



THE RELATIONSHIP BETWEEN ENVIRONMENTAL SCANNING SOURCES OF
INFORMATION AND NEW SERVICE DEVELOPMENT PERFORMANCE:
A CASE OF BANGKOK HOSPITAL, THAILAND

By
RASEL MAHMUD KHAN

A Thesis submitted in partial fulfillment
of the requirements for the degree of

Master of Business Administration

Graduate School of Business
Assumption University
Bangkok, Thailand

October
2009

**THE RELATIONSHIP BETWEEN ENVIRONMENTAL SCANNING SOURCES OF
INFORMATION AND NEW SERVICE DEVELOPMENT PERFORMANCE:
A CASE OF BANGKOK HOSPITAL, THAILAND**



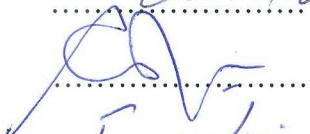
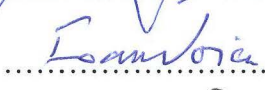
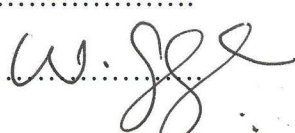
By

RASEL MAHMUD KHAN

A Thesis submitted in partial fulfillment
of the requirement for the degree of

Master of Business Administration

Examination Committee :

1. Dr. Chittipa Ngamkroeckjoti (Advisor) 
2. Dr. Charnchai Athichitskul (Member) 
3. Dr. Aaron Loh (Member) 
4. Dr. Ioan Voicu (Member) 
5. Assoc.Prof. Wirat Sanguanwongwan (MOE Representative) 

Examined on : 27 October 2009

Approved for Graduation on :

Graduate School of Business
Assumption University
Bangkok, Thailand
October
2009

ABSTRACT

This study begins with an elaborate introduction of the importance of environmental scanning and performances new service process development (NSPD) the description of ES and NSPD concept and its illustration in Bangkok Hospital.

The research was conducted to determine the relationship between environmental scanning and new service development for medical healthcare service development in Bangkok Hospital around Bangkok City. The data was collected self-administered questionnaire, distributed to mid to top management who were directly indirectly involve in policy and decision making process. The objective of the research is to develop a better understanding the service performances of new service.

This study aims to examine the relationship between the environmental scanning and performance of new service in the case of Bangkok Hospital. Environmental Scanning, in this study is measured by the characteristics of rapid changes in performances of new product and process development. Questionnaire from the mid to top management approximately 66 sample survey are used to examine the affects of environmental scanning towards the performances of new service process development to test that whether there is strong relationship on environmental scanning practice upon performances of new service development in the case of Bangkok Hospital .

The findings show that environmental scanning has strong impacts upon use of information sources ES practices in Thai healthcare industry. It is obvious that mid to top management recognized that the environmental scanning impacts NPD performances. Finally, this research concluded by providing the recommendations, and suggestions for future research

ACKNOWLEDGEMENT

First of all, I would like to pay homage and the deepest gratitude to Almighty Allah for showing His unlimited kindness and giving all the courage. Then, my parents and my brother deserve the myriad reverence for their utmost enthusiastic & inspired feedback throughout the fulfillment of the thesis. Importantly encouragement from my wife, Nazma Khanam (shapna) leads me to the right direction of enormous achievement.

Sincere thanks to the advisor, Dr *Chittipa* Ngamkroeckjoti for her experienced guidance. It is also a great pleasure to thank Dr. Ismail for his expert suggestions. I would like to thank the following people who had strong influences on writing of this thesis. It includes Dr Simeen Akhter, Dr Sadif, Hema Apu, Mohammed Sohel Islam, Israt Jahan (shammi). Last, not the least is the employee of Bangkok Hospital whose cooperation is certainly admirable.

Rasel Mahmud Khan



Table of Contents

	Page
Title page	
Abstract	i
Acknowledge	ii
Table of Contents	iv
List of Tables	vi
List of Figures	ix

Chapter 1: Generalities of the study

1.1	Introduction of the Study	1
1.2	Thai Healthcare in Medical Tourism	2
1.3	Global Healthcare Industries Situation	5
1.4	Thailand Healthcare Industries Situation	7
1.5	Background of Bangkok Hospital Medical Center	11
1.6	Statement of the Problem	13
1.7	Research Objectives	14
1.8	Research Questions	14
1.9	Significance of the Study	15
1.10	Scope of the Study	16
1.11	Limitations of the Study	16
1.12	Definition of Terms	16

Chapter 2: Review of Literature and Related Studies

2.1	Definition and features of Environmental Scanning	20
2.1.1	Defining Environmental Scanning	20
2.1.2	Reviews of selected Environmental Scanning Literature	24
2.2	Practices on Performances of New Service Process Development (NSPD)	28
2.2.1	Defining and characteristics	28

2.2.2 Literature review on New Service Process Development	30
--	----

Table of Contents

Title	Page
2.3 Related Literature concern about environmental scanning and new service process Development	36
2.4 Healthcare industry in Thailand	44
2.4.1 Health Products and Health Services: Another industry in which Thailand is Competitive	44
2.4.2 Health Products and Health Services: Another industry in which Bangkok Hospital is competitive	45
Chapter 3: Research Framework	
3.1 Theoretical Framework:	48
3.2 Statistical Hypothesis	51
3.3 Variables Measurement	53
3.4 Scale of measurement level	56
3.5 Expected Outcome	56
Chapter 4: Research Methodology	
4.1 Methods of Research Used	58
4.2 Respondents and Sampling Procedures	58
4.3 Research Instruments/Questionnaire	62
4.4 Collection of Data/Gathering Procedures	63
4.5 Statistical Treatment of Data	63
Chapter 5: Data Analysis and Findings	
5.1 Descriptive Statistics	65
5.1.2 Frequency of Type of Scanning, Internal Sources of Information	67
5.1.2 Frequency of Type of Scanning, External Sources of Information	71

5.1.3	Frequency of Performance of Service Development	77
5.2	Inferential Statistics	81

Table of Contents

Title	Page
5.2.1 Hypothesis Testing	81
5.2.2 Bivariate regression analysis	87

Chapter 6: Conclusions and Recommendations

6.1	Conclusion	91
6.1.1	Summary of the study	91
6.1.2	Summary of the findings	92
6.2	Discussion and Managerial Implication	94
6.1.3	Recommendation	95
Appendix A: Primary Data from Interview		96
Appendix B: Bibliography		97
Appendix C: Questionnaire		105

List of Tables

Title page	Page
Chapter 1: Generalities of the Study	
Table 1.1: Rate of Healthcare cost in Decade Ahead for US	6
Table 1.2: BMC Financial Highlights	12
Chapter 2: Review of Related Literature and Studies	
Table 2.1: Categories of the Business Environment	24
Table 2.2: Major research concern about NSPD	30
Table 2.3: Major research concerning Environmental Scanning and new service process development	37
Chapter 3: Research Framework	
Table 3.1: Definition of variables	51
Table 3.3.1: Operationalization chart of independent variable	53
Table 3.3.2: Operationalization chart of dependent variable	54
Table 3.3.3: Operational definition of influencing variables	55
Chapter 4: Research Methodology	
Table 4.1: Theoretical Sample Sizes for different sizes of population	61
Table 4.2: Test of reliability	63

List of Tables

Title page	Page
Chapter 5: Data Analysis and Findings	
Table 5.1 Gender	65
Table 5.2 Age (years old)	66
Table 5.3 Marital Status of the employee	66
Table 5.4 Current Position of the employee within the organization	66
Table 5.5 Management Level	66
Table 5.6 Management Style	67
Table 5.7 Frequency Distribution of Top Management Impact on ES factors	67
Table 5.8 Frequency Distribution of Outcomes of Board members meetings Management	67
Table 5.9 Frequency Distribution of feedback from patients by manager	68
Table 5.10 Frequency Distribution of employees	68
Table 5.11 Frequency Distribution Information from patients provided by in house research	68
Table 5.12 Frequency Distribution company's internal database	69
Table 5.13 Frequency Distribution of patients feedback after consultation with specialists	69
Table 5.14 Summary table of Frequency of Internal sources of information	69
Table 5.15 Summary table percentage of internal sources of information	70
Table 5.16 Mean and standard deviation of internal sources of information	70

List of Tables

Title	Page
Table 5.17	Frequency Distribution of publication 71
Table 5.18	Frequency Distribution of public organization 71
Table 5.19	Frequency Distribution of private organization 72
Table 5.20	Frequency Distribution of patient's feedback 72
Table 5.21	Frequency Distribution of suppliers 72
Table 5.22	Frequency Distribution of competitions 72
Table 5.23	Frequency Distribution of information from research companies 73
Table 5.24	Frequency Distribution of information from in-house research 73
Table 5.25	Frequency Distribution from seminar / conference / exhibition 73
Table 5.26	Frequency Distribution of trade association 74
Table 5.27	Frequency Distribution from correspondence with co-partner company / Affiliates 74
Table 5.28	Frequency Distribution of Relationship between friends or relatives 74
Table 5.29	Summary of frequency of external sources of information 75
Table 5.30	Summary of percentage of external sources of information 75
Table 5.31	Mean and standard deviation of external sources of information 76
Table 5.32	Frequency Distribution of service development 77
Table 5.33	Frequency Distribution of growth rate exceed objective 77
Table 5.34	Frequency Distribution of turnover rate exceed objective 78
Table 5.35	Frequency Distribution of market share exceed objective 78

List of Tables

Title	Page
Table 5.36	Frequency Distribution of sales volume exceed objective 78
Table 5.37	Frequency Distribution of payback investment 79
Table 5.38	Summary of frequency distribution of new service development 79
Table 5.39	Summary of percentage distribution of new service development 79
Table 5.40	Mean and standard deviation of deviation of new service development 80
Table 5.41	Regression analysis of Environmental Scanning and New Service Development 86



List of Figures

Title page	Page
Chapter 1: Generalities of the Study	
Figure1.1: Overseas patient's statistics in Thailand	3
Figure 1.2: Healthcare segment in Thailand and development of Private sectors	3
Figure1.3: Thai Healthcare Statistics	4
Figure 1.4: Rate of Healthcare cost in a decade ahead	5
Figure 1.5: Medical tourists to Thailand by country of origin (2007)	8
Figure 1.6: Revenue contribution by Thai and international patients	9
Figure 1.7: Estimated international patients treated, 2003 – 2005	10
Chapter 2: Review of Related Literature and Studies	
Figure: 2.1 Positioning- Differentiations - Brand triangle of Bangkok Hospital	47
Chapter 3: Research Framework	
Figure 3.1 Conceptual framework of the research study	52

CHAPTER 1

GENERALITIES OF THE STUDY

1.1 Introduction of the study

The on-going turbulences changes in the business macro environment have led to increasing interest in “Environmental Scanning” (ES). Research which concerns of environment factors. The world over, environmental factors, economic, socio-cultural, political, ecological, and technological, are undergoing rapid changes that have a major impact on a company's vision, mission, strategy, objectives and performance.

Today, many business units have scanned this environment on their business, for example, hotel business, automotive industry or even in healthcare business. Healthcare concerns have become a major part of hospital business development throughout the world. The value for healthcare has increased in proportion to the growth of population. As demand for products and services has increased, as a result of faster pace major changes of living standards, diseases patterns are also changing in varied ways. Today, more serious diseases, which are industrial, related, and chronic degenerative disease such s cancer, strokes and cardiovascular disease, as well as road accidents are among the leading causes of death. The healthcare service industry, especially with hospitals, is emerging as one of the growing sectors in Thailand, one with great potential for future expansion.

Therefore, if healthcare organizations want to improve the performances of services; they need to follow the model of the fast moving technological world. In addition, one must have a benchmark to the changing environment (Aherne, 2006). As healthcare costs

increase at a faster rate than other products or services, healthcare providers, in particular hospitals, are under continuous pressure to dramatically improve service, reduce costs, improve patient safety, reduce waiting times, and reduce errors and associated litigation. (Aherne, 2006)

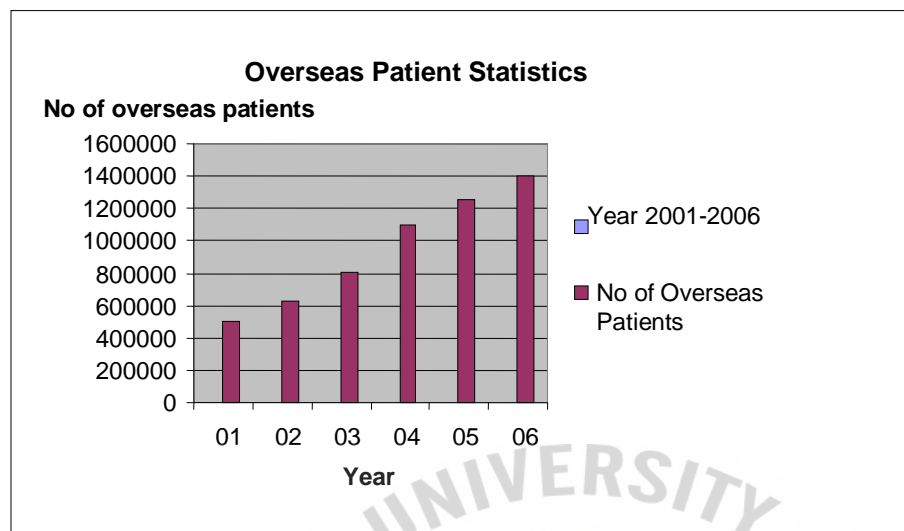
1.2 Thai Healthcare in Medical Tourism

According to Abacus International, medical tourism is becoming one of Asia's fastest growing industries, projected to be worth at least US\$4 billion by 2012. The promise of low-cost, yet high quality healthcare is attracting more than 1.3 million tourists a year to key locations such as Thailand where medical tourists spend an average of US\$362 a day, compared with the average traveler's spending of US\$144.

With the combined efforts of private institutions, medical colleges and Ministry of Public Health (MOPH) agencies objective of becoming "Medical Hub of Asia" is not a far fetched one. The MOPH have a policy aimed at turning Thailand into the Medical Hub of Asia within five years from 2004 to 2009 with emphasize on three health products and services: medical treatment service business, health promotion service business and Thai herb and health product business. It is expected that the total income in this five years space will be THB 210,815 Million.

After the leading hospitals improved and upgraded medical services and facilities, the number of foreign patients, including overseas clients, has grown simultaneously as shown in following Figure 1.1 below

Figure 1.1: Overseas Patient Statistics in Thailand.

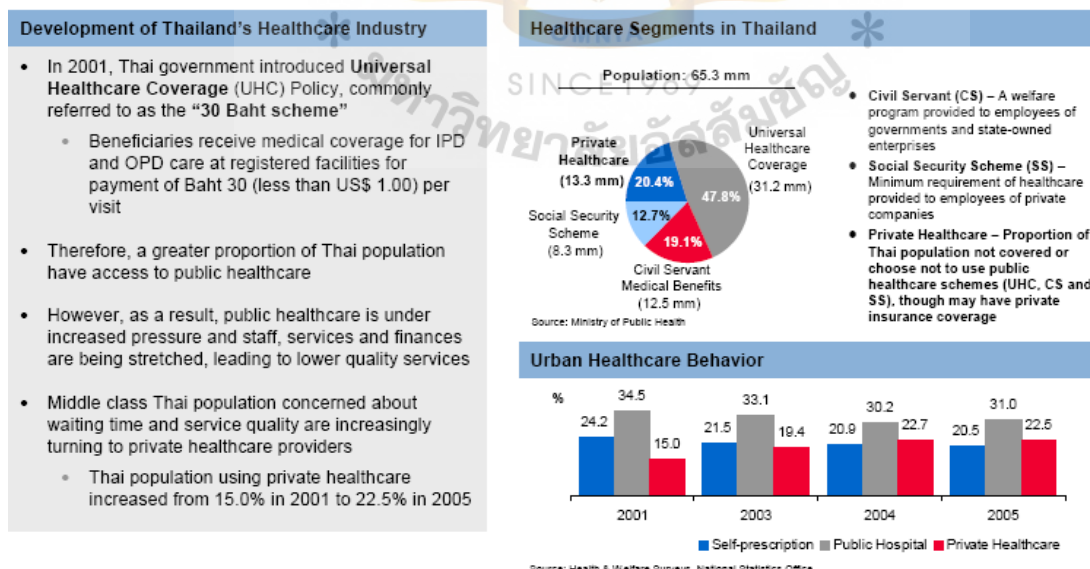


(Source: “Flourishing world-class medical service” Patcharee Lueng-uthai Editor, Newspaper the Nation on “May 24, 2007.”)

Figure1.2: Healthcare segment in Thailand and development of private sectors

Universal Coverage increases Thais’ medical coverage, but increased patients has strained quality of public hospitals, driving some patient groups to private healthcare

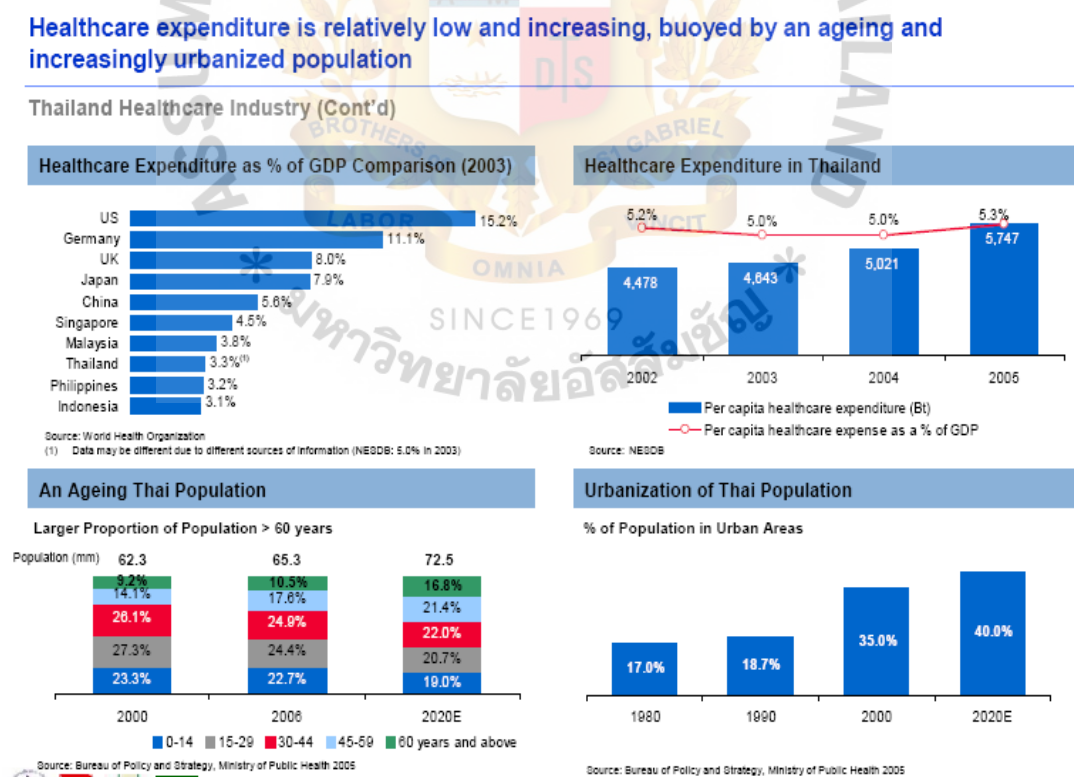
Thailand Healthcare Industry



(Source: Health & welfare surveys, National statistics office)

For simplification, we can divide Thailand medical care into two groups, government hospitals in other words “socialized” hospital and private hospital so called “capitalized” hospitals. Both sectors are facing some pressure to be efficient in serving patients, reducing costs and having competitive prices. Private healthcare plans for common people are now highly questionable. Private sector hospitals are also facing challenges with waste management and cost efficiency among others. Figure 1.2 which shows present Thai care statistics is self explanatory. Figure 1.3 gives statistics on the public and private sectors which account for the private sectors development

Figure 1.3 Thailand healthcares Statistic

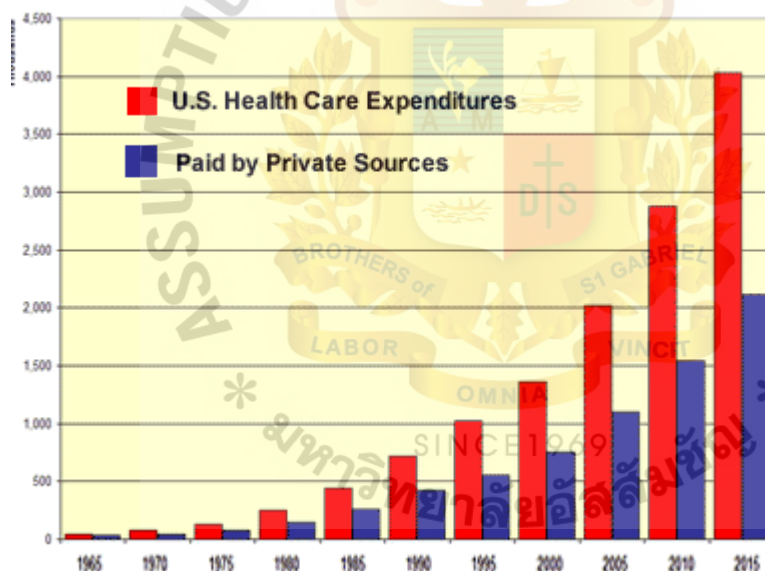


(Source: Health & welfare surveys, National statistics office)

1.3.Global Healthcare Industries Situation

If one looks at the situation around the world like in the **US, UK, Canada** and Asian countries, one can see that escalating costs in the **US** healthcare system has reached critical level. The US government's annual bill for healthcare spending significantly exceeds that of other nations. According to statistics released by the nation's tab for healthcare could hit \$3.6 trillion by 2014, or nearly 19 percent of the entire U.S. economy, and more than \$4 trillion by 2015 with one of every five dollars being spent on healthcare (Please see Figure 1.4 and Table 1.1 below).

Figure 1.4 Rate of Healthcare cost in Decade Ahead



(Source: www.cms.hhs.gov/NationalHealthExpendData retrieved on 10/27/2008 9:04:14 AM 2008.”)

Table 1.1: Rate of Healthcare cost in Decade Ahead for US

\$ Millions	Expense	Private
1965	42,272	31,690
1970	75,111	46,763
1975	133,557	77,225
1980	254,872	147,572
1985	441,880	262,523
1990	717,342	427,318
1995	1,020,438	553,815
2000	1,358,510	756,343
2005	2,016,044	1,101,434
2010	2,879,425	1,544,706
2015	4,031,671	2,116,403

(Source: www.cms.hhs.gov/NationalHealthExpendData retrieved on 10/27/2008 9:04:14 AM 2008.”)

In Ontario, Canada, for example, healthcare costs are expected to account for 50 percent of governmental spending by 2011, two-thirds by 2017, and 100 percent by 2026; unless a radical approach to healthcare is adopted. These problems combined with emergence of globalization, consumerism, demographic shifts, the increased burden of disease, and expensive new technologies and treatments, are expected to force fundamental changes in the approach to healthcare within the coming decade.

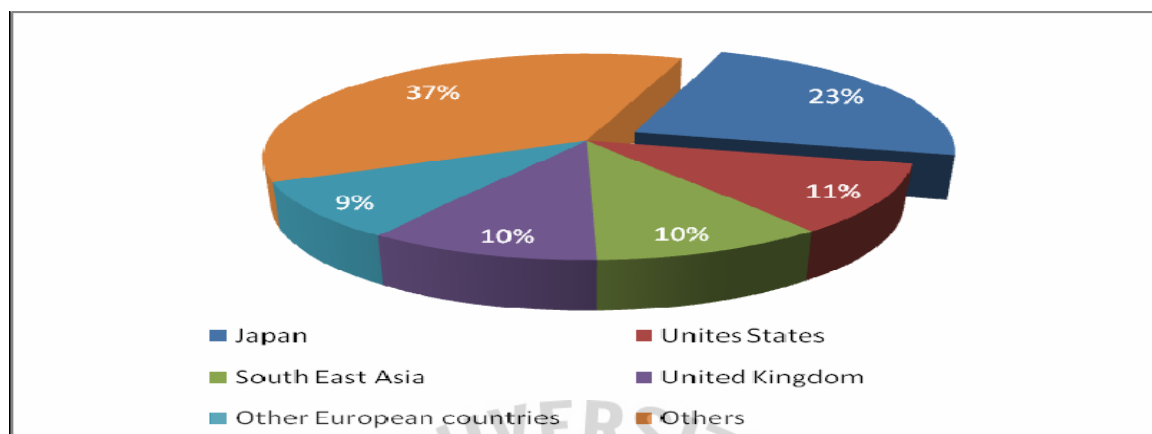
Recent experience in the UK has shown the problem cannot be resolved by spending more money or by increasing capacity and staff. Better outcomes for patients, more satisfying working conditions for staff, and lower costs to the tax payer (or members of private healthcare schemes) can only come from fundamentally redesigning the underlying process for delivering healthcare.

1.4 Thailand Healthcare Industries Situation

Since the 1997 Asian economic crisis, Thailand has had a major impact on the many business industry, the simultaneous oil increased prices globally in today has created a crisis in Thailand much more. The repercussion of this was also decreased in growth of all business sectors in Thailand. The healthcare industry has also been affected by it. Hence, healthcare business need new product development, new product process, new technologies, new management skills, new quality assurance, new rules, new regulation and new strategies in order to develop or keep their hospitals competitiveness in the market. As a result, ES is going to become an important tool for many large healthcare organizations to acquire information about their local and global markets, which can enhance future expansion the healthcare industry.

ES is the acquisition and use of information about events and trends in an organization's internal and external environment. In Thailand, there are many large healthcare providers that have been employing ES in their organization; for example Bumrungrad International, Samitivej Hospital, and Bangkok Hospital Medical Center (formerly Bangkok Hospital or Bangkok General Hospital). ES activities by hospitalities organizations despite prior empirical work and recommendations that companies should undertake environmental scanning activities; research shows a different reality (Olsen *et al.*, 1994). However, this study focuses only on Bangkok Hospital Medical Center; as this hospital have many branches and researcher hoped that this ES concept will be successful in adopting ES in their organizations.

Figure 1.5: Medical tourists to Thailand by country of origin (2007)



(Source: Adapted from patients without borders: an overview of the medical travel industry in Asia, its challenges and opportunities unescap, egm Bangkok 9-11 October 2007)

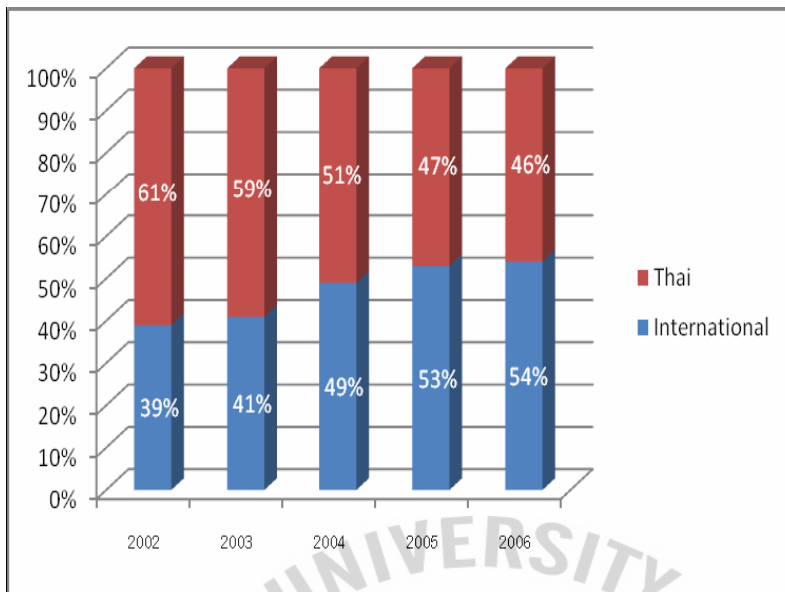
Thailand was particularly hard hit by the financial crisis in 1997. To compensate for the significant drop in revenues caused by the economic crash, private hospitals started to explore the business of treating overseas patients. Since then, private hospitals have had considerable success in tapping the international patient market thanks to its affordable pricing of medical procedures.

The number of international patients visiting Thailand has increased from 500,000 patients in 2001 to 630,000 patients in 2002; 1,103,095 patients in 2004; and an estimated 1.25 million in 2005. In 2006, thirty private hospitals in Thailand accommodated 1.4 million international patients; this generated a total estimated turnover of an US\$ 1 billion. The number of medical tourists is estimated to increase to 2 million in 2007. No current data is not available for secondary information. The Thai Department of Export Promotion believes that the international accreditation of the Thai healthcare industry and the advanced medical technology, competent healthcare professionals and the reasonable cost

for medical services are the main factors attributable to the increase in the number of foreign patients visiting Thailand. The Thailand department of export promotion classifies international patient visits Thailand for medical treatment the international patients who visit Thailand for medical treatment are classified by the Thailand Department of Export Promotion, Ministry of Commerce, into three broad groups expatriate comprising foreigners who work in Thailand and its neighboring countries. These patients are generally treated for heart disease, blood-pressure, respiratory care, and plastic surgery. Direct flying includes foreigners who visit Thailand specifically to utilize the Thai healthcare services. These patients are generally treated for heart disease, neurosurgical, and eye care and kidney disease. Tourists comprise foreigners who are tourists in Thailand and require Thai healthcare services for, among other things, common disease and respiratory care.

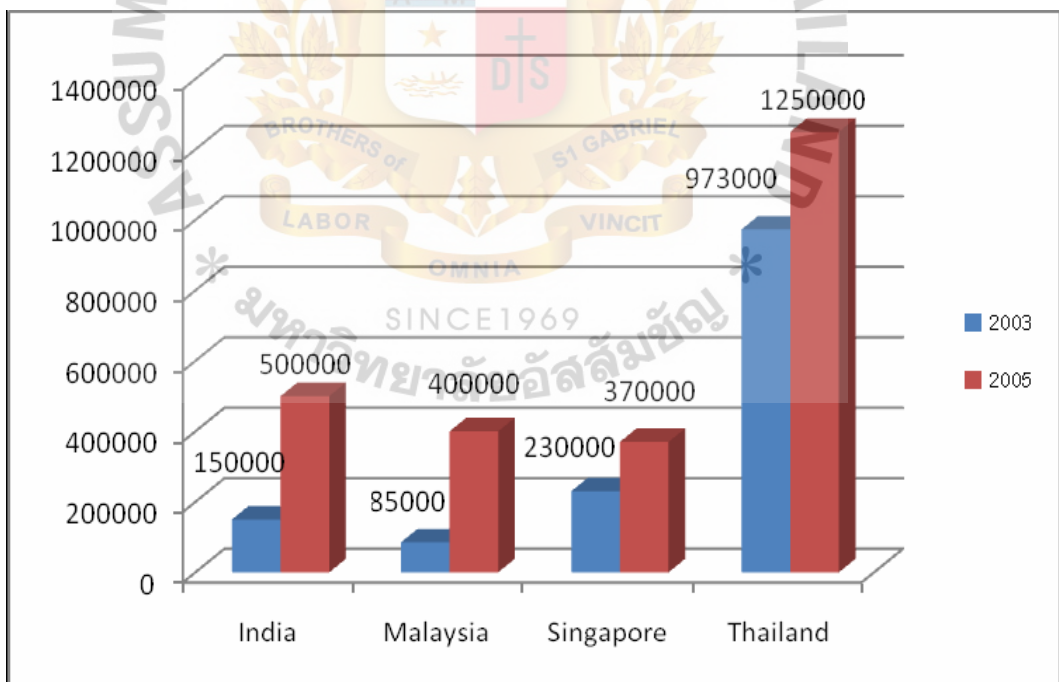
An estimated 60 percent of international patients visiting Thailand are expatriates, 30 percent are direct flying and 10 percent tourists. Japanese still form the largest number of medical travelers coming to Thailand, though Americans, British and Individuals from the Middle East are now also coming in significant numbers.

Figure 1.6: Revenue contribution by Thai and international patients



(Source: Adapted from patients without borders: an overview of the medical travel industry in Asia, its challenges and opportunities unescap, egm Bangkok 9-11 October 2007)

Figure 1.7: Estimated international patients treated, 2003 - 2005



(Source: Adapted from patients without borders: an overview of the medical travel industry in Asia, its challenges and opportunities unescap, egm Bangkok 9-11 October 2007)

1.5 Background of Bangkok Hospital Medical Center (BMC)

This researcher chose a prominent hospital in Thailand as his case study to further study ES implication on Thai Healthcare the Bangkok Hospital Medical Center (in short, BMC also formerly known as “Bangkok General Hospital”). BMC is one of the biggest hospitals in Thailand providing tertiary healthcare. The hospital was established in 1972 by a group of doctors and pharmacist, and began with a staff of 5 specialists and 30 full-time nurses. Today, Bangkok Hospital has more than 400 full-time and consultant physicians along with 600 nurses. BMC consists of 4 hospitals Bangkok Hospital, Bangkok Heart Hospital, Wattanosoth Cancer Hospital, and Bangkok International Hospital. All are located the same complex.

Bangkok Hospital Medical Center has also gradually expanded its network to many provinces and is now the flagship of an entire network of hospitals throughout the country under management of the Bangkok Hospital group. Continuous development, investments in the latest technology, medical expertise, and supporting facilities have contributed to the group current status, ranking it among the top medical institutions in Southeast Asia. Because of its rapid expansion and huge investment in the BMC Complex, it is also making sure that it is efficient when handling day to today. Management is interested in knowing whether their resources are being efficiently used, and there are ways to control costs, time and be otherwise efficient. Above all they want to know if their patients are getting value for their money.

Table 1.2: BMC Financial Highlights

	9M06	9M05	2005	2004	2003
Financial Performance (MB)					
Total Current Assets	3,072.2	1,439.4	1,439.4	1,708.4	911.1
Total Assets	24,241.0	17,677.2	17,677.2	14,598.4	7,304.9
Total Current Liabilities	4,107.1	2,837.6	2,837.6	1,878.4	1,306.0
Total Liabilities	14,612.7	9,259.7	9,259.7	6,711.0	3,579.5
Total Shareholders' Equity	9,628.3	8,417.5	8,417.5	7,887.4	3,725.5
Total Revenues	1,671.6	605.2	10,723.7	5,635.3	3,328.7
Net Earnings for the Year	362.7	188.6	832.1	623.2	384.5
Basic Earnings Per Share	0.31	0.16	0.72	0.71	0.51
Book Value Per Share	8.17	7.24	7.24	9.01	4.97
Financial Ratios					
Gross Profit Margin (%)	42.98%	46.14%	42.10%	43.10%	39.70%
EBITDA Margin (%)	21.5%	18.4%	18.2%	16.4%	18.2%
EBIT Margin (%)	12.49%	8.50%	8.51%	9.49%	11.44%
Net Profit Margin (%)	8.81%	8.19%	8.10%	11.80%	12.50%
Growth on Sales from Hospital Operations (%)	54.43%	93.87%	94.40%	71.00%	31.60%
Net Profit Growth (%)	92.32%	18.32%	33.50%	62.10%	25.70%
Return on Equity (%) *	10.93%	7.57%	10.50%	8.30%	11.40%
Return on Assets (%) *	4.11%	3.38%	4.70%	4.30%	5.30%
Debt to Equity (x)	1.52	1.1	1.1	0.85	0.96
Interest Coverage Ratio (x)	8.00	9.13	8.18	12.84	9.84
Current Ratio (x)	0.75	0.51	0.51	0.92	0.7
Liquidity Ratio (x)	0.71	0.45	0.45	0.86	0.66

(Sources: Adapted from BMC annual report 2007).

Table 1.2 show low returns on assets and a stagnant net profit margin. Because of rapid expansion, some of the specific performance-related challenges BMC is facing are:

- Too much paper works still persist
- Redundant capture of information on admission
- Multiple recordings of patient information
- Excessive supplies that has to be stored in multiple locations
- Excessive time spent looking for charts
- Patient waiting rooms
- Excessive time spent waiting for equipment, lab results, x-rays etc.
- Excessive time spent dealing with service complaints
- Lack of integration on communication among the departments

These are also common problem scenarios in any hospitals in Thailand. This research however chose BMC as a good case study for business improvement.

1.6 Statement of the Problem

As the dollar rate versus the Thai baht is being stabilized, healthcare institutions and other multinationals companies need to protect themselves from unforeseen problems. The process of assessing the situation through ES is thus extremely valuable. In this study, the researcher explores in Bangkok Hospital since the concept of Environmental Scanning today, there are various factors that influence the development of the healthcare system.

The aim of this study is to *examine whether there are any environmental scanning factors have impacted on the performance of new service development at Bangkok Hospital.*

1.7 Research Objectives

The purpose of this study is to examine if there is any environmental scanning factors which have impacted on the performance of the new service development at BMC

- a) To examine the relationship between ES and the performances of new service development at BMC.
- b) To recommend to the middle-to-top management on which Environmental Scanning factors are important in terms of performance of the new service development.

1.8 Research Questions

Looking at the global situation and seeing that many countries around the world are already trying to adapt environmental scanning in their healthcare management, the researcher's prime question in this study is:

- Is Environmental scanning applicable to Thai International Health care?
- How does ES impact upon the performance of the new service development in the context of BMC
- Does Environmental Scanning have an impact upon the performance of new service development process in the context of BMC
- What recommendations should be made to Bangkok Hospital and what factors are important to ES in order to improve the performances of new services?

1.9 Significance of the Study

With the healthcare industry, especially hospitals, is emerging as one of the growing sectors in business service in Thailand with great potential for future expansion, competition among the healthcare service provider has increased. As the dynamic and competitive nature of healthcare continues, it is essential for managers and directors to focus on service quality and process development for serving customers. These factors should be carefully explored and examined for continued improvement of the working process they offer in the organization.

The aim is to assist BMC managers, directors and policy makers to find the level of the development in recent year with quality service provided by Bangkok Hospital. This study will help BMC managers to identify the barriers to implementing the performances of new development and innovation for current Thai and non-Thai patients by providing good quality service and thus will help them to create value-added differentiation among their competitors

This study could serve Bangkok Hospital with some relevant information with the collections and analysis of data. Since the research is about environmental scanning practices with regards to the performance of new service development assigned by BMC the management the research results could assist managers in various decision making helping them to improve and upgrade current services, and to gain more customers and increase the quality of the service center. Thus BMC supervisors will be able to figure out the best possible outcome to improve the protocol of in-house operations in their chain of command in any particular departments.

This study would be a beneficial source of information to all parties involves in healthcare management in Thailand and abroad. Moreover, anyone coming across this thesis would, to a certain extent, gain an insight into ES healthcare implications. This thesis attempts to prove that the concept that has been so successful in other industry such as hotel, tourism , and food industry, many of the financial institutions, automobile industry can also be a success in the healthcare industry.

1.10 Scope of the Study

This study exposes a tertiary care hospital environment that is BMC based in Bangkok metropolitan city, one of the top healthcare institutions in Bangkok, for this reason other hospitals within in Bangkok will not be explored

1.11 Limitations of the Study:

Since this study scans and analyzes the factors affecting the performances of new service development at Bangkok Hospital, it has limitations:

- 1) The research is conducted only in the month of December 2008.
- 2) The researcher does not have full access to mid to top management to fully implement the proposed topic
- 3) This research focuses on the performance of new service development for user and staff only.

1.12 Definition of Terms

Environmental scanning:

Environmental scanning (ES) is the acquisition and use of information about the events, trends, and relationship in an organization's external environment, the knowledge of which would assist management planning the organization's future course of action (Choo, 2001)

A business environment can be scanned in three ways

- **Ad-hoc scanning** - Short term, infrequent examinations usually initiated by a crisis
- **Regular scanning** - Studies done on a regular schedule (say, once a year)
- **Continuous scanning** - (also called continuous learning) - continuous structured data collection and processing on a broad range of environmental factors

Most commentators feel that in today's turbulent business environment the best scanning method available is continuous scanning. This allows firm to act quickly, take advantage of opportunities before competitors do, and respond to environmental threats before significant damage is done. ES in this study means the macro environmental scanning BMC

Environmental Uncertainty:

The degree of complexity plus the degree of changes existing in an organization's external environmental. (Wheelen and Hunger, 2002) In this study Environmental Uncertainty was assessed by having respondents rate the degree of uncertainty associated with twelve different aspects of the hospital environment here environmental uncertainty means the uncertainty environmental factors that Bangkok Hospital need to scan.

New Product Development:

New product development (NPD) is the term used to describe the complete process of bringing a new product or service to market. These could be products with totally new technical development or they could be revisions of existing products with new packaging or a new financial service (Ahituv et al., 1998). In this study, new product is defined as a variety of treatment services which have been successfully launched at BMC past three years.

New Service Development: New service development similar development to product development, but there are significant difference in the activities and research techniques (Johne & Storey, 1998) in this study, new service process development is defined as a variety of treatments services which have been successfully launched at BMC past three years.

Hospital:

An institute or establishment providing medical or surgical treatments for the ill or wounded (Brown 1993). A hospital is an institution for healthcare, often but not always providing for longer-term patient stays. Today, hospitals are usually funded by the state, health organizations (for profit or non-profit), health insurances or charities, including direct charitable donations. In that part, however, they were often founded and funded by religious orders or charitable individuals and leaders. Whereas this work used to be done by the founding religious orders by volunteers there are hospitals are now a day staffed by professional physicians, surgeons and nurse as in the care with BMC

Customers:

Individuals, who identify a need, buy and consume products or services to satisfy their needs, and then dispose of the product or terminate the service when they are through with it (Wells and Prensky 1996). A decision-making unit (individual, family, household or firm) that takes in information, process that information (consciously and unconsciously) in light of the existing situation, takes action to achieve satisfaction and enhance lifestyle (Hawkins 1980) Customers in this study means BMC patients.

Customer Behavior:

Mental and physical activities undertaken by the customers that result in decision and actions to pay for buying and using products and service (Sheth, Mittal and Newman 1998) Customer Behavior in this study means BMC patients' behavior.

Customer Expectations:

Customer expectations define the probabilities of the occurrences of positive or negative events or actions if customers engage in some behavior (Oliver, 1980) Customer Expectations in this study mean what patients expect in terms of services from BMC

Customer Satisfaction:

A persons feeling of pleasure or disappointment resulting from comparing a product's perceived performances (or outcome) in relation to his or her expectations (Kotler 2000). The mental state of feeling adequately rewarded in a buying situation (Hanna and Woziak 2001) Customers Satisfaction in this study means BMC patients' satisfaction

CHAPTER 2

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter reviews related literature, and briefly discusses and highlights major concepts and theories related to this study. The literature review describes the different theories and models leading to a conceptual framework upon which the study based the literature review concern 4 areas. The first part focuses on studies in the field of ES. The second part fully focuses on the performance of new service development (NSD). The third will focus on the impact on ES practices upon the performances of new service development. And the final part is concerned with ES of the healthcare industry in global era.

2.1 Definition and features of Environmental Scanning

2.1.1 Defining Environmental Scanning

ES is a process of gathering, analyzing, and dispensing information for tactical or strategic purposes. The environmental scanning process entails obtaining both factual and subjective information on the business environments in which a company is operating or consider entering (Choo, 2001). See page 16-17

Success in today's success business environment depends, to a large extent on the ability of the firm to gather and process information and the amount of relevant information used in the planning process. In short ES is an important competitive weapon for firms, therefore, to acquire superior information about the environment (Sawyerr, 2002).

Managers gather information from different sources and with varying degree of frequency. Informal sources include face-to-face and telephone communication whereas formal sources include documents, reports survey results, magazines and newspapers. The sources of information could also be internal or external to the organization. Merged with internal analysis of the organization's vision, mission, strengths, and weaknesses, external analysis assists decision makers in formulating strategic directions and strategic plans. The goal of environmental scanning is to alert decision makers to potentially significant external changes before they crystallize so that decision makers have sufficient lead time to react to the change. Consequently, the scope of environmental scanning is broad (Morrison, 1992).

Internal sources also include memos, reports, discussions and meetings with organizational members whereas external sources include personal contacts and other media outside the organization. Managers may gather and interpret information irregularly or continuously, or regularly on a daily, weekly, monthly, quarterly or yearly basis. As a manager has limited time and cognitive capacity to comprehensively and completely understand the environment, they must choose among scanning alternatives (Elenkove, 1997).

Wood (1997) identifies several sources of information that can be drawn on in the scanning process. These include traditional sources such as employees, suppliers, and trade publications. Wood also emphasizes other sources such as competitors' Web sites, suppliers' Web sites, and on-line.

Strategy was classified according to Porter's (1996) typology of product differentiation, low-cost leadership, and niche focus. The study found that strategy and environmental

scanning had a substantial influence on the firm's return on assets and return on sales. High-performing firms in both differentiation and low cost strategies engaged in significantly greater amounts of scanning than low-performing firms in those two strategic groups.

A study of scanning by chief executives found that executives of high-performing firms (those with higher returns on assets) increased the frequency, intensity, and breadth of their scanning as external uncertainty rose (Daft *et al.*'s 1988).

Subramanian and his associates studied scanning and performance in US Fortune 500 companies and found support for a relationship between performances, measured by profitability and growth, and advanced scanning systems: firms using advanced systems to monitor external events showed higher growth and profitability than firms that did not have such systems (Subramanian *et al.*, 1993).

Subramanian led another recent study of over 600 hospitals belonging to the American Hospital Association. He concluded that hospitals with the more sophisticated scanning functions performed significantly better than hospitals which used less advanced or basic methods to monitor the environment (Subramanian *et al.*, 1994). The sophisticated scanners scored high in their abilities to obtain information and their ability to use the scanning information in the strategic planning process. These hospitals performed better in terms of occupancy rates and per bed expenditures.

The benefits of scanning are not solely economic or financial. In an in-depth case study of environmental scanning at the Georgia Center for Continuing Education, Murphy (1987)

concluded that scanning is an important component of the organization's strategic planning process, improving the Center's ability to react to and implement change in response to external factors. Furthermore, scanning has also contributed to increased communication among the line and staff personnel of the organization, and greater employee involvement in the decision making process.

Ptaszynski (1989) examined the effect of the introduction of environmental scanning in another educational organization. The study found scanning to have a positive effect on the organization in these areas: communication, shared vision, strategic planning and management, and future orientation. The most significant effect was that scanning provided a structured process which encouraged people to regularly participate in face-to-face discussions on planning issues. As a result, the organization was able to develop a number of strategic options that could be used proactively to cope with external changes.

Information derived from environmental scanning is increasingly being used to drive the strategic planning process by business and public-sector organizations in most developed countries. There is research evidence to show that environmental scanning is linked with improved organizational performance. However, the practice of scanning by itself is insufficient to assure performance – scanning must be aligned with strategy, and scanning information must be effectively utilized in the strategic planning process. An important effect of scanning is to increase and enhance communication and discussion about future-oriented issues by people in the organization. Coupled with the availability of information on external change, scanning can induce strategic, generative organizational learning.

2.1.2 Reviews of selected ES Literature

The purpose of ES is to identify and track current and potential trends that afford business opportunities and pose challenges to the continued success of an organization (Auster & Choo, 1993; Costa & Teare, 2000). Information obtained from both the internal and external environments drives the strategic planning process (Choo, 1998). Previous studies suggest that different methods of scanning have been proposed, for instance, the individualistic versus collective approach articulated by Mintzberg, Ahlstrand, and Lampel (1998). Accurately perceiving the environment is a difficult task. Thus a classification of the environment is helpful (see Table 2.1).

Table 2.1 Business Environment Categories

General environment	Task environment	Functional environment
Political Technological Economic Socio -cultured Ecological	Customers Suppliers Competitors Regulators	Finance Human resource Operation Administration Marketing Research and development

Source: Adapted from Aguilar, F., “Scanning the Business Environment, Macmillan”, New York”, 1967.

Aaker (1984) developed the concept of a “strategic information scanning system” (SISS), which sought to enhance the effectiveness of the scanning effort and preserve much of the information which is invariably lost to organizations. This system consists of six steps: steps one and two specify information needs and sources; steps three and four identify the participants of the system and assign them to scanning tasks; and steps five and six deal with the storage, processing and dissemination of the information

Indent SISS can provide useful strategic information this is achieved by focusing on target information needs, allocating efforts among those exposed to relevant information, and having an effective system for storing, processing and disseminating information. By adapting a straight forward and well organized process of environmental scanning, organizations are able to make full use of the available information, collected, processed and stored at a very low cost. This process by Aaker is an interesting alternative to continuous scanning using an outside-in perspective, as monitoring all sectors of the external environmental is likely to be time-consuming and expensive.

According to Dey, (2006) defined the an integrated quality management which can leads problem so easily and also recommend some solution, he developed a logical frame work analysis for implementing and helps to create and evaluate continues healthcare performances .In his study he represents in the proposed quality management model has the following steps:

- (1) *Identify a specific process for improvement.* Although to improve performance of a productive system, every process performance is required to be studied and improvement measures are to be derived, a specific process may be prioritized for improvement action.
- (2) *Identify performance parameters.* The process parameters are both objective and subjective in nature.
- (3) *Measure current performance.* Extensive data collection and analysis in line with the performance measurement framework with the active involvement of the process owners are to be carried out in order to measure performance of each process.

(4) *Identify issues related to the process not performing as desired using problem tree.*

The reasons for non-achievement of desired performance level are to be identified using brainstorming among the process owners. First, the macro level problem is identified and subsequently, the root causes of that problem are identified hierarchically.

(5) *Derive solutions to the above problems using objective tree.* Subsequently, an objective tree is developed, which corresponds to the problem tree of a specific process with the involvement of the process owners.

(6) *Develop a logical framework using the information from the objective tree.* A logical framework is then formulated from the information in the objective trees. The logical framework matrix justifies the improvement project as well as providing an overview of the project plan.

(7) *Develop a detailed project plan for implementation for improving process performance.* Information from logical framework along with other studies (survey, design and detailed engineering) helps develop detailed project plan.

(8) *Obtain approval of the competent authority.* Approval from competent authority on the basis of project plan ensures of resource deployment and management, commitment for performance improvement while approving management ensures link between process improvement projects and organizational strategies both in short and long terms.

(9) *Implement, monitor, and evaluate the improvement projects.* Projects are then implement with the involvement of specialized groups (from the matrix organization structure) along with consultants, contractors and suppliers (in line with the requirements), which ensures employee involvement in improving process performance.

(10) *Measure the performance of the process using the earlier parameters and analyze for continuous improvement.* Process performance is dynamically monitored for the purpose of continuous improvement.

Rouibah (2002) investigated companies that are evolving in turbulent and equivocal environments. He wanted to find out the distances in literature between western countries business environment and low development country business environment. He investigated Kuwait executives from top 86 companies. When he started his research on this particular area, he found little research on this field. Beside although he found substantial research attention in management literature in the western countries, for example Lang *et al.*, 1997, Groom and David 2001, there was a small number of knowledge about how organizations in low development country practice environmental scanning. According to this author's knowledge only five research papers were done: respectively about Nigeria (Sawyer *et al.* 2000), Bulgaria (Elenkov 1997), Russia (May *et al.*, 2000), China (Ebrahimi, 2000), and Thailand (Ngamkroekjoti and Johri 2000). Beyond their research contributions, they were focused on different research objectives. Most of Kuwaiti executives claimed to be familiar with the concepts of environmental scanning and strategic information concept. So they are familiar with environmental scanning claims. Many researches in well developed countries advocate that there is a positive relationship between environmental scanning activities and companies' performances (see Analoui and Karami 2002); Did Rouibah think is this relationship was still valid in companies that belong to less developed countries? Is there any difference in the scanning frequency of different sectors of the environment (political, economic,

societal, competition, customers, and suppliers)? Which kind of information sources do executives frequently scan.

2.2 Practices on Performances of New Service Development (NSD)

2.2.1 Defining and characteristics

In business and engineering, new product development (NPD) is the term used to describe the complete process of bringing a new product or service to market. There are two parallel paths involved in the NPD process: one involves the idea generation, product design, and detail engineering; the other involves market research and marketing analysis. Companies typically see new product development as the first stage in generating and commercializing new products within the overall strategic process of product life cycle management used to maintain or grow their market share.

New Service Development

New Service process Development NSD has been relatively neglected in the literature on innovation. Valuable insights are available in the extensive new NPD literature they can be considered while developing services. However, it is recognized that there are a number of aspects distinctive to services, which are likely to affect their development one of these is the role that users and service staff can play in NSD.

New service development has a similar development process to product development, but there are significant differences in the activities and the research techniques (Johne & Storey, 1998). Johnne and Storey in their comprehensive review of service development literature commented on the importance and lack of effort to develop specific service development models. The literature suggests that relative to product

firms, service firms are less likely to perform concept tests, test marketing, launch activity and are inefficient in predevelopment activities (Easingwood, 1993). The early stages of problem description, idea creation, concept definition and screening are vital for the success of the future stages.

A study comparing the innovation activities of Australian firms explored the factors necessary for the successful development of new goods and services. The study (Atuahene-Gima, 1996) found that both types of firms focus on similar factors but the relative importance varied. The critical factor for services - the importance accorded to innovation activity in the firm's human resource strategy - ranked third in importance for manufacturers. Service innovation advantage and quality ranked third in importance for service firms. Compared to manufacturers, successful service firms must place greater emphasis on the selection and management of employees who work directly with the user.

A review of service development by Cowell in 1988 highlighted the following points: Services development appeared to be technology driven rather than user driven. Generally, the rate of new service creation is quicker, while user adoption of new services is slower, relative to new products. There are more service improvements rather than service innovations. In most services, users are involved in the service production process. Service staffs are critical to service production and delivery

2.2.2 New Service Development (NSD)

Table 2.2 Major Research on NSD

Year and author	Concept or focus	Empirical basic	Results
2000 Jorge Costa and Richard Teare	Developing an environmental scanning process in the hotel sector.	Investigates the environmental scanning activities of hotel chains operating in Portugal and to determine the relevance of these activities.	A cognitive mapping technique was used in the analysis of respondent's perceptions towards the development of such a process, with the map showing more similarities than differences between the comparison groups, thus highlighting the importance of this process for both intenders and realizers.
2000 Suwannaporn, P	New Product Development in the Thai food Industry.	To examine success factors of NPD in technology driven industries as focus on information sharing between R&D, production and external interface	This model of information flow for continuous learning in new product development seems to give some useful guidance on thinking about information sources, information flows, and parts within the company, which should be linked into the information framework
2000 Woodcock, D.J	New Product Development in British SMEs	Report on NPD activities of British SMEs .Emphasis on performance data recording performance review procedure and production personal	They recommend the collection and use of such information to systematically improve their performance. Data collected also need to be periodically reviewed and benchmarked in the context of competition.
2003 Abraham B. (Rami) Shani James A. Sena and Tommy olin	Knowledge management and new product development: a study of two company	To explores the complex relationship between organizational context, NPD and knowledge management. Design-based frame work is proposed and utilize in the investigation of two NPD units telecommunication and software development	Sustain the success of the NPD process and outcomes present many challenges. The balance between sustaining human and business development become critical

Source: Summary implications based on literature reviews

Year and author	Concept or focus	Empirical basic	Results
2003 Chittipa Ngamkroekjoti and Lalit M. Johri	Coping with hyper-competition in the financial service industry in Thailand: environmental scanning practices of leaders and followers	The research on medium sized finance companies in Thailand shows that companies with well organized and managed environmental scanning practices are recovering from the 1997 financial crisis and are able to respond to the hyper competitive market.	In financial services industry the leaders help in shaping regulatory environment and continuously redefine industry benchmarks.
2007 Aruna Shekar	An innovate Models of Service Development: A process guide for service Managers	An empirical evaluation of a process model for new service development.	The modification to the user techniques used in service development should focus on providing tangible stimuli where appropriate (especially at the idea generation stage) and enhance the participation of users and service staff.

(Source: Summary implication based on literature reviews)

Costa and Teare(2000) as represented in the study the majority regarded the development and implementation of a formal environmental scanning process as something (11) very important and we have been trying to do something similar. In this group, the development and implementation of formal scanning process is seen by the majority of respondents as very important, with concept (7) the information collected and analyzed (may) be provided to the units, board of directors and administration, being the most important of links(three links). A formal environmental scanning process is both seen as “not just important but fundamental”, and helpful but not that relevant”, by respondents in this group Three sequences are clearly defined in the map, two of which reflect positive

attitudes towards the adoption of a formal scanning process and one showing a negative attitude.

In terms of domain analysis, the most important concepts in the map are concepts (6) simple and objective information with just what we need to know and (11) improve concepts have three links going to or out of them and represent some important aspects commonly regarded by respondents as central problems affecting their information needs: quality/objectivity of information and its dissatisfaction/use by staff. Even in the case where the formalization of the scanning process is seen as helpful but not relevant, the limited dissemination and use of information is still the main concern.

A formal environment scanning process is both seen as “not just important but fundamental” and “helpful but not relevant “ by the respondent in this group (d)) three sequences are clearly defined in the map, two of which reflect positive attitudes on the adoption on a formal scanning process and one showing a negative attitude. In terms of domain analysis, the most important concept in the map are (6) simple and objective information with just what we need to know and (11) improve information to disseminate in meetings. These concepts have three links going into or out of them and represent some important aspects commonly regarded by respondents as central problems affecting their information needs: quality/objectivity of information and its dissemination/use by staff. Even in the case where the formalization of the scanning process is seen as helpful but not relevant, the limited dissemination and use of information is still the main concern

The prior empirical study of Suwannaporn et al (2000) examined its study the success factors of new product development in the Thai food processing industry determined how much it confirmed to the current research, suggesting that well-managed new product development should be organized as a continuous learning process and should have strong information linkage across functions and outside a firm to suppliers and customers. These authors found that generally only some multinationals and few large Thai firms attempt to integrate information from a wide knowledge base into their new product development. It appears that new product development in most Thai companies suffers poor cross-functional communication, which can lead to costly mistakes and loss of time in getting new products to the market quickly. These problems are less likely to occur in the MNC, which try to incorporate new managerial practices into their new product development process. From the examination of new product development in Thailand, they proposed a model based on the continuous learning process in new NDP suggesting how to accumulate and integrate learning (about customers, technology and new product development itself) across key internal functions (marketing, R&D and manufacturing). The model suggests customer information circulating through contributing to new product development knowledge. Synthesis of these two moves companies toward new products appropriate to target customers. Similarly, information about technology feeds into R&D, manufacturing and cycles through new product development and existing products. This model of information flow for continuous learning in new product development seems to give some useful guidance on thinking about information sources, information flows, and parts within the company, which should be linked into the information framework. Woodcock et al. (2000) reported the pilot study of the efforts by six British SMEs to

enhance their product development capabilities. Despite the fact that the firms involved have all shown positive attitudes towards new products, they discovered that most of them are deficient in formal competitor and market analysis, formal documented procedures and performances record during new product development process. Moreover manufacturers are typically involved too late in new product development process. The primary reasons for being late in collecting such data were a fear of possible costs involved and a lack of awareness of the value of such information, including not knowing precisely what data to collect and to analyze. This shortage of information hinders the ability of management to learn and thus improve the future generation of new products. They recommend the collection and use of such information to systematically improve their performance. Data collected also need to be periodically reviewed and benchmarked in the context of competition.

Shani, (2003) Sena and Olin (2003) in their research focused on new product development and knowledge management coupled with the two case studies to provide rich data for discussion, theoretical exploration and managerial implications. Sustaining the success of the NPD process and outcomes present many challenges. The balance between sustaining human and business development becomes critical.

Hatchuel et al (2002) argued that to address the increasing challenges of new product development in a knowledge-intensive environment, organization needed to follow a design-oriented-organization paradigm. This paradigm treats the organization from a holistic and comprehensive perspective) I.E. production or new product development must be seen as one of few key elements in the design process). This paper proposes a holistic and comprehensive framework that integrates strategic thinking with socio-technical

system design theory, knowledge management, new product development theories and the emerging body of knowledge about sustainability. The comprehensive nature of the proposed framework provides an opportunity to conduct examination of current NPD practices in two companies' telecommunication and software development firms. The paper documents some new insights into the nature and dynamics of NPD work and proposes some direction for new research. The lack of academic research on sustainability, and the relationship among capital strategies, organization design configurations, NPD structure and processes, knowledge management, and business and human sustainability may reflect an inherent difficulty in empirical measurement and testing. Thus, sustainability of the NPD work systems is in need of systematic research

Ngamkroeckjoti (2003) investigated three top financial companies during the economic crisis in Thailand and Asia. She wanted to see how during the unstable economy this three companies how they survive. These three medium sizes organizations and industry leaders show two distinguish approaches in response to the business environment. The company focused on possible short and long terms possible to look at the broader set of factors, are able to influences the better awareness of the business environment changes during the economic crisis. She found in the industry the followers have slow capturing the Business environment, does not influences the regulation can only accomplish once the policies handed out by the regulators and leaders have to manage the over come the debt burden are looking forward.

Shenkar. A (2007) began with secondary data collection or desk research followed by qualitative research, which include expert interviews, customers and service staff group

discussions for need and attribute identification and then idea generation. She concluded that a service development framework that incorporates the participation of users and service staff in the development process was created based on the literature and the characteristics of services. This framework was applied and tested in four case studies with local governments in New Zealand, to produce a model of service development. The model provided a systematic process to guide service managers and providers, for developing and improving services systematically. It is a tool to aid service development, by providing direction and review points for decision-making and suggesting when and how to incorporate users and staff in the development process. The research highlighted that participation of users as well as service staff are beneficial in the first stage of development, as each group brings requirements for the new service from their perspective. In general, the modification to the user techniques used in service development should focus on providing tangible stimuli where appropriate (especially at the idea generation stage) and enhance the participation of users and service staff.

2.3 Related Literature concerning ES and new service process development

The rapid changes in the business environment have led to increased interest in research on the subject of "environmental scanning." The world over, environmental factors classified as economic, socio-cultural, political, ecological, and technological are undergoing rapid changes. These changes have a major impact on a company's vision, mission and strategy, objectives and its performance.

The business environment in Thailand has been changing at a fast pace even before the 1997 economic crisis. The trade liberalization and investor friendly policies of the Thai government, the trend towards free market economy through privatization and

deregulation of the economy coupled with rapidly changing technologies and shift in social and cultural values pose new challenges and opportunities for companies in Thailand. In the case of large companies, the impact of these changes is enormous, affecting almost every aspect of their value chain. The rapid growth of the Thai economy was characterized by the creation of thousands of new jobs, increase in the intensity of competition, introduction of new technologies, rise in income levels leading to changes in life styles, greater concern for human rights and environmental issues. The literature on the environmental scanning practices of companies in Asian context is rather scanty and the underlying motive of this research is to fill this gap (Ngamkroekjoti and Johri 2000) Sallis (2005) Kohn (2005).

Table 2.3 Major research concerning environmental scanning and new service process development

Year and author	Concept or Focus	Empirical basic	Results
2001 Papastathopoulou, Paulina	The initial stage of new service development : A case study of Greek banking sector	This paper examines the initial stages of new service development in the case of a leading Greek bank.	These revealed a different way for developing new services in comparison with the main body of the existing literature.
2002 Ian Alam	An exploratory investigation of user involvement in new product development	This study tries to identify four key elements of user involvement, including objectives, stages, intensity, and modes of involvement.	Based on the findings, the author develops an inventory of activities that needs to be carried out in involving users in a new service development project.
2005 Kamilla Kohn	Idea generation in new product development through business environmental scanning: the case of	Develop an understanding of why the use of business information in new product Which proves problematic in practice, and to show how obstacles and	In this case, the findings indicate the opposite. Even though XCar has extensive experience in handling market intelligence activities, it

	XCar	difficulties may be overcome by reference to the process of using business environmental scanning (BES) for the purpose in a real organization scanning.	has mostly consisted of confirmation-oriented scanning.
2006 Nina Veflen Olsen James Sallis	Market scanning for new service development	The focus of this paper is to develop and test a theoretical model of narrow and broad market scanning in a service industry, including short- and long-term outcomes.	The paper offers the following advice: as with organizational learning, service firms need to scan their markets by design, not default.
2008 Chittipa Ngamkroeckjoti & Mark Speece	Technology turbulence and Thai food new product development	The focus of this paper to examine the uses of environmental scanning in the Thai food processing industry , study also show that more extensive use of ES improves new product performances	In the result shows that more comprehensive use of ES makes a significant contribution on NP performances
1997 Detelin S. Elenkov	Environmental scanning systems and performance	The focus of Russians General Directors of 400 medium sized firms, randomly selected from the Russian Chamber of Commerce and Industry's list of companies, were contacted for participation in this study.	In the result the type of relationship between scanning system and performances, Suggested that more advanced environmental scanning systems were associated with a greater extent of product-service change and higher profitability.
2009 Oyvind Helgesen	Marketing perceptions and business performance	The focus of this paper is to analyze associations between practitioners' perception of Marketing and business performance, and discuss possible implications for marketing education Norway context	The results indicate that the firms that share a common view of marketing, strongly focused on both core marketing and sales, perform better than firms that share a more narrow view of marketing. Thus, both

			“intrinsic” and “instrumental” aims may be important to any core curriculum for marketing education.
--	--	--	--

Papastathopoulou, Paulina (2001) despite of the important of development of new services by banking institutions, the empirical research that has been undertaken concerning the process of developing new services is rather limited. This is even more obvious as far as the initial stages of the procedure are concerned, despite the fact that many authors have stressed their importance for the success of the whole effort. They examine the initial stages of new service development at a leading Greek bank. Nine in-depth interviews were conducted with senior and middle executives. They revealed a different way of developing new services in compared with the main body of the existing literature. The main difference in the fact that each business unit is almost exclusively responsible for the development of new services, without collaborating extensively with other departments within the bank.

Ian Alam (2001) due to major structural changes in the service sector, many services managers are recognizing the need to continually develop new services that are timely and responsive to user needs. Thus, user input and involvement in new service development are an important area of inquiry. Although there has been a resurgence of academic and practitioner interest in new service development, there is a dearth of research on how users are involved in new service development. This study first combines insights from extant literature and exploratory interviews with practitioners to identify four key elements of user involvement, including objectives, stages, intensity, and modes

of involvement, and then investigates these four elements in 12 service firms. Based on the findings, the author develops an inventory of activities that needs to be carried out in involving users in a new service development project.

The prior empirical study of Olsen, Sallis (2005) stated that services often involve direct interaction between the customer and provider. Customers play a more active role in the service development process. This has ramifications for how service firms scan their environment and, in turn, for incremental and discontinuous innovation. It is found that narrow and broad scanning effect the new service development process in a unique way. Narrow scanning has a strong positive effect on profitability through incremental service adaptation, broad scanning has a weak but significant effect on profitability through incremental service adaptation. Broad scanning also positively influences spin-off knowledge. The two greatest limitations of the research, which translate into important avenues for future research, are to develop a better measure of discontinuous innovation, and to test the model in an alternative setting, because hotels are very dependent on locality and surroundings. When developing services, services managers must distinguish between short- and long-term performance, and how they scan their markets. Adapting to customers to the exclusion of exploring new opportunities threatens long-term viability. The paper offers the following advice: as with organizational learning, service firms need to scan their markets by design, not default.

Kohn (2005) found that the utilization of BES activity in generating new product ideas is a rather creative process. Based on the findings of the case study, the outcome seems to have improved new product proposals, by development of the process towards enabling a

more creative approach, “thinking outside the box”, and by becoming more experimental and opportunity-oriented, not by focusing on reducing uncertainty. The process has been developed from concentrating merely on the collection of data to focusing more on the creative part, where trends are elaborated and interpreted in relation to the strategic direction of the company and its capabilities. It has gone from taking action based on data collected, to using the data collected to increase the understanding and knowledge of the market in order to speculate and anticipate future trends, and from there generate new product ideas. If developed further, the BES process may become an intelligence generation capability to XCar. Further, as it can be seen as an early step in the product development process, such a capability would also lead to a more thorough concept phase, which is identified as being a strong factor for improvement in developing successful new products (Koen et al., 2001). This will eventually lead to improved corporate performance and increased competitiveness. The results from this single case provide valuable insights into the use of business information in new product idea generation, both in theory and in practice. In an attempt to generalize the findings, it may be argued that different processes and methods need to be applied depending on the purpose of the scanning activity.

Findings from previous studies have indicate that a lack of experience in BES is a potential explanation for practical problems (Ottum and Moore, 1997). In this case, the findings indicate the opposite. Even though XCar has extensive experience in handling market intelligence activities, it has mostly consisted of confirmation-oriented scanning. The problems and difficulties in carrying out a more explorative type of scanning are partly due to path dependence on the confirmatory orientation, which militates against a different approach with a different process and methods. Rather than not utilizing market

information in developing new ideas, as some authors radically suggest (Trott, 2001; Martin, 1995). It seems preferable to keep the purpose of environment scanning in mind and reflect on how that purpose is visible through the design of the process and the methods used. This may help in breaking free of past behavior and developing new capabilities. Applying a too broad and general process based on a confirmatory purpose is likely to lead to the problems found in previous research, relating to acting on current customer needs for future product ideas. Such a general process unrelated to the purpose may further be an explanation for the problems encountered with BES in practice. A reflection prompted by this case is whether the experience of utilizing environmental scanning for generating new product ideas may also be of importance in determining how confirmatory oriented scanning is conducted. In the automotive industry, many of the developed products are upgrades of current products. With a more exploratory approach, much can be learned from different perspectives that can be applied to deciding which changes to focus on in coming upgrades, with current customer needs in focus. As there are difficulties and risks in generalizing from a single case study, further research is suggested with regard to the different purposes and processes of BES and its areas of application.

Ngamkroekjoti *et al.* (2008) examined the success factor of environmental scanning to new product development in Thai food product development industry and determine how much it conforms the current research, suggesting that more extensive use of ES improves new product (NP) performance, and that perception of higher technology turbulence increase usages of ES. She found that generally some multinational and few large Thai firms attempt to integrate information from wide range of knowledge based in to their new

product development. It appears that new product development in most Thai company suffers from poor cross functional communication, which can lead to costly mistake and lose time in getting new products to the market quality.

According to Elenkov *et al* (1997) the results of the study, there is a strong relationship between more advanced scanning systems and a greater extent of product-service change. The study has also found support for a relationship between more advanced scanning systems and higher profitability; hence, the study's findings provide further evidence for the contingent relationship between the environment, the organization's internal processes and performance in the case of successful firms. In other words, the results of the study indicate that better performing Russian firms gain a competitive advantage by using more sophisticated scanning systems. However, no causality has been tested here. The scanning function has been identified as a moderating factor in the alignment between the environment and the furthermore, management development scholars and practitioners have largely agreed that while some firms possess characteristics which greatly enhance their capabilities to adapt to rapid change, other companies should try to cultivate similar capabilities. Building a learning organization can, according to a great number of those specialists, help firms redesign and improve the most critical organizational processes, including environmental scanning There are several key organizational practices which may contribute to a Russian firm's potential for learning: frequent rotation of managers; decentralization of decision making; high tolerance for failure; and openness and diversity of many viewpoints.

According to Oyvind Helgesen (2009) the purpose of this study is to analyze possible associations between practitioners perception of marketing and business performance, and

subsequently, possible implications for marketing education. Based on a survey that identifies practitioner's perceptions of marketing as well as business performances, the following research questions are addressed: can businesses be categorized into different groups according to Their managers' perceptions of marketing If so, are there any differences in performance between the business groups thus, can significant relationships be identified between business groups and business performance

2.4 Healthcare Industry in Thailand

2.4.1 Health Products and Health Services: Another industry in which Thailand is competitive

Thailand's strategy to make the country the center for health services in Asia by the year 2010 involves a three-pronged effort on the national level. For healthcare, the target is to raise the number of foreigners seeking medical treatment in Thailand's hospitals from a total of 970,000 persons in 2003 to two millions by 2010. Meanwhile, total income derived will be increased from THB 19,000 million to THB 80,000 million. In the area of health spas, a total of 2.6 million foreign visitors and tourists used the services during 2003, generating a total income of about THB 3,000 million. The spa business is expected to grow by 20 - 25 percent annually. The health and herbal product trade will also be promoted. The aim is to expand domestic production to reduce imports as well as to sell more of Thailand's own products to the world. Foreign patients are becoming significant sources of income for Thailand's private hospitals because their purchasing power is considerably higher than the average domestic patients. On the other hand, Thailand's cost of living is much lower than in Japan, the U.S. and Europe, making the cost of medical

care in Thailand a lot less than what foreign patients have to pay in their own countries. This is one of the main reasons why private hospitals in Thailand are becoming more and more popular to foreigners seeking medical care overseas. This bright forecast has prompted Thai private hospitals to adjust marketing and product strategies to meet the growth of medical care requirements as well as capitalize on the new opportunities.

(**Source:** Adopted from Association of Thai Private Hospitals)

2.4.2 Health Products and Health Services: Another industry in which Bangkok Hospital is competitive

Bangkok Hospital is positioned as the convenient and integrated healthcare solution. This positioning is possible because of its well-established infrastructure. As mentioned in the introduction of differentiation can be created from content, context, and infrastructure. The case of Bangkok Hospital, the network of hospitals and clinics with comprehensive integrated healthcare solution is a fine example of infrastructure differentiation

Nature of Business

Bangkok Dusit Medical Services Public Company Limited was established in October 1969 as “Bangkok Dusit Medical Services Co., Ltd.” with an initial registered capital of THB10 million for the purpose of engaging in private hospital business, the operation under the range of “Bangkok Hospital” officially commenced February 26th , 1972 Throughout the thirty-seven years of its operation, the company has gradually expanded to the extent that it became registered in the Stock Exchange of Thailand on October 2nd , 1991. It registered its conversion to limited public company in 1994 as it gradually increased registered capital. The following are the company’s key business milestones

2001 Hospital Accreditation (HA) by the Hospital Standard Certification and Development Institution, Ministry of Public Health, Prime Minister's Export Award: Best Service Provider by Department of Export Promotion, Ministry of Commerce, on the 20th of August 2001

Register of the change in paid up capital from THB 356.25 million to THB 500 million in 2002. The Asian Hospital Management Awarded for Marketing PR or Brand Management Project and Quality Management Program out of the ten prizes. The awards were presented by International Hospital Association, John Hopkins International Institute, Summa Foundation and Thai Private Hospital Association, Register of the change in paid up capital from THB 500 million to THB 750 million.

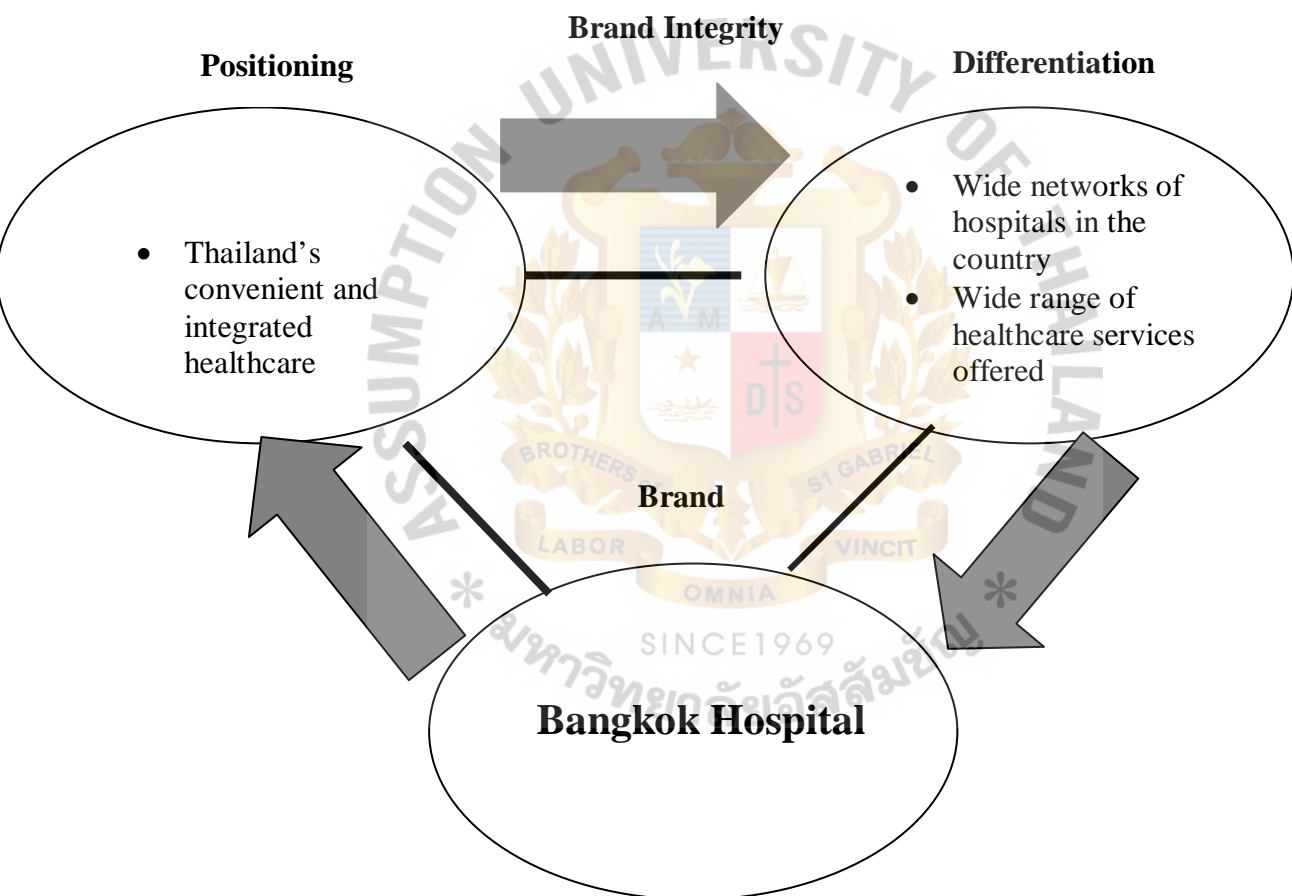
2003 ISO14001 certification, MorOrGor.18001/OHSAS 18001 for environmental management standard, occupational hygiene and safety management standard certification by the Industrial Standard Organization. Bangkok Hospital was pronounced by Super brands as the preferred hospital of consumers and one of the only two hospitals in Thailand remembered by consumers for positive reputation and medical service excellence.

2004 ISO 14001 certification for environmental management, Mor Or Gor 18001/OHSAS 18001 and occupational hygiene and safety management standard certification by Japan Audit and Certification (JACO). Register of the change in paid up capital from THB 1000 million to THB 1,300 million. Including registered of the change of par value from THB 10 to THB 1 per share.

2007 JCI accreditation to Bangkok Hospital Medical Center, All four hospitals in the complex of BMC have been granted the accreditation - Bangkok Hospital, Bangkok Heart

Hospital, Wattanosoth Cancer Hospital and Bangkok International Hospital. This is the first time that 4 hospitals in one complex have passed the vigorous investigations in achieving JCI. Achieving JCI is not only an internal milestone, but one for Thailand as a center of medical excellence. It is now officially recognized that the practices at BMC from doctors, nurses and the management team forms the same integrated approach to those benchmarks of medical facilities in the US.

Figure: 2.1 Positioning- Differentiations –Brand triangle of Bangkok Hospital



(Source: Adapted from “Think Asean! Rethinking Marketing towards ASEAN Community 2015 written by Dr. Philip Kotler”, published by the McGraw Hills Companies (copyright 2007).

CHAPTER 3

RESEARCH FRAMEWORK

This chapter focuses on the framework of the research adapted from theories and empirical researches reviewed in the second chapter. The researcher reviewed related theories and literature to develop a conceptual framework of the research. The theoretical and conceptual framework, hypothesis statements, and operational definition of related variables are presented.

This chapter consists of two main sections. The first section elaborates on the details of the theoretical and conceptual frameworks of the study, while the second explains the hypotheses and the expected outcome.

3.1 Theoretical Framework:

This study examines the impact of ES to develop performances of new service process in the context of Bangkok Hospital. There are several principles of ES applied and the user has to choose the right principle and apply them at the right time to get reasonable results. Based on the different theoretical models and research works that have been discussed in chapter 2, it is obvious that few researches have been conducted in Bangkok Hospital with regard to environmental scanning. A research framework is proposed in this section to delineate the attitude of BMC management towards scanning practice in order to develop better services for the organization. This framework has been developed to measure the impact of ES at Bangkok Hospital and the purchase intention of new service development. There are many independent variables along with those mentioned in the research framework, which have been already tested in numerous previous research

studies. Among these independent variables, fourteen independent sub variables have been chosen, as these possess some level of importance in the context of ES of the top management to adopt better healthcare management for their employees. Hence, momentous of these independent variables in the context of Bangkok Hospital and their extensive use in the previous researches as mentioned in the literature review and later in this chapter give rise to the justification of using them in the research framework.

The fourteen independent variables are divided into two groups internal and external sources of information, these variables will be tested to measure the impact of environmental scanning practices upon performances of new service development. They are Top management, Board members, Managers, Employees, In-house researches, Company database, and Patient's feedback. The first seven independent sub-variables are under the dimension of internal sources of information.

Another twelve independent sub-variables will be tested to measure the impact of environmental scanning practice. They are Publications, Public organization, Suppliers, research companies, Conference, Trade association, and Relationship. These twelve independent variables are also under the dimension of external sources of information, as discussed in chapter 2. There exists a flow among the NPD variables from the impact of environmental scanning practices upon the performances of new service process development at BMC to the purchase intension. This flow is strongly supported by the previous researches that have been discussed in chapter 2. Because of the existence of flows among the dependent variables that are supported by the previous research, this particular research study ignores the testing of the flow of these nine dependant variables. The researcher's particular interest is only to test certain independent variables with the

six distinct dependent variables the literature reviewed revealed that there was no specific paper on hospital ES, which made primary source data was necessary. Therefore direct interviews would be need .So when the pilot interview was done it was seen that the logical question thing to ask was to find out about the process of changes of new policy for the hospital.

The questions asked to the top and mid-level management were all dealing with the top management persons, particularly the way they were creating a new direction for the benefit of the hospital. Cady et al (1999) found that the Board of Directors who has the greater degree of involvement in planning activities will lend higher effectiveness in environmental scanning, strategy formulation and implementation. This requires process has to be developed, so questions of process as variable came in. As a result, the questions were redirected to ask about how the process was followed and the implementation process had to be asked about.

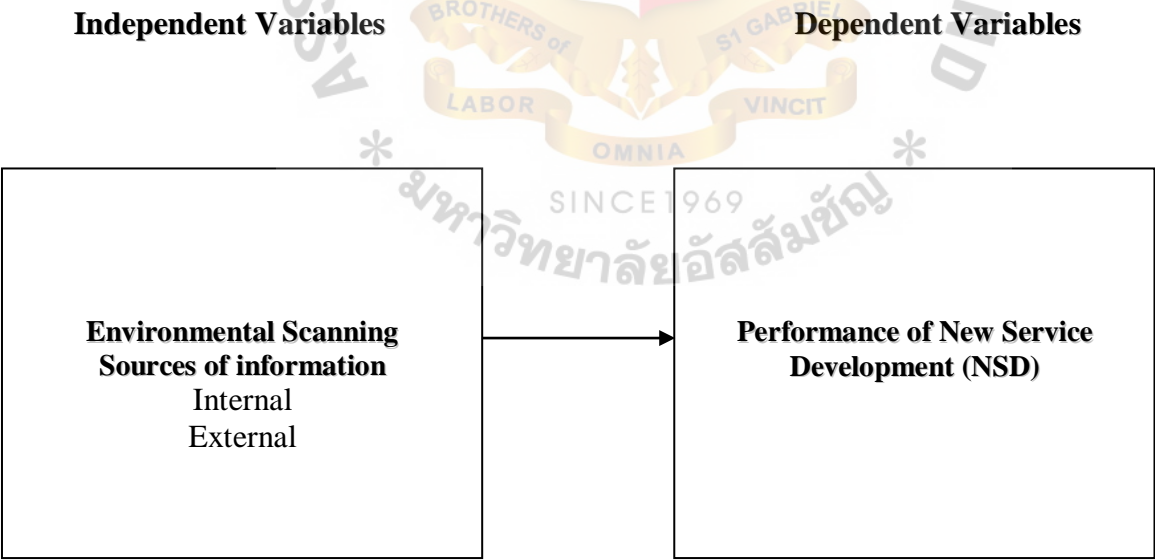
Implementation and monitoring are closely linked to the role played by managers. Managers act as environmental radars to indicate trends and events in the environment. These scenarios define the direction of strategic planning (Ngamkroeckjoti, johri 2000). Elkenov (1997) observed that industry leaders tend to rely on process more often when high environmental uncertainty occurs. As evaluation on the basis of environmental uncertainty is therefore important because those top management leaders, who have the vision to evaluate crisis before hand tend to rely on environmental scanning and enable their institution to survive through the crisis. It is hoped that in the hospital setting this environmental scanning process will ultimately show whether customer/patient

satisfaction has increased or not as a result of the assessment of possible changes in actions taken by top management.

Table 3.1 Definition of variables

Independent (Environmental Scanning)	Dependent (Performances of New Service Development)
Internal External	<ul style="list-style-type: none">• Customer acceptances• Growth rate• Turnover rate• Market Share• Sales Volume• Payback of Investment

Figure 3.1 Conceptual framework of the research study



3.2 Statistical Hypothesis:

A hypothesis is a logical supposition, a reasonable guess, and educated conjecture. It provides a tentative explanation for a phenomenon under investigation.(Leedy and

Ormrod, 2001). An example of a formalized research hypothesis “If skin cancer is related to ultraviolet light, people with a high exposure to UV light will have a higher frequency of skin cancer. However, hypotheses are not unique to research. Hypotheses are constantly generated in the human mind as we work to understand day-to-day phenomena. By formulating a series of reasonable guesses of cause and effects we are able to understand and explore the events in our surrounding environment (Leedy and Ormrod, 2001)

Hypothesis:

H1: Testing the relationship between internal sources of information and customer acceptances

Ho1: There is no relationship between internal sources of information and Customer acceptances

Ha1: There is a relationship between internal sources of information and Customer acceptances

H2: Testing relationship between Internal sources of information and growth rate

Ho2: There is no relationship between internal sources of information and growth rate

Ha2: There is a relationship between internal sources of information and growth rate

H3: Testing relationship between Internal sources of information and turnover rate

Ho3: There is no relationship between internal sources of information and turnover rate

Ha3: There is a relationship between internal sources of information and turnover rate

H4: Testing relationship between Internal sources of information and market share

Ho4: There is no relationship between internal sources of information and market share

Ha4: There is a relationship between internal sources of information and market share

H5: Testing relationship between Internal sources of information and sales Volume

Ho5: There is no relationship between internal sources of information and sales volume

Ha5: There is a relationship between internal sources of information and sales volume

H6: Testing relationship between Internal sources of information and payback of Investment

Ho6: There is no relationship between internal sources of information and payback of investment

Ha6: There is a relationship between internal sources of information and payback of investment

H7: Testing relationship between External sources of information and customer acceptances

Ho7: There is no relationship between external sources of information and Customer acceptances

Ha7: There is a relationship between external sources of information and Customer acceptances

H8: Testing relationship between External sources of information and growth rate

Ho8: There is no relationship between external sources of information and growth rate

Ha8: There is a relationship between external sources of information and growth rate

H9: Testing relationship between External sources of information and turnover rate

Ho9: There is no relationship between external sources of information and turnover rate

Ha9: There is a relationship between external sources of information and turnover rate

H10: Testing relationship between External sources of information and market share

Ho10: There is no relationship between external sources of information and market share

Ha10: There is a relationship between external sources of information and market share

H11: Testing relationship between External sources of information and sales volume

Ho11: There is no relationship between external sources of information and sales volume

Ha11: There is a relationship between external sources of information and sales volume

H12: Testing relationship between External sources of information and payback of investment

Ho12: There is no relationship between external sources of information and payback of investment

Ha12: There is a relationship between external sources of information and payback of investment

3.3 Variables Measurement

The concept and variables of this research, which help us draw necessary conclusion, can be explained in Table 3.3.1

Table 3.3.1 Operationalization chart of independent variables

Variables	Operation definition	Scales
ES-Internal source of information	Top management	Interval
ES-Internal source of information	Board members'	Interval
ES-Internal source of information	Managers	Interval
ES-Internal source of information	Employees	Interval
ES-Internal source of information 1	In-house research	Interval
ES-Internal source of information	Company database	Interval
ES-Internal source of information	Patient feedback	Interval
ES-External source of information	Publication	Interval
ES-External source of information	Public organization	Interval
ES-external source of information	Suppliers	Interval
ES-external source of information	Research company	Interval
ES-external source of information	Conference	Interval
ES-external source of information	Trade association	Interval
ES-external source of information	Relationship	Interval

Table 3.3.2 Operationalization chart of dependent variables

Variables	Operation definition	Scales
NSPD	Customer acceptances	Interval
	Growth rate	Interval
	Turnover rate	Interval
	Market share	Interval

	Sales volume	Interval
	Payback of investment	Interval

Table 3.3.3 Operational definition of influencing variables

Variables	Operation definition	Measure Description	Scales
Respondent profile	<input type="checkbox"/> Male <input type="checkbox"/> Female	A two-choice question(1-3)	Nominal
	20 or less 21-30 31-40 41-50 50 or above	A five-choice question(1-5)	Nominal
	Unmarried Married Widow	A three-choice question(1-3)	Nominal
	Supervisor, Manager Assistant Director, Director Assistant CEO, CEO Others, please specify	A seven-choice question(1-7)	Nominal

Table 3.3.3 Operational definition of influencing variables

(Continued)

Variables	Operation definition	Measure Description	Scales
	< 1000 \$ \$1001-\$2000 \$2001-\$3000 \$3000+ others, please specify	A five-choice question(1-5)	Nominal

3.4 Scale of measurement level

The research uses Interval, Nominal and ordinal Scales for measurement level. Interval scale is one with which the numbers are used to rank objects such that numerically equal distance on the scale represent equal distance in the characteristics being measured. Nominal scale is a scale whose numbers serve only as label or tags for identifying and classifying objects with a strict one-to-one correspondence between the number and the objects. Ordinal scale is a scale that arranges objects or alternatives according to their magnitude in an ordered relationship (Zikmund, 1997)

3.5 Expected outcome

The results of these tested hypotheses will provide us with the necessary information that will help us conclude about the impact of environmental scanning practices upon new service process development in the case of Bangkok Hospital.

It is expected that there would be a relationship impact of environmental scanning and new service process development in the context of Bangkok Hospital about the scanning process of various department among the different managerial level as previous research conducted by Ngamkroeckjoti (2006) who came up with results illustrating the relationship between corporate environment and new service development, strengthen of process & people towards the relationship between corporate environment and performances new service process development. The propositions of the research were the greater the effects of corporate environment, the better the new service process development. The effects of the characteristics of the process strengthen the relationship between corporate environment and performances of new service process development. Three propositions are proposed to present the relationship among the corporate

environment, process, people and performances of new service development. Preliminary examination suggests that SMEs should greatly promote human resource development. Also, lack of awareness of contingency variables can lead to failure performances of new service development.



CHAPTER 4

RESEARCH METHODOLOGY

All the research problems and the framework have been configured. The following research design, an accurate diagnosis specifying the methods and procedures for collecting and analyzing the useful information, has been developed.

4.1 Methods of Research Used

The aim of this research is to find out the simulation which can explain the symptoms of the specific relationship of two or more factors in the event. The suitable type of research design for this study is Ex Post Facto design with which the survey is to accomplish the research objectives.

Information is gathered from a sample of people by the use of questionnaires. The ultimate objective of the survey is to diagnose relationship between variables. It will tell us the feasible data, whether the questionnaire is understandable and whether the right direction for nominated case study has. Thus, this research can give us a clear picture of the relationships of specific variables in the concept of ES from the context of BMC.

4.2 Respondents and Sampling Procedures:

Structured Interview:

To collect the primary data on the earlier mentioned topic for this particular study, the researcher has employed structured interview together with the help of questionnaire. Structured interviews are those conducted by the interviewer when the interviewer knows exactly what information is needed and has a predetermined list of questions that will be posed to the respondents (Shekaran, 1992). The researcher has been personally

administered the questionnaire and clarified any points with unclear from the respondents during the interview session. These self-administered questionnaires have been distributed at different departments of BMC within the selected target population. The main benefits of this type of questionnaire are collection of information within a short period of time, and their retrieved from the target population. Upon completion, the level of error that might arise can be reduced in the absence of the researcher as explanations about the questions used in the questionnaire also are provided. The sentences of the questionnaire have been used in an understandable so that all the respondents to understand the researcher's intention. Close-ended questions have been set to get immediate responses from respondents.

Secondary Data:

Secondary data is collected from many sources in order to develop the research framework for this study: Ministry of public health, Association of Thailand private hospital, Bangkok Hospital library, Human resource department of Bangkok Hospital. News paper, journal of hospitality management, marketing research, thesis, NSD research and books related to ES, NSD Strategic management, financial management, and health service management. Different studies from the above-mentioned sources help to conceptualize the researcher's particular interest in the framework developed in the foregoing chapter.

Sampling Design:

Non-Probability Sampling

Non-probability sampling is the most appropriate for this research study. In non-probability sampling design, the probability of any particular member of the population being chosen is unknown (Zikmund, 2000) and the elements of the population do not have any probability attached to their being chosen as sample subjects (Sekaran, 2003). The researcher utilized the convenience-sampling technique to select the sample unit from 17 departments in BMC. Convenience sampling is one of the non-probability sampling designs used in the research. As its name implies, convenience sampling involves collecting information from members of the population who are conveniently available to provide this information (Sekaran, 2003). This approach is considered to be the purest form of non-probability sample. Convenience sampling is appealing because it seems to be simple and meets all the necessary requirements of non-probability samples. The first reason for using this approach is that it is less time-consuming and can be accomplished with limited financial involvement.

Target Population:

Population refers to the entire group of people, events or things of interest that the researcher wishes to investigate (Sekaran, 2003). It is the specific complete group relevant to the research project (Zikmund, 2000) and the complete set of unit's analysis under investigation. The target population for this research study is mid-top management directly or indirectly involved in the scanning process in order to make decisions. According to BMC human resource department, there are 2,177 employees, out of whom 373 male and 1804 female employees. 525 have a Bachelor Degree and higher diploma, 1508 with only Bachelor Degree, 144 Masters Degree. As to the number of years of service in the organization, those who are 32 years old or above have been working for 6 years Source: (Ms Suwapee Ratnaratorn, Human Resource Manager).

There is no sampling frame for this study as no list is available from where the target respondents are chosen. According to HR there might have been 80-100 people involved in the scanning process during the rapid expansion of BMC in 2005-2007.

Sample Unit: The sample unit is the entire back office employees, from senior to top management group of BHMC

Determining the Sample size:

The sample size of the research is set at 66 people and all the respondents were selected from the population. The theoretical principles for the calculation of the sample size of proportions are similar to the concepts of the formulas used for probability sampling method. Table 4.1 illustrates how the sample size is drawn.

Table 4.1 Theoretical sample sizes for different sizes of population at 95 percentages level of certainty

N	S	N	S	N	S
50	44	170	118	380	191
55	48	180	123	400	196
60	52	190	127	420	201
65	56	200	132	440	205
70	59	210	136	460	210
75	63	220	140	480	214
80	66	230	144	500	217
85	70	240	148	550	226
90	73	250	152	600	234
90	76	260	155	650	242
100	80	270	159	700	248
110	86	280	162	750	254
120	92	290	165	800	260
130	97	300	169	850	265
140	103	320	175	900	269
150	108	340	181	950	274
160	113	360	186	1000	278

(Source: Adapted from Krejcie and Morgan (1970) as well as Cohen (1969)

From the Krejcie and Morgan table (1970) with 95% confidence level, the minimum sample size required for this study is 66.

4.3 Research Instruments/Questionnaire

The instrument used in the study is a self-administrated questionnaire that is filled in by a respondent rather than an interviewer and relies on the efficiency of the written words rather than those of the interviewer. This allows respondents time to think and fill in the questionnaire at their convenience.

Questionnaire: The survey questionnaire is built upon the literature review of the variables and contents. It is divided into three parts comprising four questions. The purposes of the questionnaire each are as follows.

The questionnaire consists of three parts:

Part 1: To identify the new services for which the organization played an important role in the designing and launching process of the Thai healthcare industry in the recent past (1-3 years)? This part of the questionnaire contains two major questions which investigate the sources of information in order to launch new products or services. Five points-level likert scales will be used as follows:

Not at all = 1, slightly =2, neutral =3, considerable=4, extensively=5

Part 2: To what extent has each of the following scanning been used to collect internal sources of information in order to design and launch the new product/service? This part of the questionnaire examines sources of information used for environmental scanning of new product development. Five points-level likert scales will be used as follows:

Strongly disagree=1, disagree=2, neutral used =3, agree=4, strongly agree =5

Part 3: This part of the questionnaire contains respondent profile and also the investment on fixed asset values.

4.4 Collection of Data/Gathering Procedures

From the above theoretical calculation it is obvious that the researcher needs 66 samples to conduct this research study. Approximately 30 questionnaires have been distributed to mid-top management at BMC while conducted the survey pre test study. Primary data have been collected for these 66 samples by the use of questionnaire.

Table 4.2 Test of Reliability

Scale	Number of Item	Alpha Value
Environmental scanning of internal sources of information	7	0.709
Environmental scanning of external sources of information	12	0.858
Performances of New Service Process Development	6	0.715

From the pilot survey it can be concluded that the survey questionnaire is reliable since the coefficient alpha values are greater than 0.60 in every variable, the coefficient alpha assesses the significance of reliability.

4.5 Statistical Treatment of Data:

The researcher uses SPSS Statistical Package for Social Sciences (SPSS) 15.0 to analyze the data from the questionnaires into easily interpretable formats. All the statistical procedures were carried out a computer software package to ensure accuracy as well as minimal cost and time. Hypothesis testing was conducted to explore the

relationship between the performances of new service process development and internal and external sources of information used in environmental scanning.

Regression Analysis: Multiple Regressions

Zikmund (2003) explained that multiple regression analysis is a way to describe the relationship between a dependent variable and several independent variables. In the multiple regressions, one uses additional independent variables that help better explain or predict the dependent variable (Y). Multiple regression analysis can be either a descriptive or an inferential technique. The formula is:

$$Y' = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + \dots + b_k X_k$$

Where:

a = the Y-intercept, the estimated value of Y when X's are zero. b = the amount by which Y changes when X changes by one unit with all other values held the same.

CHAPTER 5

DATA ANALYSIS AND FINDINGS

Data collection for this study was gathered four hospitals at BMC premises. This chapter presents the analysis of collected data. A total of 66 valid questionnaires were collected and then further processed for the final analysis by SPSS program. These chapter two types of statistical analysis that are applied to the conceptual framework and further used for explaining from questionnaires. The first descriptive statistic, describe general characteristics of BMC healthcare business and hospitality industry. The second type, inferential statistic; describe the relationship between ES and Performances of New Services

Descriptive statistics

The statistical model used in this research is descriptive statistics, which can describe or summarize information about population and samples (Zikmund, 2003). By using this method, raw data can be summarized and results interpreted.

5.1 Descriptive Statistics

5.1.1 Sample Profile of BMC

Table 5.1 Gender

		Frequency	Percent
Valid	Male	21	31.8
	Female	45	68.2
	Total	66	100.0

Table 5.2 Age (years old)

	Frequency	Percent
Valid 40 years old or less	36	54.5
41 - 50 years old	20	30.3
50 years old or above	10	15.2
Total	66	100.0

Table 5.1 and 5.2 indicates that the majority of the sample is female and their age group is 40 years old with 54.5 percent.

Table 5.3 Marital status of the employee

	Frequency	Percent
Valid Unmarried	44	66.7
Married	19	28.8
Widow/Seperated	3	4.5
Total	66	100.0

Table 5.3 showed that majority of the sample response is unmarried with percentage of 66.7

Table 5.4 Current position of the employee within the organization

	Frequency	Percent
Valid Top Level Management	2	3.0
Business Management	7	10.6
Functional Management	57	86.4
Total	66	100.0

Tables 5.4, about 86.4 percent of the participant are functional management people

Table 5.5 Management level

	Frequency	Percent
Valid Supervisor	39	59.1
Manager	18	27.3
Assistant Director	7	10.6
Director or above	2	3.0
Total	66	100.0

Table 5.5 indicate that about 59.1 percent people are supervisor level

Table 5.6 Management Style

	Frequency	Percent
Valid Autocratic	59	89.4
Bureaucratic	7	10.6
Total	66	100.0

Table 5.6 indicates that about 89.4 percent of the people follow the autocratic style

5.1.2 Frequency of Type of Scanning, Internal Sources of Information

Table 5.7 Frequency distribution of top management impact on ES factors

Top Management					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	2	3.0	3.0	3.0
	Slightly	5	7.6	7.6	10.6
	Neutrally	10	15.2	15.2	25.8
	Considerably	39	59.1	59.1	84.8
	Extensively	10	15.2	15.2	100.0
	Total	66	100.0	100.0	

From table 5.7, about 59.1% of the top management participants rated “considerably” scanning from internal source of information

Table 5.8 Frequency distributions of outcomes of Board members meetings

Outcomes of Board member's meetings					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly	7	10.6	10.6	10.6
	Neutrally	14	21.2	21.2	31.8
	Considerably	35	53.0	53.0	84.8
	Extensively	10	15.2	15.2	100.0
	Total	66	100.0	100.0	

From table, 5.8, about 53% of the participants rated “considerable” scanning from internal source of information

Feedback from patients by the managers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly	9	13.6	13.6	13.6
	Neutrally	18	27.3	27.3	40.9
	Considerably	29	43.9	43.9	84.8
	Extensively	10	15.2	15.2	100.0
	Total	66	100.0	100.0	

Table 5.9 Frequency distribution of feedback from patients by the managers

From table, 5.9 about 43.9 % rated “considerable” scanning from internal sources of information

Table 5.10 Frequency distribution of employee

Employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly	7	10.6	10.6	10.6
	Neutrally	23	34.8	34.8	45.5
	Considerably	32	48.5	48.5	93.9
	Extensively	4	6.1	6.1	100.0
	Total	66	100.0	100.0	

From table, 5.10 about 48.5% participants rated “considerably” scanning from internal sources of information

Table 5.11 Frequency distribution information from patients provided by in-house research

Information from patients provided by in-house research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	5	7.6	7.6	7.6
	Slightly	5	7.6	7.6	15.2
	Neutrally	20	30.3	30.3	45.5
	Considerably	30	45.5	45.5	90.9
	Extensively	6	9.1	9.1	100.0
	Total	66	100.0	100.0	

From table 5.11, about 45.5 % of the participants rated considerably ES from internal source of information

Company's internal database

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	3	4.5	4.5	4.5
	Slightly	6	9.1	9.1	13.6
	Neutrally	16	24.2	24.2	37.9
	Considerably	34	51.5	51.5	89.4
	Extensively	7	10.6	10.6	100.0
	Total	66	100.0	100.0	

Table 5.12 Frequency Distribution Company's internal database

From table 5.12, about 51.5 % of the participants rated “considerably” by ES from internal source of information

Table 5.13 Frequency distribution of patient's feedback after consultation with specialists

Patient's feedback after consultation with specialists

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	2	3.0	3.0	3.0
	Slightly	4	6.1	6.1	9.1
	Neutrally	16	24.2	24.2	33.3
	Considerably	37	56.1	56.1	89.4
	Extensively	7	10.6	10.6	100.0
	Total	66	100.0	100.0	

Table 5.13, about 56.1 % of the participants rated “considerable” by ES from internal sources of information

Table 5.14 Summary table of frequency of internal source of information

	Not at all	Slightly	Neutrally	Considerably	Extensively	Total
Top Management	2	5	10	39	10	66
Outcomes of Board member's meetings	0	7	14	35	10	66
Feedback from patients by the managers	0	9	18	29	10	66
Employees	0	7	23	32	4	66
Information from patients provided by in-house research	5	5	20	30	6	66
Company's internal database	3	6	16	34	7	66
Patient's feedback after consultation with specialists	2	4	16	37	7	66
Total	12	43	117	236	54	462

Table 5.15 Summary table of percentage of internal sources of information

	Not at all	Slightly	Neutrally	Considerably	Extensively	Total
Top Management	3.0	7.6	15.2	59.1	15.2	100
Outcomes of Board member's meetings	0	10.6	21.2	53.0	15.2	100
Feedback from patients by the managers	0	13.6	27.3	43.9	15.2	100
Employees	0	10.6	34.8	48.5	6.1	100
Information from patients provided by in-house research	7.6	7.6	30.3	45.5	9.1	100
Company's internal database	4.5	9.1	24.2	51.5	10.6	100
Patient's feedback after consultation with specialists	3.0	6.1	24.2	56.1	10.6	100
Total	18.1	65.2	177.2	357.6	82.0	700

Table 5.16 Mean and Standard deviation of internal source of information

	Mean	Std. Deviation	Ranking
Top Management	3.76	0.91	1
Outcomes of Board member's meetings	3.73	0.85	2
Feedback from patients by the managers	3.61	0.91	4
Employees	3.50	0.77	6
Information from patients provided by in-house research	3.41	1.02	7
Company's internal database	3.55	0.96	5
Patient's feedback after consultation with specialists	3.65	0.87	3

The extent to which the sample BMC are perceived they are effected by internal ES factors, are counted in each sector, table 5.14 displays the form of frequency distribution and table 5.15 exhibits the frequency in the form of percentage distribution . The perception in each factor is evaluated from (1) not at all to (5) extensively. It can seen that the mean values range from 3.50 to 3.76 (see table 5.16) with the most values lying between (4) considerably and (5) extensively. The indicates that perception is above the

middle 1-5 scale. Based upon the mean values , it can be conclude that the sample of BMC perceive that new product development has strong effect by top management internal source of information (mean = 3.76, S.D = 0.91) followed by out comes of board members meeting (mean 3.73, S.D = 0.85 , patients feedback after consultation with specialist is 3rd rank (mean =3.65 S.D= 0.87) , feedback from the patients by the managers (Mean=3.61, S.D= 0.91), company's internal database (mean= 3.55, S.D.= 0.87) , employees (mean=3.50, S.D.=0.77), information from patients provided by in-house research (mean=3.41, S.D.=1.02)

5.1.2 Frequency of Type of Scanning, External Sources of Information

Table 5.17 Frequency distribution of publications

Pubilications					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly	3	4.5	4.5	4.5
	Neutrally	14	21.2	21.2	25.8
	Considerably	39	59.1	59.1	84.8
	Extensively	10	15.2	15.2	100.0
	Total	66	100.0	100.0	

From table 5.17, about 59.1% participants rated “considerably” by ES from external sources of information

Table 5.18 Frequency distribution of public organization

Public organization					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly	1	1.5	1.5	1.5
	Neutrally	18	27.3	27.3	28.8
	Considerably	43	65.2	65.2	93.9
	Extensively	4	6.1	6.1	100.0
	Total	66	100.0	100.0	

From table 5.18, about 65.2 % rated “considerably” by ES from external source of information

Table 5.19 Frequency distribution of private organization

Private organization		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly	3	4.5	4.5	4.5
	Neutrally	20	30.3	30.3	34.8
	Considerably	41	62.1	62.1	97.0
	Extensively	2	3.0	3.0	100.0
	Total	66	100.0	100.0	

From table 5.19, about 62.1 % rated “considerably” by ES from external source of information

Table 5.20 Frequency distribution of patient’s feedback

Patient's feedback		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly	4	6.1	6.1	6.1
	Neutrally	16	24.2	24.2	30.3
	Considerably	41	62.1	62.1	92.4
	Extensively	5	7.6	7.6	100.0
	Total	66	100.0	100.0	

From table 5.20, about 62.1 rated “considerable” by Es from external source of information

Table 5.21 Frequency distribution of Suppliers

Suppliers		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	1	1.5	1.5	1.5
	Slightly	9	13.6	13.6	15.2
	Neutrally	26	39.4	39.4	54.5
	Considerably	28	42.4	42.4	97.0
	Extensively	2	3.0	3.0	100.0
	Total	66	100.0	100.0	

From table 5.21, about 42.4 % rated “considerable” by Es from external sources of information

Table 5.22 frequency distribution of competitors

Competitors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	1	1.5	1.5	1.5
	Slightly	4	6.1	6.1	7.6
	Neutrally	16	24.2	24.2	31.8
	Considerably	41	62.1	62.1	93.9
	Extensively	4	6.1	6.1	100.0
	Total	66	100.0	100.0	

From table 5.22, about 62.1 % rated “considerably” by ES from external sources of information

Table 5.23 Frequency distribution of information from research companies

Information from research companies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	1	1.5	1.5	1.5
	Slightly	4	6.1	6.1	7.6
	Neutrally	18	27.3	27.3	34.8
	Considerably	38	57.6	57.6	92.4
	Extensively	5	7.6	7.6	100.0
	Total	66	100.0	100.0	

Table 5.23, about 57.6 % rated “considerably” by ES from external sources of information

Table 5.24 Frequency distribution of information from in-house research

Information from in-house research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly	1	1.5	1.5	1.5
	Neutrally	24	36.4	36.4	37.9
	Considerably	39	59.1	59.1	97.0
	Extensively	2	3.0	3.0	100.0
	Total	66	100.0	100.0	

From table 5.24, about 59.1 % rated “considerably” by ES from external source of information

Table 5.25 Frequency distribution from Seminar/Conference / Exhibition

Seminars/Conference/Exhibition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutrally	18	27.3	27.3	27.3
	Considerably	43	65.2	65.2	92.4
	Extensively	5	7.6	7.6	100.0
	Total	66	100.0	100.0	

From table 5.23, about 65.2 % rated “considerably” by Es from external source of information

Table 5.26 Frequency distribution of Trade association

Trade association		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutrally	15	22.7	22.7	22.7
	Considerably	47	71.2	71.2	93.9
	Extensively	4	6.1	6.1	100.0
	Total	66	100.0	100.0	

From table 5.26, about 71.2 % rated “considerably” by Es from external source of information

Table 5.27 Frequency distribution from Correspondence with Co-partner company/Affiliates

Correspondence with Co-partner company/Affiliates		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly	2	3.0	3.0	3.0
	Neutrally	21	31.8	31.8	34.8
	Considerably	42	63.6	63.6	98.5
	Extensively	1	1.5	1.5	100.0
	Total	66	100.0	100.0	

From table 5.27, about 63.6 % rated considerably” by ES from external sources of information

Table 5.28 Frequency distribution of Relationship between friends or relatives

Relationship between friends or relatives		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Slightly	5	7.6	7.6	7.6
	Neutrally	18	27.3	27.3	34.8
	Considerably	38	57.6	57.6	92.4
	Extensively	5	7.6	7.6	100.0
	Total	66	100.0	100.0	

From table 5.28, about 57.6 rated “considerably” by ES from external sources of information

Table 5.29 Summery of frequency of external sources of information

	Not at all	Slightly	Neutrally	Considerably	Extensively	Total
Publications	0	3	14	39	10	66
Public organization	0	1	18	43	4	66
Private organization	0	3	20	41	2	66
Patient's feedback	0	4	16	41	5	66
Suppliers	1	9	26	28	2	66
Competitors	1	4	16	41	4	66
Information from research companies	1	4	18	38	5	66
Information from in-house research	0	1	24	39	2	66
Seminars/Conference/Exhibition	0	0	18	43	5	66
Trade association	0	0	15	47	4	66
Correspondence with Co-partner company/Affiliates	0	2	21	42	1	66
Relationship between friends or relatives	0	5	18	38	5	66
Total	3	36	224	480	49	792

Table 5.30 Summery of percentages of external sources of information

	Not at all	Slightly	Neutrally	Considerably	Extensively	Total
Publications	0	4.5	21.2	59.1	15.2	100
Public organization	0	1.5	27.3	65.2	6.1	100
Private organization	0	4.5	30.3	62.1	3.0	100
Patient's feedback	0	6.1	24.2	62.1	7.6	100
Suppliers	1.5	13.6	39.4	42.4	3.0	100
Competitors	1.5	6.1	24.2	62.1	6.1	100
Information from research companies	1.5	6.1	27.3	57.6	7.6	100
Information from in-house research	0	1.5	36.4	59.1	3.0	100
Seminars/Conference/Exhibition	0	0	27.3	65.2	7.6	100
Trade association	0	0	22.7	71.2	6.1	100
Correspondence with Co-partner company/Affiliates	0	3.0	31.8	63.6	1.5	100
Relationship between friends or relatives	0	7.6	27.3	57.6	7.6	100
Total	4.5	54.5	339.4	727.3	74.4	1200

Table 5.31 Mean and standard deviation of external source of information

	Mean	Std. Deviation	Ranking
Publications	3.85	0.73	1
Public organization	3.76	0.58	4
Private organization	3.64	0.62	8
Patient's feedback	3.71	0.70	5
Suppliers	3.32	0.81	12
Competitors	3.65	0.75	6
Information from research companies	3.64	0.78	8
Information from in-house research	3.64	0.57	8
Seminars/Conference/Exhibition	3.80	0.56	3
Trade association	3.83	0.51	2
Correspondence with Co-partner company/Affiliates	3.64	0.57	8
Relationship between friends or relatives	3.65	0.73	6

The extent to which the sample BMC in healthcare industry are perceive they are affected by external ES factors, are counted in each sector. Table 5.29 displays the form of frequency distribution and table 5.13 exhibits the frequency in the form of percentages distribution. The perception in each factor is evaluated form (1) not at all to (5) extensively. It can be seen that the mean values range from 3.32 to 3.71 (see table 5.31) with most values lying between (3) neutrally and (4) considerably. This indicates that the perception is above the middle of 1-5 scale. Based upon the mean values, it can be concluded that sample of BMC perceive that publications are the most effected by external source of information (mean =3.85, S.D= 0.73, followed by Trade association (mean =3.83, S.D= 0.51), seminar/ conference/Exhibition , (mean = 3.8- S.D= 0.56), public organization (mean = 3.76, S.D= 0.58, patients feedback (mean= 3.71,S.d.= 0.70) ,competitors (mean=3.65, S.D= 0.75 , private organization, information from research companies , information from in-house research, correspondence with co-partner

company/affiliates all four sub-variables are equal and same rank (mean= 3.64, S.D= 0.62, 0.78, 0.57, 0.57 respectively)

5.1.3 Frequency of Performances of Service Development

Table 5.32 Frequency distribution of customer acceptance

Customer acceptances					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutrally used	17	25.8	25.8	25.8
	Agreed	48	72.7	72.7	98.5
	Strongly agreed	1	1.5	1.5	100.0
	Total	66	100.0	100.0	

From table 5.32, about 72.7 % rated “agreed” by customer acceptance from new service development

Table 5.33 Frequency distribution of growth rate exceed objectives

Growth rate exceed objectives					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutrally used	21	31.8	31.8	31.8
	Agreed	43	65.2	65.2	97.0
	Strongly agreed	2	3.0	3.0	100.0
	Total	66	100.0	100.0	

From table 5.33, about 65.2 % rated “agreed” by growth rate exceed objectives from NSD

Table 5.34 Frequency distribution of turnover rate exceed objectives

Turnover rate exceed objectives		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutrally used	24	36.4	36.4	36.4
	Agreed	41	62.1	62.1	98.5
	Strongly agreed	1	1.5	1.5	100.0
	Total	66	100.0	100.0	

From table 5.34, about 62.1 % rated “agreed” by turnover rate exceed objectives from NSD

Table 5.35 Frequency distribution of market share exceed objectives

Market share exceed objectives		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutrally used	15	22.7	22.7	22.7
	Agreed	50	75.8	75.8	98.5
	Strongly agreed	1	1.5	1.5	100.0
	Total	66	100.0	100.0	

From table 5.35, about 75.8 rated “agreed” by market share exceed objectives from NSD

Table 5.36 Frequency distribution of sales volume exceed objectives

Sales volume exceed objectives		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutrally used	16	24.2	24.2	24.2
	Agreed	48	72.7	72.7	97.0
	Strongly agreed	2	3.0	3.0	100.0
	Total	66	100.0	100.0	

From Table 5.36, about 72.7 % rated “agreed” by sales volume exceed objectives from NSD

Table 5.37 Frequency distribution of payback investment**Payback of investment**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	3	4.5	4.5	4.5
	Neutrally used	32	48.5	48.5	53.0
	Agreed	31	47.0	47.0	100.0
	Total	66	100.0	100.0	

From table 3.37, about 48.5 rated “Neutrally used” by payback investment from NSD

Table 5.38 Summery of frequency distribution of new service development

	Strongly Disagreed	Disagreed	Neutrally used	Agreed	Strongly agreed	Total
Customer acceptances	0	0	17	48	1	66
Growth rate exceed objectives	0	0	21	43	2	66
Turnover rate exceed objectives	0	0	24	41	1	66
Market share exceed objectives	0	0	15	50	1	66
Sales volume exceed objectives	0	0	16	48	2	66
Payback of investment	0	3	32	31	0	66
Total	0	3	125	261	7	396

Table 5.39 Summery of percentage distribution of new service development

	Strongly Disagreed	Disagreed	Neutrally used	Agreed	Strongly agreed	Total
Customer acceptances	0	0	25.8	72.7	1.5	100
Growth rate exceed objectives	0	0	31.8	65.2	3.0	100
Turnover rate exceed objectives	0	0	36.4	62.1	1.5	100
Market share exceed objectives	0	0	22.7	75.8	1.5	100
Sales volume exceed objectives	0	0	24.2	72.7	3.0	100
Payback of investment	0	4.5	48.5	47.0	0	100
Total	0	4.5	189.4	395.5	10.5	600

Table 5.40 Mean and standard deviation of new service development

	Mean	Std. Deviation	Ranking
Customer acceptances	3.76	0.47	3
Growth rate exceed objectives	3.71	0.52	4
Turnover rate exceed objectives	3.65	0.51	5
Market share exceed objectives	3.79	0.45	1
Sales volume exceed objectives	3.79	0.48	1
Payback of investment	3.42	0.58	6

The table given above, report the extent to which the sample BMC in healthcare industry Thailand use new service development. Table 5.38 displays the frequency distribution for new service development and Table 5.39 exhibits NSD percentages. In the table 5.40, the degree of NSD in each preference is evaluated from (1) strongly disagreed to (5) strongly agreed, indicate in the mean column. It can be seen that mean values range from 3.42 to 3.79 (see table 5.40) with most value lying between (3) neutrally used and (4) agreed. This indicate that measurement of new service development is the above the middle of the scale of 1 to 5. Based upon the mean values, it can be concluded that BMC use for new service development from market share objectives and sales volume objectives both are equals and same ranks (mean =3.79 S.D= 0.45 S.D=0.48) followed by customers acceptances (mean= 3.76 S.D= 0.47), growth rate objectives (mean=3.71, S.D=0.52), turnover rate exceed objectives (mean=3.65, S.D=0.52), payback of investment (mean=3.42, S.D=0.58)

5.2 Inferential Statistics

From inferential statistics, one can draw inferences from a sample to the population. In other words, it tells how variables relate to one another, whether there are any differences between two or more groups and the like (Sekaran, 2003). The method used is Regression analysis. The scale used in this research is interval scale of association to measure the variables.

5.2.1 Hypothesis Testing

A null hypothesis is a statement on which any change from what has been thought to be true will be due entirely to random error; whereas, an alternative hypothesis statement indicates the opposite of null hypothesis. H_0 is assigned generally for full null hypothesis and H_1 to alternative hypothesis. The purpose of assigning hypothesis. The purpose of assigning hypothesis is to determine which of the two hypotheses correct (Zikhnund, 2003) is. The significance level is the critical probability in choosing between null hypothesis and alternative hypothesis, the probability level that this too low to warrant support of null hypothesis. The insignificance level determines the probability level. The statistically significant correlations at the 0.05 level ($\alpha = 0.05$ at 95% confident level) Testing a hypothesis is presented one after another, accompanied with the table, showing the statistical results from SPSS. In this chapter, a summary of hypothesis-testing results is displayed (see Table 86)

5.2 Inferential Statistics:

DV1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.329 ^a	.108	.080	.447

a. Predictors: (Constant), External Source of Information, Internal Source of Information

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.524	2	.762	3.810	.027 ^a
	Residual	12.597	63	.200		
	Total	14.121	65			

a. Predictors: (Constant), External Source of Information, Internal Source of Information

b. Dependent Variable: Customer acceptances

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.893	.688		2.751	.008
	Internal Source of Information	.054	.110	.067	.489	.627
	External Source of Information	.455	.215	.290	2.112	.039

a. Dependent Variable: Customer acceptances

DV2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.497 ^a	.247	.223	.458

a. Predictors: (Constant), External Source of Information, Internal Source of Information

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.336	2	2.168	10.352	.000 ^a
	Residual	13.194	63	.209		
	Total	17.530	65			

a. Predictors: (Constant), External Source of Information, Internal Source of Information

b. Dependent Variable: Growth rate exceed objectives

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.920	.704		1.306	.196
	Internal Source of Information	.249	.112	.279	2.216	.030
	External Source of Information	.516	.220	.295	2.342	.022

a. Dependent Variable: Growth rate exceed objectives

DV3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.426 ^a	.181	.155	.470

a. Predictors: (Constant), External Source of Information, Internal Source of Information

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.077	2	1.538	6.969	.002 ^a
	Residual	13.908	63	.221		
	Total	16.985	65			

a. Predictors: (Constant), External Source of Information, Internal Source of Information

b. Dependent Variable: Turnover rate exceed objectives

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.048	.723		1.449	.152
	Internal Source of Information	.109	.115	.125	.949	.346
	External Source of Information	.601	.226	.349	2.658	.010

a. Dependent Variable: Turnover rate exceed objectives

DV4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.491 ^a	.241	.217	.396

a. Predictors: (Constant), External Source of Information, Internal Source of Information

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.140	2	1.570	10.001	.000 ^a
	Residual	9.890	63	.157		
	Total	13.030	65			

a. Predictors: (Constant), External Source of Information, Internal Source of Information

b. Dependent Variable: Market share exceed objectives

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.402	.610		2.299	.025
	Internal Source of Information	.209	.097	.272	2.148	.036
	External Source of Information	.444	.191	.295	2.331	.023

a. Dependent Variable: Market share exceed objectives

DV5

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.548 ^a	.301	.278	.409

a. Predictors: (Constant), External Source of Information, Internal Source of Information

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.517	2	2.258	13.532	.000 ^a
	Residual	10.514	63	.167		
	Total	15.030	65			

a. Predictors: (Constant), External Source of Information, Internal Source of Information

b. Dependent Variable: Sales volume exceed objectives

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.081	.629		1.720	.090
	Internal Source of Information	.291	.100	.353	2.906	.005
	External Source of Information	.451	.197	.279	2.294	.025

a. Dependent Variable: Sales volume exceed objectives

DV6

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.520 ^a	.270	.247	.506

a. Predictors: (Constant), External Source of Information, Internal Source of Information

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.982	2	2.991	11.675	.000 ^a
	Residual	16.139	63	.256		
	Total	22.121	65			

a. Predictors: (Constant), External Source of Information, Internal Source of Information

b. Dependent Variable: Payback of investment

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.082	.779		.106	.916
	Internal Source of Information	.274	.124	.273	2.202	.031
	External Source of Information	.641	.244	.327	2.632	.011

a. Dependent Variable: Payback of investment

Table 5.41 Regression analysis of Environmental Scanning and New Service Development

All DV

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.790 ^a	.624	.612	.18444

a. Predictors: (Constant), External Source of Information, Internal Source of Information

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.552	2	1.776	52.211	.000 ^a
	Residual	2.143	63	.034		
	Total	5.695	65			

a. Predictors: (Constant), External Source of Information, Internal Source of Information

b. Dependent Variable: Performances of Service Development

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.071	.284		3.773	.000
Internal Source of Information	.198	.045	.389	4.366	.000
External Source of Information	.518	.089	.520	5.835	.000

a. Dependent Variable: Performances of Service Development

5.2.2 Bivariate regression analysis

Bivariate regression is a procedure for deriving a mathematical relationship, in the form of an equation, between a single metric dependent or criterion variable and a single metric independent or predictor variable (Malhotra, 1999). In this study, we use the sum of the mean of each variable to calculate the relationship between the two variables. The bivariate regression equation as follows:

$$Y = \beta_0 + \beta_1 X_1$$

From the regression equation, if a given independent variable is “b1” the “a” unit increase in the dependent variable(X) is associate with “ab1” change in the log offs of the dependent variable. The predict value can be calculated using the regression equation as flows.

The use of source = 1.071+0.518 (Environmental Scanning)

For cross-sectional data, the regression coefficient for the predictor is the difference in the response per unit difference in the predictor. For longitudinal data, the regression

coefficient is the use of the source of information differ 0.518 units for every unit difference in the ES affects.

Testing of significance

Standard Error.

It is the standard errors of the regression coefficients. It can use for hypothesis testing and constructing confidence level. For the standard error results given in the table 5.41 (see page 89). The standard error of the use of source of information coefficient is .089.

Standard coefficient (Beta)

The term of beta coefficient is used to denote the standardized regression coefficient. The beta coefficient allows for a direct comparison between coefficients as to their relative explanatory power of the dependant variable. For the regression results given in the table 5.41 (see page 89), the value of the beta coefficient is estimated as 0.520

The t statistic test the hypothesis that a population regression coefficient B_1 is 0, that is, $H_0: B_1 = 0$. It is the ration of the sample regression coefficient b to its standard error. The appropriate test statistic is the t statistic as follows:

$$t = b / SE_b$$

When, b is non-standardize coefficient and SE_b is standard error, then

$$t = 0.518 / 0.089$$

$$t = 5.835$$

to illustrate the t test statistic, with $n-2=98$ degree of freedom. From the statistical appendix, $\alpha = 0.050$ is 1.984 for two tailed test. The calculated t statistic exceeds the critical value, thus the null hypothesis is rejected. Hence, there is a significant linear relationship between two variables. The positive sign of slope coefficient indicates that this relationship is positive. In other words, ES has affect towards the NSD use in internal and external sources of information.

ANOVA Table

Analysis of variance (ANOVA) explains the story of how the regression equation accounts for variability in the response variable. The F statistic will be tested for examining the significance of the linear relationship between X and Y is another equivalent test for examining the significance of the coefficient of determination. The appropriate test statistic is the F statistic as follows:

$$F = \frac{\text{Sum Square}_{\text{reg}}}{\text{Sum Square}_{\text{reg}}/(n-2)}$$

Which, this has an F distribution with 1 and $n-2$ degree of freedom. The F test is a generalized form of the t test. If a random variable is t distributed with n degree of freedom, then t square's F distributed with 1 and n degree of freedom. The value of the F statistic as follows: $F = 1.776/0.034 = 52.211$

With 1 and 98 degrees of freedom. From the statistic table, $\alpha=0.05$ is about 3.540. The calculated F statistic exceeds the critical value and thus, the model is statistically significant, and corroborating the results of the t test. Thus, the relationship between X

and Y is significance, it is meaningful to predict the values of Y based on the values of X and to estimate prediction accuracy. Subsequently, the null hypothesis of $H_0: B=0$ is rejected. This means ES has affects upon NSD for BMC. The coefficient of R square(r) is the square of the simple correlation coefficient obtained by correlating the two variables.

Correlation coefficient

The coefficient r^2 varies between 0 and 1. It signifies the proportion of the total variation in Y that is accounted for by the variation in X. From Table 5.41 (see page 87), the strength of association may be calculated as follows:

$$r^2 = \frac{SumSquare_{reg}}{SumSquare_{reg}}$$

Then = 3.552/5.695

$$= 0.62$$

To illustrate the calculation of (r^2) the value is close to 1, it means there is a high degree of association and positive coefficient relationship between the two variables.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

In this final chapter the study enriched with the inferences made the research against the problem. From the study it is obvious to the research that ES concept can be applicable to Thai healthcare industry especially in BMC, similarly the same concept of improvement can be applied through the whole organization using the method call ES. Sometime small continuous change is more doable than a break through change. The same model of ES healthcare can be applied to any healthcare organization in Thailand as most of them have similar way of activities. Because of ES concept is common sense methodology it can be easily adapted to any organization if the organization is willing to change. Furthermore, an array of research finding through which objectives of the research to be achieved or not will be conveyed explicitly in this chapter. Specifically, the outcomes of this research furnish this chapter elaborately with ES concept in the context of BMC. Moreover, to what degree certain facets of ES having impact on new service development of BMC are unveiled here.

6.1 Conclusion

6.1.1 Summary of the study

This research is mainly conducted to explore the relationships of ES and New Service Development in the context of Bangkok Hospital Medical Center in Thai healthcare industry. In the study, ES is measured by the characteristics affects, namely impact in internal facets and external factors. In view of research methodology, the study employs a quantitative method, using regression analysis technique, in analyzing data from questionnaires. The samples, comprised of 66 mid-top management people as a target

respondent, are captured in BMC campus in December 2007. The final analysis on survey data is processed through the software, Statistical package for Social Science (SPSS) version 15.0

6.1.2 Summary of findings:

Descriptive statistics

The sample of BMC is most likely medium-large organization (number of employees not over 3000 or investment or register capital with stock exchange not over 2000 million baht) The findings indicate that the sample of BMC agreed that ES has effects on new service development most, followed by internal and external sources of information with many sub variables. Most of the mean value lies between (3) neutrally and (4) considerably, indicating that the average degree of scanning is a little above the middle of a 1-5 scale. Regarding new service development, the majority of mean values lie between (3) neutrally used and (4) agreed indicating that average degree of new service development is little above the middle of a 1-5 scale.

Inferential statistics:

All DV

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.790 ^a	.624	.612	.18444

a. Predictors: (Constant), External Source of Information, Internal Source of Information

According to $R = 0.79$, There is a strong relationship between performances of new service development and two independent variables (internal and external factors)
 According to $R^2 = 0.624$ 62.4% of the total variation performances in service development can be explained by the two independent variables (internal and external factors)

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.552	2	1.776	52.211	.000 ^a
	Residual	2.143	63	.034		
	Total	5.695	65			

a. Predictors: (Constant), External Source of Information, Internal Source of Information

b. Dependent Variable: Performances of Service Development

Ho: B1; B2=0 According to the rule $\text{sig} 0.000 < 0.05$, hypothesis will be rejected. So, Reject Ho. Performances of new service development can be predicted by internal and external factors

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.071	.284		3.773	.000
	Internal Source of Information	.198	.045	.389	4.366	.000
	External Source of Information	.518	.089	.520	5.835	.000

a. Dependent Variable: Performances of Service Development

$$\text{Equation } Y = a + b_1X_1 + b_2X_2$$

Where Y= Performances of new service development (dependent variables)

X1= Internal factors independent variables

X2= External factors independent variables

$$Y = 1.071 + .198X_1 + .518X_2$$

According to the rule, if Sig $0.000 < 0.05$, hypothesis will be rejected. So, Reject Ho.

There is only independent (external factors) that can be used as significant constant variable is predicting the performances of service development

According to the standardized coefficients .520.

There is positive relationship between performance of service development and external factors. The more external factors increased the more performances service will be increase.

6.2 Discussion and managerial implication

This particular research study has been proposed to make meaningful what might otherwise be just a cacophony of words regarding the importance of saving the environmental scanning from intense deterioration. The frame work of this study will help the academicians to build concrete understanding of how do certain factors of ES cause an impact on new service development. Not only building solid understanding, but also practical implementation of the theories in the context of a unique healthcare is unveiled in this research study.

However, effective environmental scanning requires companies to practice frequently. The frequent scanning of the environment will allow firms to align their competitive strategy with the environment and enable healthcare organization to choose among alternative new service within the corporation. The frequent scanning of the environment from several sources such as publication, trade association, seminars/conference/exhibition will provide the hospital with current information on the changing environmental condition, informing them of improvement and modification of new product processes, that could be help hospital increase the ES practice on

performance of service, provide more alternative service, and aid in faster launching new service.

6.1.3 Recommendation:

This section encompasses some crucial suggestive action that should be taken instantaneous consideration by healthcare professional in government and private sector of Thailand responsible for the preservation of the healthcare environment. This research aims to evaluate the affects of ES factors use of internal and external sources. The further study would explore the degree scanning uncertainty environmental. Since the study is conducted with BMC in Thai healthcare industry in Bangkok only, the results of the study are industry specific and limited to the Thai healthcare service only, it extension to cover the healthcare industry in other industrial areas will provide a further insights into how ES impacts upon practice on performance of service development . Therefore, because of the small size, the study's findings have to be taken with caution. Replication using larger and different samples in terms of different industries different provinces, or concentrating on larger companies instead of only BMC would help in gaining a better perspective on corporate scanning for further study in the future. Hospital industries in Thailand comprise mostly SMEs, for these SMEs, competition is rife and turn over high. As such, these studies, through a conceptual model, seek to examine the relationship between environmental scanning and new service development. Also, examine whether people characteristics of process strength the relationship between environmental scanning and new service process development.

PRIMARY DATA FROM INTERVIEW

Interview of the Mid-Top management was done by asking them question as what is the objectives of performances of new service how they scan and implement the performance of new services, and what are the limitations. Also during the interview, the limitations in each area were discussed, and they allowed me to go further with each area, to collect data

Interview with the Director, manager, supervisor of each area, most of the frontline manager and supervisor was interviewed, and the data got from their answer were such as what are the top most problems they face in order to performed new service . Who are the most qualified in which operation, who they could afford to move and who they could plan for implementing new performances.

Primary data was gathered by interviewing the following persons in the month of April-may 2007

- Virginia Maripolsky, Assistant CEO Nursing Affairs Bangkok Hospital Medical Center
- Dr. Simeen Akhtar Assistant Director Nutritional Service Bangkok Hospital Medical Center
- Prof Emeritus Som-arch Wongkhomthong Chairman of Institute Review Board (IRB) , Deputy Director of Bangkok International Hospital
- Patanavadee Pongsatit, Assistant Hospital Director Customer Relation Bangkok Hospital Medical Center
- Ms Nuttariaya Niransitirat, Customer Service Manager, Bangkok Hospital Medical Center
- Dr. Shakti Ranjan Paul, Assistant Director of International Marketing
- Ms Suwapee Ratnaratorn, Human Resource Manager Bangkok Hospital

BIBLIOGRAPHY

Websites

Aherne, J. (2006), Lean Healthcare Services Blog: “Leaning” Your Healthcare Organization – A Recipe for continuing success. Retrieved Nov. 20, 2007, from <http://www.leanhealthcareservices.com/2006/12/leaning-your-healthcare-organisation.html>.

News paper article

An article published in 7 May 2006 named “Leaning Health care” Daniel T Jones, Chairman Lean Enterprise Academy.

Journal article

Aguilar, F., “Scanning the Business Environment, Macmillan”, New York, 1967.

Aaker, D.A.,”Organizing a strategic information scanning system”, California

Management Review, Vol. 25 No 2, 1983, pp.76-83.

Aaker, D.A., “Developing Business Strategy”, Jhon Wiley & Sons, New York, NY, 1984

Ahituv, N., Zif, J. and Machlin, I. (1998), ”Environmental Scanning and information Systems in relation to success in introducing new products”, *Information and Management*, Vol.33 No.4, pp.201-11

Abel, E. (2002), “Hot topics environmental scanning”, *Bulletin of the American society For information, science and technology*, vol.28 No.3, pp. 16-17

Appiah-Adu, K (1998), “Customer orientation and performance: A STUDY OF SMEs Management Decision 36/6 385-394.

Alam, I., Perry, C (2002), “A customer-oriented new service development process”, *The Journal of service marketing* vol. 16 No. 6 pp. 515-534

Alam, I. (2002), “An Exploratory Investigation of User Involvement in New Service”, *Development Academy of Marketing Science Journal* vol. 30, No. 3 Page 250-261

Analoui F., and Karami A., (2002) How chief executives’ perception of the environment Company performance. *Journal of Management Development*, 21(¾), 290-305

Atuahene-Gima, K (1996) “Differential potency of factors affecting innovation Performance in manufacturing and services firms in Australia”, *Journal of Product Innovation Management* 13, 35-52.

Beal, R.M.(2000),”Competing effectively: Environmental scanning, Competitive strategy and organization performances in small manufacturing firms”, *Journal of Small*

Business Management, Vol.38, No.1, pp.27-47.

Brentani, U. de (1991), "Success Factors in Developing New Business Services",
European Journal of Marketing, Vol. 25 No. 2 pp. 33-59

Brown, (1993), "American Behavioral Scientist", July Vol36 (6) page 741-759.
"Consumer Behavior", "William D. Wells, David Prensky" Books 592 Pages, John
Wiley & Sons; 1 edition 1996.

Book

"Consumer Behavior", Implications for Marketing Strategy and it was written by "Del
Hawkins, Best, Kenneth". This edition of Consumer Behavior: Implications for
Marketing Strategy is in a Book format. This books publish date is January 1980,
and it has a suggested retail price of \$. There are 548 pages in the book and it
was published by Business Publications.

"Customer Behavior", Consumer Behavior and Beyond by Jagdish N. Sheth, Banwari
Mittal, and Bruce I. Newman Jul 1998.

"Consumer Behavior", "An Applied Approach by Nessim Hanna, Richard Wozniak",
Publisher: 2001, Prentice Hall ISBN-13: 9780130895028 ISBN: 0130895024.

Journal article

Costa, J (1995) "An empirically-based review of the concept of environmental
Scanning", *International Journal of Contemporary Hospitality Management* vol. 7
No. 7 pp. 4-9

Choo, Chun Wei, and Nick Bontis. (2002) *The Strategic Management of Intellectual
Capital and Organizational Knowledge*. New York: Oxford University Press.

Choo, Chun Wei. (2001) *Information Management for the Intelligent Organization: The
Art of Scanning the Environment*. 3rd ed. Medford, NJ: Information
Today, Inc.

Choo, Chun Wei. (1998). *The Knowing Organization: How Organizations Use
Information to Construct Meaning, Create Knowledge, and Make Decisions*. New
York: Oxford University Press.

Choo, Chun Wei, and Ethel Auster. (1993). *Environmental Scanning: Acquisition and Use
of Information by Managers*. In *Annual Review of Information Science and
Technology*, edited by M. E. Williams. Medford, NJ: Learned Information, Inc.
For the American Society for Information Science.

Choo, C. W. (2001) "Environmental Scanning as Information Seeking and Organizational
Learning." *Information Research*, Vol 7 No 1.

Journal article

Choo, C. W. (2002) "The Art of Scanning the Environment." *Society for Information Science* 25(3): 21-24, 1999.

Costa, J. (2000), "Development an environmental scanning process in the hotel sector", *International journal of contemporary hospitality management* Vol. 12/3 pp. 156-169.

Costa, J (2000), "Development an environmental scanning process in the hotel sector", *International journal of contemporary hospitality management*, Vol. 12/3 pp. 156-169.

Cady, J.H. and Soukup, R. (1999), "Thoughts about effective planning", *US Banker*, Vol. 109 No. 1, pp. 49-50.

Daft, R. L., Sormunen, J. and Parks, D., (1988), "Chief Executive Scanning, Environmental Characteristics, and Company Performance: An Empirical Study." *Strategic Management Journal* 9(2): 123-39, 1988.

Dey, P. K., Hariharan, S., Brookes, N (2006), "Managing healthcare quality using logical framework Analysis", *Managing Service quality* Vol. 16. No 2 pp. 203-222

Ebrahimi B. P., (2000) Perceived Strategic Uncertainty and Environmental Scanning Behavior of Hong Kong Chinese Executives. *Journal of Business Research*, 49, 67-77

Elenkov, D.S (1997), "Strategic Uncertainty and the environmental scanning: the case for Institutional influences on scanning behavior, *Strategic Management Journal*, vol. 18 No. 4, April, pp.287-302.

Easingwood, C.J.and storey, C(199)" The augmented service offering", *Journal of Product Innovation Management*, 15(4), 335-351.

PhD Thesis

Garner, P.J (1989), "Ed Quest as an organizational development activity: evaluating the benefits of environmental scanning", Chapel Hill, NC: The University Of North Carolina at Chapel Hill. (Ph.D. thesis).

Journal article

Jhone, A.and C.Storey. (1998) New service Development: a review of the literature and annotated bibliography", *European Journal of Marketing* , 32.

Jhone, A Harborne P. (2003) One leader is not enough for major new service development: Result of a user banking study", *Service industry Journal*, 23(3):22-39.

Karim, N S.A (2004), "The link between environmental scanning (ES)", and organizational information behavior: implication for research and the role of information professionals", Volume 53. Number 7. pp. 356-362 DOI

Journal article

Khon, K (2005) "Idea generation in new product development through business environmental scanning: the case of X Car", *Marketing Intelligence & planning* Vol. 23 No 7 pp. 668-704.

Book

Kotler, P (2000), "Marketing Management", The Millennium edition: Tenth Edition Prentice Hall, New Jercey.

Kotler, P. (2007), "THINK ASEAN! Rethinking Marketing toward ASEAN Community 2015 written by Dr. Philip Kotler", published by The McGraw Hills Companies (Copyright 2007).

Journal article

Koen,P.,Ajamain, G.,Burkart,R.,Clamen,A., Davidson,J.,D'Amore,R., Elkins,C., Herald,K., Incorvia, M., Johnson,A .,Karol,R.,Seibert, R.,Slavejkov, A.and Wanger, K.(2001) "Providing clarity and a common language to the fuzzy front end", *Research Technology Management*, Vol. 44 No 2pp 46-55

Lettice, F. (2006), "Measuring knowledge in the new product development process",. *International Journal of Productivity and Performance management* vol. 55 No. ¾ pp.217-241

Lang J.R., Calatone J.R., and Gudmandson D., (1997) Small firms' information seeking as a response to environmental threats and opportunities. *Journal of small business Management* 35, 11-23

Leedy, P. & Ormrod, J. (2001). *Practical research: Planning and design* (7th Ed.). Upper Saddle River, NJ: Merrill Prentice Hall. Thousand Oaks: SAGE Publications.

May R.C., Stewart W.J., and Sweo, (2000) Environmental scanning behavior in a transitional economy: evidence from Russia. *Academic of Management Journal*, 43(3), 403-427

Morrison and J.L, and Held. W (1989), "Developing environmental scanning or Forecasting system to augment community college ", *Journal of the Virginia community college association*, Vol. 4 No 2 pp 12-20.

Muralidharan, R. (2003), "Environmental Scanning and strategic Decision in Multinational Corporations", Volume 11 Number 1 Indiana University South Bend

Murphy, M. F. (1987). *Environmental Scanning: A Case Study In Higher Education*. Unpublished Ed.D, University Of Georgia.

Mintzberg, H., Ahlstrand, B., & Lampel, J. (1998). *Strategy Safari: A Guided Tour Through the Wilds of Strategic Management*. New York: Free Press.

Book

Martin, J. (1995), "Ignore your customers", *Fortune*, Vol.131No. 8,pp 121-6.

Journal article

Michael, P., (1985), "*Competitive advantage*. New York, NY: The Free Press

Carl L. Saxby (2002), "Environmental scanning and organizational culture. Marketing", *Intelligence & Planning* Vol. 20/1 pp. 28-34

Nina Veflen Olsen, James Sallis (2006), "Market scanning for new service development", *European journal of marketing*, Vol. 40 No. 5/6 pp. 466-484

Ngamkroekjoti, C., and Johri, L.M (2000), "Management of environmental scanning process in large companies in Thailand", *Business Process management*, Vol. 6, 4, Pp.331-341.

Ngamkroekjoti, C. (2000), "Environmental scanning of the corporate practices in Thailand", PhD dissertation, school of Management, Asian Institute of Technology, Bangkok.

Ngamkroekjoti, C, Mark speece. (2008) "Technology Turbulence and environmental scanning in Thai food new product development. *Asia Pacific Journal of Marketing and logistic* Vol. 20 No4, 2008.

Websites

New York Times, February 22, 2006. Analysts: Health Care Costs to Keep Rising Available at <http://www.nytimes.com/aponline/national/AP-Health-Care-Costs.html>

Journal article

Ngamkroekjoti, C., Speece, M. and Dimmitt, N.J. (2005), "Environmental scanning in Thai food SMEs: the impact of technology strategy and technology turbulence", *British Food Journal*, Vol. 107 No.5, pp.285-305.

Ngamkroekjoti, C and Johri L.M. (2003) "Coping with hyper competition in the financial services industry in Thailand: environmental scanning practices of leaders and Followers", *The International Journal of Bank Marketing* Volume: 21 Issue: 6/7, pp. 289-97.

Ottum, B.D. and Moore, W.L.(1997), "The role of market information in new product Success/failure", *Journal of Product Innovation Management*, Vol.14.No 4, Pp.258-73.

Olsen, M., Tse, E.and West, J. (1992), *Strategic Management in the Hospitality Industry*, International Thomson Publishing, London.

Olsen, V.N. Michael, D. Murthy, B and Teare, R. (1994), "CEO Perspectives on Scanning the Global Hotel Business Environment", *International Journal of Contemporary Hospitality Management*, Volume 6 No. 4 pp. 3-9 MCB

University Press Limited, 0959-6119.

Journal article

Olsen, V.N and Sallis, J, (2006),” Market scanning for new service development”
European Journal of Marketing Vol.40No...56

Oliver R. (1980),”Cognitive Antecedents and Consequences of Satisfaction”, *Journal of Marketing Research*, Vol.17, No3, pp482

Oyvind Helgesen, Erik Nasset and Terje Voldsund (2009) “Marketing perceptions and business performance Implications for marketing education. Institute of International Marketing, Aalesund University College, Alesund, Norway
Marketing Intelligence & Planning Vol. 27 No. 1, 2009 pp. 25-47

Porter, M.E. (1996),”What is strategy?” Harvard Business Review, Vol.74No.6, pp.61-78.

Ptaszynski, J. G. (1989). Ed Quest as an Organizational Development Activity:

Evaluating the Benefits of Environmental Scanning. Unpublished Ph.d., The University Of North Carolina At Chapel Hill.

Papastathopoulou, P (2001), “The initial stages of new service development: A case study From the Greek banking sector”, *The journal of Financial Service marketing*. Vol. 6, 2, pp.147-161.

Rouibah K. and Lesca H., (1996) Tools for Strategic Probe Aide. 1st Annual International Conference on Industrial Engineering Applications and Practice. Houston, USA, 4-7th December 1996, 342-349

Rouibah K. and Ould-Ali S., (2002) PUZZLE: a concept and prototype for linking business intelligence to business strategy. *Journal of Strategic Information System*, 11(2), 111-130

Subramanian, R, Fernandes, N and Harper, E (1993) “Environmental Scanning in U.S. Companies: Their Nature and Their Relationship to Performance.”
Management International Review 33(3): 271-286.

Subramanian, R., Kumar, K., & Yauger, C. (1994). The Scanning of Task Environments in Hospitals: An Empirical Study. *Journal of Applied Business Research*, 10(4), 104-115.

Sawyerr O., Ebrahimi B., and Thibodeaux M., (2000) Executive environmental scanning, Information source utilization and firm performance: the case of Nigeria. *Journal*

of Applied Management Studies, 9(1), 95-115

Sawyer, O.O., Edbrahimi, B.P., and Thibodeaux, M.S. (2002). Executive environmental scanning, information source utilization and firm performances: The case of Nigeria. *Journal of Applied management Studies*, Vol.9.1. pp 95-115.

Book

Sekaran, U. (1992), "Research Methods for Business", 2nd ed., John Wiley & Sons.

Business Research Methodology by Sakeran (1993)

Sekaran, U. (2003). *Research Methods for Business, A Skill-Building Approach* (Fourth Edition ed.). United States: John Wiley & Sons, Inc.

Journal article

Shekar A. (2003). "User research and service staff involvement in the service development Process", doctoral thesis. Massey University, New Zealand.

Shekar A (2007). 'An Innovation Model of Service Development A process guide for service Manager. *The Innovation Journal: The Public Sector Innovation Journal*, Volume 12(1), 2007, article 4.

Trott, P. (2001), "The role of market research in the development of discontinuous new Products", *European Journal of Innovation Management*, Vol.29 No 1 , pp89-101.

Book

Quantitative analysis for management by Barry Render, Ralph M. Stair, JR. Michael E Hanna 9th Edition Pearson Prentice Hall

Journal article

Richard S. W. (1987), "*Organizations: rational, natural, and open systems*", 2nd ed. Englewood Cliffs, NJ: Prentice-Hall

Wheelen, T. L., & Hunger, J. D., "(2002), *Strategic management and Business Policy*", Tenth edition Pearson International Edition

Wood, M.B. (1997), "Insight ", *Advertising Age's Business Marketing*, August, P.15

Book

Zikmund, W.G (1997), "Business Research Method". 5Th Edition Orlando: The Dryden Press.

Zikmund, W.G (2000), "Business Research Method". 5Th Edition Orlando: The Dryden Press.

Zikmund, W. G. (2003), "Business Research Methods" 7Th Edition. USA. Thomson – South Western.

Journal article

Healthcare segment in Thailand and development of private sectors figure source adopted

from Health & welfare surveys, National statistics office.

Websites & annual report from library

Bangkok Hospital annual reports (2002, 2003, 2004, 2005, 2006, and 2007) retrieved on March 9, 2007.

Websites

Bangkok Hospital - Financial Highlights. (2007.). Retrieved Nov. 20, 2007, from <http://bangkokhospital.com/eng/>

Source adopted from www.bangkokhospital.com, also from the BMC annual reports, 2002-2008

News paper article

Source: An article published in 7 May 2006 named “Leaning Health care” Daniel T Jones, Chairman Lean Enterprise Academy)

Book

SPSS Base 15.0 Application Guide (2007) Chicago: SPSS Inc

Secondary data was collected from the library of Assumption University, and internet sites such as:

www.dictionary.com retrieved on 03/10/2006 10:38:26 PM 2007

www.google.com/health retrieved on 15/04/2007 9:30:25 AM 2007

www.healthcare.com retrieved on 18/05/2007 8:30:05 PM 2007

www.hospital.com retrieved on 21/06/2007 9:43:50 PM 2007

www.moc.go.th retrieved on 17/07/2007 11:25:40 AM 2007

<http://eng.moph.go.th/> retrieved on 19/09/2007 10:27:15 AM 2007

<http://www.thaiph.org/> retrieved on 20/09/2007 11:28:17 AM 2007

<http://www.who.int/> retrieved on 25/11/2007 13:14:21 PM

<http://www.healthline.com/> retrieved on 16/12/2007 17:21:16 PM

<http://www.patient.co.uk/> retrieved on 21/12/2007 21:10:20 PM

<http://www.nih.gov/> retrieved on 30/12/2007 22:10:47 PM

http://en.wikipedia.org/wiki/Environmental_scanning retrieved on 17/05/2007 09:10:15 AM

www.bangkokhospital.com retrieved on 20/12/2008 21:10:20 AM

Questionnaire

The following questionnaire pertains to the partial fulfillment of MBA thesis conducted by a graduate student of Assumption University, Thailand. The academic intent of this questionnaire is to obtain information onto what internal & external sources of information of large company in the healthcare industry used in scanning for Performances of new service development. The questionnaire is consisting of three parts. Your full cooperation in responding to all items in this questionnaire will be highly appreciated. Thank you very much for participating in our study.

Please identify the new service for which you have played an important role in the designing and launching process onto the Thai healthcare industry in the recent past (1-3 years)? Please specify (in English or in Thai)

Name of the new hospital service recently

introduced _____

Internal sources of information in order to design and launch the new performances/service? Please tick (✓) the appropriate boxes.

1=not at all used, 2= slightly used, 3 neutral used, 4= considerable used, 5 extensively used

Part (1)

Type of scanning Internal sources of information	Not at all	Slightly	Neutrally	considerably	Extensively
Internal					
1. Top management (both local and foreign)	1()	2()	3()	4()	5()
2. Outcomes of board members' meetings	1()	2()	3()	4()	5()

3. Feedback obtained from patients by the managers at all levels (both local and foreign)	1()	2()	3()	4()	5()
4. Employees (both local and foreign)	1()	2()	3()	4()	5()
5. Information provided by in-house research department like Use of forms for assessment/re-assessment/out patients forms are done	1()	2()	3()	4()	5()
6. Company's internal database	1()	2()	3()	4()	5()
7. Patient's feedback after consultation with specialists	1()	2()	3()	4()	5()

Part (ii)

Type of scanning External sources of information	Not at all	Slightly	Neutrally	Considerably	Extensively
External					
8. Publications (both from public and private organizations)	1()	2()	3()	4()	5()
9. Public organization, such as ministry of public health	1()	2()	3()	4()	5()
10. Private organization like bank	1()	2()	3()	4()	5()
11. Patients' feedback (both local and foreign)	1()	2()	3()	4()	5()
12. Suppliers	1()	2()	3()	4()	5()

13. Competitors	1()	2()	3()	4()	5()
14. Information collected by market research companies/ agencies/ institutions	1()	2()	3()	4()	5()
15. Information collected by in-house research	1()	2()	3()	4()	5()
16. Seminars/Conference/Exhibition	1()	2()	3()	4()	5()
17. Trade association, such as the private hospital association, Thailand etc.	1()	2()	3()	4()	5()
18. Correspondence with Co-partner company/ Affiliates	1()	2()	3()	4()	5()
19. Relationship between friends or relatives	1()	2()	3()	4()	5()

Part (iii)

Question 3. To what extent have you agreed upon the following statements regarding the environmental Scanning and performances of Service Development in your organization? Please tick (✓) the appropriate boxes?

1= strongly disagreed, 2= disagreed, 3= neutral used, 4= agreed, 5 = strongly agreed

Performances of New Service Development stage Activities performed by the customers	Strongly disagreed	Disagreed	Neutrally used	Agreed	Strongly agreed
20. Customer acceptances of services provided by the hospital	1()	2()	3()	4()	5()
21. Growth rate exceed objectives	1()	2()	3()	4()	5()
22. Turnover rate exceed objectives	1()	2()	3()	4()	5()

23. Market share exceed objectives	1()	2()	3()	4()	5()
24. Sales volume exceed objectives	1()	2()	3()	4()	5()
25. Payback of investment	1()	2()	3()	4()	5()

Observation Data for Hypothesis Testing

H1 Internal VS Customer acceptance Q1-7 VS Q 20

H2 Internal VS Growth rate Q1-7 VS Q 21

H3 Internal VS Turnover rate Q1-7 VS Q 22

H4 Internal VS Market share Q1-7 VS Q 23

H5 Internal VS Sales Volume Q1-7 VS Q24

H6 Internal VS Payback Q1-7 VS Q25

H7 External VS Customer acceptance Q8-19 VS Q 20

H8 External VS Growth rate Q8-19 VS Q 21

H9 External VS Turnover rate Q9-19 VS Q 22

H10 External VS Market Share Q10-19 VS Q23

H11 External VS Sales Volume Q11-19 VS Q24

H12 External VS Payback Q12-19 VS Q25

General Information

Sex

- ☐ Male ☐ Female

Age (years old)

- ☐ 20 or less ☐ 21-30 ☐ 31-40 ☐ 41-50 ☐ 50 or above

Marital status

- ☐ Unmarried ☐ Married ☐ Widow/separated

Position

- ☐ Top - level management ☐ Business management ☐ Functional management ☐ others, please specify _____

What is your current position within the organization?

- ☐ Supervisor ☐ Manager ☐ Assistant Director ☐ Director
☐ Assistant CEO ☐ CEO ☐ others, please specify _____

Business Life Cycle Stage

- ☐ Market Introduction Stage ☐ Growth stage
☐ Mature stage ☐ Decline or stability stage

Management style

- ☐ Autocratic ☐ Bureaucratic