H_o: There is no relationship between network and ISP survival.

H_1: There is relationship between network and ISP survival.

Third:

H_o: There is no relationship between phone lines always free and ISP survival.

H_1: There is relationship between phone lines always free and ISP survival.

Fourth:

H_o: There is no relationship between the easily set up program and ISP survival.

H_1: There is relationship between the easily set up program and ISP survival.

Fifth:

H_o: There is no relationship between special high-speed connection and ISP survival.

H_1: There is relationship between high-speed connection and ISP survival.

Sixth:

H_o: There is no relationship between re-connect to server and ISP survival.

H_1: There is relationship between re-connect to server and ISP survival.

Seventh:

H_o: There is no relationship between server rarely downs and ISP survival.

H1: There is relationship between server rarely downs and ISP survival.

Eighth:

H_o: There is no relationship between distance call rates equal to city call rate and ISP Survival.

H1: There is relationship between distance call rates equal to city call rate and ISP Survival.

Ninth:

H_o: There is no relationship between speed of information transferring and ISP survival.

HI: There is relationship between speed of information transferring and ISP survival.

Tenth:

H_o: There is no relationship between E-mail capacity ISPs provided and ISP survival.

H_1: There is relationship between E-mail capacity ISPs provided and ISP survival.

Eleventh:

H_o: There is no relationship between prompt customer and technical support and ISP survival.

HI: There is relationship between prompt customer and technical support and ISP survival.

Twelfth:

H_o: There is no relationship between 24 hrs. technical support service and ISP survival.

H_1: There is relationship between 24 hrs. technical support service and ISP survival.

Thirtieth:

H_o: There is no relationship between online supporting and ISP survival.

H_1: There is relationship between online supporting and ISP survival.

Fourteenth:

H_o: There is no relationship between product available to buy and ISP survival.

H_1: There is relationship between product available to buy and ISP survival.

Fifteenth:

H_o: There is no relationship between advertising and ISP survival.

H1: There is relationship between advertising and ISP survival.

Sixteenth:

H_o: There is no relationship between promotion and ISP survival.

H_1: There is relationship between promotion and ISP survival.

Seventeenth:

H_o: There is no relationship between product segmentation and ISP survival.

H_1: There is relationship between product segmentation and ISP survival.

1.6 **Delimitation**

This research focuses only on service quality aspect, which are described as tangible, access, competence, responsiveness and understanding customer; and its relationship with ISPs survival.

The questionnaire 400 sets (100 for each location) will be distributed and collected between 1st to 30th August 2001, time 12:30 — 17.00 p.m.

This research would be conducted within Bangkok, and the target area where the researcher makes a survey is Panthip Plaza: Petchburi road, Tawanna IT city: Bangkapi, IT mall Fortune Town: Ratchadapisek road and Seri Center: Srinakarin road. Therefore, the finding and conclusion would only represent the sample from these four locations.

1.7 Deliverables

This research uses questionnaires to collect information. The results can be tools for evaluating attitudes of people against time management. Readers can study this method in order to use time efficiently and effectively.

1.8 Definition of Terms

ISP: Internet Service Provider (ISP) is the company that provides one of the permanent links that make up the Internet and sells connections to private user.

Network: A collection of objects or concepts that are interconnected, either physically (e.g. communications network, local area network) or logically (e.g. associative network) and also used in the abstract sense to mean modes of interaction between people.

Access Network: The part of a communication network that enables users to connect to it and request its service (as opposed to the transport network that serves to carry the information).

Connection Speed: The connection speed of end users to ISPs, which is usually qualified in terms of bit per second.

Telephone Line: Number of telephone lines, which ISPs provide their members, more telephone lines, will make members easier to connect to the ISPs Internet service.

Online: Any part of a computer-based system that is under the direct of the main computer system involved, normally the one running the applications programs, thus the terminals connected to a transaction processing system via a network are described as online.

Bandwidth: The frequency range of transmission channel, usually expressed in kiloHertz(KHz) or megaHertz(MHz).

Email (electronic mail): It is the sending and receiving mail services used on the Internet.

Calling rate: A measure of the use a device makes of a communications network normally expressed as a calling rate of so many calls per hour of so many duration

Internet: It is the worldwide network of computer links which allows computer users to connect with computers all over the world, and which carries Electronic mail.

Internet Account: The Internet users were applied to be member of ISPs, will get their own the Internet account with those particular ISPs.

Server: It is apart of computer network that does a particular task, for example storing or processing information.

Computer: It is a machine that can be programmed to process data (input) into useful information (output). A computer system requires four main aspects of data handling-input, processing, output, and storage.

II. LITERATURE REVIEW

2.1 Overview

Internet Thailand was the first ISP in Thailand. The service went into commercial operation on March 1st, 1995, as a natural progression of the Thailand Scientific, Academic and Research Network and the quasi-commercial Thailand Internet Service. Four other ISPs started business as our customers. This ISPs have the solid networking experience to maintain a reliable service. The Communications Authority of Thailand (CAT) currently sets the rules which contain a provision that any ISP (Internet Service Provider) operating in Thailand is a joint venture between the business and CAT. In addition, CAT has set up the following conditions: a joint venture must have registered capital of at least 15 million Baht CAT's shareholder and employee shareholder percentages must be 32 percent and three percent respectively, CAT's equity share has to be paid for by the joint venture partner, and two representatives from CAT sit on the Board of any joint venture. Dividends paid to shareholders must total at least 50 percent of net profit. And last, but certainly not least, any joint venture must use telecomm equipment and services provided by CAT. However, voice telephone and fax services over the Internet are not permitted. This restriction of Internet services to ban voice telephone and fax, both of which are large sources of income for telephone monopolies in developed and developing countries alike, is not unique to Thailand. But if the definition of a fully functional Internet is to include all means of transmitting information, then excluding the possibility of voice telephone and fax transmission amounts to a kind of hobbling. It is not in itself directly censorship-because it is not aimed at any specific speech or group of speakers but rather at the possibility of using

the Internet to go around the monopoly provider's control of the telecomm system(s). And CAT's equity position on all ISPs in Thailand does give it the right, at least in theory, to put up a roadblock against any kind of unpopular speech online, regardless of reason or content.

CAT is supposed to be privatized in the near future. Then it will be a private company holding shares in various Internet and telecomm ventures. However, there has been no mention of using privatization as a way of easing CAT out of the role of overseer of Thai ISPs.

2.2 Influencing Service Quality Factors on ISPs Survival

This research is founded on the list of influencing service quality factors dimensions suggested by A. Parasuraman, Valarie A. Zeithaml, and Leonard L. Berry to be a good starting point for providing more details to a description of influencing service quality factors. They describe the dimensions of service quality factors as Reliability, Responsiveness, Competence, Access, Courtesy, Communication, Credibility, Security, Understanding the Customer, and Tangibles.

Although the service quality factors model suggested by A. Parasuraman, Valarie A. Zeithaml, and Leonard L. Berry (1990) has proposed 10 dimensions of service quality factors, however due to the context in this research, which is about influencing service quality factors provided by Internet Service Provider (ISP), tangible, access, competence, responsiveness, and understanding the customers are selected to match this research study.

First: Tangible

First of all we should understand the value of Tangible. Tangible is the appearance of physical facilities, equipment, personnel, and communication materials

(A. Parasuraman, Valarie A. Zeithaml, and Leonard L. Berry 1990).

In this research Tangible refer to the ISP infrastructure that enables the connection between customer and ISP:

(1) Number of telephone lines

(2) Sufficient of Networks, International linkage.

Current Situation ISPs on Tangible Factor

The Telephone Organization of Thailand (TOT) expects to lease the network to many of Thailand's Internet service providers (ISPs), including KSC Commercial Internet, Freei.net, and Loxley Information Services. The network will provide low-cost connections for dial-up Internet users throughout Thailand. ISPs simply built an Internet Protocol (IP) network. With their IP network, they add some value. Their networks have wider coverage than other ISPs, and every phone call can be charged the same as a local phone call. (From Dr. Nopparat Maytsaveekulchai, a senior director at TOT: October 11, 2000).

In addition to offering cost-efficient service, the network represents a new option for ISPs in Thailand that have until now been able to gain international gateway access only through The Telephone Organization of Thailand (TOT) the Thailand's other state-owned telecom company.

The network will incorporate a leased fiber optic link to Malaysia's Time Telecom and satellite connections via Hutchinson Corporation in Hong Kong.

Now they have their own international gateway connection and for those who want a link, they can provide Internet service automatically to their customers. For several months the two state agencies, TOT and CAT, had been embroiled in a dispute about network leasing rights for ISPs. CAT has controlled the international gateway and

required Thailand's private ISPs to turn over 32 percent of their stock for access. Two months ago, TOT attempted to sub-lease lines to ISPs for one million baht per year.

CAT protested the move, which had been hailed by some industry analysts as an effective way of freeing up the tightly regulated Thai Internet market. CAT claimed it had exclusive rights to the ISP market because ISPs required the international gateway.

Second: Access

Access is the approachability and ease of contact (A. Parasuraman, Valarie A. Zeithaml, and Leonard L. Berry 1990), in this research access refers to ease connectivity to the server:

(1) Line always free

(2) Easily set-up programs for user.

(3) Special high-speed connection such as satellite Internet, cables modem.

(4) Users rarely have to reconnect to server.

(5) Server-down problem.

Current Situation ISPs on Access Factor

Internet Thailand server provides 200 Mbps link to the Internet Information Research (IIR) or PIE and 512kbps link to the Local Internet Exchange (LIX or TH-NIX) assures customers of fast and reliable connectivity with other ISPs in Thailand. Internet Thailand also offers an ultra-fast connection to the largest on-line information pool in the country - the ThAISARN Public Internet Exchange **(PIE).** PIE comprises of national information servers operated and maintained by the National Electronics and Computer Technology Center (NECTEC) and many other government agencies. For instance, the NECTEC WorldWide Web server contains 150,000 hypertext documents, all of which are hard- to- find information about Thailand. NECTEC also runs Multimedia servers and the NECTEC FTP server contain 50GB with 42GB filled of

downloadable software and information of interest. Internet Thailand users can access all of this information, as fast as if the information were sitting on Internet Thailand's backbone.

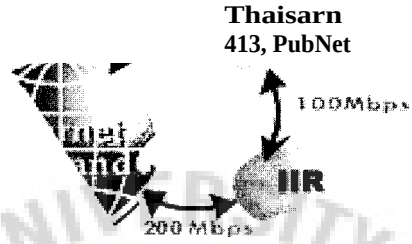

Figure 2.1. ThaiSarn Public Internet.

Third: Competence

Competence is the Possession of the required skills and knowledge to perform the service (A. Parasuraman, Valarie A. Zeithaml, and Leonard L. Berry1990). In this research Competence refers to the speed of transferring information and ability to compete with competitors:

(1) Time to upload/download information form server.

(2) Email capacity is provided by ISP.

(3) Distance call rate is equal to city call rate.

Current Situation ISPs on Competence Factor

Now TOT's network will be available for ISPs, lowering dial-up charges for Internet subscribers outside Bangkok. Using the network, subscribers can access Internet service at a flat rate of 3 Bahts(US$.07) per connected call, about 80 percent less than average long-distance call rates in Thailand. Cisco's Hatari TOT leased the

routers for its IP network from Hatari, a subsidiary of Cisco Systems, for Bt 3 billion (US$71.4 million). A TOT representative said the company had set up hubs in 20 of Thailand's 76 provinces and plans to install hubs in the rest of the country's provinces by the end of the year.

Forth: Responsiveness

Responsiveness is the Willingness to help customers and provide prompt service (A. Parasuraman, Valarie A. Zeithaml, and Leonard L. Berry 1990). Therefore, the Responsiveness means to the willingness of the **ISP** in helping customer and providing prompt service:

(1) Customer service and technical support provided by ISP.

(2) 24-hour technical support.

(3) Online supporting website.

Current Situation ISPs on Responsiveness Factor

Thailand's National IT Committee (NITC) has announced measures for Internet service providers (ISPs) to tackle what it considers inappropriate content on Web sites. Thailand government telecom agencies, the Communications Authority of Thailand and the Telephone Organization of Thailand, have been instructed to draft a letter to all ISPs and telecom operators to standardize the time on their system clocks. This will help with information tracking, according to the committee. All ISPs will then be required to keep a log file of an Internet user's access and their caller ID for at least three months. The committee expects ISPs to react immediately when they are informed of inappropriate content on the Web and to also prevent access to the sites. ISPs will also be instructed to update their terms of use to add a clause on customer responsibility for both business and individuals. The NITC has issued a guideline for the Royal Police Department to cooperate with technical and legal experts and to set up an e-mail hotline. Its role will

be to analyze reported information about Web sites and cooperate with ISPs and webmasters to block inappropriate content.

Fifth: Understanding the customer

Understanding the customer is the Making the effort to know customers and their needs (A.Parasuraman, Valarie A.Zeithaml, and Leonard L.Berry :1990). For this research it means that the distribution of product package, product segmentation, advertising, and promotion:

(1) Availability of product

(2) Promotion

(3) Advertising

(4) Product segmentation based on usage rate

Current Situation ISPs on Understanding the Customer Factor

SchoolNet content creation and promotion campaign

During the course of developing SchoolNet Thailand, it was found that major hindrance for schools in getting the benefit from the global knowledge is due to four factors. These are the (lack of) computers, (lack of) access to the Internet, (lack of) relevant contents for schools in Thai language and the (lack of computer-fluent) teachers. While the Ministry of Education is solely responsible for the first factor, i.e., it has to equip the classrooms with computers and courseware, the other three factors are hardly provided by the ministry.

SchoolNet project identified these problems since 1998. The Internet access was quickly solved by the royal peindssion to use the Golden Jubilee Network to access SchoolNet. Almost all of SchoolNet budget at NECTEC, being very small, was directed to the contents creation program and teachers' training.

As from January 2000, a digital library for SchoolNet was successfully created. The digital library consists of more than 1,000 articles in Thai language, which are classified and searchable from the Internet. The articles were collected and prepared by schoolteachers who joined in the course "Building Digital Library for SchoolNet" set up by Kasetsart University and the Institute for the Promotion of Teaching Science and Technology.

Apart from the digital library, several schools developed their web sites with useful infoiniation and excellent educational materials. NECTEC also promotes international cooperation projects such as the GLOBE program, ThinkQuest, and AT&T Virtual Classroom.

For teachers' training, NECTEC provided pilot courses and teaching materials for Raj abhat Institute, which, in turn, will teach schoolteachers in SchoolNet project. In addition to this normal Internet course, NECTEC also provides a special course on Linux-SIS, our own distribution of Linux for use as School Internet Server. SIS is very popular in Thailand due to its excellent documentation in Thai language, simple to install CD-ROM and web-based server management without the need to know UNIX commands. SIS training courses are always in constant demand from schools looking for reliable Internet server with the lowest cost.

Table 2.1. ISPs in Thailand Sorted by the Date Registration Approved by the Ministry of Commerce.

Registration Approved by Ministry Of Commerce	Registration No.	Name of Company	Capital, Share and Major Shareholder
1. Jun 7, 1994	(2) 2414/2537	Internet KSC Co., Ltd.	Capital 100 MBht, 10 Million SharesDr. Kanokwan Wongwatanasin 45% Prof.Dr. Srisakdi Charmonman 30%Jasmine International Co., Ltd. 25%
2. July 20, 1994	(1)1816/2537	C.S. Communication Co.,Ltd. (CS Internet)	Capital 10 MBht, 1 Million SharesShinawatra Satellite Public Co. 51%CAT 49%
3. Dec 21 1994 ,	(2)5675/2537	KSC Commercial Internet Co., Ltd.	Capital 15 MBht, 1.5 Million Shareslnternet KSC 65%CAT 32%450 CAT Employees 3%
4. Jan 19 , 1995	(3)0202/2538	Info News Co., Ltd.	Capital 15 MBht, 1.5 Million SharesVatachak (Public) Co., Ltd. 65%CAT 32%450 CAT Employees 3%
5. Nov 9, 1995	(1)2867/2538	Chomanan WorldNet Co., Ltd. (Chomanan WorldNet, CMN)	Capital 15 MBht, 1.5 Million SharesChomanan Group Co., Ltd. 65%CAT 32% 450 CAT Employees 3%
6. Dec 8 , 1995	(3)2716/2538	A-Net Co .,) Ltd. (Anew	Capital 15 MBht, 1.5 Million SharesA-News Corporation 53.4%CAT 32.0% 450 CAT Employees 3.0%5 Universities 11.6%
7. Jan 29 1996 ,	(3)243/2539	Info Access Co. Ltd. (Infonews)	Capital 15 MBht, 1.5 Million SharesVatachak (Public) Co., Ltd. 65%CAT 32%450 CAT Employees 3%
8. Feb 19, 1996	459/2539	Loxley Information Services Co., Ltd. (LoxInfo)	Capital 15 MBht, 1.5 Million Shares Loxley Information Holding 65%CAT 32% 450 CAT Employees 3%

Table 2.1. ISPs in Thailand Sorted by the Date Registration Approved by the Ministry of Commerce (Continued).

Registration Approved by Ministry Of Commerce	Registration No.	Name of Company	Capital, Share and Major Shareholder
9. Apr 1, 1996	(1)523/2458	Samart Infonet Co., Ltd. (SamartCybernet)	Capital 15 MBht, 1.5 Million SharesSamart Corporation Co., Ltd. 65%CAT 32%450 CAT Employees 3%
10. Apr 10, 1996	(1)939/2539	WorldNet & Services Co., Ltd. (WorldNet)	Capital 15 MBht, 1.5 Million SharesMultimedia& Services Co., Ltd. 65% CAT 32%450 CAT Employees 3%
11.May13, 1996	(2)2188/ 2539	Data Line Thai Co. Ltd. (Line Thai)	Capital 15 MBht, 1.5 Million SharesDatamat (Public) Co. 65%CAT 32%450 CAT Employees 3%
14. Sep 2, 1996	(2)1904/ 2539	Idea Net Co., Ltd.(Idea Net)	Capital 15 MBht, 1.5 Million SharesThe Idea Corporation 65%CAT 32% 450 CAT Employees 3%
15. Sep 13, 1996	(2)3748/ 2539	Siam Global Access Co., Ltd.	Capital 15 MBht, 1.5 Million SharesSiam Media & Communication 65%CAT 32% 450 CAT Employees3%
16.Mayl 3, 1997	(1)430/2540	Internet ThailandCo.,Ltd (InternetThailand)	Capital 16 MBht, 1.6 Million SharesNational S&T Development Agency(NSTDA) 34% TOT 33% CAT 33%

III. RESEARCH OVERVIEW

3.1 The Research Process

The steps in research are as follows:

Step 1 Identify a problem

Step 2 Define the problem operationally

Step 3 Develop hypotheses or research questions

Step 4 Develop and/or identify techniques or instruments that can be used to gain knowledge about the identified problem.

Step 5 Collect data

Step 6 Analyze the data collected

Step 7 Generate conclusions about the data

Step 8 Report the data in a public arena such as a professional journal or presentation

Step one: Problem / opportunity identification and formulation

Once a problem is recognized, it is important to understand what needs to be examined, it is important to study the nature of problem and the environment surrounding it. We define research objectives. Objectives must be as specific and unambiguous as possible, with no level of ignorance and it should lead to a decision. Often researchers state research objectives in the form of a hypothesis.

Step two: Creating the Research Design

The research design is the plan to be followed to answer the research objectives; the structure or framework to solve a specific problem. Research design always is subject to the various constraints such as research cost, time constraints, etc. A research has to decide whether the research will be descriptive or casual.

Step three: Choosing a basic method of research

There are 2 kinds of data collection that are primary data collection and secondary data collection

Primary Data Collection

Primary data is new data gathered to help solve the problem at hand. It can be gathered information via the method of observation, experimentation and survey research

(a) Observation

Observation is descriptive research that monitors respondents' actions without direct interaction. This approach can avoid much of the biasing factors caused by the interviewer and question structure associated with the survey method. Some forms of data are gathered more quickly and accurately by observation. But only behavior and physical personal characteristics can be examined. Research is not learning about motives, attitudes, intentions or feelings. It can be time consuming and costly if the observed behavior occurs infrequently.

(b) Experimentation

Experimentation research uses an approach where one variable is manipulated and the effect on another variable observed. It is to study 3 things: correlation, appropriate time order of occurrence and the elimination of other possible casual factors. Experiments can be planned in lab or in a field.

(c) Survey research

There are reasons for the popularity of surveys. First is the need to know why people do or do not do something. Second is the need to know how people make decisions. Third is the need to know who makes decisions with the information of demographic or life style perspective. There are many types of surveys that are door-to-door interviewing, executive interview, mall intercept, central location telephone interviews, direct computer interview, self-administered questionnaires, ad hoc (one-shot) mail survey and mail panel. Several factors that determine the selection of a particular survey method are: sampling precision, budget available, need to expose responses to various stimuli, quality of data required, length of questionnaire, necessity of having respondent perform certain specialized tasks, incidence rate, degree of structure of questionnaire and time available to complete survey.

Secondary Data Collection

Secondary data are data that have been previously gathered. Secondary data can be useful in one or more of three ways: in exploratory work, as a news source, or in making decisions. Sources of secondary data are Internet, libraries, trade paper, newsletters, journals and magazines, etc.

Step four: Selecting the sampling procedure

A sample is a subset from a larger population. Define the population of interest. It should include all the people whose opinions, behavior, preferences, attitudes, etc. Which can help in decision-making. Once the population is defined, then determine to use a probability sample or a non-probability sample.

A probability sample is characterized by every element in the population having a known nonzero probability of being selected. Non-probability samples include all samples that are not probability samples.

Step five: Collecting the data

There are 3 ways of collecting the data. They are observation, survey research and experimentation. The researcher must study which method is proper for gathering information. The questionnaire is one method of Survey research approach for data collection.

Step six: Analysis of the data

To interpret and conclude the collected data. Once the questionnaire has been returned from the field, a five-step process takes place. These steps are quality control checks, coding, data entry, machine cleaning and tabulation and statistical analysis. Analysis is to examine the relationship between variables and measure of the degree to which changes in one variable are associated with changes in another.

Step seven: Preparing and Writing the Report

The researcher must prepare the report and communicate the conclusions and recommendations to management. The basic components of a research report are executive summary, detailed introduction, analysis of findings, conclusions, recommendations, methodology and appendices. The report must be as concise as possible and provide enough information for determining easily.

Step eight: Follow-up

The researcher should determine whether the recommendations were followed.

3.2 Questionnaire Design

Improper design can lead to incomplete information, inaccurate data, and higher cost. Criteria for good questionnaire are the questionnaire must provide the necessary decision-making information and the questionnaire should consider the respondent.

The questionnaire development process has 10 steps.

(1) Determine the survey objective

(2) Determine data collection method

(3) Determine question response format

(4) Decide question wording

(5) Establish questionnaire flow and layout

(6) Evaluate the questionnaire and layout

(7) Obtain approval from all relevant parties

(8) Pretest and revise

(9) Prepare final copy

(10) Implementation

Step one: Determine the survey objective

Survey object is the decision-making information sought through the questionnaire. Empathizing with the respondent is critical. This initial stage is the time to make sure that other projects are not tagged onto the study objectives. It is also the point weight budget constraints versus information needs.

Step two: Determine data collection method

Discuss and choose the way to survey data. There are several ways to collect data such as telephone, in-person, mail, etc. Each method will have an impact on questionnaire design.

Step three: Determine question response format

Three majors types used in research are open-ended, closed-ended, and scale response questions.

(a) Open-ended questions are questions that ask respondents to reply in their own words. Using the question words such as what, why, when, why and how. Open-ended questions require probes from the interviewer. They enable respondents to give their general reactions to questions. They can provide the researcher with a rich array of information. They may suggest additional alternatives not listed in a closed-ended question. But they also have limitations. One point is that time and money consuming process of editing and coding. Another point is that it is difficult in interpreting the meaning. The researcher must decide on the proper set of categories and then each response must be evaluated as to which category it falls into. Interviewer bias is also the problem of open-ended questions.

(b) Closed-ended questions are questions that ask respondents to choose from a list of answers. Their advantages are interviewer and coder bias is removed because the interviewer is simply checking a box, circling a category or recording a number. The interviewer simply checks the points on the precoded answers as they are given. Closed-ended questions can be separated into 2 types. Dichotomous questions are two choice answers. Multiple-choice or multichotomous are a list of more than two answers. Limitation of dichotomous question is that frequently the responses fail to communicate any intensity of feeling from the respondent. Disadvantages of multiple-choice are the researcher must spend time generating the list of

possible responses. Another problem is the range of possible answers and any bias list of answers.

Step four: Decide question wording. Question wording must have characteristics as follows:

(a) The wording must be clear and should avoid ambiguous teiminology. Avoid jargon. Avoid double-barred question that means each question should address only one aspect of evaluation. Each question must be understandable to all those participating in the study. The word must have a common meaning to all.

(b) Select words so as to avoid biasing the respondent. The true purpose of the study must be disguised to obtain an unbiased response.

(c) Consider the ability of the respondent to answer the question. To avoid the problem of a respondent's inability to recall, time periods should be kept relatively short.

(d) Consider the willingness of the respondent to answer the question. Embarrassing topics must be asked in the third person. Another method for handling embarrassing information is to state that the behavior or attitude is not unusually prior to asking the question.

(e) Questions relating to respondents' private lives probably should be phrased in a direct, businesslike approach, in a way that suggests this is simply another matter-of-fact question.

(f) Behavior questions must be specific, not generalized.

(g) Questions that involve the respondent's pride must be handled with considerable care so as to avoid incorrect replies.

Step five: Establish questionnaire flow and layout

This step is to sequence and develop a layout for the questionnaire. One question should flow logically from another. Each question should lead to the next. Pride and personal questions should not appear early in the questioning. Sometimes personal or private questions are easier to ask when they are in a context of other easy-to-answer questions. Memory questions must be asked in the right order because the question sequence may possibly lead to biased replies. Below are some guidelines in organizing the questionnaire:

(a) Use the screener questions to identify qualified respondents. The screeners are questions used to identify appropriate respondents.

(b) After obtaining a qualified respondent, begin with questions that are simple, interesting and nonthreatening, easy to answer.

(c) Ask general questions. General questions are covered first to get the person thinking about a concept, company and then to the specifics.

(d) Ask questions that require work in the middle of the questionnaire. Build interest and commitment early to motivate the respondent to finish the rest of the questionnaire.

(e) Insert prompters at strategic points. To insert short encouragement at strategic locations in the questionnaire.

(0 Position sensitive, threatening, and demographic questions at the end. Embarrassing topics should be covered near the end of the questionnaire.

Step six: Evaluate the questionnaire and layout

Several items should be considered:

(a) The need of a given question. Every question must serve a purpose.

(b) The length of questionnaire must not be too long.

(c) The desired information to accomplish the research objectives.

(d) Several key considerations of layout and design of questionnaire are as follows: Appearances of questionnaire should be as professional looking as possible. It should avoid a cluttered look. Allow plenty of space for open-ended responses. Consider color-coding the questionnaires. Instructions printed within the questionnaires should be in capital letters.

Step seven: Obtain approval from all relevant parties

Once the first draft of the questionnaire has been completed, copies of it should be distributed to all parties to welcome some suggestions for development.

Step eight: Pretest and revise

After final managerial approval, the questionnaire must be pretested that is put it through a trial run. Then make changes if necessary.

Step nine: Prepare final copy

Precise typing instructions, spacing, numbering, and precoding must be set up, monitored, and proofread.

Step ten: Implementation

This step is to collect data via distributing questionnaire.

3.3 Measurement and Attitude Scales

Measurement is the process of assigning numbers or labels to things in accordance with specific rules to represent quantities or qualities or quantities of attributes. Measurement is a procedure used to assign numbers that reflect the amount of an attribute, which measure attitudes, age, income and other relevant factors not the event, object or person. Here are some examples of attitude scales that are rank-order scales, staple scales, and Likert scales.

Rank-Order Scales

Rank-order scales are scales in which the respondent compares one item with another or a group of items against each other and ranks them. Rank-order scales are comparative because the respondent is asked to judge one item against another. They are easy to use. Instructions are easy to understand the process typically moves at a steady pace. But if all of the alternatives in a respondent's choice set are not included, the results could be misleading. And the Scale gives the researcher only ordinal data.

The Stapel Scale

The stapel scale is a scale ranging from +5 to —5 that requires the respondent to rate how close and in what direction a descriptor adjective fits a given concept. The technique is designed to measure both the direction and intensity of attitudes simultaneously. Its advantage is that it permits finer discrimination in measuring attitudes. But its problem is that descriptor adjectives can be phrased in a positive, neutral, or negative vein. The choice of phrasing has been shown to affect the scale result and the person's ability to respond.

The Likert Scale

The Likert scale is a scale in which the respondent specifies a level of agreement or disagreement with statements that express a favorable or unfavorable attitude toward the concept under study.

To develop the Likert scale:

(1) The researcher identifies the concept to be scaled.

(2) The researcher assembles a large number of statements

(3) The researcher classifies between favorable and unfavorable attitudes

(4) For each statement, the sample of people respond to each statement

(4.1) Strongly agree (5 points)

(4.2) Agree (4 points)

(4.3) Neither agree nor disagree (3 points)

(4.4) Disagree (2 points)

(4.5) Strongly disagree (1 point)

The researcher refines the scale by eliminating statements where most respondents agree on the answer, as well as statements not discriminating between those who are generally favorable and those who are generally unfavorable.

The 20 to 25 items finally selected are those that are discriminated best between high versus low total scorers in the pretest.

The Likert scale is quick and easy to constructed and can be administered over the phone. But it takes time and money to develop (McDaniel 1998) (Blankenship 1998).

IV. RESEARCH METHODOLOGY

4.1 Sampling Process and Sampling Size Determination

This research uses a questionnaire for data collection. It involves studying the characteristics of some population of interest. It is impossible to survey information from all members of the population. Therefore sampling procedures are employed. Various steps in the sampling process are:

(1) Determining the target population.

(2) Determining the sampling frame

(3) Selecting a sampling procedure

(4) Determining the sample size

Step One: Determining the target population

Population can be defined as the set of all objects that process some common set of characteristics with respect to a marketing research problem (Aaker 1998). A target population for this project is defined as general people around those four areas (Punthip Plaza:Petchburi road, Tawanna IT city:Bangkapi, IT mall Fortune Town:Ratchadapisek road and Seri Center:Srinakarin road) who will be asked first whether they are using Internet or not. Then, the quota sampling will be employed because only persons who use Internet will be selected in answering the questionnaire is based on judgmental basis. The 400 questionnaires of this research (this number comes from sample size part) will be proportionately distributed by 100 questionnaires for each area.

Step Two: Determining the sampling frame

The sampling frame is a list of population members used to obtain a sample. As the Internet is well adapted to a wide range of users regardless of their sex, age, education, occupation, and income. Furthermore, the growth rate through the years is

incredibly high thus; it is very hard to determine the population for this research. In order to over come this difficulty, the researcher concluded that would select the four major areas in Bangkok that would be the best representative of the target respondent. Theses four selected areas are selected because; they are the prime areas in Bangkok for computer hardware, software, and component parts including Internet accessories. The researcher believes that the target respondents would be those people who would come to shop and look for computer accessories there, of which they may not include all of the people who use Internet in Bangkok (non-probability sampling).

Step Three: Selecting a sampling procedure

There are 2 kinds of sampling methods that are probability sampling and non-probability sampling. This research employs the non-probability sampling procedure since the costs and trouble of developing frame are less but it is possible to find the biases and uncertainties. Convenience sampling is carried since it is accessible, convenient, and easy to measure and it is cooperative.

Step Four: Determining the sample size

Factors determining sample size are number of groups within the sample, value and accuracy of information, cost of sample and variability of the population. Sampling size related to precision.

Since the exact population size and population variance is unknown in this research, the sample size will be determined by an interval estimate of a population as the following equation (Andernon D. R., D. J. Sweeney, and T.A. Williams 1996)

$$n = \frac{Z^2 p(1-p)}{E^2}$$

where

n = sample size

E = allowable error (precision required)

Z = Z score based on research's desired level of confidence

P = population proportion that has the required characteristic (or estimate)

For this research;

Table 4.1. Represent the Value to Show the Sample Size.

"p"	Represents 98% of Internet users who stay with their current ISP
"(1-p)"	Represents 2% (100%-98%) of Internet users whom quit using their current
"Z"	Represents 1.96 based on 95% level of confidence. The researcher uses 95% because it locates at the middle between 90% and 99%. For 90%, it is more precision but less confidence; while 99% is less precision but more confidence.
"B"	Represents 3%. The desired maximum sampling error or margin of error for estimating a population proportion is usually 0.10 or less. In national public opinion polls conducted by organizations such as Gallup and Harris, a 0.03 or 0.04 margin of error is generally reported.

$$n = \frac{1.96^2 \ (0.98) \ (1\text{-}0.98)}{0.03^2}$$

$$n = 83.66$$

Therefore, according to the above theoretical equation, the minimum sample size for this research is 83.66. However, this number is not practical in conducting the robust research, thus the researcher came to unanimous decision to use the sample size at 400. Furthermore, this number comply with the range of 30-500 suggest by Roscoe (1975).

4.2 Variables and Hypotheses

There are 2 Kinds of variables

(1) Independent variable is a symbol or a concept that the researcher can manipulate and that is hypothesized to cause of influence the dependent variable.

(2) Dependent variable is a symbol or concept expected to be explained or caused by the independent variable.

The objective of this research is aim to investigate whether the influencing service quality factors is related to the survival of ISPs.

There are five service quality factors influencing of survival ISPs in competitive environment.

(a) Tangible

(b) Access

(c) Competence

(d) Responsiveness

(e) Understanding the customers

Although the service quality factors model suggested by A.Parasuraman, Valarie A.Zeithaml, and Leonard L.Berry (1990) has proposed 10 dimensions of service quality factors, however due to the context in this research, which is about influencing service quality factors provided by Internet Service Provider (ISP). Therefore, tangible, access,

competence, responsiveness, and understanding the customers are selected to match this research study.

This researcher found out that the independent variables are tangible, access, competence, responsiveness, and understanding the customers. The dependent variable is ISP survival in competitive environment.

Elaborating the conceptual model (either by Schematic or Mathematical)

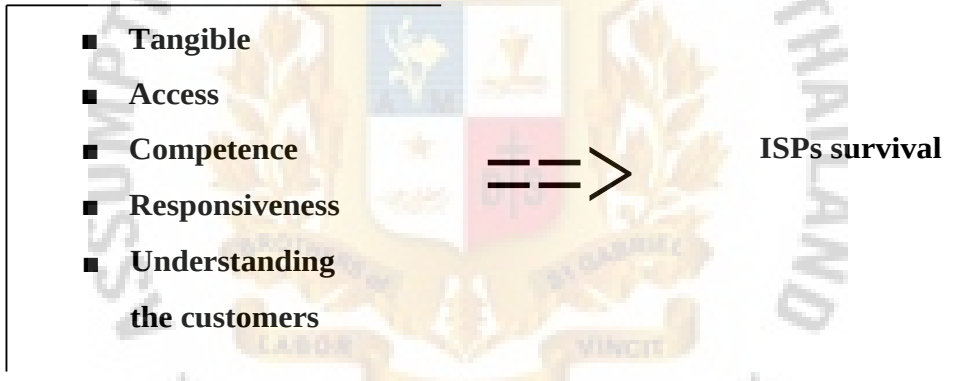

Figure 4.1. Relationship between Independent Variables and Dependent Variable.

Hypothesis

A hypothesis is an assumption or speculation of population parameter to a possible answer to a research question. The characteristics of hypothesis are (Green, Tull, and Albaum 1988):

(1) Hypothesis should be a statement about the relation between 2 or more variables.

(2) Hypothesis should carry clear statement for testing relation. Variables must be measurable.

A hypothesis testing consists of 6 steps as follows:

Step one: Foimulate the null hypothesis Ho.

Step two: Formulate the alternative H_1 in statistical terms

Step three: Set the level of the significance and the sample size n.

Step four: Select the appropriate test statistic and the reject rule.

Step five: Collect the data and calculate the test statistic.

Step six: If the calculated value of the test statistic falls in the rejection region, then reject Ho if the calculated value of the test statistic doesn't fall in the rejection region, then do not reject Ho (Billingsley and Huntsberger 1996).

As this research is to study influencing service quality factors of ISPs survival, therefore the researcher sets 17 hypotheses in analyzing influencing factors of ISPs survival example of hypothesis as follows:

The example of hypothesis:

H_o: There is no relationship between number of telephone line and ISP survival.

H_1: There is relationship between number of telephone line and ISP survival.

4.3 Survey Instrument

The researcher selects survey technique in this research because it is the most common technique in which information is gathered from a sample of people by use of questionnaire method. By then, the researcher can make the research within the short time limitation (within 2 months), reasonable budget, and quick response compared to other methodology.

A questionnaire is classified into 2 parts:

The first part is to study general information of the sample group. It is questions about demographic information such as sex, age, educational background, etc.

The second part is the questions about influencing service quality factor of ISPs survival. In this part the Likert scale and Nominal scale are employed. A five choice answer for rating attitude measurement (positive and negative attitude) is used.

Strongly agree	5	scores
Agree	4	scores
Neither agree nor disagree	3	scores
Disagree	2	scores
Strongly disagree	1	scores

The guidelines of the questions are taken from Douglass (1993), Mckenzie (1990) and Ferner (1994).

In this part there are 21 questions (20 questions which involve 5 factors using Likert scale measurement and 1 question which involve ISPs survival using Nominal scale measurement).

V. DATA ANALYSIS

5.1 Demographic Data Analysis

Personal information is analyzed in the form of frequency and percentage.

Table 5.1. Number of Respondents on Gender.

Gender

N	Valid	400
	Missing	0

Table 5.2. Gender of Respondents (Personal Information).

Gender

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	188	47.0	47.0	47.0
	Female	212	53.0	53.0	100.0
	Total	400	100.0	100.0	

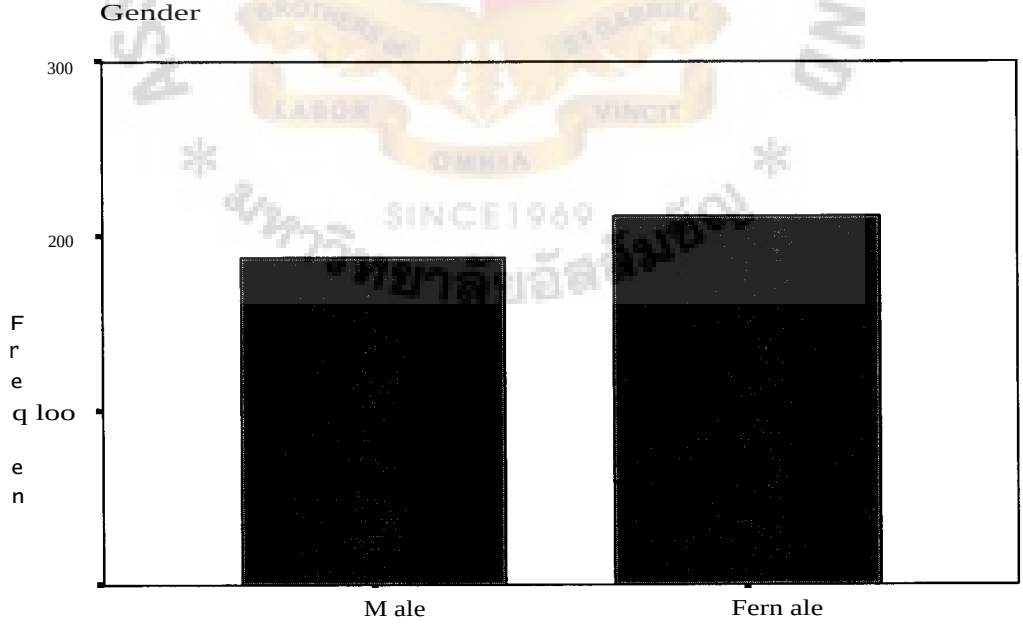

Figure 5.1. **Bar** Chart of Gender (Personal Infoiniation).

Table 5.3. Number of Respondents on Age.

Age

N	Valid	400
	Missing	0

Table 5.4. Age of Respondents (Personal Information).

Age

Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	under 18 years old	16	4.0	4.0	4.0
	18-25 years old	200	50.0	50.0	54.0
	26-33 years old	144	36.0	36.0	90.0
	34-40 years old	32	8.0	8.0	98.0
	41 years old and above	8	2.0	2.0	100.0
	Total	400	100.0	100.0	

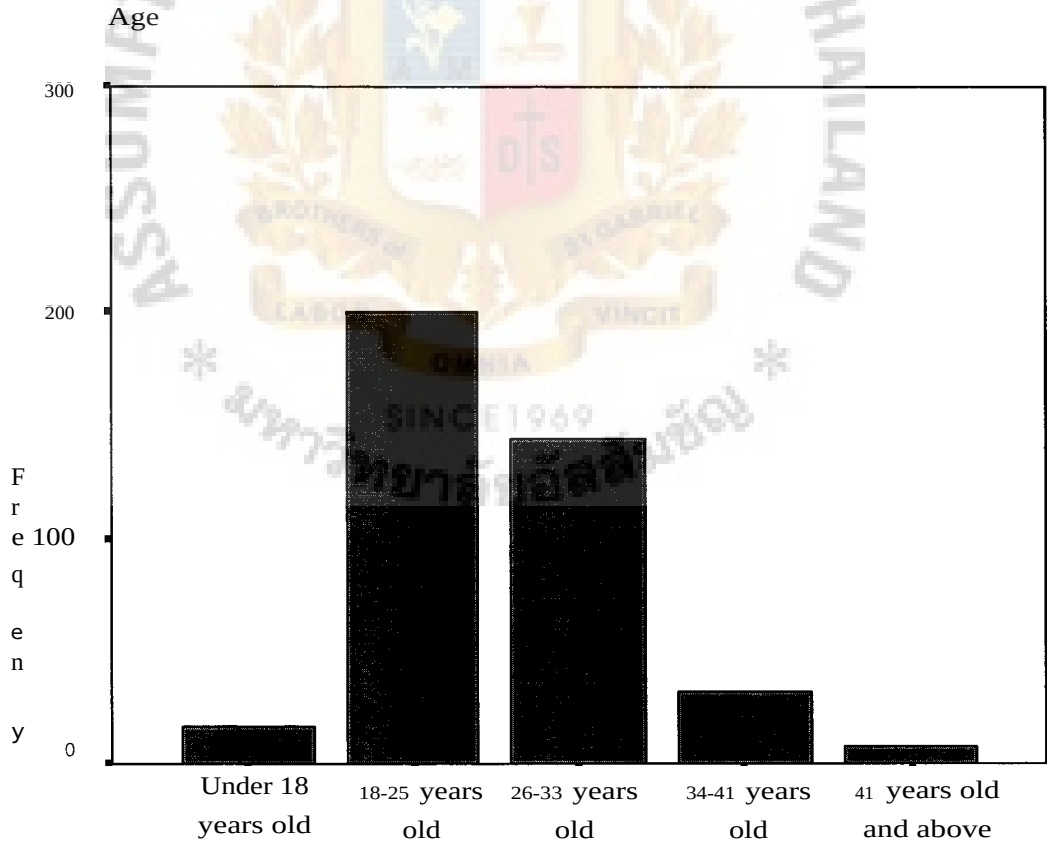

Figure 5.2. Bar Chart of Age (Personal Information).

Table 5.5. Number of Respondents on Education.

Education

N	Valid	400
	Missing	0

Table 5.6. Education of Respondents (Personal Information).

Education

Education		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor degree	268	67.0	67.0	67.0
	Master degree	128	32.0	32.0	99.0
	Doctorate and over	4	1.0	1.0	100.0
	Total	400	100.0	100.0	

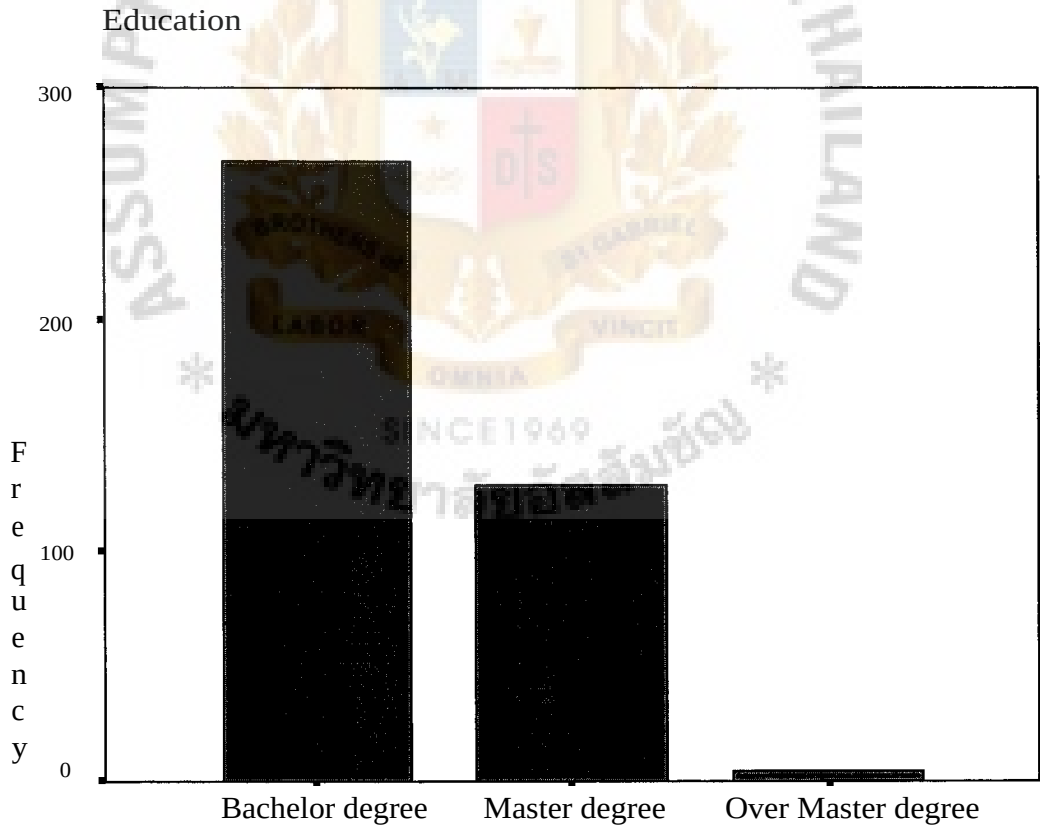

Figure 5.3. Bar Chart of Education (Personal Information).

Table 5.7. Number of Respondents on Occupation.

Occupation

N	Valid	400
	Missing	0

Table 5.8. Occupation of Respondents (Personal Information).

Occupation

Occupation		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	176	44.0	44.0	44.0
	Government staff	24	6.0	6.0	50.0
	Private company staff	140	35.0	35.0	85.0
	Business owner	56	14.0	14.0	99.0
	Other please specify	4	1.0	1.0	100.0
	Total	400	100.0	100.0	

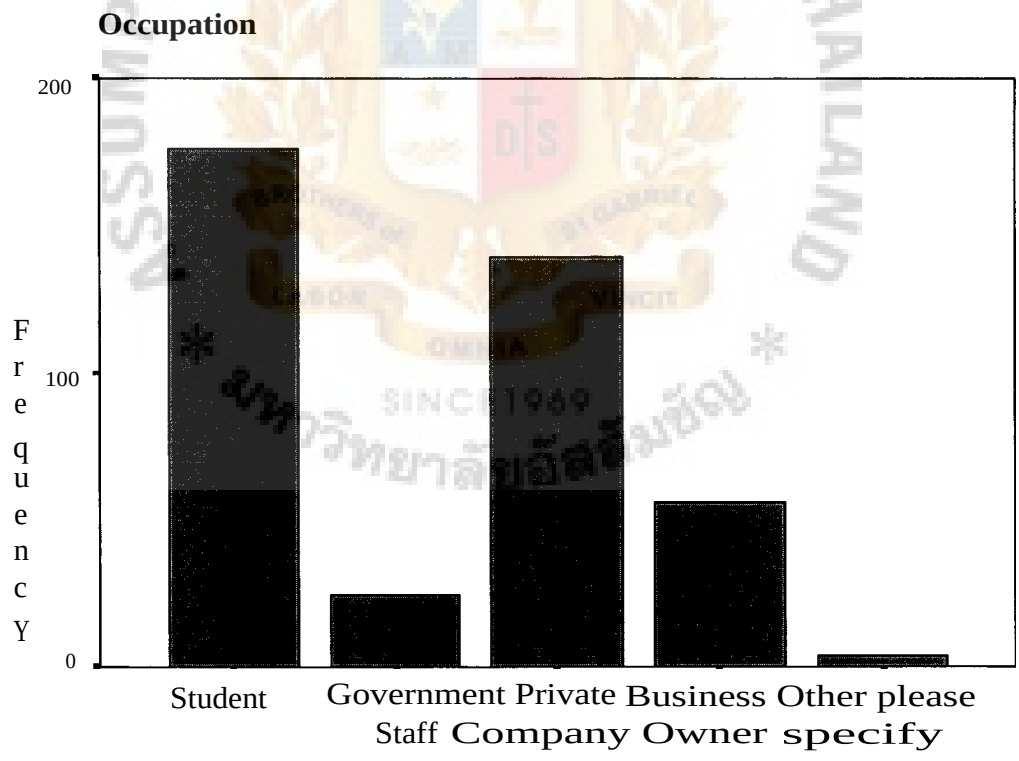

Figure 5.4. Bar Chart of Occupation (Personal Information).

Table 5.9. Number of Respondents on Income.

Income

N	Valid	400
	Missing	0

Table 5.10. Income of Respondents (Personal Information).

Income

Income		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 10,000 baht	56	14.0	14.0	14.0
	10,000-19,999 baht	176	44.0	44.0	58.0
	20,000-29,999 baht	56	14.0	14.0	72.0
	30,000-39,999 baht	32	8.0	8.0	80.0
	Above 40,000 baht	80	20.0	20.0	100.0
	Total	400	100.0	100.0	

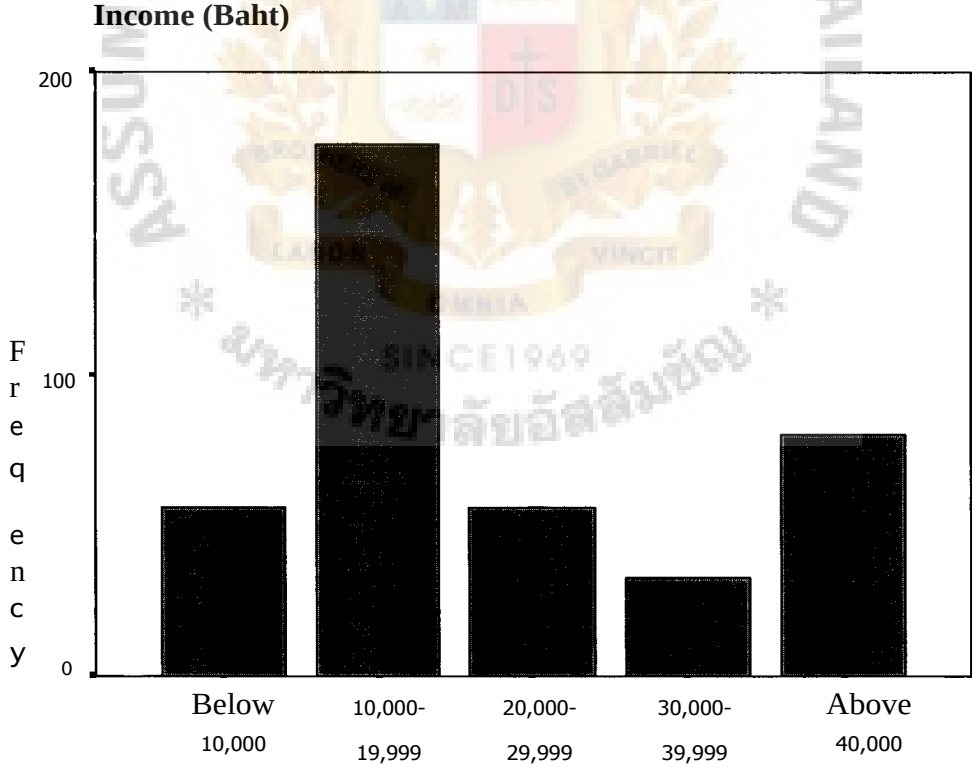

Figure 5.5. Bar Chart of Income (Personal Information).

Personal Information Is Analyzed in the Form of Frequency and Percentage

(1) From Table 5.1., Table 5.2. and Figure 5.1.

According to the Personal Data "Gender" were studied of 400 respondents, 188 people are male (47%) and 212 people are female (53%).

(2) From Table 5.3., Table 5.4. and Figure 5.2.

The result of survey 400 samples, there are 16 people (4%) for age lower than 18 years old, 200 people (50%) for 18-25 years old, 144 people (36%) for 26-33 years old, 32 people (8%) for 34-40 years old, and 8 people (2%) for age higher than 41 years old.

(3) From Table 5.5., Table 5.6. and Figure 5.3.

The value of 400 respondents, 268 people (67%) had graduated bachelor degree, 128 people (32%) had graduated master degree, 4 people (1%) had graduated doctorate and above and no respondent of this sample had graduated under bachelor degree.

(4) From Table 5.7., Table 5.8. and Figure 5.4.

According to the Personal Data "Occupation" were studied of 400 respondents, 176 people (44%) are students, 24 people (6%) are government staffs, 140 people (35%) are private staffs, 56 people (14%) are business owner, and 4 people (1%) are other of occupations.

(5) From Table 5.9., Table 5.10. and Figure 5.5

The result of survey of 400 respondents, most incomes per month are 10,000-19,999 bahts (176 people 44%), the respondents who earn income below 10, 000 bahts equal to the respondents who earn income 20.000-29,999 bahts are 56 people (14%), 32 people (8%) earn 30.000-39,999 bahts and 80 people (20%) earn income per month as above 40,000 bahts.

5.2 The Result of Relationship Hypothesis Testing between Dependent Variable (ISP survival) and Independent Variables (tangible, access, competence, responsiveness, and understanding the customers).

The researcher transcribes the variable and concept appeared in this data analysis into a set of questions in the process of the questionnaire design. The Likert type scale (5-point scale) is used to tap the opinion of prospective respondents. In this case, this analysis is relevant to the test of difference that involves chi-square statistics by using the CROSSTABS procedure for non-parametric statistics. Then the researcher codes the dependent into categorical type, which is labeled as "profit" comprising the first with the value of 15% and less, and the second with the value of more than 15%. For all the independent variables - Tangibles refer to the ISP infrastructure that enables the connection between customer and ISP (Number of telephone lines, Networks), Access refers to the ease connectivity to the server (line always free, easily set-up program, special high-speed connection, reconnection problems, and server-down problem), Competence refers to the speed of transferring information and ability to compete with competitors (upload/download, email capacity, and distance call rate), Responsiveness refers to the willingness of the ISP in helping customer and providing prompt service (customer service, 24-hour technical support, online supporting website), which are the five — category nominal level, the researcher will be used in the column cell while the criterion variable will be used in the row cell.

The Result of the test Hypothesis #1

H_o: There is no relationship between number of telephone line and ISP survival.

HI: There is relationship between number of telephone line and ISP survival.

Table 5.11. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Provides Adequate Number of Phone Lines.

Crosstabulation

		Your ISP provides adequate number of phone lines					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	27	67	32	80	16	222
	More than 15%	9	49	36	68	16	178
Total		36	116	68	148	32	400

Table 5.12. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Provides Adequate Number of Phone Lines.

Chi-Square

	Value	df	Asymp. Sig. (2sided)
Pearson Chi-Square	8.261(a)	4	.082
Likelihood Ratio	8.583	4	.072
N of Valid Cases	400		

(a) 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.24.

From Table 5.11. and Table 5.12.

Tangible: Number of Phone Line.

Testing hypothesis # 1 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis #1, shows the value of the Pearson's Chi-square significance value that 0.082 is greater than 0.05,therefore, the researcher makes the decision to accept null hypothesis meaning that the number of phone lines each ISP is not related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis # 2

H_o: There is no relationship between sufficient network and ISP survival.

H_1: There is relationship between sufficient network and ISP survival.

Table 5.13. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Offers Sufficient Network System (The International Linkage).

Crosstabulation

		Your ISP offers sufficient network system (The International Linkage)					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	21	101	46	46	8	222
	More than 15%	27	83	34	30	4	178
Total		48	184	80	76	12	400

Table 5.14. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Offers Sufficient Network System (The International Linkage).

Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.224(a)	4	.377
Likelihood Ratio	4.226	4	.376
N of Valid Cases	400		

(a) 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.34.

From Table5.13. and Table 5.14

Tangible: Network.

Testing hypothesis # 2 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 2, shows the value of the Pearson's Chi-square significance value that 0.377 is greater than 0.05,therefore, the researcher makes the decision to accept null hypothesis meaning that sufficient network is not related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis # 3

H_o: There is no relationship between distance call rate equal to city call rate and ISP survival.

H_1: There is relationship between distance call rate equal to city call rate and ISP survival.

Table 5.15. Crosstabution: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Provides Distance Call Rate Equal to City Call Rate.

Crosstabution

		Your ISP provides distance call rate equal to city call rate				
		Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	16	67	98	41	222
	more than 15%	28	49	70	31	178
Total		44	116	168	72	400

Table 5.16. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Provides Distance Call Rate Equal to City Call Rate.

Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.371(a)	3	.061
Likelihood Ratio	7.351	3	.062
N of Valid Cases	400		

(a) 0 cells (.0%) have expected count less than 5. The minimum expected count is 19.58.

From Table 5.15. and Table 5.16.

Competence: Distance Call Rates Equal to City Call Rates.

Testing hypothesis # 3 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 3, shows the value of the Pearson's Chi-square significance value that 0.061 is greater than 0.05,therefore, the researcher makes the decision to accept null hypothesis meaning that distance call rates equal to city call rates is not related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis # 4

H_o: There is no relationship between phone lines always free and ISP survival.

HI: There is relationship between phone lines always free and ISP survival.

Table 5.17. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In percentage term) * Your ISP's Phone Lines always Free.

Crosstabulation

		Your ISP's phone lines always free					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	39	57	29	74	23	222
	more than 15%	17	39	27	62	33	178
Total		56	96	56	136	56	400

Table 5.18. Chi-Square Tests: How Much Profit DoYou Think That Your ISP Will Earn (In Percentage Term) * Your ISP's Phone Lines Always Free.

Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.217(a)	4	.037
Likelihood Ratio	10.352	4	.035
N of Valid Cases	400		

(a) 0 cells (.0%) have expected count less than 5. The minimum expected count is 24.92.

From Table 5.17. and Table 5.18.

Access: Phone Lines Always Free.

Testing hypothesis # 4 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 4, shows the value of the Pearson's Chi-square significance value that 0.037 is less than 0.05,therefore, the researcher makes the decision to reject null hypothesis meaning that phone lines always free is related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis # 5

H_o: There is no relationship between the easily set-up program and ISP survival.

H_1: There is relationship between the easily set-up program and ISP survival.

Table 5.19. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Provides The Easily Set-Up Program.

Crosstabulation

		Your ISP provides the easily set-up program					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	34	110	46	24	8	222
	more than 15%	38	74	58	8		178
Total		72	184	104	32	8	400

Table 5.20. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Provides the Easily Set-Up Program.

Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.053(a)	4	.006
Likelihood Ratio	23.312	4	.0005
N of Valid Cases	400		

(a) 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.56.

From Table 5.19. and Table 5.20.

Access: The Easily Set-Up Program.

Testing hypothesis # 5 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 5, shows the value of the Pearson's Chi-square significance value that 0.006 is less than 0.05,therefore, the researcher makes the decision to reject null hypothesis meaning that the easily set-up program is related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis # 6

H_o: There is no relationship between special high-speed connection and ISP survival.

HI: There is relationship between special high-speed connection and ISP survival.

Table 5.21. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Tenn) * Your ISP Provide Special High-Speed Connection.

Crosstabulation

		Your ISP provide special high-speed connection					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	31	98	39	38	16	222
	more than 15%	17	58	37	58	8	178
Total		48	156	76	96	24	400

Table 5.22. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Provide Special High-Speed Connection.

Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.586(a)	4	.002
Likelihood Ratio	16.634	4	.002
N of Valid Cases	400		

(a) 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.68.

From Table 5.21. and Table 5.22.

Access: Special High-Speed Connection.

Testing hypothesis # 6 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 6, shows the value of the Pearson's Chi-square significance value that 0.002 is less than 0.05,therefore, the researcher makes the decision to reject null hypothesis meaning that special high-speed connection is related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis #7

H_0: There is no relationship between re-connect and ISP survival.

H_1: There is relationship between re-connect and ISP survival.

Table 5.23. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * You Rarely Have to Re-Connect to Your ISP.

Crosstabulation

		You rarely have to re-connect to Your ISP					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	23	104	45	46	4	222
	more than 15%	25	88	31	30	4	178
Total		48	192	76	76	8	400

Table 5.24. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * You Rarely Have to Re-Connect to Your ISP.

Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.555(a)	4	.635
Likelihood Ratio	2.556	4	.635
N of Valid Cases	400		

(a) 2cells (20.0%) have expected count less than 5. The minimum expected count is 3.56.

From Table 5.23. and Table 5.24.

Access: Re-Connect to Server.

Testing hypothesis # 7 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 7, shows the value of the Pearson's Chi-square significance value that 0.635 is greater than 0.05,therefore, the researcher makes the decision to accept null hypothesis meaning that re-connect to server is related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis # 8

H_o: There is no relationship between server rarely downs and ISP survival.

H_1: There is relationship between server rarely downs and ISP survival.

Table 5.25. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Server Rarely Downs.

Crosstabulation

		Your ISP server rarely downs					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	11	67	47	77	20	222
	more than 15%	9	41	45	67	16	178
Total		20	108	92	144	36	400

Table 5.26. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Server Rarely Downs.

Chi-Square

	Value	df	Asymp. Sig. (2sided)
Pearson Chi-Square	2.836(a)	4	.586
Likelihood Ratio	2.856	4	.582
N of Valid Cases	400		

(a) 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.90.

From Table 5.25. and Table 5.26.

Access: Server Rarely Downs.

Testing hypothesis # 8 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 8, shows the value of the Pearson's Chi-square significance value that 0.586 is greater than 0.05,therefore, the researcher makes the decision to accept null hypothesis meaning that server rarely downs t is not related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis # 9

H_o: There is no relationship between speed of information transferring and ISP survival.

H1: There is relationship between speed of information transferring and ISP survival.

Table 5.27. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Offers Acceptable Speed of Information Transferring (Upload/Download).

Crosstabulation

		Your ISP offers acceptable speed of information transferring (upload/download)					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	11	60	81	70		222
	more than 15%	13	56	59	38	12	178
Total		24	116	140	108	12	400

Table 5.28. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Offers Acceptable Speed of Information Transferring (Upload/Download).

Chi-S uare

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.653(a)	4	.007
Likelihood Ratio	25.187	4	.007
N of Valid Cases	400		

(a) 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.34.

From Table 5.27. and Table 5.28.

Competence: Speed of Information Transferring (upload/download).

Testing hypothesis # 9 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 9, shows the value of the Pearson's Chi-square significance value that 0.007 is less than 0.05,therefore, the researcher makes the decision to reject null hypothesis meaning that speed of information transferring (upload/download) is related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis # 10

H_o: There is no relationship between E-mail capacity ISPs provided and ISP survival.

H_1: There is relationship between E-mail capacity ISPs provided and ISP survival.

Table 5.29. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * You Always Choose ISP Based On the E-mail Capacity Provided.

Crosstabulation

		You always choose ISP based on the email capacity provided					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	23	84	79	32	4	222
	more than 15%	9	68	77	24	-	178
Total		32	152	156	56	4	400

Table 5.30. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * You Always Choose ISP Based On the E-Mail Capacity Provided.

Chi-Square

	Value	df	Asymp. Sig. (2sided)
Pearson Chi-Square	8.237(a)	4	.083
Likelihood Ratio	9.892	4	.042
N of Valid Cases	400		

(a) 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.78.

From Table 5.29. and Table 5.30.

Competence: The E-mail Capacity.

Testing hypothesis # 10 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 10, shows the value of the Pearson's Chi-square significance value that 0.083 is greater than 0.05,therefore, the researcher makes the decision to accept null hypothesis meaning that the E-mail capacity is not related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis # 11

H_o: There is no relationship between prompt customer and technical support and ISP survival.

Hi: There is relationship between prompt customer and technical support and ISP survival.

Table 5.31. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Provide Prompt Customer and Technical Support.

Crosstabulation.

		Your ISP provide prompt customer and technical support					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	24	112	54	32		222
	more than 15%	28	60	58	20	12	178
Total		52	172	112	52	12	400

Table 5.32. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Provide Prompt Customer and Technical Support.

Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.420(a)	4	.008
Likelihood Ratio	31.001	4	.008
N of Valid Cases	400		

(a) 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.34.

From Table 5.31. and Table 5.32.

Responsiveness: Prompt Customer and Technical Support.

Testing hypothesis # 11 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 11, shows the value of the Pearson's Chi-square significance value 0.008 that is less than 0.05, the researcher makes the decision to reject null hypothesis meaning that prompt customer and technical support is related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis #12

H_o: There is no relationship between 24 hrs. technical support service and ISP survival.

H1: There is relationship between 24 hrs. technical support service and ISP survival.

Table 5.33. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Provides 24 hours Technical Support Service.

Crosstabulation

		Your ISP provides 24 hours technical support service				
		Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	39	65	68	50	222
	more than 15%	21	63	68	26	178
Total		60	128	136	76	400

Table 5.34. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Provides 24 hours Technical Support Service.

Chi-Square

	Value	df	Asymp. Sig. (2sided)
Pearson Chi-Square	8.270(a)	3	.041
Likelihood Ratio	8.376	3	.039
N of Valid Cases	400		

(a) 0 cells (.0%) have expected count less than 5. The minimum expected count is 26.70.

From Table 5.33. and Table 5.34.

Responsiveness: 24 hrs. Technical Support Service.

Testing hypothesis # 12 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 12 shows the value of the Pearson's Chi-square significance value 0.041 that is less than 0.05, the researcher makes the decision to reject null hypothesis meaning that 24 hrs. technical support service is related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis # 13

H_o: There is no relationship between online supporting and ISP survival.

H_1: There is relationship between online supporting and ISP survival.

Table 5.35. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Provides Online Supporting Website.

Crosstabulation

		Your ISP provides online supporting website					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	24	75	77	46		222
	more than 15%	12	69	67	26	4	178
Total		36	144	144	72	4	400

Table 5.36. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP Provides Online Supporting Website.

Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.778(a)	4	.044
Likelihood Ratio	11.347	4	.023
N of Valid Cases	400		

(a) 2cells (20.0%) have expected count less than 5. The minimum expected count is 1.78.

From Table 5.35. and Table 5.36.

Responsiveness: Online Supporting Website.

Testing hypothesis # 13 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 13, shows the value of the Pearson's Chi-square significance value 0.044 that is less than 0.05, the researcher makes the decision to reject null hypothesis meaning that online supporting is related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis # 14

H_o: There is no relationship between product available to buy and ISP survival.

H_1: There is relationship between product available to buy and ISP survival.

Table 5.37. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * Your ISP's Product Always Available to Buy.

Crosstabulation

		Your ISP's product always available to buy					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	36	123	39	24		222
	more than 15%	32	85	49	8	4	178
Total		68	208	88	32	4	400

Table 5.38. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage term) * Your ISP's Product Always Available to Buy.

Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.663(a)	4	.004
Likelihood Ratio	17.423	4	.002
N of Valid Cases	400		

(a) cells (20.0%) have expected count less than 5. The minimum expected count is 1.78.

From Table 5.37. and Table 5.38.

Understanding the customer: Product Available to Buy.

Testing hypothesis # 14 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 14, shows the value of the Pearson's Chi-square significance value 0.004 that is less than 0.05, the researcher makes the decision to reject null hypothesis meaning that product available to buy is related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis #15

H_o: There is no relationship between advertising and ISP survival.

H_1: There is relationship between advertising and ISP survival.

Table 5.39. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * You Can Remember Your ISP Advertising.

Crosstabulation

		You can remember your ISP advertising					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	35	78	58	39	12	222
	more than 15%	13	70	66	21	8	178
Total		48	148	124	60	20	400

Table 5.40. Chi-Square Tests: How Much Profit do You think that Your ISP will earn (In percentage term) * You can Remember Your ISP Advertising.

Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.544(a)	4	.014
Likelihood Ratio	12.859	4	.012
N of Valid Cases	400		

(a) 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.90.

From Table 5.39. and Table 5.40.

Understanding the customer: Advertising.

Testing hypothesis # 15 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis #15, shows the value of the Pearson's Chi-square significance value 0.014 that is less than 0.05, the researcher makes the decision to reject null hypothesis meaning that advertising is related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis #16

H_o: There is no relationship between promotion and ISP survival.

H_1: There is relationship between promotion and ISP survival.

Table 5.41. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * You Always Choose ISP Based on the Promotion.

Crosstabulation

		You always choose ISP based on the promotion					
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	47	81	51	39	4	222
	more than 15%	17	83	41	37		178
Total		64	164	92	76	4	400

Table 5.42. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * You Always Choose ISP Based on the Promotion.

Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.563(a)	4	.006
Likelihood Ratio	16.490	4	.002
N of Valid Cases	400		

(a) 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.78.

From Table 5.41. and Table 5.42.

Understanding the customer: Promotion.

Testing hypothesis # 16 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis # 16, shows the value of the Pearson's Chi-square significance value that 0.006 is less than 0.05, the researcher makes the decision to reject null hypothesis meaning that promotion is related to the overall profit of ISPs (ISP's survival).

The result of testing hypothesis #17

H_o: There is no relationship between product segmentation and ISP survival.

H_1: There is relationship between product segmentation and ISP survival.

Table 5.43. Crosstabulation: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * You Always Choose ISP Based on Product Segmentation (Usage Rate).

Crosstabulation

You always choose ISP based on product segmentation (usage rate)							
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
How much profit do you think that your ISP will earn (In percentage term)	0-15%	49	94	63	16		222
	more than 15%	27	86	37	20	8	178
Total		76	180	100	36	8	400

Table 5.44. Chi-Square Tests: How Much Profit Do You Think That Your ISP Will Earn (In Percentage Term) * You Always Choose ISP Based on Product Segmentation (Usage Rate).

Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.298(a)	4	.002
Likelihood Ratio	20.340	4	.000
N of Valid Cases	400		

(a) 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.56.

From Table 5.43. and Table 5.44.

Understanding the customer: Product Segmentation.

Testing hypothesis # 17 involves the test of significance and measure of association at the same time, i.e. whether the null is accepted or rejected and direction of these paired variables.

If the p-value (The Pearson Chi-square significance value) is greater than 0.05, the researcher will accept the null hypothesis; otherwise, the researcher will reject the null and accept the alternate in lieu.

The result from the test hypothesis #17, shows the value of the Pearson's Chi-square significance value that 0.002 is less than 0.05, the researcher makes the decision to reject null hypothesis meaning that product segmentation is related to the overall profit of ISPs (ISP's survival).

VI. CONCLUSIONS & RECOMMENDATIONS

6.1 Conclusions

This research is to study influencing service quality factors of survival ISPs in competitive environment. The reason is that the researcher defined a target population as general people around those four areas (Punthip Plaza: Petchburi road, Tawanna IT City: Bangkapi, IT mall Fortune Town: Ratchadapisek road and Seri Center: Srinakarin road) because the people who are located in those four areas would like to use Internet, in spite of the fact that they may not use Internet.

The researcher employed a questionnaire as the instrument to survey information. The questionnaire has 2 parts. The first part is about demographic information such as gender, age, education, occupation and income per month. The other part is the questions on influencing service quality factors of survival ISPs in high competitive environmental.

The summary of demographic data from 400 respondents is that the majority of the sample group are female 212 people (53%), are around 18-25 years old 200 people (50%) have education of bachelors degree 268 people (67%), are student 176 people (44%) and earn income 10,000 — 19,999 bahts per month 176 people (44%).

In this study the researcher employed the Pearson's Chi-Square test in analyzing the relationship between the dependent variable (ISPs survival: profitability) and the independent variables (Tangible, Access, Responsiveness, Competence and Understanding the customers).

Tangible Factors:

(1) Tangible: Number of Phone Lines.

The result from the Pearson's Chi-square significant value (p value) is greater than 0.05 (0.082), so the researcher makes the decision to accept null hypothesis meaning that the number of phone lines is not related to the overall profit of ISP (ISP's survival).

(2) Tangibles: Network.

The P value is 0.377 means that the null hypothesis is accepted, there is no relationship between the sufficient network and the ISP survival.

Since the both of Tangible are not related to ISP survival, the researcher founded that ISPs' tangibles are indifference. Nowadays, most of ISPs provide the same sufficient technology to their Internet users.

Competence Factors:

(1) Competence: Distance Call Rates equal to City Call Rates.

The result from P value is 0.061 is greater than 0.05, therefore it can be concluded that the distance call rates equal to city call rates is not related to ISP survival.

(2) Competence: Speed of Information Transferring (upload/download).

The P value is 0.007 means that the null hypothesis is rejected, means that the Speed of information transferring (upload/download) is related to ISP survival.

(3) Competence: The E-mail Capacity.

The result from P value is 0.083 is greater than 0.05, therefore it can be concluded that the Email capacity is not related to ISP survival.

Although the distance call rates equal to city call rates and the Email capacity are not related to the ISP survival, but the speed of information transferring is related to ISP survival. Since the respondents are mostly live in Bangkok area and the ISPs' Emails are not popular among Internet users because most Internet users always use the free E-mail such as hotmail and yahoo so distance call rates and Email capacity are not significant.

Access Factors:

(1) Access: Phone Lines Always Free.

The result from P value is 0.037 is less than 0.05, therefore it can be concluded that the Phone lines always free is related to ISP survival.

(2) Access: The Easily Set-Up Program.

The P value is 0.006 means that the null hypothesis is rejected, means that the easily set-up program is related to ISP survival.

(3) Access: Special High-Speed Connection.

The P value is 0.002 means that the null hypothesis is rejected, means that the special high-speed connection is related to ISP survival.

(4) Access: Re-Connect to Server.

The result from P value is 0.635 is greater than 0.05, therefore it can be concluded that the re-connect to server is not related to ISP survival.

(5) Access: Server rarely down.

The P value is 0.586 means that the null hypothesis is accepted, means that the server rarely down is not related to ISP survival.

Although re-connect to server and server rarely down are not related to ISP survival but phone lines always free, the easily set-up program and special high-speed connection are related to ISP survival especially the

special high speed connection. Since the special high speed connect is new to the Internet industry, most of Internet users are aware of this channel of connection such as Cable modem and Satellite Internet.

Responsiveness Factors:

(1) Responsiveness: Prompt Customer and Technical Support.

The result from P value is 0.008 is less than 0.05, therefore it can be concluded that the prompt customer and technical support is related to ISP survival.

(2) Responsiveness: 24Hrs. Technical Support Service.

The result from P value is 0.041 is less than 0.05, therefore it can be concluded that the 24Hrs. Technical support service is related to ISP survival.

(3) Responsiveness: Online Supporting Website.

The result from P value is 0.044 is less than 0.05, therefore it can be concluded that the online supporting website is related to ISP survival.

The responsiveness factor is related to ISP survival, since the responsiveness is the selling point of each ISP. The after sales service is very important in the intense competition.

Understanding the Customer 's Need Factors:

(1) Understanding the Customer: Product Available to Buy.

The result from P value is 0.004 is less than 0.05, therefore it can be concluded that the product available to buy is related to ISP survival.

(2) Understanding the Customer: Advertising.

The P value is 0.014 means that the null hypothesis is rejected, means that the advertising is related to ISP survival.

(3) Understanding the Customer: Promotion.

The P value is 0.006 means that the null hypothesis is rejected, means that the promotion is related to ISP survival.

(4) Understanding the Customer: Product Segmentation.

The P value is 0.002 means that the null hypothesis is rejected, means that the product segmentation is related to ISP survival.

Understanding the customer is the highly related to the ISP survival, since the intense competition forced each ISP to offer the marketing strategies in term of availability, promotion, advertising, and product segmentation. The product segmentation (based on usage rate) is the most related to ISP survival follow by product available, promotion, and advertising.

Finally, the five independent variables (factors) with the different in the Pearson's Chi-square value, the researcher found that all of four factors (excluding understanding the customer factor) that are related to the speed of the Internet and Understanding the customer are mostly related on ISPs survival in high competitive environment.

6.2 Recommendations

From the finding results, the researcher found that the relationship between dependent and independent factors can be very useful, in which leads to the practical recommendation as follows:

Understanding the customers' needs are highly related to the ISP survival, especially for the product availability, advertising, promotion, and product segmentation. So ISPs should continue improving this competitive advantage over their

competitors, through the best marketing strategy, will be survival in the intense competitive environment.

The researcher also would like to suggest each ISPs using **the differentiate strategy.** From the results, the researcher found that most of the respondents are unaware of the ISP products and services. Therefore the researcher would like to introduce the differentiate strategy, which is strengthened the competitive points of each ISP. In order to implement this strategy, ISP should know its position and the strength and weakness, and then develop the business plan. The business plan should be the broad ideas on how to emphasis on the competitive strength and overcome the weakness. The marketing plan should be developed in order to achieve goal of the business plan. The differentiate strategy under the marketing plan should emphasis on how to differ its own product and service from other and pass this understanding to the Internet users. The examples are: CS Internet develops the Internet satellite in order to serve the very high speed information transferring which is 2-35 times faster than the general Internet modem. Asia Infonet has launched the ClickTA service with unlimited Internet use on TA telephone line for a 250-500 bahts monthly fee.

The differentiate strategy can also be applied to the Understanding the customer need in form of product availability, advertising, promotion, and product segmentation.

The differentiate strategy based on the product availability. As the Internet users can buy the Internet package in the computer mall or the bookstore, the researcher would like to introduce new channel of distribution through the ATM machine, just like the renewal time for the prepaid mobile phone or the online buying from through the highly secure website.

The differentiate strategy based on advertising. Advertising is very important as the medium of transferring any new technology or new promotion from ISPs to Internet

users. Traditional advertising should be modified, add more the attractive feature in order to increase the perception retention of the audience.

The differentiate strategy based on promotion. Improving the existing promotion programs, by adding more value and at the same time increase the customer royalty. Beside the reduction of the price per hour, ISP should have the other promotion such as the minute plus (same as the mobile phone), premium and specialty.

The differentiate strategy based on the product segmentation. Presently, the product segmentation of ISPs mostly focuses on the usage rate. The researcher would like to introduce the segmentation based on the age and the occupation. The example is the student package offers to some school or University (in which ISP may ask for the cooperation from the Communication Authority of Thailand (CAT) or and the Ministry of Education in order to lower the lease line expense) charge the lower rate than the normal package. The Business package, ISP can charge more and increase the speed of information transferring to niche the premium Internet users.

However it should not be neglected independent variables that are not directly related to the ISP survival because several of them are the associates with the Understanding customer needs. Most of the Internet user are unaware of the Tangible (International Linkage, number of phone lines) ISPs can use these as the differentiated strategy from its competitors. Access (Distance call rate same as City call rate), relationship is quite low, due to the fact that the survey is conducted in the city so the result does not represent the whole population for these questions.

APPENDIX A

QUESTIONNAIRE

Questionnaire

" Influencing Factors of survival ISPs in competitive environment"

Instructions:

This questionnaire is set with an objective to study influencing factors of survival ISPs in competitive environment. The researcher has divided the question into two parts. Please fill in all questions by marking (✓) in front of the answers choices that best matches your own opinion. There is neither right nor wrong answers. Your responses will be kept confidential. Your cooperation will be highly appreciated.

Part L• Personal Data

Please mark (✓) in front of the answers in every question which best matches to your situation.

1. Gender:

Male ❑ Female

2. Age:

❑ under 18 years old ❑ 18-25 years old

❑ 26-33 years old ❑ 34-40 years old

❑ 41 years old and above

3.Education:

❑ Under bachelor degree ❑ Bachelor degree

Master degree ❑ Over Master degree

4. Occupation:

❑ Student ❑ Government staff

❑ Private company staff ❑ Business Owner

❑ Other please specify.....

5. Income:

❑ Below 10,000 baht ❑ 10,000-19,999 baht

C 20,000-29,999 baht ❑ 30,000-39,999 baht

❑ Above 40,000 baht

<u>Part II:</u> Attitude Measurement

Please make a check (✓) in every question which best matches to your opinion.

Questions	Strongly \agree	ˆC to	Neither agree nor disa: ee	**ID**isagree	Strongly Disagree
1. You always use Internet.					
2. You always change your ISP within one year.					
3. You always choose ISP based on its brand reputation.					
4. Your ISP provides adequate number of phone lines.					
5. Your ISP offers sufficient network system (The International Linkage).					

6. Your ISP provides distance call rate equal to city call rate.					
7. Your ISP's phone lines always free					
8. Your ISP provides the easily set-up program.					
9. Your ISP provide special high-speed connection.					
10. You rarely have to re-connect to your ISP.					
11. Your ISP server rarely downs.					
12. Your ISP offers acceptable speed of information transferring (upload/download).					
13. You always choose ISP based on the email capacity provided.					
14. Your ISP provide prompt customer and technical support.					
15. Your ISP provides 24 hours technical support service.					
16. Your ISP provides online supporting website.					
17. Your ISP's product always available to buy.					
18. You can remember your ISP advertising.					

19 You always choose ISP based on the promotion.					
20. You always choose ISP based on product segmentation (usage rate).					

21. How much profit do you think that your ISP will earn? (In percentage term)

❑ 0-15% ❑ More than 15%

แบบสอบถาม

ปัจจัยที่ส่งผลกระทบต่อความอยู่รอดของผู้ให้บริการอินเตอร์เน็ตในภาวะการแข่งขันรุนแรง

คำชี้แจง

แบบสอบถามฉบับนี้ถูกออกแบบขึ้นมาโดยมีวัตถุประสงค์ในการศึกษาปัจจัยที่มีผลกระทบต่อความอยู่รอดของผู้ให้บริการอินเตอร์เน็ต โดยมุ่งเน้นเพื่อศึกษาในเชิงวิชาการผู้วิจัยได้แบ่งคำถามออกเป็น 2 ส่วน ซึ่งคำตอบเหล่านี้ไม่มีข้อถูกหรือผิด ข้อมูลเหล่านี้จะถูกเก็บเป็นความลับ เพื่อนำผลมาวิเคราะห์และปรับปรุงวิธีการบริหารเวลา จึงขอความอนุเคราะห์ในการตอบแบบสอบถามทุกข้อตามความเป็นจริงมากที่สุด

ส่วนที่หนึ่ง: คำถามทั่วไป

กรุณาตอบคำถามทุกข้อโดยการทำเครื่องหมาย (✓)หน้าข้อความที่ท่านเห็นว่าตรงกับความเป็นจริงมากที่สุด

1. เพศ

☐ ผู้ชาย ☐ ผู้หญิง

2. อายุ

☐ ต่ำกว่า 20 ปี ☐ 18 - 25 ปี

☐ 26 - 33 ปี ☐ 34 - 40 ปี

☐ 40ปีขึ้นไป

3. การศึกษา

☐ ต่ำกว่าปริญญาตรี ☐ ปริญญาตรี

☐ ปริญญาโท ☐ ปริญญาเอกหรือสูงกว่า

4. อาชีพ

☐ นักศึกษา ☐ พนักงานรัฐวิสาหกิจ

☐ พนักงานบริษัทเอกชน ☐ เจ้าของกิจการ

☐ อื่นๆ โปรดระบุ.....

5. รายได้

☐ ต่ำกว่า 10,000 บาท ☐ 10,000 -19,999 บาท

☐ 20,000 - 29,999 บาท ☐ 30,000 -39,999 บาท

☐ มากกว่า 40,000 บาท

ส่วนที่สอง: การวัดผลปัจจัยที่มีผลต่อการบริหารเวลา

กรุณาตอบคำถามทุกข้อโดยการทำเครื่องหมาย (✓) ในช่องว่างที่ท่านเห็นว่าตรงกับความเป็นจริงมากที่สุด

คำถาม	เห็นด้วยอย่างยิ่ง	เห็นด้วย	เฉยๆ	ไม่เห็นด้วย	ไม่เห็นด้วยอย่างยิ่ง
1. ท่านใช้บริการทางด้านอินเตอร์เน็ตอย่างสม่ำเสมอ					
2. ท่านเปลี่ยนผู้ให้บริการอินเตอร์เน็ตบ่อยภายในหนึ่งปี					
3. ท่านเลือกผู้ให้บริการอินเตอร์เน็ตโดยดูจากชื่อเสียงของบริษัทผู้ให้บริการอินเตอร์เน็ตเสมอ					
4. ผู้ให้บริการทางอินเตอร์เน็ตของท่านมีจำนวนคู่สายโทรศัพท์ในการติดต่อมากเพียงพอ					
5. ผู้ให้บริการทางอินเตอร์เน็ตของท่านมีช่องสัญญานติดต่อกับต่างประเทศมากซึ่งเป็นส่วนหนึ่งที่ช่วยเพิ่มประสิทธิภาพในการติดต่อ					
6. ผู้ให้บริการอินเตอร์เน็ตของท่านคิดค่าใช้โทรศัพท์ราคาเดียวกันทั่วประเทศ					

7. ผู้ให้บริการอินเตอร์เน็ตของท่านมีสายโทรศัพท์ว่างเสมอเวลาติดต่อ					
8. ท่านสามารถติดตั้งระบบการใช้อินเตอร์เน็ตอย่างง่ายจากผู้ให้บริการอินเตอร์เน็ตของท่าน					
9. ผู้ให้บริการอินเตอร์เน็ตของท่านมีระบบการติดต่ออย่างรวดเร็วเป็นพิเศษกว่าระบบอื่นๆ					
10. สายโทรศัพท์ของท่านแทบจะไม่หลุดในการใช้อินเตอร์เน็ต					
11. เซิฟเวอร์ของผู้ให้บริการอินเตอร์เน็ตแทบจะไม่เสีย					
12. ผู้ให้บริการอินเตอร์เน็ตของท่านสามารถให้บริการรับและส่งข้อมูลได้อย่างรวดเร็วไม่มีสะดุด					
13. ท่านมักจะเลือกซื้ออินเตอร์เน็ตจากเนื้อที่ของอีเมล์ของผู้ให้บริการอินเตอร์เน็ทจัดไว้ให้					
14. ท่านคิดว่าการบริการหลังการขายและการให้คำแนะนำทางด้านเทคนิคต่างๆของทางผู้ให้บริการอินเตอร์เน็ตของท่านสามารถบริการลูกค้าทันทีที่ลูกค้าต้องการ					

15. ผู้ให้บริการอินเตอร์เน็ตของท่านมีบริการให้คำแนะนำ และให้ข้อมูลต่อลูกค้าตลอด 24 ชั่วโมง					
16. ผู้ให้บริการอินเตอร์เน็ตของท่านมีเวบไซค์ที่ช่วยในการบริการและให้ข้อมูลลูกค้า					
17. ท่านสามารถหาซื้ออินเตอร์เน็ตจากผู้ให้บริการอินเตอร์เน็ต ของท่านได้อย่างสะดวกสะดาย					
18. ท่านสามารถจำโฆษณาของผู้ให้บริการอินเตอร์เน็ตของท่านได้					
19. ท่านมักจะเลือกผู้ให้บริการอินเตอร์เน็ตจากรายการส่งเสริมการขาย					
20. ท่านมักจะเลือกผู้ให้บริการทางอินเตอร์เน็ตจากรูปแบบของชั่วโมงและ ราคาจากการใช้อินเตอร์เน็ตของท่าน					

21. ท่านคิดว่าผู้ให้บริการอินเตอร์เน็ตของท่านควรมีกำไรเป็นเท่าไร?

☐ น้อยกว่า 15% ☐ มากกว่า 15%

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