

REFERENCES

- Aaker, A.D., Day, S.G., and Kumar, V. Marketing research. 6th ed. United States: John Wiley & Sons. 1998.
- Frederick, E.W. Market-driven management. United States: John Wiley & Sons. 1994.
- Kenneth, C.L.; and Jane, P.L. Management information systems: Organization and technology. 4th ed. New Jersey: Prentice-Hall.
- Kotler, P. Marketing management: Analysis, planning, implementation, and control. 9th ed. United States: Prentice-Hall, Inc. 1997.
- Madaniel, C.; and Gates, R. Marketing research essentials. 2nd ed. South Western. 1998.
- Malhotra, K.N. Marketing Research: An applied orientation. 2nd ed. United States: Prentice-Hall, Inc. 1996.
- Mintzberg, H., Quinn, B.J., and Voyer, J. The strategy process. United States: Prentice-Hall, Inc. 1995.
- Oz, E. Management information systems. United States: L Thomson Publishing. 1998.
- Phipps, R., and Simmons, C. Understanding customers. Singapore: KHL Printing 1995.
- Ralph, M.S. Principles of information systems: A managerial approach. 2nd ed. Massachusetts: Boyd & Fraser publishing company. 1996.
- Solomon, R.M.; and Stuart, W.E. Marketing: Real people, real choices. United States: Prentice-Hall, Inc. 1997.
- Stickland, T. Strategic management. 9th ed. United States: Time Mirror Higher Education Group. 1996.
- Wilcox, L.D., Ault, H.P., and Agee, K.W. Public relations: Strategies and tactics. 4th ed. United States: Harper Collins. 1995.

Appendix A: Questionnaire for Residential Customer

1. Sex Male Female

2. Age

3. Occupation Student Government official State enterprise
 Private company officer Own Business Others

4. Revenue / month less than 10,000 baht 10,001 - 30,000 baht
 30,001 - 50,000 baht more than 50,001 baht

5. Educational Level Grade 1 - 6 Grade 7 - 12 Vocational degree
 Bachelor degree Master degree Others.....

6. No. of person in household (include interviewee)person
Age younger than 12 (# person) male(# person) female(# person)
 12 - 18..... (# person) male(# person) female.....(# person)
 19 - 24..... (# person) male(# person) female.....(# person)
 25 - 35..... (# person) male(# person) female.....(# person)
 36 - 60..... (# person) male(# person) female.....(# person)
 more than 60 (# person) male(# person) female.....(# person)

7. Type of telecommunication equipment that you use
 Fixed Line, Use TT&T service line, revenue per line/monthbaht
 Use TOT serviceline, revenue per line/monthbaht
Payment at TOT office Bank Direct debit
If not apply for direct debit, why?.....
Do you use SPC service Yes No No idea about it
If using SPC, Which type of them do you use?
 Waiting call Call conference Abbreviated Dailing
 Hot line Call transfer Automatic call repetition

- Fax, if use TT&T number of lines..... TOT number of lines.....

- Mobile phone, 800.....number, Do you have promotion campaign? O yes O no

900.....number, Do you have promotion campaign? O yes O no

GSM.....number, Do you have promotion campaign? O yes O no

1800.....number, Do you have promotion campaign? O yes O no

Average of monthly paymentbaht/number/month

The reason why do you use mobile phone? Long distance is cheaper

convenience necessary because..... Free office mobile phone

If promotion campaign is expired, you will O continue to use because.....

O stop using because.....

Pager, If use 152 162 1500 1144 1188 142

Cable T.V. Why do you subscribe cable T.V.?

Which company? Expense per month

8. Do you have computer at home? No yes, how many ?....., which brand ?.....

Do you have modem with computer? No yes, how many?....., Speed.....

Which telephone line you connect with modem?

TT&T , how many?..... TOT line, how many?.....

Why do you connect with modem?

for Internet, KSC LOXINFO other, specific.....

Why do you use Internet? Find information E-mail Telephone by Internet

for shopping or other services other.....

Other, please specific.....

9. In this year, do you plan to increase or decrease the above service or not?

No plan Yes, by increase (specific)..... Yes, by decrease

10. How do you make the long distance call?

Fixed line mobile phone public phone (by coin)

Public phone (card phone) Pin phone 108

Average per one call less than 3 min. 3 -10 min. more than 10 min.

11. Due to the economic constrained, how does the behavior of telephone usage effect you?

Fixed line use less use same, no effect use more

mobile phone use less use same, no effect use more

12. If the tariff of fixed line is reduced to be 3, 6, 9, 12 baht/min as same as of mobile, you would use fixed line as same as the past use fixed line more

13. If the deposit of 3,000 baht is cancelled, what do you think about applying the new line? Interested to get more line not interested, because you have it enough

14. If we introduce the pre-paid card and increase the value of card from paying 1,000 baht to amount of 1,100 baht, you would buy it, because..... Not buy it , because...

If buy, Which price do you interest?

pay 1,000 baht, get 1,100 baht

pay 2,000 baht, get 2,250 baht

pay 3,000 baht, get 3,350 baht

buy equal to regular monthly fee

buy at price giving most discount others.....

15. If we offer the special price, what type of the telecommunication equipment are you interested? Fax Pager Cable TV Computer Other (specific).....

16. Who is the most use of your fixed line? Age.....years old male Female

17. The most duration time of telephone usage

7 a.m. - 6 p.m.

6 p.m. - 10 p.m.

10 p.m. - 7 a.m.

18. How long do you use telephone per call?

less than 3 min.

3 -10 min.

more than 10 min.

19. Do you have phone card? yes no no idea about it

20. Do you have Pin Phone 108? yes no no idea about it

If we have pin phone which you can pay after using, What do you think?

interested

not interested

21. Have you ever try to use TT&T Smart Call? yes no no idea about it

If yes, which program do you like most? Fortune teller Match Dating

Lotto

Information on food and beverage

talk with comedies

If we are going to sell TT&T smart call's card, Are you interested? yes no

What other program do you would like to have?

Other comments or suggestions on TT&T Smart Call.....

22. What radio program do you usually listen?..... Frequency..... Time.....

Have you ever call to the radio program? Often sometimes never

23. Which television program do you like most? (No. 1 = Very much, No. 5 = Less)

.....drama.....NewsGame showMusicFeature

Have you ever call to live TV program? Often sometimes never

If yes, which program..... Date and time when you usually watching TV.....

24. Name your newspaper that you would normally read. (can select more than 1 item)

Thairat Daily News Kao Sot Mati Chon Ban-Muang

Neal-Na Poo-Jad-Kan Khung-tap Turakit Than-sade-ta-kit

25. If the monthly fee increases from 100 baht/month to 120 baht/month, you would

Acceptable Unacceptable

26. Air time charging should be correlated with:

Within same province no. of call time of call

Different province distance and no. of call distance and time

27. Ranking the criteria that you concern when you want to select the telecommunication service provider.

.....Quality of networkPriceAfter-sales servicesValue-added service

28. Please feel free to comment the rest:

	<u>TT&T</u>		<u>TOT</u>		Suggestion
	Satisfy	Unsatisfied	Satisfy	Unsatisfied	
Ease of line Request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Instrallaiton quickness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System Quality					
- Easy to connect	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Voice clearness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fault Clearance Quality					
- Maintenace Quickness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Quality after repairing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	<u>TT&T</u>		<u>TOT</u>		Suggestion
	Satisfy	Unsatisfied	Satisfy	Unsatisfied	
Payment collection					
- Correct Payment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Receive on hand Bill Payment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Payment location (Nearby)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Quickness of Payment System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Message Receipt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer service Quality					
- Politesse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Enthusiasm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Solution Providing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Office Image	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29. Please feel free to comment the rest:

	<u>Agree</u>	<u>Not sure</u>	<u>Not agree</u>
TT&T is one of the company that is			
Good Fame	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Good Reliability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Good Security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High Technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix B: Questionnaire for Business Customer

1. Company Name.....
2. Name of interviewee.....
3. Type of Business..... No. of your employee.....
4. How many branch do you have? Location of head office.....
5. Fixed Line, Use TT&T service line, revenue per line/monthbaht
Use TOT serviceline, revenue per line/monthbaht
Payment at TOT office Bank Direct debit
If not apply for direct debit, why?.....
Do you use SPC service Yes No No idea about it
If you are using SPC, Which type?
 Waiting call Call conference Abbreviated Dailing
 Hot line Call transfer Automatic call repetition
6. Fax, if use TT&T number of lines..... TOT number of lines.....
7. Mobile phone, system 800...number, Do you have promotion campaign? Oyes Ono
 900...number, Do you have promotion campaign? Oyes Ono
 GSM...number, Do you have promotion campaign? Oyes Ono
 1800 ...number, Do you have promotion campaign? Oyes Ono
Average of monthly payment.....baht/number/month
Purpose of using mobile.....
8. Do you have PABX in your business? No yes, brand name.....
If you use PABX, no. of external line....., no. of internal Line.....
If you have both TT&T and TOT lines, how do you prioritize your incoming call and outgoing call?.....
Does your company use the line reverse? Use Not use Don't know
Does your company use hunting group? Use Not use Don't know

9. Please feel free to comment the rest:

	<u>TT&T</u>		<u>TOT</u>		Suggestion
	Satisfy	Unsatisfied	Satisfy	Unsatisfied	
Ease of line Request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Instrallaiton quickness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System Quality					
- Easy to connect	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Voice clearness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fault Clearance Quality					
- Maintenace Quickness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Quality after repairing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Payment collection					
- Correct Payment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Receive on hand Bill Payment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Payment location (Nearby)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Quickness of Payment System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Message Receipt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer service Quality					
- Politesse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Enthusiasm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Solution Providing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Office Image	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29. Please feel free to comment the rest:

	<u>Agree</u>	<u>Not sure</u>	<u>Not agree</u>
TT&T is one of the company that is			
Good Fame	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Good Reliability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Good Security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High Technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. How do you make the long distance call?

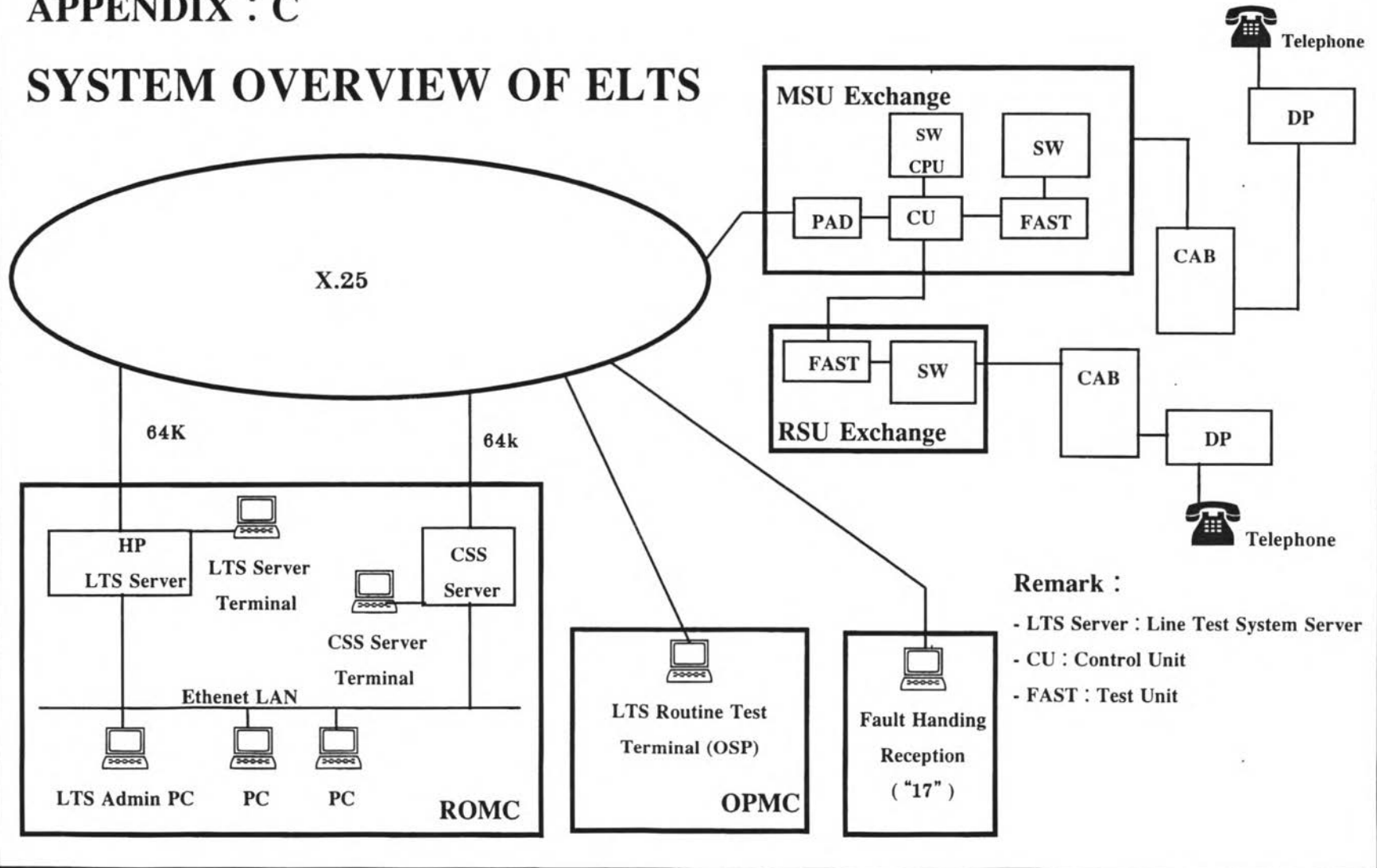
- Fixed line
 mobile phone
 Others

- Average per one call less than 3 min. 3 -10 min. more than 10 min.
12. If the tariff of fixed line is reduced to 3, 6, 9, 12 baht/min as same as mobile tariff, you would use fixed line as same as the past use fixed line more than the past
13. Due to the economic slump, how does the behavior of your company's telephone usage? Fixed line use less no effect use more
Mobile phone use less no effect use more
14. Air time should be correlated with:
Within same province no. of call time of call
Different province distance and no. of call distance and time
15. If the monthly fee increases from 100 baht/month to 200 baht/month, you would Acceptable because..... Unacceptable because.....
16. If the deposit of 3,000 baht is cancelled, what do you think about applying the new line? Interested to get more line not interested, because you have it enough
17. If we introduce the pre-paid card and increase the value of card from paying 1,000 baht to amount of 1,100 baht, you would Buy it, because... Not buy it, because.....
If buy, Which price do you interest?
 pay 1,000 baht, get 1,100 baht pay 2,000 baht, get 2,250 baht
 pay 3,000 baht, get 3,350 baht buy equal to regular monthly fee
 buy at price giving most discount others.....
18. If we offer the special price, what type of the telecommunication equipment are you interested? Fax Pager Cable TV Computer Other (specific).....
19. Ranking the criteria that you concern when you want to select the telecommunication service provider.
.....Quality of networkPriceAfter-sales servicesValue-added service
20. Does your company have computer department?
 Yes (no. of employee.....persons) No
If not, How do you maintain your computer system?.....
21. Does your company use LAN? Yes No

22. Does your company use Internet? Yes No
 If yes, Which service provider?..... What type? Corporate individual
 Purpose of use.....
 If no, do you plan to use the Internet in this year? Yes No
23. Does your company has the Intranet? No Yes, use for.....
 If no, How do you plan to use the Intranet in this year?.....
24. Does your company has mobile radio or trunk radio? No Yes, for.....
 How many?set Which service provider?.....
25. Telecommunication equipments.
- Fax
- On-line by Modem
- Satellite, which provider? Acumen Compunet Samart
 Siam Sat Worldsat Usat
- How do you plan to increase or decrease satellite usage in the near future?
- | <input type="radio"/> Leased Circuit | Provider | No. of links | Speed | route |
|--------------------------------------|----------|--------------|-------|-------|
| <input type="checkbox"/> | TOT | ..... | ..... | ..... |
| <input type="checkbox"/> | CAT | ..... | ..... | ..... |
| <input type="checkbox"/> | TT&T | ..... | ..... | ..... |
| <input type="checkbox"/> | UIH | ..... | ..... | ..... |
| <input type="checkbox"/> | DataNet | ..... | ..... | ..... |
- How do you plan to increase or decrease satellite usage in the near future?
26. Does your company has Point of Sales or On-line Counter Service? Yes No
27. Do you have Cable TV in your business?
 Yes No, Type? Cable Wireless Satellite
28. What kind of telecommunication that your company has been used and already quit to use?..... Why?.....
29. Comments for improvement.....

APPENDIX : C

SYSTEM OVERVIEW OF ELTS



Remark :

- LTS Server : Line Test System Server
- CU : Control Unit
- FAST : Test Unit



BIOGRAPHY

Nuntaporn Kaewvichian was born on February 10, 1971 in Bangkok, Thailand. She obtained the Bachelor's Degree in Electrical Engineering from Chulalongkorn University in 1992 academic year. She started working at Thai Telephone and Telecommunication Company (TT&T). In 1996, she continued her graduate study in Engineering Management at the Regional Centre for Manufacturing Systems Engineering at the same university.