Chapter I: Laying the Groundwork

Quality in a service or product is not what you put into it. It is what the client or customer gets out of it. 

Peter Drucker

I. Introduction

Higher educational institutions are in an increasingly competitive environment; at the same time, they are also under government pressure to provide quality education with tighter budgetary control. More and more, they find themselves having to grapple with problems similar to those traditionally faced by private corporations. Issues such as how to improve education quality, how to recruit qualified students, and how to motivate faculty and staff for better performance; have become a great challenge to education administrators. Some of these issues require marketing solutions; others, quality management. Finding the right solution is not easy. Not only is the process complicated and far-reaching, but also changing the systems which measure an individual’s value or worth stirs fear and resistance (Cornesky, McCool, Byrnes, and Weber 1992). Nevertheless, the time has come. Higher educational institutions need to re-examine their approach to education and their way of managing their organizations. In fact, fundamental changes may be necessary to solve long-term problems associated with education quality, student recruitment, faculty performance, and budgetary management (ibid.). In a market economy, ultimately, it is the institution’s market competitiveness that draws the support of its students and their parents, the industry, the society, and the government.

What is the ultimate answer? Is it possible for higher educational institutions to systematically adopt modern management principles in order to improve education quality and work performance efficiency and effectiveness?

One of the frequently heard complaints among education administrators by this researcher is that government regulations often discourage them from doing the sensible things. Such claims may have some merit. For example, using government grant to entice educational institutions into adopting a quality management program without insisting on measuring tangible
performance will encourage some education administrators to manipulate rules solely for the purpose of obtaining the grant. Obviously, to these administrators, who themselves lack a clear perspective on the philosophy of quality management, acquiring the skill to manipulate rules is far more important than acquiring the capability to improve education quality and satisfy student demands.

Still, having to face government restrictions is not a unique situation. Private companies must also face government regulations and union demands that are not necessarily pro-business. Yet, it seems that there are always some organizations, profit or nonprofit, that find ways to outperform others even in an adverse environment. The purpose of this thesis, therefore, is not to solely dwell on the negative effect of government regulations and the need to change the way the government governs — that is another subject (and in this thesis, the topic of government and its impact is treated as one of the major influences in the macro environment). Rather, the intention of this thesis is to provide educational institutions with a working model where marketing and quality management guidelines are provided systematically. Hence, the primary issues for this thesis are:

1. What management principles will help higher educational institutions to become more competitive and successful?

2. How can these principles be organized into a comprehensive model for the improvement of education quality and efficient and effective management of higher educational institutions?

3. Using the proposed model, what market knowledge is necessary to provide the direction for an institutional-wide improvement?

Traditionally, marketing has promised the most effective solutions for issues such as: student recruitment; image building; competitive advantage formulation (i.e., what the seller does differently and better than its competitors in the value it has created for its customers); and planning and designing of the education offer. Quality management theories provide the managerial insight on improving product (education) quality and organization performance efficiency and effectiveness.

While there are plenty of marketing and quality management models available for profit organizations, there lacks a comprehensive model aimed at solving education-related marketing and quality management issues. Further, even for profit organizations, marketing and quality management are
often treated as two separate fields. Thus, the idea is not to take a micro approach where a theory is developed and the researcher proceeds to prove its validity. Instead, this thesis takes on a macro approach. There are plenty of time-proven management theories that could be utilized to guide educational institutions in improve organization performance and thus, education quality. It is the intention of this thesis to throw a new light on theory application by incorporating marketing and quality management principles into one model.

Secondly, not all theories/models proposed in this thesis are only applicable to the management of higher educational institutions. That would be too presumptuous --- a good theory has a potential for a wide range of applications across many industries and situations. The key is not to place a narrow confinement on the potential usefulness of a theory but to translate and incorporate general theories into a relevant set of guidelines.

For market knowledge, field research in students’ educational needs is necessary. This information is essential in formulating the educational mission and goals, defining education quality, and determining the right education offer and the right strategy to communicate with the marketplace -- all of which are the backbones of the proposed model mentioned above. While Chapter I presents the definitions and arguments of the central ideas of the model, Chapters II and III present the research questions and methodology for the field research. Chapter IV gives the research findings. Chapters V - VII work out the details of the proposed model so that education institutions are able to follow the scheme systematically.

II. Strategic Marketing Management & Higher Educational Institutions

II.1. What Orientation Is Required of A Successful Organization?

Despite the fact that marketing orientation is not an unfamiliar term to many, a considerable number of organizations still have a production or a sales orientation. A production-oriented organization is mostly interested in pursuing efficiency in production, cost reduction, and in achieving technological superiority in production process. Organizations that are production-oriented try to produce whatever products they find easy and prefer to produce. Success in running a company is judged according to the firm’s production superiority --- selling products is just an afterthought. Thus, production managers are the ones who have a decisive influence on the
prioritization of organization goals and objectives. Market input for production decision is almost non-existent.

A sales-oriented organization tries to peddle whatever product(s) that will sell without regard to whether its customers really need them. Selling is seen as the direct consequence of a mass production, which creates a need for the organization to eliminate its surplus inventory. The sales managers have more influence in this type of organizations even though the production managers still have a firm grip on the company's strategies.

The above two approaches are in marked contrast with the marketing-orientation in which the firm tries to determine the needs of its target market first and then, adopts its needs by producing the right product. Because customers are considered the most important company asset, production is seen as the direct result of discovering and defining customers' needs. Active marketing research is conducted on a regular basis in an effort to fulfill customers' needs. Sales, in this case, is only a part of marketing functions. It is the marketing managers who are responsible for setting priorities for the production process as well as for the rest of the organization.

As consumers become better educated, more informed and take increasingly more advantage of opportunities to pick and choose products that will fulfill their needs, it should become obvious that those companies that are concerned with their customers' needs have a much better chance of becoming successful.

II.2. Marketing Definition

Marketing is the business philosophy, whereby an organization defines its business in terms of customer needs. In the process of fulfilling customer needs and thus, achieving the organization's business objectives, strategies and tactics are formulated and implemented based on certain methodology.

II.2.1. Marketing as the Philosophy

The cornerstone of the marketing philosophy is customer-orientation. Peter Drucker (1974) once stated that marketing is the core of business and the only justifiable business purpose is to create customers. Indeed, business does not exist and function to create employment, to provide welfare for society, or to help government reduce its deficit. This is not to say that modern companies should not concern themselves with anything but
marketing issues; Drucker was merely trying to set the priority for businesses. Ultimately, a firm’s economic power lies in the pocket of its customers. It is the customers’ willingness to purchase goods alone that transforms raw materials and manpower into goods and goods into wealth. Unless a firm recognizes this and is able to find a way to satisfy its customers and therefore, ensures its long-term survival, it has very little chance to fulfill its other obligations --- no matter how grand they might be.

The second dimension of customer-orientation is that the basic requirement for a firm to remain competitive must be more than just to identify and satisfy its customers’ needs --- it must anticipate their needs. Market followers ask customers what they want. Market leaders detect what customers want before customers know it themselves. This concept implies that as economic, social, cultural, technological, political, and legal environments change, customers are not necessarily always aware of, or are able to identify precisely their changing needs in product/services forms. An average consumer would not have thought of asking for instant coffee, a fax machine, or disposable contact lenses before they were invented and marketed. Nevertheless, products such as these help to fulfill two of the contemporary consumer needs --- the need to save time, and the need for convenience (Engel, Blackwell, & Miniard 1993). Thus, even though customers did not specifically ask for them, the wide acceptance of these products indicate that some of the firms were able to anticipate customers’ needs. This further implies that the responsibility of discovering and defining customers’ needs as well as designing and marketing the appropriate products that can best satisfy these needs, rests squarely on the producers’ shoulders --- not the customers’.

The third dimension of customer-orientation is that a firm must enlist the entire company’s effort to satisfy its customers’ needs (McCarthy and Perreault, Jr. 1993). The ultimate purpose of every activity carried out within the company is intended to contribute to the satisfaction of its customers. For instance, finding ways to keep employees motivated is not a random management kindness; rather, it is a good business practice. Motivated and productive employees are better able to fulfill customers’ needs and are more likely to contribute to the achievement of the company’s business objectives.

The fourth dimension is that the outcome of marketing exchange process between a producer and its customers must yield profit or profit-equivalent that contribute to the long-term success of the firm (ibid.). This means that a successful firm does not scatter and waste its limited time, money, and manpower in a vague attempt to capture all or any customers. Rather, it
streamlines its effort and concentrates on serving those ‘targeted customers’ who will most likely to contribute to the company’s long-term success.

Moreover, money for goods is not the only form of commercial exchange that contributes to the long-term success of a firm. As long as the benefit received by both the seller and its customers are equal and agreeable, the exchange process can take place with other than monetary payment. This is a particularly relevant point for government subsidized educational institutions since by definition, the exchange process between students and educational institutions is not a one hundred percent ‘money for education services’ exchange. In most cases, it is the head count of the enrolled students or graduates that earns schools the subsidy.

The fifth dimension is that customer feedback is an essential source of marketing information for designing and improving the company offer. Thus, it is important to systematically collect and analyze customer feedback even if that feedback is negative. Further, customer feedback may be used not only for the marketing department but for the rest of the company as well.

Ultimately, it is the marketing philosophy that helps to establish “a basic set of values and beliefs about the central importance of the customer that guide the organization” (Webster, Jr. 1992, P. 10).

II.2.2. Marketing as the Business Strategy and Tactics

Webster, Jr. (1992), and Boyd and Walker (1990) claim that marketing strategy operates in three levels: the corporate level, the SBU (strategic business unit) level, and the functional level. This approach presents a problem --- not all organizations possess a clear cut organization structure that consists of headquarters, SBUs, and marketing departments. It is especially true with the recent proposals of new types of organization where the traditional definition of organization boundaries and structure are no longer applicable (Achrol 1991, Drucker 1993, Mills 1993, Webster, Jr. 1992). Consequently, it will be more useful to define different levels of marketing strategies without attaching them to a particular type of organization structure. Figure I.1. shown below reflects this approach.

At the ‘global strategy’ level, to detect customer needs, marketing takes the approach of ‘outside looking in’. The first step is environmental scanning and analysis. This enables the organization to identify the market opportunities for which it is best equipped. The second step is to establish
organization mission and goals. While a mission "defines the scope of a business and provides important guidelines for managing the corporation" (Cravens 1994, P. 41), goals reflect the company’s desired state, often stated in quantitative terms and in a specified time period. At the 'targeting and positioning strategy' level, the marketeer determines which market(s) to concentrate and maps out the characteristics of the targeted market (step 3). Based on the market demand and the firm’s competitive advantage, the firm formulates its product differentiation and positioning strategy (step 4).

**Figure I.1. The Strategic Marketing Management Model**

At the ‘functional strategy’ level, a company’s offer stated in four Ps that reflects the company’s competitive advantage and the way it chooses to satisfy the target market is developed (step 5). While steps one through four are the market planning stages, step five is both a planning and an implementation stage. Decisions about and designing of the marketing mix are a part of market planning, but producing and offering marketing mix to the target market involves implementation. The final step (step 6) involves the development of a system for the evaluation and controlling of the firm’s market performance so that deviations may be detected and corrected. The proposed model is displayed in a circular loop indicating that environmental changes could affect a company’s goals and its strategic decisions. It is also possible that a firm’s changes in strategies influence its perception and the interpretation of market opportunities.

**II.2.3. Marketing as the Methodology**

Marketing management deals extensively with the methodology of STP (segmentation, targeting, and positioning) as well as the development of the marketing mix. For instance, Kotler (1994) suggested a list of market-segmentation variables and procedure that can be used to divide a consumer market into various segments. He further identified criteria for selecting a
target market and methods to develop a positioning strategy. In addition, McCarthy and Perreault (1993) as well as Kotler (ibid.) provided the basic methods in designing the four Ps. Even though the philosophy of customer-orientation requires that a firm aligns its internal company effort to its external customer demands, marketing management does not offer a specific methodology for dealing with internal organization and management issues, e.g., determining leadership style and management responsibilities, mapping the work processes, and formulating employee performance policies. Instead, marketing relies mostly on other management disciplines to provide the answers of the methodological question of "how?", e.g., "How can an organization motivate its employees to become customer-focused?"

In recent years, due partially to the influence of TQM, advocates of relationship marketing have attempted to bridge the gap between the management issues in the marketplace and those inside an organization. While traditional marketing concentrates more on "getting the customers", relationship marketing is concerned with both "getting and keeping the customers" (Christopher, Payne, & Ballantyne 1991, Evans, & Laskin 1994). To increase customer loyalty, relationship marketing proposes that TQM, service marketing, and marketing management, be incorporated into the relationship marketing umbrella concept. Nevertheless, relationship marketing failed to impress the industry and the academia that TQM should become a part of its model --- the nearly total absence of debate in TQM and marketing management literature on this subject indicates a general lack of interest in such a proposal. The reason could be that the fundamental differences between service marketing and marketing management is not clear. It is also not clear how TQM fits into the relationship marketing scheme. Instead, the major contribution of relationship marketing is its emphasis in building a long-term relationship with the organization's stakeholders, i.e., suppliers, stockholders, clients, and consumers.

II.3. Is Marketing Relevant to Higher Educational Institutions?

It has often been said that marketing is not relevant to educational institutions because it involves commercial activities that facilitate the exchange of money for goods, whereas the mission of an educational institution is to provide education for students. While Kotler and Levy (1991) call for broadening the concept of marketing to include nonprofit organizations, Doyle and Newbould (1980) take a direct approach: "Whether marketing is relevant to a university depends upon how closely the management function in a university resembles that of a commercial firm . . . ." (P. 259). They
claim that the resemblance is almost total. They argue that the function of management in a commercial firm is mainly concerned with making decisions on allocating limited resources. When comparing this definition to an educational institution, striking similarities begin to emerge. Like any commercial firm, an educational institution includes a number of employees, operates within a changing environment, and it must allocate scarce resources among competing uses.

Still, it could be argued that unlike private firms, in which customers provide the revenue, public educational institutions are subsidized by their government. Thus, it relieves them from having to earn their income from student tuition. However, the fact still remains that businesses need customers to survive, and universities need students to stay in operation. As long as potential students are free to choose among different educational institutions, each institution, in essence, is like any firm, competing in the marketplace.

In short, an educational institution is both an educator and a business entity. Consequently, an educational institution needs to define its market position that reflects the institution's competitive advantage. The effectiveness of the positioning strategy provides an insight into the desires of the target market, (Ries & Trout 1986), i.e., is the educational institution the preferred choice amongst its competitors? Additionally, an educational institution needs to formulate and implement marketing strategies. Concentrating on developing the right marketing mix forces the institution to allocate and commit scarce resources to the production and marketing of the defined marketing mix and thus, it prevents waste in utilizing resources on those activities that are not related to the core business. This helps the institution align its internal effort to the institution's external demand. For this reason, marketing is as relevant to higher educational institutions as to any profit organizations.

II.4. To What Extent Has a Marketing Approach Been Utilized in Strategic Planning Among Higher Educational Institutions?

II.4.1. Development in the US

It is one thing to establish marketing relevancy to higher educational institutions. It is something else to convince education administrators that marketing is more than just promotional activities. In the 1970s, a survey (Murphy & McGarrity 1978) showed that among education administrators, there was a general lack of understanding of how marketing principles could be used to benefit higher educational institutions. It also showed that 89% of the surveyed education administrators thought that marketing was limited to
either sales, advertising, PR, or a combination of the two or three. Another research (Blackburn 1980, Kreutner & Godfrey 1980) showed that while many institutions emphasized promotion mix and direct marketing to increase student enrollment, other aspects of marketing mix, such as, curriculum design (product), location(s) of campuses (place), and tuition (price) received very little attention (Fox & Kotler 1984).

Furthermore, even though the college admission office in most institutions performs marketing functions, it is not where the academic planning and policy are formulated. Unlike the manufacturing industry, where marketing dictates a company’s strategic planning and decision-making (Lovelock 1991), among educational institutions marketing is not integrated into the central policy-making activity. In fact, very few college presidents have adopted a marketing orientation in their strategic planning and decision-making (Allen and Peters 1983).

During the past decade - prompted by declining number of potential college students - the situation has improved somewhat (Kotler & Fox 1985). Taylor & Darling (1991) state in their research that 83% of the surveyed academic deans thought that marketing was valid for both large and small institutions, while 76% agreed that marketing worked well both in theory and in practice. In addition, 77% of the respondents thought that marketing influenced the philosophy of top education administrators. Even more importantly, target marketing was ranked the second highest (91%) in overall use. Not all development was positive, however. Only 46% of the respondents thought that marketing was adopted as an operating philosophy by higher educational institutions, 44% believed that education administrators gave mostly lip service to marketing, and 36% agreed that marketing was effective in making positive contributions to higher educational institutions.

These results seem to be contradictory. It could be that strategic marketing problems rarely require simple, short-term solutions. Marketing solutions are often quite involved, long-term in nature, and their outcome may not always be immediately visible. All of these indicate that if the given institution lacks in-depth understanding of the marketing principles, persistency in keeping its course on track, and a systematic approach, many things could go wrong while applying marketing solutions. This will greatly influence the effectiveness of the ultimate outcome. Goldgehn (1991) confirms this in his research that marketing application is often done haphazardly. Techniques which should have been used simultaneously have been used independently, and others which should have been applied in sequence have been applied without the precursor or the follow-up.
Overall, it seems that there still exists confusion in applications and suspicion about the actual benefit of utilizing marketing in the academic community. This could be due to that higher educational institutions aren’t able to relate to many of the business issues. Perhaps, traditional marketing models are inadequate in serving the educational community, and there is a need for a working model that translates general marketing principles into relevant issues in which education administrators can easily identify with and relate to.

II.4.2. Development in The Netherlands

The development and the acceptance of marketing philosophy and practices in the public and nonprofit sectors in The Netherlands faces even more difficulties. It seems that of all of the managerial skills required to manage an organization, professional marketing skills are in the shortest supply in the public and nonprofit sectors. A survey (Bamossy 1992) of 200 Dutch public and nonprofit organizations that included higher educational organizations showed that even though 70% of the responding organizations admitted that they were facing one or more marketing problems, only 5% stated having individuals with formal marketing education on the policy board or in key management positions. At the same time, those organizations without marketing experts did not necessarily seek outside help. In fact, during a three-year period, only 8% of the responding organizations said they employed an outside marketing consulting firm, and 80% of those organizations only used outside consultants once.

What were the reasons for not using marketing consultants more frequently? The following is a list of major reasons stated by the respondents:

1. We don’t have any marketing problems ....................... 37%
2. Consultants are too expensive .......................... 31%
3. It is not our habit/never thought about it .................. 25%
4. Our sponsoring institution has internal advisors ............. 20%

Also, in 1986, the same question was posted in a field research (Bamossy 1992). The two most widely stated reasons were:

• Nonprofit organizations do not have to be market oriented;
• Consultants are too expensive.

In addition, the same research indicated that between 1985 and 1992, there was not much progress in gaining a better understanding of marketing among the nonprofit institutions. One of the possible reasons is that most
people have no idea what marketing is. Van Leeuwer (1977) discovered in his research that 80% of the respondents did not have a clue as to what a market researcher did for living. Of the 80%, one quarter thought a market researcher was a keurder van waren (an open market goods inspector)!

It seems that marketing is widely misconstrued. Indeed, the philosophy of a socialistic oriented society, such as The Netherlands, may view the development of a marketing concept as contradicting its basic orientation in providing social services. Regardless, the general trend in the European higher educational community is towards more competition due to decreasing student pools; an increasing number of higher educational institutions; more demanding students; and reduced subsidies. Acquiring marketing knowledge and skills in dealing with the changing environment may not be a management option but a necessity for self-preservation.

III. TQM and Higher Educational Institutions

III.1. Quality Concept Evolution

Figure 1.2 below demonstrates the progressive thinking in quality issues starting from the early concept of ‘quality control’ to the current concept of ‘TQM’. While ISO 9000 is near the basic end of the quality evolution, TQM is at the top end. During the pre-QC era, the approach to problem-solving was typically ‘reactive’. When a quality problem occurred, management was responsible for finding the causes and a solution. Because each problem was
attributed regionally; e.g., a production problem versus a marketing problem, the corresponding department head had the responsibility of solving it. Employee involvement and training were limited to those who were directly involved. Quality issues were seen as a way to survive and not necessarily as an approach to achieve market leadership.

Between 1970s and 80s, fierce Japanese competition in the US and the influences of Deming’s thinking prompted companies to form Quality Circles (QCs) to solve production problems (Latzko & Saunders 1995). This marked the beginning of the modern way of dealing with quality issues. Because the introduction of QCs were stemmed from production needs, the original QCs were made up of production workers who identified problems and formulated solutions. This trend helped to shift the responsibility of solving problems downward, and it paved the road for the current management concept of ‘empowerment’. Still, this approach was based on the ‘quality control’ concept --- QCs were added to the existing structure after the defected products had been detected. Solutions were implemented locally without considering the overall effect. The real cause of the problems were often overlooked, and no structural or cultural changes were enforced. In time, QCs were found much less satisfactory than had been expected.

Instead of emphasizing solving production problems, TQM (Total Quality Management) evolved from being a management tool to a comprehensive management program. It stresses the importance of customer-orientation, i.e., quality must be defined by customers. It also requires management leadership as well as company-wide employee training and involvement. Table 1.1. summarizes the major differences between the approaches of QCs.

Table 1.1. Summary of Quality Circles and TQM Differences

<table>
<thead>
<tr>
<th>Quality Circles</th>
<th>TQM</th>
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</thead>
<tbody>
<tr>
<td>• A tool</td>
<td>• Philosophy, strategy, &amp; methodology</td>
</tr>
<tr>
<td>• Quality control</td>
<td>• Quality prevention</td>
</tr>
<tr>
<td>• Production-oriented</td>
<td>• Customer-oriented</td>
</tr>
<tr>
<td>• Local program</td>
<td>• Company-wide program</td>
</tr>
<tr>
<td>• One-time problem solving</td>
<td>• A permanent solution &amp; continuous improvement</td>
</tr>
<tr>
<td>• Education/training for members of QCs</td>
<td>• Company-wide education and training</td>
</tr>
<tr>
<td>• Added to the existing structure</td>
<td>• Requires cultural and structural changes</td>
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and TQM. While the concept of QCs is not as advanced as TQM, QCs can still be used as a part of TQM diagnostic tools --- as long as the coordination of QCs is in line with the TQM philosophy.

III.2. TQM Definition

"Total" means without compromise; every activity must be included, and everyone in the organization must be involved. "Quality" is doing the right things right the first time, every time" (Fusco 1994, P. 105). Peter Drucker further confirms: "Efficiency is doing something very well. Effectiveness is doing the right thing exceedingly well . . . What is the point of doing something very efficiently that should not be done at all" (cited in Townsend and Gebhardt 1990, P. 33). On the other hand, "management is the manner in which the leadership implements, monitors, and refines the various processes to create a quality organization" (Fusco 1994, P. 105). Thus, TQM, at the conceptual level, is a management philosophy and a part of overall business strategy. The aim is to provide customer satisfaction and market competitiveness through a comprehensive management program, designed to change organization culture, structure, and processes. At the more practical level, TQM provides management methodology to improve work processes so that work effectiveness and efficiency may be achieved.

III.2.1. TQM as the Philosophy

As the management philosophy, it provides the quality concepts that guide the organization in five dimensions. Adopted from the marketing approach, the first dimension in TQM is marketing-orientation. "Quality should be aimed at the needs of the consumer, present and future" (Deming, cited in Oakland 1993, P. 5). For educational institutions, this means:

A high-quality institution is one that knows about its students. Further, the high-quality institution has a method for gathering and disseminating this information, enabling it to make appropriate adjustments in programs or policies when the student data indicate that change or improvement is needed (Astin 1981, P. 162).

The second dimension is that "knowledge" is essential. Effective work cannot be achieved by good intention alone. Deming states (Cited in Latzko & Saunders 1995):

Sure we want best efforts; but best effort must be guided by theory and knowledge . . . When these approaches are used without the benefit of profound knowledge they are counter-productive" (P. 21).
The third dimension is quality prevention --- not quality control. TQM author, Ciampa (1991) claims that the cost of poor quality can be from 20 - 40% of total sales, while the quality costs are usually less than 5%. Spenly (1992) and Crosby (1984) confirm that in the service industries, the cost of non-conformance in most Western companies is around 40% of sales revenue. To reduce costs, the philosophy of ‘prevention’ and not ‘aftermath control’ must be adopted. This will also help to ensure consumer confidence, therefore, preserve the company reputation.

The fourth dimension is total commitment. Quality is everyone’s business, and it can only be achieved if it is internalized, i.e., every employee demands quality output from him/herself. Ultimately, ‘total commitment’ brings about a sense of what Deming calls ‘constancy of purpose’ (Latzko & Saunders, 1995, P. 120). It is this ‘sense’ that aligns employees and the organization’s quality goals.

The fifth dimension is continuous improvement. The quality issue is not a one-time deal; it is an ongoing process. Ultimately, whether a TQM program is successful depends on the firm’s ability to continuously survey its environment and seek constant improvement.

III.2.2. TQM as the Business Strategy

There is an unanimous agreement among educational institutions that academic quality will be the major concern in the next decade or two (Keller 1983). Benson (1993) surveyed managers from 536 companies in the US reported that most executives agreed that TQM - as a strategy - will likely affect their organization’s competitive position in the long-term.

The TQM model shown below (Figure 1.3) demonstrates that the competitive advantage of an educational institution, which is reflected in the institution’s reputation, market share, quality of student and faculty, financial endowment, success of graduates, as well as research and publications, is achieved through meeting the needs of the institution’s external and internal driving forces. The external and internal driving forces include:

- Potential students demands (the targeted markets)
- Current student demands (the existing market)
- Industry preferences
- Government regulations and restrictions
- Faculty and staff demand
- Society expectations
Since students are the ultimate reason for the continuous existence of an educational institution, education demands from potential and current students and their definition of education quality should take priority.

Meeting the student needs requires quality-conscious leadership to establish clear goals and a mission. A good leader also drives policy and formulates winning educational strategies, e.g., types of the programs offered, the level of academic standards, and the direction of curriculum emphasis. In addition, a good leader must formulate winning business strategies as well, e.g., targeting and positioning. Thus, education leadership involves two distinct roles: The role of being an education administrator and the role of being a business manager. For this reason, the strategic choices of an educational institution are reflected in two systems: the education system and the management system. By examining the two systems’ work processes, the educational institution is able detect problem areas that affect the formulation and implementation of the chosen strategies and tactics.

![Figure I.3. The TQM Model for Higher Educational Institutions](image)

Finally, market reaction to the institution’s offer acts as feedback. This, along with environmental changes, are constant factors that affect the institution’s internal and external driving forces. They, in turn change their demand accordingly --- which act as forces that drive the institution for continuous improvement.

**The Education System**

The education system (Figure I.4) dictates how education is delivered and evaluated. Work processes in students, faculty/curriculum, and education support need to be examined to determine whether the right tasks are being carried out for the right strategy. If there is a deviation, problem areas and their causes must be identified.
1. Students

- Student selection process: How many stages does the institution go through to complete its student selection process each year? Where are the problem areas that prevent the institution from selecting higher quality students? What are the causes?

- Student orientation process: What steps do students go through in order to fit in? What causes students to drop out?

2. Faculty and Curriculum

- Education delivery process: How is knowledge transferred from faculty to students and how is students’ achievement measured? Where are the problems in knowledge transfer and what are the causes?

- Program(s) development and evaluation process: How are the programs put together and their quality and level measured? Are there any problems that can be prevented?
• Course development and evaluation process: How are the courses developed and their quality and level measured? Are there any problems that can be prevented?

• Faculty development process: What are the steps the faculty takes for continuous self-improvement? Are there any areas that might need to be changed?

3. Education Support

Any task that education support groups perform may be scrutinized in process mapping and cause-effect identification. Two major tasks given in the above diagram are ‘Student Advisory Process’ and ‘Course Administrative Process’. Other work processes in student support groups could include: library, computer lab, and food service.

The Management System:

The management system (Figure 1.5.) deals with the formulating and maintaining the organization’s education and business strategies, policies, and procedures. The same techniques used in mapping education processes can also be used in the management system.

Figure 1.5. The Management System

Because some of the management issues are related to education, e.g., the faculty hiring and firing process, and others are related to business, e.g., facility acquisition and the management process, two sets of work processes
should be considered. Figure 1.5 provides examples of possible areas of education and business work processes. Again, by mapping out the work processes, problems may be detected and corrected.

Finally, refer back to the TQM Model (Figure 1.3), market reaction to the institution’s offer and environmental changes are the constant factors that drive the institution to improve its education and management systems as well as their work processes.

III.2.3. TQM as the Management Methodology

As the management methodology, TQM involves:

1. Gaining necessary knowledge and skills in TQM approach and methodology;
2. Mapping the current work processes to detect problem areas;
3. Surveying customers, suppliers, and other stakeholders to isolate the main causes of the problems;
4. Evaluating solutions based on objectives;
5. Implementing solutions by improving or redesigning the work processes;
6. Continuing to monitor and improve the work processes.

One of the core techniques used in TQM is process mapping. Figure 1.6 shows an example of a selling process (Govoni, English, and Galper 1986).

**Figure 1.6. Selling Process Classification and Cause and Effect Diagram**
By mapping out the seven selling stages, it becomes clear how sales are normally made. Figure 1.6 also points out the cause and effect of the problem(s) in each selling stage. For example, stage one, "Generating Leads". If the organization's advertising is not effective, and the number of referrals is low, salespeople may have difficulty in generating good sales leads. However, these are only the effects. What are the causes? The diagram shows that wrong advertising messages and poor after sale services are the causes.

Mapping out work processes and determining the causes and effects of each problem are as much a task as a learning experience for the organization. Many employees may not be aware of all the stages involved in a given work process. Mapping out the work process helps to clarify some of the important questions in solving a quality problem --- "Is this really how the task is carried out?" "Where did it go wrong?" Process mapping also allows the organization to determine what needs to be done to correct the current situation and to prevent the situation from recurring.

Process classification and fishbone diagrams are only two of the statistical and management tools commonly used in gathering, analyzing, and displaying data as well as making plans for actions. For additional tools and explanation, refer to Appendix 1.1.

III.3. Is TQM Relevant to Higher Educational Institutions?

The fact that TQM, like marketing, is a part of the business concept continues to stir discomfort among some of the education administrators. A letter from an educational administrator, addressed to The Chronicle of Higher Education (a US bi-weekly newspaper for colleges and universities) wrote: "Higher education simply cannot be forced into the narrow confines of business rhetoric" (Pederson 1992, B4). This view reflects the deep-rooted distrust among some members of academia on anything that is related to the business community. This kind of suspicion, of course, is more likely based on misunderstanding of business and management principles than on reality.

Seymour (1995) argues that such skepticism is mostly based on misinterpretation of the language used in business concepts. For instance, 'customer-orientation' holds the notion that students are more important than the education administrators and professors. This may not sit well with some administrators and professors. Still, the reality remains; a university without students cannot be considered a university no matter how many administrators and professors are employed in the institution.
The term, ‘customer-orientation’, could also be interpreted as students having all the rights to make demands but none of the obligations to comply with university regulations and performance requirements — this, of course, couldn’t be further from the truth.

In a profit organization, customers are expected to abide by a set of rules stipulated by the seller. For instance, a customer is not allowed to cause disturbances in a restaurant. Failure to observe the rules could result in an unpleasant consequence. In addition, in applying the customer-orientation concept, students should be treated like health club clients and not department store customers. The difference is that health club clients must work in order to gain benefit, a concept which translates into the phrase ‘no pain, no gain!’ This not only implies that students must actively participate in the learning process but they must also put in real hard work.

In fact, “the fundamental questions that drive performance in most organizations are essentially the same” (Seymour 1995, P. 151). To prove his point, Seymour compares a list of TQM questions from the employee pocket guide distributed by the Hewlett-Packard Company, and a list of questions for implementing successful assessment presented by the American Association for Higher Education (ibid., P. 150). A striking similarity emerged (see Table I.2). As discussed previously, higher educational institutions share similar management functions with commercial firms. Thus, there is no reason why business and management principles cannot be applied to educational institutions. The TQM concept can be just as beneficial for a profit organization as for a higher educational institution.

Table I.2. Fundamental Questions That Drive Performance

<table>
<thead>
<tr>
<th>American Association for Higher Education’s “Implementing Successful Assessment”</th>
<th>Hewlett-Packard’s Quest for Total Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Who are our students, and why do they come here?</td>
<td>1. Who are my customers?</td>
</tr>
<tr>
<td>2. What should a graduate be like?</td>
<td>2. What do they need?</td>
</tr>
<tr>
<td>3. How do students change — and why?</td>
<td>3. What is my product or service?</td>
</tr>
<tr>
<td>4. How do students talk about their own learning?</td>
<td>4. Does my product or service exceed their expectations?</td>
</tr>
<tr>
<td>5. Is there a better way to organize the curriculum?</td>
<td>5. What is my process for providing the need?</td>
</tr>
<tr>
<td>6. How could we do better?</td>
<td>6. What corrective action is needed to improve the process?</td>
</tr>
</tbody>
</table>
III.4. To What Extent Has the Concept of TQM Been Utilized in Higher Educational Institutions?

There is nothing new in higher educational institutions desiring to have quality education. A US study (Ruben 1995) showed that most are concerned with quality of students, teaching staff, and courses. In Europe, a recent survey (Gandolfi & Euw, 1996) researched 135 universities in five nations: England, Germany, Italy, the Netherlands, and Switzerland. The results showed that most universities are concerned with quality issues.

Nevertheless, concerns for quality should not be confused with adopting a quality management program. The research from Gandolfi and Euw (ibid.) indicated that while the majority thought education quality was important, more than 60% of the respondents claimed their administration did not evaluate the satisfaction of their students, faculty, government, research benefactors, and industry, and 30% said that their faculty did not evaluate the satisfaction of their students. Only 30% of the respondents indicated that they had a clear description of their education process, 33%, administration process, and 34%, research process. Only 17% of the respondents indicated that they regularly questioned their staff’s attitude towards the university. All these indicate that although European universities are concerned with quality, the majority lacks a systematic approach to quality management.

In terms of TQM effectiveness, a research carried out by the Quality and Productivity Management Association (Benson 1993) in the US indicated that less than half of the organizations that implemented TQM considered themselves highly successful in obtaining concrete results (see Table I.3).

<table>
<thead>
<tr>
<th>Area of Success</th>
<th>Low-</th>
<th>Highly Successful</th>
<th>Moderately Successful</th>
<th>Successful</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational Results (Cycle time reduction, improved productivity, fewer defects)</td>
<td>38%</td>
<td>40%</td>
<td>15%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Customer Retention / Satisfaction</td>
<td>47%</td>
<td>38%</td>
<td>6%</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Organizational Climate (higher morale, lower turnover, enhanced quality of work life)</td>
<td>44%</td>
<td>38%</td>
<td>14%</td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>

Research (Quality & Productivity 1993) shows that the single incident separating the high and the low performance is the respondents' perception of the importance of certain critical success factors and how proficiently these factors are implemented in their company. The wider the gap, the less the respondent perceives that TQM has brought about successful results. Table 1.4. shows the importance ranking of 13 critical success factors, company proficiencies in implementation of these factors, and the mean gaps between factor importance and proficiency. The mean is based on a five-point scale. The top five gaps are mostly in the areas of organization underlying structure:

1. Leadership commitment
2. Training
3. Alignment of organizational systems
4. Recognition and rewards
5. Performance management and appraisal

Table 1.4. TQM Critical Success Factor Importance Rating & Proficiency Gap

<table>
<thead>
<tr>
<th>RK</th>
<th>Critical Success Factor</th>
<th>Factor Importance Mean</th>
<th>Factor Proficiency Mean</th>
<th>Mean Gap</th>
<th>Mean Gap RK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Leadership Commitment</td>
<td>4.44</td>
<td>2.93</td>
<td>1.51</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Training</td>
<td>4.44</td>
<td>2.97</td>
<td>1.47</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Customer Focus</td>
<td>4.42</td>
<td>3.23</td>
<td>1.19</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>Alignment of Organizational Systems</td>
<td>4.34</td>
<td>2.88</td>
<td>1.46</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Empowerment/Involvement</td>
<td>4.31</td>
<td>2.94</td>
<td>1.37</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>Communication</td>
<td>4.28</td>
<td>3.01</td>
<td>1.27</td>
<td>8</td>
</tr>
<tr>
<td>7</td>
<td>Vision and Values</td>
<td>4.26</td>
<td>3.01</td>
<td>1.25</td>
<td>9</td>
</tr>
<tr>
<td>8</td>
<td>Implementation/Roll-out</td>
<td>4.26</td>
<td>3.05</td>
<td>1.21</td>
<td>10</td>
</tr>
<tr>
<td>9</td>
<td>Performance Mgmt Appraisal</td>
<td>4.22</td>
<td>2.81</td>
<td>1.41</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>Measurement</td>
<td>4.21</td>
<td>2.89</td>
<td>1.32</td>
<td>7</td>
</tr>
<tr>
<td>11</td>
<td>Supplier Involvement</td>
<td>4.20</td>
<td>3.00</td>
<td>1.20</td>
<td>11</td>
</tr>
<tr>
<td>12</td>
<td>Recognition and Rewards</td>
<td>4.10</td>
<td>2.66</td>
<td>1.44</td>
<td>3</td>
</tr>
<tr>
<td>13</td>
<td>Tools and Techniques</td>
<td>3.86</td>
<td>2.86</td>
<td>1.00</td>
<td>13</td>
</tr>
</tbody>
</table>

*RK: Ranking
Source: Quality & Productivity Management Association, USA (1993)
Notice that 'leadership commitment' shows the largest gap. Even more interestingly, 54% of the surveyed executives considered themselves the biggest barrier to TQM success. Those organizations that failed in TQM probably continued their traditional approach of curing the symptoms instead of the problems. Consequently, effort was mostly made to redo things that were incorrectly done and not to do things correctly the first time. Professors, Comsky, McCool, Byrnes, and Weber (1992) testify that in their 35 years of experience in universities, nearly every institution with which they have come into contact, there was evidence of "redundant processes and systems where individuals are assigned functions of checking and re-doing work that should have been done right in the first place" (P. 46).

Another point is that most public institutions build their quality concept on a resources model instead of a performance model (Seymour 1995). That is, the more an institution is able to attract government funds, and industry support, the more the perceived quality of the institution increases. Thus, in turn, leads to public trust, which in turn, leads to additional government funds and industry support. In reality, improving education quality and attracting government funds and industry support are two different tasks. The former relies on the institution's ability to manage its people and resources effectively, and the latter, to manipulate bureaucratic requirements. Thus, for those education administrators who operate under a resources model, the real purpose of adopting a quality program is to increase funding. They are less interested in making fundamental changes and are more keen to provide the impression that the institution is making quality improvements. Seymour (ibid.) suggests that while it is necessary to attract government support, in light of shrinking subsidy, educational institutions must shift from building their quality concept from a resources model to a performance model, in which superior performance leads to increased perceived quality, which in turn, leads to public trust and additional funding.

IV. A Strategic Paradigm: Linking Strategic Marketing Management & TQM in Higher Educational Institutions

IV.1. Marketing & TQM Compliment Each Other

The strengths of strategic marketing management are in its effectiveness in dealing with external issues as well as focusing the organization's effort on formulating the marketing mix. Conversely, the strength of TQM lies in its capacity to deal with organization internal issues to ensure quality output that meets the market demand. In reality, management problems often involve
both internal and external issues. Thus, linking marketing and TQM allows management to work with two principles that compliment each other. Figure 1.7 compares management issues that are commonly associated with either strategic marketing management or TQM. These topics were extracted from an extensive marketing and TQM literature research (Cravens 1994, Crosby 1986, Gitlow & Gitlow 1987, Hart & Bogan 1992, Kotler 1994, Kotler &

Figure 1.7. Comparative Degree of Systematic Approach in Strategic Marketing Management & TQM Issues

<table>
<thead>
<tr>
<th>Management Issue</th>
<th>Comparative Degree of Systematic Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Towards External Environment</td>
<td>High</td>
</tr>
<tr>
<td>Customer-Orientation</td>
<td>Low</td>
</tr>
<tr>
<td>Market Opportunities Analysis</td>
<td>Low</td>
</tr>
<tr>
<td>STP</td>
<td>Low</td>
</tr>
<tr>
<td>Developing Marketing Mix</td>
<td>Low</td>
</tr>
<tr>
<td>Towards Organization Internal Environment</td>
<td>High</td>
</tr>
<tr>
<td>Evaluating &amp; Controlling</td>
<td>High</td>
</tr>
<tr>
<td>Quality Prevention</td>
<td>Low</td>
</tr>
<tr>
<td>Leadership &amp; Management</td>
<td>High</td>
</tr>
<tr>
<td>Effective Measurement</td>
<td>Low</td>
</tr>
<tr>
<td>Process Emphasis</td>
<td>Low</td>
</tr>
<tr>
<td>Education &amp; Training</td>
<td>High</td>
</tr>
<tr>
<td>Empowerment</td>
<td>Low</td>
</tr>
<tr>
<td>Continuous Improvement</td>
<td>High</td>
</tr>
</tbody>
</table>

Strategic Marketing Management

TQM
A Strategic Paradigm: Linking Marketing & TQM in Higher Educational Institutions

Armstrong 1994, Latzko & Saunders, 1995, Logothetis 1992, Mann 1989, McCarthy & Perreault, Jr. 1993, Oakland 1993, Spenley 1992). Comparisons were made on a scale of one to five on strategic marketing and TQM topic related to the degree of systematic approach. ‘One’ indicates ‘low’ degree of systematic approach, and ‘five’, ‘high’ degree. Strictly speaking, this is not a scientific comparison but it does serve the purpose of providing a general picture of the strengths and weaknesses of each system.

IV.2. A Brief Description of the Proposed Model

This thesis is all about utilizing modern management principles to manage higher educational institutions so that education quality, work performance, and ultimately, institution competitiveness may be improved. It is with this view that the Strategic Paradigm Model (Figure 1.8) which incorporates both marketing and TQM concepts is proposed. The model aligns the institution effort with the task of identifying and satisfying the market demand. This alignment is a must if the institution strives to achieve organization efficiency and effectiveness and thus, market competitiveness. The model outlines all of the major internal and external management issues at one glance. This makes it possible for practitioners to assess and adopt changes systematically.

The model starts with the market environment which includes students, industry, and the educational institution itself as a competitor (SIE). Much of the strategic marketing
issues such as targeting and positioning are subject to the influences of SIE. An organization's \textit{internal environment} encompasses the internal driving forces (current students, faculty and staff) and organization culture (which is the underlying force that determines the organization's value system and the way it formulates and carries out its strategies). Organization internal strategic issues, i.e., philosophy, mission and goals, as well as education quality and academic standards, provide the definitions of the desired organization value and direction. All these help to shape the institution's performance in determining, designing, and offering its education.

Figure I.9. Comparing the Strategic Paradigm Model with the Strategic Marketing Management & TQM Theories

While every employee contributes to the organization performance, the strength of management leadership ultimately determines its quality. To
ensure education quality, in addition to leadership, an effective performance management policy and the right organization structure are also essential. For evaluation and control, the concept of competitive advantage may be used to assess the institution’s performance.

Finally, the reaction of the marketplace towards the educational institution’s communications completes the loop of the market feedback.

IV.3. Advantages of Using the Paradigm Model

Figure 1.9 compares the Paradigm Model with those issues stated in the Strategic Marketing Management Model (Figure 1.1.) and the TQM Model (Figure 1.3). It shows that the Paradigm Model is an integration of marketing management and TQM theories. In addition, the problem with theory application is that there is too much information. This makes it difficult for practitioners to sort out the relevant from the irrelevant, and the important from the nonessential. The Paradigm Model identifies the essential internal and external management issues in education systematically. The model translates general management issues into specifics so that education administrators can easily relate to them. It also serves as a frame of reference allowing education administrators to see the whole picture at one glance and at the same time, to not lose perspective when dealing with a specific issue.

V. Thesis Contribution

The thesis contributes to the following areas:

1. A proposal of a new, comprehensive marketing and TQM definition that depicts marketing/TQM as a philosophy; strategy; and management methodology.

2. The development of general and specific application models that can be used to guide higher educational institutions to adopt marketing and TQM concepts. For example:

   • Figure 1.8. The Strategic Paradigm Model serves as a comprehensive framework for all strategic marketing management and TQM key issues that are related to higher educational institutions. The model may be used when an institutional-wide systematic approach is required as in the case of reorganization.
• The proposals of smaller models, e.g., Strategic Marketing Management Models (Figure 1.1), and The TQM Model (Figure 1.3), allow the institution to work on organizational-wide marketing or TQM issues separately.

• The proposal of models for a specific marketing or TQM topic, e.g., competitive advantage (Table V.3). They can be used to guide educational institutions to assess a specific marketing or quality management solution within a defined area.

3. Models that explain the relationship between a given set of ideas or group members:

• Figure II.1. ‘A Simplified Motivation Theory’ sheds light on what leads individuals to take action and what prompts them to repeat their behavior. This model can be used to explain consumer (student) as well as employee behavior.

• Figure II.2. ‘Student Decision Model’ contributes to the understanding of the stages in students’ university selection decision.

• Figure V.3. ‘Types of Competitors Faced by Students at Different Decision Stages’ compares levels of competition to consumer decision stages. This provides an insight that competition and consumer decision stages are two sides of the same.

4. Providing empirical data on student education and education-related needs in order to establish a customer-oriented approach and the definition (attributes) of education quality. The specific benefits of this research include:

• Providing the answer to what motivates students to pursue higher education study. This is important in formulating the educational institution’s mission.

• Providing the answer to what affects students’ decisions in selecting a particular institution. This is important in defining education quality and the educational institution success factors.

• Providing the answer to what student information and communication needs are during their institution selection process.
This helps the designing of the information packages and the communication of messages through the right channels.

VI. Description of Chapters

Chapter I: Laying the Groundwork

Chapter I states the thesis purpose and defines the marketing and TQM concepts. Additionally, it argues that the principles of strategic marketing and TQM are relevant to the management issues faced by higher educational institutions and that they are helpful in improving education quality and institution performance. Hence, the Strategic Paradigm Model that incorporates strategic marketing and TQM topics is introduced.

Chapter II: Research Objectives and Questions Defined

This chapter elaborates the research objectives and questions as well as the previous research reports related to the research topics. Two theories are proposed to support the research questions:

- **Figure II.1. A Simplified Motivation Theory:**

  The proposed need definition is more focused so that it is not as broad as in the theory of Maslow's hierarchy of needs. Secondly, the model argues that 'student needs' ultimately drive students in their decisions to pursue higher education study and in selecting a particular institution. Thus, the concepts of need and motivation are an integral part of the theoretical base in constructing the questionnaire on student needs.

- **Figure II.2. Student Decision Model:**

  This model depicts the stages students go through in selecting an educational institution. The theoretical knowledge in student decision stages and their corresponding needs offer an insight into what educational institutions should do to reach their potential markets.
Chapter III: Research Methodology

Chapter III describes the methodology of how the students and education administrators surveys were carried out and this includes: exploratory focus group research, populations and sample frames definitions, questionnaire development, questionnaire measuring process, sampling, data collection and compilation; and finally, data analysis plans.

Chapter IV: Research Findings

Chapter IV presents the research findings on student education needs. Also presented are data analysis and interpretation, and the potential contribution of the findings.

Chapter V: Theoretical Framework and Development I - Organization External Issues

Based on the proposed Strategic Paradigm Model, supporting strategic marketing management principles and theories are presented, e.g., macro environment, market environment, targeting and positioning strategy. They, in turn, form the guidelines for educational institutions in searching for the right organization external strategies.

Chapter VI: Theoretical Framework and Development II - Organization Internal Issues

This chapter covers the first part of the organization internal issues illustrated in the Strategic Paradigm Model. In particular, four major topics are included in this chapter: Organization internal environment, internal strategic issues, designing of institution offer and integrated marketing communications. Marketing management and TQM principles and theories are proposed and explained.

Chapter VII: Theoretical Framework and Development III - Organization Internal Issues

The final part of the organization internal issues include organization development, management system, evaluation and control.
Chapter VIII: Assumptions and Limitations

This chapter deals with the key assumptions and limitations of the thesis. Limitations include population definition, sampling frame, sample collections, research methodology, and data outcome interpretation. Suggestions for future research and theory development are also included in the discussion.

Chapter IX: Summary and Conclusions

The final chapter summarizes the dissertation and provides additional insight/conclusions.