

The Satisfaction of Using the Service of Wireless Computer Network Case Study: Nakhon Si Thammarat Municipality

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Abstract

The research objectives were to study the satisfaction level of using the service of wireless computer network: Nakhon Si Thammarat municipality as the case study. It was the survey research. The samples were students, undergraduates, state enterprise officers, private employees, and people living in Nakhon Si Thammarat municipality, total of 400 units which were derived from the table of Taro Yamane. The research tool was the close-ended questionnaire which its content validity was reviewed by three experts and was shown the Index of Item-Objective Congruence (IOC) of 0.95. The data analysis applied the statistics of frequency, percentage, mean, standard deviation; and the method of content analysis. The research findings were as follows: (1) Satisfaction in overall 4 aspects were rated at the high level ($\bar{X} = 3.88$). When considered in each aspect, the satisfaction was rated at the high level "Speed of Using Network Service" ($\bar{X} = 4.01$); "Convenience of Using Network Service" ($\bar{X} = 3.90$); "Stability of Using Network Service" ($\bar{X} = 3.80$); and "Security of Using the Network Service" ($\bar{X} = 3.70$). Such research findings were beneficially implement to improve the effectiveness of the wireless computer network of Nakhon Si Thammarat municipality.

Keywords: Wireless Computer Network; Satisfaction; Service Using.

Introduction

Network Technology is critical to every organizational learnings. It integrates the associated systems (e.g. internets, intranet, telephone network, Private Automatic Branch Exchante--PABX, wireless network, such broadcasting systems as radio/television network). In the future, there is the tendency to assemble the systems to function with IP network, therefore, the municipality should plan to construct the technology infrastructure for value creation to the users.

Nakhon Si Thammarat municipality is one of the entities where has provided the wireless internet services (installed in the building area, internet/service points such as schools, city museum, municipal knowledge park, municipal hospital, community welfare unit, bus terminal, health rehabilitation center for the elderly, ThungTha Lad zoo, Buddhist landscape, training centers) without any service charges to students, undergraduates, government officers, state enterprise officers, private employees, and general people living in Nakhon Si Thammarat municipality since 2010AD. However, there have neither been measured the satisfaction nor surveyed the problems of such service using, therefore, the researcher, then, was interested in actualizing such initiatives with the hope to bring the researcher's findings to analyze the cause of the problems; to realize the satisfaction level from service using; and to ultimately improve and develop the network system.

Research Objective

1. To study the satisfaction level of using the service of wireless computer network case study: Nakhon Si Thammarat municipality.
2. To bring the research findings to improve and develop the system of wireless network more effectively.

Literature Review

Researcher reviewed the concept of satisfaction from various academics as following.

NarisaNarasri (2001, p. 28) identified the definition of "satisfaction" that it's a kind of intense demand responding to physical need, then, resulting in satisfaction and start demanding the security and safety. Once such basic physical needs are already satisfied, people will be accepted and feel attached with the belonging groups.

TaneeyaPunyakaew (1998, p.12) identified the definition of "satisfaction" that the satisfaction could be derived from type of work the one does. Such factors as achievement, being recognized, job type, scope of job responsibility and job advancement lead people to either satisfaction or dissatisfaction. For example, if the job is progressive, challenged, and accomplished with recognition, the one would be satisfied and motivated more, as the reinforcement, to get the work done.

From the various viewpoints, researcher defined the satisfaction as the good feeling or the good attitude of persons which mostly come from the satisfied needs. On the contrary, if people don't get what they want, then they will be dissatisfied.

Measurement Of Satisfaction

Millet (1954) mentioned about satisfaction in the context of service sector and suggested the determining factors to judge whether the service would provide the satisfaction or not. Theses determining factors were the equitable services, the speedy services, the sufficient supports in terms of personnel and equipment, the continuity of providing services until the complete processes had been done, and the continuous improvement of service quality.

IntiraSirichouychoochai (2004, Abstract) conducted *A Study of Satisfaction of Customers on Using Internet Service (TOT Online) of TOT Corporation Public Company Limited*. The findings were revealed that the satisfactions of customers using internet services in overall aspect were rated at the moderate level. When considered in each aspect, it was found that customers' satisfaction were rated at the high level in one aspect of "Service Price" (free of charge for using 2-hour services, just pay for 3-Baht connecting call only). Customers' satisfaction were rated at the moderate level in two aspects of "Usability" and "Connecting to the Network"—minimize the case of disconnection. Customers' satisfaction were rated at the low level in two aspects of "Speed of the Network" and "Advertising via Multi-Media of Free Internet Using". Increase speed of internet, protection of disconnection problems, free internet using for the unlimited period, and the coverage area of providing network were the suggestions of the research.

Pornpimon Kaewkerd (2010) conducted the independent study regarding *Satisfaction of the Internet Users: Rajamangala University of Technology Thanyaburi as the case study* by having the objectives to study and analyze the behaviors and satisfactions of internet users of Rajamangala University of Technology Thanyaburi. Samples selected were faculty members and students, total of 414 units, who had been granted the authorization access in the system. The research tool was questionnaire. Statistics used to analyze data were frequency, percentage, and the average. Statistics for hypotheses testing for 2-group was *t* test (independent) and for more-than-2-group were Levene's Test, Welch Test, and *F* test (One-way ANOVA). If there were found the differences between/among groups, multiple comparison needed to be analyzed by Scheffé and Dunnett's T3 methods which computer programs could help to do such processes.

Scope Of Study

This research to study the satisfaction of using the services of wireless computer network case study: Nakhon Si Thammarat municipality were divided into 4 aspects as follows:

- The satisfaction with "Speed" of using network system
- The satisfaction with "Convenience" of using network system
- The satisfaction with "Security" of using network system
- The satisfaction with "Stability" of using network system

Research Methodology

This is a survey research which researcher constructed the research design accordingly:

Population and Samples

Population in this research were students, undergraduates, government officers, state enterprise officers, private employees, and general people living in Nakhon Si Thammarat municipality, total of 105,844 persons (Statistics as of December 31, 2017, from Administration Office Nakhon Si Thammarat). Samples of this research were drawn from this population which the sample size of 100 was determined by the table of Taro Yamane with 95% level of confidence and 5% random sampling error.

Research Tool

This study used the questionnaire of "Satisfaction of Using the Services of Wireless Computer Network Case Study: Nakhon Si Thammarat Municipality" as the research tool. This questionnaire was divided into 2 sections accordingly:

Section 1 contained such questions about respondents' personal information as gender, age, occupation, and revenue. It's the multiple choice questions.

Section 2 contained the questions regarding the satisfaction of using network services in Nakhon Si Thammarat Municipality. It's the 5-rating scale questions which were divided into 4 aspects: Speed, Convenience Security, and Stability of using network system.

Research Results and Discussion

Data analysis (in terms of frequency and percentage) regarding

1. the respondents' personal information in the aspects of "Occupation" were 146 students (accounted for 36.50%), 132 undergraduates (accounted for 33.00%), 48 government officers (accounted for 12.00%), 35 state enterprise officers (accounted for 8.75%), 25 private employees (accounted for 6.25%), and 14 for others (accounted for 3.50%).

2. Regarding the behavior of using network service in the aspect of "Duration" showed that during 3.01-6.00 p.m. was in the first rank (121 respondents, accounted for 30.25%); and during 6.00-12.00 a.m. was in the second rank (114 respondents, accounted for 28.50%)

3. Regarding the behavior of using network service in the aspect of "Area" where people most used the services showed that at Sanam Nah Nueang park was in the first rank (157 respondents, accounted for 39.25%); and at Si Thammasokarat public park was in the second rank (89 respondents, accounted for 22.25%)

4. Regarding the behavior of using network service in the aspect of "Purposes" of using services showed that for conversing online was in the first rank (134 respondents, accounted for 33.50%); and for searching for information was in the second rank (107 respondents, accounted for 26.75%)

In conclusion, the samples mostly used the network services during 3.00-6.00 p.m. (30.25%); mostly used the service at Sanam Nah Mueang park (39.25%), and mostly used the services for the purpose of conversing online (33.50%). These research findings corresponded to the survey of behavior of internet users in Thailand, 2015 AD which revealed that demand for accessing and using internet was for learning. In addition, information technology and communication was crucial to support that facts.

Data analysis in terms of "Satisfaction Level" in overall 4 aspects were rated at the high level ($\bar{X} = 3.88$). When considered in each aspect: (1) Speed ($\bar{X} = 4.10$) (2) Convenience ($\bar{X} = 3.90$) (3) Stability ($\bar{X} = 3.80$) and (4) Security ($\bar{X} = 3.70$) of using network system were all rated at the high level, respectively. (see Table)

Table: Mean, Standard Deviation, Satisfaction Level of Customers Using Network Services

Aspect	\bar{X}	SD	Level	Rank
1. Speed of using network service	4.10	0.32	High	1
2. Convenience of using network service	3.90	0.57	High	2
3. Security of using network service	3.70	0.42	High	4
4. Stability of using network service	3.80	0.48	High	3
Overall 4 Aspect	3.88	0.36	High	

Data Analysis in terms of "Satisfaction Level" in each item was as follows:

1. In the aspect: Speed of using the network service, the item "Speed of Connecting wireless network with other devices (e.g. mobile/smart phone, notebook, laptop, and tablet)" was rated at the highest level; and the item "Speed of Using Search Engine (e.g. www.google.com) via wireless internet" was rated at the high level. These findings corresponds to Siriporn Ummeepien and Walainush Sakulnuy (2009) who studied about *Satisfaction of Students in the Use of computer Networks in Ratchaphruek College*.

These findings revealed that students had the highest satisfaction level with the rapidity of the webpage access (in case of wire network) and high satisfaction level with speed of functional operation (in case of wireless network).

2. In the aspect: Convenience of using the network service, the items (1) Adequacy of facilitating officers to support the problems regarding network system (2) Proper providing manuals for installation and for using the network to facilitate users and (3) the Ability to access wireless network everywhere in the service area were all rated at the high level, respectively.

3. In the aspect: Security of using the network service, the items: (1) System required data encryption before sending via network and (2) There is the system warning/notification when arises the problem of virus, spyware, or any other problems regarding the network were all rated at the high level.

4. In the aspect: Stability of using the network service, the items: (1) Stability of the network system to let the internet be used continuously and (2) Duration of providing internet services times were all rated at the high level.

In conclusion, all the above findings corresponded to the research objectives.

Data analysis from the open-ended questionnaire as respondents' suggestions were as follows:

1. Suggestion to expand network signal in the other area (36 respondents)
2. Suggestion to provide the service points with wire connection as well (25 respondents)
3. Suggestion to provide such type of services as downloading anti-virus Program (14 respondents)
4. Suggestion to improve the stability of network service, especially in the area of Sanam Nah Mueang park due to the large number of service users.
- 5.

These findings corresponded to the Office of Electronic Transactions Development Agency (2015AD) which revealed that the top-5 most important problems of using internet were (1) delay to connect/access internet (72%) (2) disturbance of online advertising (41.60%) (3) Difficulties of connecting internet and its instability (33.8%) (4) Such high expenditures as cost of using services, cost of equipment/devices (26.0%) and (5) Non-coverage of service area (20.3%). The above respondents' suggestions were beneficial as the proposal to the government units responsible for providing the internet services of Nakhon Si Thammarat municipality and to improve, plan, and develop the management processes of network more efficiently. In addition, the measurement of user satisfaction should be repetitively and continually conducted.

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