CHAPTER 2

THEORETICAL CONSIDERATIONS

2.1 The Market Research

In marketing system, Malhotra (1996) stated that market research is the process of feedback acknowledgment. It provides an effective data of the current marketing activities for marketing decision in some necessary changes. Often, market research is used as the primary tool for exploring new opportunities. Typically, three function roles are included in market research. There are descriptive, diagnostic and predictive function. Descriptive function involves gathering and presenting statements of fact whereas diagnostic function takes that data to explain. Finally, both the descriptive and diagnostic results are used to predict the results of a decision making.

The Research Process (Aaker, Day, and Kumar, 1998)

1) Problem and Opportunity Identification

As changes occur in the firm's external environment, some problems or opportunities may occur and can induce the beginning of market research. Once a problem has been recognized, firm should determine whether the question really could be answered. The information that is to be used should be discussed and determined whether the information already exists.

After the completion of the problem and/or opportunity formulation process, the research objective must be stated in terms of the precise information that is necessary and desired to answer the problem. Often, objective is stated in the form of a hypothesis involving a relationship between two or more variables that can be tested with empirical data.

2) Creating the Research Design

The plan to be pursued to answer the research objective or hypothesis is called a research design. Typically, trade-off between cost and time of the research and the quality of decision-making information provided are involved.

3) Selecting a Method of Research

The next step is to choose a method of obtaining data. There are three basic methods, which are survey, observation, and experiments.

3.*1 Survey research*, the most popular method is the interaction between an interviewer and respondents to gather facts, opinions, and attitudes either in person or by mail. A questionnaire is generally used for survey method to provide a consequent approach to data acquiring.

Survey Approaches

3.1.1 Door-to-Door Interviewing

Customer is interviewed by interviewer at their home. This is thought to be the best survey approach based on many advantages, such as more feedback from the respondents, enable to explain a complicated questions, enable to achieve high data quality from visual contact, and so on. Besides, response rate for door-to-door interviewing is historically higher than other approaches due to a respondent's feeling of secure, comfortable, and familiar. Moreover, some drawbacks must be taken into account, such as cheating, fudging, or shortcutting by the interviewer, interviewing a wrong respondent, lack of communication between office and the interviewer in case of a questionnaire change, or hasten data retrieval.

3.1.2 Mall Intercept Interviewing

Shoppers are intercepted in shopping areas and asked to answer the structured questionnaire. In addition to low cost, respondents can be various stimuli for their reaction

and special questionnaire techniques can be used. However, the respondents may be ill at ease, in a hurry, or preoccupied by various disturbances, resulting in bad quality of the data obtained.

3.1.3 Executive Interviewing

Executive interviewing refers to an equivalent of door-to-door interviewing and has essentially the same advantages and disadvantages as door-to-door interviewing except more costly. Business people who involved in the purchase decision are interviewed at their office after, convincing them to agree to be interviewed. Often, time is waste from long waiting and appointment cancellation.

3.1.4 Telephone Interviewing

A telephone interviewing is a relatively inexpensive way to collect survey data due to an elimination of travel time. Besides, it has the most potential to generate a very high-quality sample than other approaches. However, the respondent cannot be shown anything and the interviewer can not judge or evaluate any outward signs. Also, an interviewing time must be shorter from the ease in hanging up the phone. Moreover, a telephone interviewing can not allow the depth and long interview with many open-ended questions.

3.1.5 Self-Administered Interview and Mail Surrey

The self-administered survey and mail survey is different from other approaches that no interviewer is employed to explain things to the respondent and to clarify responses to open-end questions. On the other hand, the absence of an interviewer will eliminate one source of bias such as his appearance, dress, speaking manner, and so on. However, a response rate of mail survey is unpredictable, with a wide range of less than 10 percent to nearly 100 percent, depending on the questionnaire length, content, incentives used, and others.

3.2   Observation aims to understand what drives customers by observing people in their every day lives. The qualitative data is gathered in-depth.

3.3   Experiment is a research which investigator manipulates one or more variables while observing the effect of such changes on another variable. The quality of experiment depends on how well all factors are held constant except the ones being manipulated.

4) Questionnaire Design

A questionnaire is a set of questions designed to generate the data necessary for achieving the research objectives. It provides consistency uniformity and standardization in data collecting. Every respondent perceives same wording and questions in similar consequence. Improper design of questionnaire lead to unsatisfied information resulting in higher costs.

4.1 Process of the questionnaire development

1.   Determine survey objectives, resources and constraints
2.   Determine data collection method
3.   Determine question response format

Three major categories of question formats are employed; they are open-ended, closed-ended and scaled-response questions.

Open-ended question allows respondents to reply in there words and provides the researcher with an array of information. However, open-ended questions are time-and-money consuming, particularly in the process of editing and coding. Interpretation is another problem generally found if too many categories are utilized. Moreover, interviewer bias may be a related problem, which can be partially overcome by pre-coding open-ended questions. A final disadvantage occurs on some self-administered

questionnaires that a shallow, incomplete, or unclear answer may be recorded without probing from interviewer.

Closed-ended question requires a respondent to choose a list of responses. The advantage is the avoidance of many problems of open-ended question. Traditionally, a two-choice question is called dichotomous and a many-choice question is called multichotomous. Dichotomous questions are prone to a measurement error because of its limited alternatives.

Scaled-response question is the question than can measure sensitivity or completeness of response. It usually forms certain incorporate numbers that may be used directly as codes. More powerful statistical tools are allowed to use with this kind of question. However, the most important problem of scaled-response question involves the respondent's misunderstanding.

4.   Decide the question wording

Wording of each question is the next task. First of all, the wording must be clear so that a question means the same thing to all respondents. Secondly, words must be selected to compose a question avoiding the respondent and interviewer bias. Further, the ability of the respondent to answer the question need to be considered. Some respondents may have never acquired the data to answer the question. Also, the respondent's forgetfulness and inability of recalling might be faced. Finally, the willingness of the respondent to answer the question should taken into account.

5.   Establish Questionnaire Flow and Layout

The next step is sequencing and developing a layout for the questionnaire. At first, the questions designed to identify suitable respondents, namely screener, are used. After that, the initial questions should be simple, interesting, and non-threatening. Further,

general questions are covered first to let the respondent think about a company's concept or product before building momentum and commitment to motivate the respondent to finish the rest of the questionnaire. When the interest and motivation of the respondents become sag, an encouragement state might be inserted. Finally, the embarrassing topics such as demographic questions should be covered near the end of the questionnaire.

6. Evaluate the questionnaire and layout

Once a draft of the questionnaire has been designed, many items should be considered. First of all, a need and length for a given question are judged. Next, a sufficient number and type of questions are repeatedly checked whether they provide the desired information to accomplish the research objectives or not. In terms of open-ended response, a questionnaire appearance and plenty of space should be permitted for avoiding a cluttered look.

7. Obtain approval from all relevant parties

At this point, the questionnaire will be copied and distributed to all parties that are involved and then is requested for an approval.

8. Pretest and revise

After managerial approval, the questionnaire must be pre-tested in the same way as the real survey. Typically, the purpose is to look for misinterpretation by respondents, lack of continuity, poor skip pattern, and so on. Any necessary change will be applied after pre-testing.

5) Sampling Process

5.1 Defining the population of interest

The population of interest is usually identified in terms of geography, demographic characteristics, product or service use aspects, or else. Screening questions

are used to qualify the target population. In addition, the population who will be excluded are important to determine.

5.2 Selecting a data collection method

5.3 Pointing out a sampling frame

5.4 Selecting a sampling method

The sampling method will be selected based on the research objectives, the availability of resources, time limitations, and the nature of problem area. Two major sampling methods are described as probability sampling method and non-probability sampling method.

"Probability samples" must be selected from the population that has a known and equal probability of being selected. In doing that, the survey results are projectable to the whole population, with high cost and more time-consuming.

1. *Simple random sample* is considered to be the purest form of probability sample, with the disadvantage of time consuming and costly.

2. *Systematic sample* is often used as a substitute for simple random sample with less time consuming and more simply. To do that, a fixed skip interval must be determined and samples are selected based on this skip interval.

3. *Stratified samples* will have a smaller sampling error than a simple random sample with the method of dividing population into two or more mutually exclusive and exhaustive subsets and choosing the samples from each other independently. Stratified samples are statistically more efficient because one source of variation has been eliminated. However, it is not used frequently because the researcher usually does not have the information necessary to properly stratify the sample.

4. *Cluster samples* is distinguished from the others because the sampling units are selected in-groups instead of individuals. Cluster samples are less statistically efficient and greater cost efficiency than the others. Data is collected from all the members in the subgroups, which are sampled before. The area sampling, where the clusters are units of geography, is the most popular type of cluster sampling. The researcher would extremely reduce travel time and expense of interviewer by interviewing only within the area selected. Under cluster sampling, we assume that the members in a cluster are as heterogeneous as the total population. If they are not, a problem will occur. However, this potential problem can be overcome by selecting a large number of clusters into the sample and sampling a small number of elements from each cluster.

Non-Probability Samples

1. *Convenience samples* are used because they are easy to collect data from with this method, the cost and time needed to accomplish it can be reduced significantly whereas a quality of such samples is low.

2. *Judgment samples* are used in case that the selection criteria are based on personal judgment that the selected element is a representative of the population.

3. *Quota samples* are selected from the demographic or classification factors of interest that are categorized on the basic of researcher judgment.

4. *Snowball samples*: are selected from the process that additional respondents are referred from the initial respondents. Typically, it is used when rare populations are provided. The major advantage involves the dramatic cost reduction in searching for all samples required. Unfortunately, an additional sample may not be a good representative of the total population.

5.5 Sample size determination

There are three major factors in determining sample size; they are financial, statistical and managerial issues. It is known that the larger the sample, the less the sampling error and the larger the costs also. Notably, the level of sampling error decreases at a rate only equal to the square root of the relative increase in sample size. Thus, what the accuracy of the result should be accepted must be judged by the researcher. There are several methods in identifying the sample size. In essence, sample size is oftenly determined backwards from the budget available. Sometimes, the *"rule of thumb"* is used in the way that specific size such as 200, 400, 500, are proposed based on past experience. In addition, a number of subgroups have to be considered that the more subgroups, the larger the sample size required.

6) Data Processing

6.1 Validation and Editing

Validation is the process to make sure that the interviews were conducted properly and completely. Fraud of interviewer in following key instructions will be detected as well as the interviewer's cheating. As a result, the research output can reflect the true responses of target population.

Editing involves checking for interviewer mistakes. Some questions that the interviewer failed to ask or record answers will be detected. Besides, the questionnaire is checked to make sure that skip pattern was followed. Sometimes, interviewers may skip when they should not or fail to skip when they should. Finally, the responses to open-ended questions that are very interested will be checked. Interviewers, normally, are instructed to record responses straightforwardly and not insert their own wording in any way. Also, they are trained to probe for initial response.

6.2 Coding

Coding is the process of assigning numeric codes to the various responses to a question. All closed-ended questions are pre-coded while all open-ended questions are not. Because there is no idea what the answers of open-ended questions are, the process of coding open-ended questions' responses is tedious and time consuming.

6.3 Data entry

Data entry refers to the process of converting data from an unreadable form to a readable form by computer after validating, editing and coding.

6.4 Tabulation of survey results

The final step of data processing is tabulation of the data. A one-way frequency table, which indicates the number of responses to each answer on a survey question. Another approach, namely cross-tabulation is a very powerful technique to summarize and analyze the survey results. It involves the examination of the responses to one question relative to the responses of one or more other questions. Frequently, some statistical measures can be used for more powerful analysis such as arithmetic mean, mode, and so on. A statistical hypothesis test allows the researcher to calculate the probability of particular result and determine whether the stated hypothesis should be acceptable or not. Further, there are several techniques in analyzing the relationship between variables. Bivariate regression analysis is generally used to predict one dependent variable from the knowledge about another independent variables. The appearance such the relationship can be plotted on a scatter diagram to judge whether it is linear or curvilinear pattern. Correlation analysis is involved in the degree measurement of association between changes in one variable and changes in another.

7) *Communication of the research results*

It is very important to distribute the research results to the management. The presentation of the interesting finding may be arranged. Each unit should perform a further analysis in the issue that directly involved in the unit's operations.

Once the research result has been distributed to the decision-makers, it serves as a valuable reference document. A significant amount of information and several objectives in the research result should be remembered for any length of time. Therefore, the decision-makers will turn back to the result and reread it to reacquaint themselves with the findings of the research.

2.2 The Strategic Planing

Planning is an ongoing process of forecasting the future and making decision that quide the business in both short and long terms. Its current situation and future destination are taken into account before making decisions.

Strategic Planning is the process of managerial decision that matches the organization's resources and capabilities to its market opportunities for survival and long-term growth. In-developing a strategic plan, the management will define the business mission and its primary goals and objectives. (Stickland, 1996)

2.2.1 *Defining the mission*

In general, top management's vision influences all other planning efforts in the organization, because it identifies the firm's long-term commitment to the business type it is in and the place in the market it wants to take. After that, mission statement is developed to describe the firm's overall purpose and what it hopes to achieve in terms of its customers, products, and resources. The ideal mission cannot be too broad, too narrow, or too shortsighted. A mission that is too broad will not provide enough focus for the

organization, where as too narrow mission can inhibit the possible growth opportunities. Likewise, the too shortsighted and inflexible mission may limit a firm's adaptation to external environmental changes.

2.2.2 Setting corporate goals and objectives

Further, the business mission is translated into the corporate's goals and objectives. The goals broadly identify desired outcome within the limited time frame, relating particular issues such as earnings, cash flow, use of resources, products, markets, customer satisfaction, and so on. Corporate objectives usually state in terms of profits and growths at the specific level of business. However, both goals and objectives do not specify how the desired outcomes will be achieved.

2.2.3 Processing the marketing plan

Kotler, 1997 stated that the marketing planning process involves monitoring change in the marketing environment and assessing the firm's ability to take advantage of the potential opportunities. It begins with an analysis of marketing environment, and follow by then establishment of marketing objectives and strategies, and a preparation of marketing plan.

1) Assessing the marketing environment

The first step is to identify both the internal and external environment of the organization. All the controllable elements within a firm is called "internal environment" such as employee and their skills, technologies used, access to resources facilities, and so on. On the other hands, the external environment includes uncontrollable environments outside an organization that can affect its performance, such as customers, government regulations, competitors, economy, social and cultural trends. In other words, such evaluation refers to a SWOT analysis, which represents strengths, weaknesses, opportunities and threats consecutively. Strengths and weaknesses are found in the internal

environment whereas opportunities and threat are found in the external environment. Firms that continuously monitor both inside and outside their organizations are able to develop strategies that successfully match business strengths to market opportunities.

2) Setting the marketing objectives

After analyzing SWOT, the next step is to develop marketing objectives which state what is to be completed by the marketing function to achieve the firm's overall goal and objectives. Marketing objectives should be measurable and can be described in both quantified and qualitative forms. For instance, quantified objective can be a particular amount of market share or sales volume desired where as qualitative objective may be a brand's image improvement, an industrial leadership, and customer loyalty improvement.

Sales objectives- Most qualitative objective are stated in terms of sales amount (baht) or unit sales based on forecasts of demand in the total market. The projected revenues from sales forecasts determine all of the firm's planning efforts including the marketing budgets and the marketing mix.

Product-oriented objectives- If a firm has decided to focus on new or improved products for existing customers, its objectives should be product-oriented. Firms usually set objectives for quality improvements to establish customer loyalty because it is more profitable to sustain customers.

Market-oriented objectives- If a firm has a potential growth on either market development strategies or diversification strategies, its objectives will be market-oriented objectives. A particular of its market or a higher market share is expected as objectives to be reached. Probably, the marketing objectives will focus on issues related to developing both new market and product.

3) Selecting a target market

Target is a group of customers that the firm will go after. It is sometimes either a total market or only part of the market. To select the market segment which is more attractive, the firm should assess the potential customers that are able to pay for its competitive products. The target market also depends on the firm's objectives which focus on either existing or new customers as well as their buying preference and practices to the firm's products. Thus, the firms should obtain large amounts of data about their customers from a market research to identify target markets.

The Product-Market growth matrix

Top management must decide which marketing direction will provide the best opportunities to each product among its current marketing environment. The decision relies on a consideration on two issues; existing or new product, and existing or new market. When all issues are combined, four different marketing strategies are provided as the product-market growth matrix in Figure 2.1.

	Existing Product	New product
Existing market	Market Penetration	Product development
New market	Market development	Diversification

Figure 2.1 *The product-market growth matrix*

Market penetration involves the strategies designed to increase sales of existing products to current customers. New uses for such product can be advertised, causing current customers to use more and potential customers to see more reasons to begin buying.

Market development is the strategies that introduce existing products to new markets. New markets can described as new customer segments within an existing geographic market or new geographic areas.

Product development refers to the strategies that sell new products in existing markets. New products cover the actual new product line or the existing products that be improved its performance.

Diversification is the strategies that emphasize both new products and new markets to reach growth.

4) Developing the marketing mix strategy (Solomon, and Stuart, 1997)

Product strategy determine the best design, the necessary features, the suitable packaging and the availability of warranty. Also, product strategies include what is needed to satisfy the target market, what services that the target customers should receive along with the product, how the product is positioned and the variation offered.

The Boston Consulting Group matrix (BCG)

The BCG matrix refers to a portfolio management strategy that is used for investment in new products. New products are chosen from their potential to become future cash generators.

	High market share	Low market share
High market growth	STAR	QUESTION MARK
Low market growth	CASH COW	DOG

Figure 2.2 The BCG Matrix

As shown in Figure 2.2, the vertical axis stands for the market growth rate, which is a measure of market's attractiveness. Simultaneously, the horizontal axis represents the firm's relative market share which is its sales relative to the nearest competitor. Each quadrant of the BCG matrix has a special meaning that is indicated by symbols of stars, cash cows, question marks and dogs.

Stars are product with dominant market share in high growth markets. They generate large revenue and also require large amount of investment for increasing product capacity and promotion. Because of large growth potential, competition is increasing, so the marketing strategies should be designed in the competition way. When the market growth slows, the product will become a "cash cow".

Cash cows are products with a dominant market share in a low-growth potential market, so that new competition are not encouraged to enter the market. The high market share can be sustained with minimal funding.

Question marks are products with low market share in high-growth markets. The situation shows the failure signal to compete successfully. Perhaps the product's price is too high, the access channel is limited, the sales force is less effective, or fewer benefits than competing products are offered. The firm can take action by investing more money to increase market share, but it's risky.

Dogs are products with a small market share in a slow-growth market. The dog might be a specialized product for very limited market that are not likely to grow rapidly.

Price strategy states the particular prices to be charged for a product. If a target market is not willing to pay the price charged, all marketing efforts are useless. A pricing strategyy is significantly influenced by the pricing of competitors' products.

Promotion strategies include all marketing activities that communicate product benefits and features to the target market. They state the message or image to be developed, the way to deliver the message, and the advertising, sales promotion and personal selling that will be used.

Place strategy determines how the product will be available to the target market at once they want it, by either directly or indirectly selling.

5) Preparing the marketing plan

Traditionally, the marketing plan is a document that explains the activities or actions to be implemented and controlled. Also, it states budgets and timing required. Sometimes, alternatives or contingency plans are included for even that the objectives are not being met by the initial strategies.

Frequently, it fails to carry out the plans. One reason can be described as the planner may not a clear understanding of the day-to-day operations. Therefore. it is necessary to develop the methods for obtaining feedback or whether the marketing plan is being performed well, within the planned budget and timing. Some necessary changes will be applied to the plan and its implementation.

2.3 The Telecommunications in the Business

To maximize the benefits from telecommunications, the businesses will explore the demands of their own organizations. A number of question be answered such as what physical channels should be used to transmit and receive signals, what speed the data should employed, and what the best layout of telecommunication network in an organization is. As usually, the benefits of hardware and software acquired to implement a telecommunication system have to be weighed against their costs. There are many factors relating to the costs (Ralph, 1996).

2.3.1 Channel capacity

When the medium which data can be communicated, namely channel, is of small capacity it is called narrow band. Media of the small capacity such as copper telephone wires is said to have baseband capacity. When a channel is greater that can transmit several streams of data simultaneously, it is said to be broadband. Improving technology may be the allowing of data to be transmitted at the greater speeds.

2.3.2 Transmission speeds

The range of bits per second, which it can operate, defines a medium's capacity. The bit rate of any communication is considered on the basis of the distance it is to be carried. The longer the distance, the less clarity of the signal. Thus, to receive accurately, the farther a signal must overcome, the more slowly it must be transmitted.

2.3.3 Media

There are various media, which are categorized by amount of information they can carry and their ability to defend the interference that degrades the data being transmitted.

Twisted pair: A traditional telephone is made of a pair of twisted copper wires, which will reduce electromagnetic interference that induces an unclear voice and data.

Coaxial cable: Coaxial cable consists of a hollow outer conductor and an inner wire conductor with an insulator between them regularly of wax or plastic. It is more expensive medium than twisted pair with a greater of transmission rate. Because it is much less susceptible to electromagnetic, the voice and data transmitted are more clear than of twisted pair.

Microwaves: Microwaves are short radio waves that can carry signals over long distance with high accuracy. Microwave communication can be effective only when there is no obstruction of line of sight between transmitter and receiver.

Fiber optic: Fiber optic cable is considerably faster, lighter, and more durable than wire media and is well suited to systems requiring a transmission of large volume of data. It is best used as the backbone of a network and not for connecting isolated devices to a backbone. In most networks, fiber optic cable is used as the high-speed trunk line, while twisted wire and coaxial cable are used to connect the trunk line to individual devices.