

Developing a Strategic Enrollment Management Plan for a Graduate School

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## DEDICATION

This project is dedicated to my wonderful family: my husband, Jamal; my mother, Carol; my brothers, Nicholas, Kyle, and Dustin; my sister-in-law, Roxana; my nieces and nephew, Jasmine, Alexander, and Gabrielle; and to those unnamed loved ones who are no longer with us.

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## ABSTRACT

### DEVELOPING A STRATEGIC ENROLLMENT MANAGEMENT PLAN FOR A GRADUATE SCHOOL

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This research project endeavors to modify the strategic enrollment management process employed by universities at the institution level, for use by graduate schools at the unit-level to influence graduate enrollments. The project documents a clear process for developing an enrollment plan in response to the unique concerns faced by graduate and professional schools. This paper reviews the literature and theoretical frameworks characterizing the field of enrollment management; outlines the process of researching and creating a strategic enrollment plan using a case study; and analyzes the process for duplication.

## 1 INTRODUCTION

Academic freedom, research, and enlightenment are the lofty goals of higher education. Nevertheless, throughout the history of American higher education, numerous institutions closed due to insufficient enrollments and inadequate revenue to buttress the expense of operation (Thelin, 2004). In view of recent national economic challenges, many institutions are faced with ever-shrinking budgets from government resources and some from decreased philanthropic generosity; thereby, forcing institutions to be dependent on tuition revenue to make up the difference of ever-growing budgetary expenses (Hebel, 2004). Because institutions of higher education are experiencing increased financial dependence on tuition dollars (Black, 2001, p. 281), they depend on enrollments to function; fluctuations in supply and demand ultimately results in competition for students (McDonough, 1994, p. 431). Most institutions must depend on business planning and development of a competitive edge to meet enrollment targets each academic year—now more than ever (Thornton, 2007).

Unlike the current explosive growth in undergraduate admissions (Laroux, 2008), graduate education is particularly vulnerable to enrollment shortfalls for several reasons. First, the target audience for graduate studies is limited since an undergraduate degree is required, preferably in an area that qualifies the individual for study within the graduate program. Secondly, most graduate students are of non-traditional college student age; in



1997, 85% of the nation's graduate students were over age 25 (Barbett, 1999). Research demonstrates that non-traditional aged students have more commitments limiting their choices and ability to attend graduate school (Southerland, 2006, p. 14); this requires schools to expand the flexibility of their programming to capture this population through non-traditional methods (McDonough, 1994, p. 431). Third, although graduate and professional schools often function within a larger university environment, the individual graduate school or program is inordinately affected by external factors such as labor or market shifts within a particular sector; therefore, practitioners commonly accept the notion that graduate schools must give attention to issues that specifically address the schools' individual enrollment needs.

In spite of the fact that existing research and literature concentrates on traditional and undergraduate enrollment, graduate and professional school enrollments are of as much concern to master's and doctoral institutions. With six years of experience recruiting graduate students in multiple fields, the researcher learned that some graduate and professional school areas of study can simultaneously be in demand within the general marketplace, yet still face specific enrollment challenges. For example, the axiom that students return to graduate school during economic downturn may hold true; however, the magnitude of the current national economic crisis creates an additional level of uncertainty as financial support for graduate study may be considerably less available to students than in recent recessions (Schwartzel, 2008). Therefore, it is critical for graduate academic organizations facing enrollment challenges to find ways to increase their influence over their enrollments.

## 1.1 The Problem

Some graduate and professional schools participate in setting enrollment goals for themselves within their institutional structures; however, the units may lack the understanding, infrastructure, or resources exert control over their enrollment in order to meet these goals. As a result, some graduate schools either encourage last minute applications or wait out the final enrollment census. An investigation into the infrastructures surrounding enrollment plagued graduate programs, often show a combination of the following:

- Enrollment responsibility is entrusted to experts in the graduate school's area of study, but such individuals may not have expertise in the business functions of higher education; or,
- The enrollment responsibility is broken down in different stages and assigned to multiple persons; and/or,
- Internal and external structures that operate as silos inhibit full communication, coordination, and cooperation with enrollment functions.

These issues can result in conflicting goals and values that ultimately undermine the efforts of the school to influence enrollment. These disparate functions must converge through transparency and communication to determine systematic improvements that can better reach enrollment goals.

It is impossible to prescribe a one-size-fits-all approach to plan enrollments for graduate and professional schools due to the range of program niche markets served (Black, 2001, p. 76). Nevertheless, some graduate and professional schools have found success by utilizing strategies, usually adapted from use at the undergraduate or

institutional level, for influencing their graduate enrollment. By fully understanding the enrollment path of the individual student from a potential prospective student to an alumnus of a university, a graduate school can create a plan that best uses available resources to recruit, enroll, retain, and graduate students; while better predicting changes and fluctuations in enrollment along the way. This plan, referred to as a strategic enrollment management (SEM) plan could potentially be the solution to aiding graduate schools to influence their enrollments as it has for many undergraduate-focused efforts nationwide.

## 1.2 Theoretical Framework

The framework for this proposal is eclectic in nature since the foundation upon which SEM planning is built is based on a collection of theories on institutional- and individual-based behaviors. Three specific assumptions are proposed to create a successful SEM plan to influence graduate enrollments:

- Enrollment is a full function of every part of the academic organization; therefore, participation by individuals at varying levels of the organization (e.g., ranging from academic faculty to admissions staff) must be involved in reviewing enrollment functions, from prospective student through graduation.
- Qualitative and quantitative data collection at each stage in the enrollment 'funnel' is critical in order to evaluate the full ability of existing systems and to make necessary improvements.
- Clear identification of methods for measuring for key performance indicators must be developed in order for an institution to assess progress towards its goals.

By modifying enrollment management strategies, graduate academic organizations can overhaul internal functions to increase the number of students who apply, enroll, persist,

and graduate. Attention to these areas can improve an organization's standing, planning, viability, and financial goals—on both a short and long term basis.

### 1.3 The Project

The intent of adapting the SEM planning process is to expand the focus from primary dependence on admissions functions to reach graduate enrollment goals, to recognize the enrollment influence capabilities of all areas within the graduate school. Managing enrollment should be a holistic, orchestrated effort of the entire organization. While application of the process may be a good solution to exert control of enrollment for the viability of a graduate or professional school, many questions will need to be answered:

- This strategy has been proven to work at an institutional level; can application of an enrollment management plan be successfully accomplished at a unit-level?
- How well does the system work for graduate and professional schools with limited markets?
- How can application of a SEM planning process help the organization in terms of structure, information sharing, or group planning?
- How does the enrollment manager go about introducing new ideas into an existing research-focused structure that may resist change?

There is very little literature on developing enrollment plans specifically for graduate schools; therefore, this project will make a contribution to the field.

#### *1.3.1 Project Limitations*

One of the primary limitations of this project was time. First, the projected completion date was November 1, 2008. Second, in order to create a well-researched

enrollment plan, data must be continuously collected and assessed longitudinally. Therefore, this project does not concern itself with assessing the success or impact of developing a particular graduate enrollment plan.

The second limitation of this project was scope. First, it is not possible to implement this process with multiple graduate and professional schools for assessment; therefore, the scope of this project was delimited to the graduate programs at The Volgenau School of Information Technology and Engineering at George Mason University (VSIT&E). Additionally, in 2004, the university changed student information systems from SIS to SCT Banner; some admissions and enrollment data is now difficult to locate and verify. Data was therefore limited to academic years 2006 through 2008. With only two and one half years of data, the full assessment of the enrollment planning process was somewhat limited.

### *1.3.2 Definitions*

Most faculty and administrators in academia are familiar with the concepts of matriculation, enrollment, and graduation. For purposes of this case study project, specific terms are defined as following:

- *Attrition*: the rate of students who leave an institution without returning. Understanding how to measure this and why an institution loses its students is key to addressing institutional weaknesses.
- *Census*: the reporting of official enrollment data, usually by a university institutional research department. At George Mason University, the census is usually taken six (6) weeks after the first day of classes in each term. Most data available for the study is retrieved after the census date, unless otherwise noted.

- *Persistence*: the rate at which students continuously enroll from semester to semester; institutions usually measure the number of students who persist from the beginning towards the completion of the given program without breaks in enrollment from one term or academic year to another.
- *Prospect*, short for *prospective student* which identifies any person who shows interest in the institution.
- *Retention*: the rate at which continuing students from a previous term return for the following term.

Additional terms are noted in Appendix A.

#### 1.4 Summary

This project focused on the process and analysis of developing a graduate enrollment plan for the graduate programs within The Volgenau School of Information Technology and Engineering at George Mason University. Additionally, it examined the methods for adapting the strategic enrollment management (SEM) planning process, while applying theoretic axioms about enrollment for non-traditional students specifically in terms of recruitment, enrollment, retention, and graduation. While the focus of the project was on the development of the plan itself, ultimately, the case study plan was intended to provide guidance to influence graduate enrollment for a graduate school and to document a clear process for duplication within other academic organizations.

## 2 LITERATURE REVIEW

The history of enrollment management encompasses various efforts by institutions to grasp and influence their ever-changing enrollments. In the eighteenth and nineteenth centuries, institutions employed a mixture of tactics to attract students, but were often discontented with the quality and quantity of those who arrived (Thelin, 2004). By the mid-twentieth century, institutions began utilizing statistical models to predict enrollment for future terms. These forays into enrollment forecasting were passive methods used to foreshadow enrollment changes requiring institutional adjustment (Synakowski & McEwen, 1954; Healey & Brown, 1978).

In the 1960s, the ‘baby boom’ generation came of age, overwhelming higher education nationally. Institutions were obliged to assess their ability to increase the supply in order to meet the surging demand; thus, the roots of enrollment management began. Institutions, such as Michigan State University, implemented strategies to recruit and capture the best college students in order to mold the *quality* of enrollees (Black, 2001, p. 4). Reacting to a downturn in the number of applications in the 1970s, institutions became more proactive in maintaining the *quantity* of enrollees by applying business strategies to their enrollment techniques. Boston College’s John Maguire and Frank Campanella are credited with coining the term and introducing the complex concepts of “enrollment management” (EM) theory (p. 5). According to Henderson

(Black, 2001), advanced long-range planning for higher education relating supply and demand with revenue and academic planning represented a paradigm shift. Leading to a rise in strategic efforts to improve and increase enrollment for the survival of an institution, from 1980 through the present, most theoretical, practical, operational, and research literature in the field has been published.

Henderson (Black, 2001) postulates that the original concept, as envisioned by Maguire and Campanella, focused on EM as a business and organizational strategy and that later, Hossler applied a more research and student-centered approach (p. 12). Penn (1999) generally concurs with Henderson, but identifies the major difference between early theorists and that of more contemporary thought like Hossler's as the transformation of the former as a passive activity (i.e., thinking and decision-making), and the latter becoming a more active and deliberate reorganization and leadership effort.

## 2.1 Theory and Research in Enrollment Management

The theory of enrollment management is largely a function of adapting prior research in organizational management, marketing, finance, and economic theory to create a theoretical approach relevant to the unique nature of higher education. A systems approach, EM concepts allow higher education administrators to efficiently use scarce resources to make the biggest impact on enrollment. Like business studies, most literature in the field is not research-based, but is practical and advisory in nature. As a result, there is general agreement among authors in the field; in fact, even recent literature consistently refers to the same early literature or authors.



In this literature review, a sampling of important theoretical concepts, frameworks, and references in literature are organized and presented in three major categories: (1) frameworks that focus on the task of developing a strategic enrollment management plan; (2) theories that explain student behavior variables; and (3) theories that explain institutional environmental variables. The vast majority of EM literature focuses on traditionally aged undergraduates and the concerns of undergraduate studies. However, since many of these concepts are adaptable to the graduate student population, they will be discussed as appropriate.

## 2.2 Frameworks for Developing a Strategic Enrollment Management Plan

### *2.2.1 Plan Structure*

There is no single approach to developing an enrollment plan, since institutions can have widely varying goals, resources, and circumstances (Black, 2001, p. 281). Crockett offers a simple framework for developing a university-level strategic enrollment management plan with four basic steps: (1) to conduct a situation analysis, (2) to develop a short-term (3-5 year) enrollment-related goals, (3) to identify strategies to achieve the goals, and (4) to assign responsibility and estimate preliminary major costs to implement strategies (Whiteside, 2004, p. 66). Massa (Black, 2001, p. 153), however, postulates that an appropriate SEM plan should consist of eight parts:

- (1) Develops a clear mission and its relation to the institutional vision;
- (2) Performs a 360-degree environmental analysis and forecasts future trends;
- (3) Acknowledges strengths, weaknesses, limitations, opportunities and trends;

- (4) Articulates the immediate position of the institution and identifies the future course;
- (5) Outlines goals and identifies specific strategies for achievement;
- (6) Determines budgetary resources to achieve each goal;
- (7) Identifies accountability to specific individuals; and
- (8) Develops a progress evaluation plan and redirects efforts when necessary.

Both of these frameworks are very similar; each significantly expounds on ways to conduct each of these steps to create a cycle of assessment, review, and adjustment to ensure that an academic organization is making adequate progress towards achieving the desired enrollment goal. To complete the process, both authors stress full assessments of internal and external data trends first, then creating a vision based closely on the institution's mission, before creating strategies or enrollment goals. Once the goal-setting stage is reached, however, both concur that (1) goals, (2) specific strategies to meet the goals, (3) ways to measure success, and (4) financial resource allocation must be produced and are all critical to the plan's success.

### *2.2.2 Using a Committee*

Most of the contributors who provide guidance on how to create and implement a SEM plan acknowledge that the process requires full organizational support and participation. Massa asserts that neither the process nor the plan can be entirely written or validated by a single individual; instead it must take place within a group setting involving stakeholders at various levels (Black, 2001). Penn (1999, p. 18) and Lay (Whiteside, 2004, p. 17) assent, recommending the creation of a steering committee to review data and rigorously discuss issues pertaining to the organization's enrollment. In

order for the resulting plan to be successful, including faculty in the research review process is required, and if possible, it is strongly recommended to have a faculty co-chair of the committee to increase the plan's credibility among internal publics.

### *2.2.3 Information Flow*

In order for institutions to make data-driven decisions that will best meet its needs, it is critical to have a free flow of data and information resources throughout the enrollment structure (Ingersoll, 1988). Dennis (1998) emphasizes the necessity of a research/analyst position on the enrollment team because of the volume of reporting and data analysis required (p. 27). The types of data that institutions need to have for the process ranges from application receipts and yield rates to retention and graduation rates (Salomonson, 2005; Ingersoll, 1988; Dennis, 1988). Within a graduate school, there may be individuals who can contribute research or data analysis skills; nonetheless, data collection and analysis is so essential to the process that enrollment planning administrators may need to consider hiring statistical research support if needed.

These advisory frameworks are clear and delineate the process well; it is possible to modify the process to complete an enrollment plan for a graduate school without making radical changes to the frameworks. By completing an analysis that takes into account information specific to the academic area(s) the graduate school serves, a clear and highly relevant plan can be created. The researcher will detail guidance from literature in the methodology section of this project. Before creating a plan, however, the entire process must be informed about the way students and organizations behave within higher education.

## 2.3 Student Behavior Theories

### 2.3.1 College Choice

Early theorists focused on traditionally aged undergraduates between 18 and 22 years of age; this age group formerly made up the majority of college students in the nation. In 1981, Chapman identified three categories of influencers on the college choice process: (1) significant life figures; (2) institutional fit; and (3) institutional communication (p. 492). He also believed that students measure their own personal characteristics and make college selection choices according to personal perceptions; some of these characteristics included socioeconomic status, aptitude, and general expectations. Hossler (1984) identifies ‘psychic’ benefits such as “personal growth and development, happiness, improved use of leisure time, and improved health” as important factors in the college choice process (p. 17). In a presentation entitled: “Formulating a New Model of College Choice and Persistence,” Southerland (2006) sketches early college choice theoretical framework as consisting of three stages: (1) *predisposition*, where the student decides if they want to go college; (2) *search*, where the prospective student begins researching and developing a ‘choice set’ of institutions; and (3) *choice*, where the student selects an institution to attend, among admissions offers (p. 7). There is little research available to discredit any of these theories.

Earlier Hossler (1982) recognizes that economic demand concepts such as Adkins’ *technogenic*, *disequilibrium*, and *demand-inflation theories* which explain the various circumstances under which prospects are influenced by external factors, such as market labor conditions, inducing or dissuading engagement in higher education (p. 19).

Further, Adkins' models identify periods where an oversupply or undersupply of college graduates can disrupt the equilibrium of market needs, thus creating a cycle between the three models affecting the supply and demand of higher education. Mortenson (Black, 2001), on the other hand, applies economic theory to higher education as an equation where prospects subtract *benefits* (usually a long-term investment) from the *costs* (short-term costs, tuition, books, travel, study time, etc.) when making a decision to attend college. None of the economic theories can predict the likelihood of enrollment exclusively, since there are many sociological reasons why students attend college.

*Using theory to recruit and enroll new students.* Understanding the intrinsic factors that predispose individuals to make higher education decisions assists institutions to position themselves as a desirable option by employing marketing techniques to recruit new students. Nevertheless, student marketing fundamentals demonstrate an existing nexus between those who desire to enroll, those who are qualified to enroll, and those who have the means to enroll; hence, those most likely to enroll are reduced by a combination of these factors—especially for graduate studies (Black, 2001, p. 87). Using this information to develop recruitment and marketing strategies, institutions therefore attempt to strategically optimize recruitment efforts by focusing efforts on recruiting those most likely to enroll and persist; an advanced version of this basic concept is referred to as *predictive modeling*.

*Applying theory to graduate choices.* Southerland (2006) alleges that many of the aforementioned theories are dated and do not apply holistically to the non-traditional prospect for whom life commitments may dictate choices for them (p. 8). For older

students, Mortenson (Black, 2001) believes that the lure of the labor force usually outweighs the benefits of higher education; further, he believes that in addition to employment, child-bearing or family responsibilities also affect the participation rate (p. 39). Nevertheless, he concedes the fact that once job responsibilities require or a new employment opportunity opens up, the draw of graduate education increases.

Appropriately, the market for graduate studies in higher education is significantly limited by the number of baccalaureate degree holders in the given field of study.

In recruiting and enrolling new graduate students to academic programs, student marketing axioms recommend graduate schools to promote programs among those who are most likely to qualify, with both the means and desire to do so. Nonetheless, it is important that during the enrollment planning process, participants have a clear understanding of how marketing strategies work (Whiteside, 2004, P. 7) and the ways that people can be persuaded by them (p. 13).

### 2.3.2 *Retention Theories*

Even after a student is enrolled, institutions concede that they must continue to assess and encourage students in order to keep them there. In “The Principles of Effective Retention,” Vincent Tinto (1987) outlines a framework of student departure that explains the primary reasons why a student chooses to leave an institution:

- (A) difficulty performing up to *satisfactory academic standards*; the opposite,
- (B) *incongruence*, can occur if the student doesn’t find the academic program stimulating enough;
- (C) difficulty adjusting to the *transition to college*;

(D) *student goals*, these may be short of degree attainment or may change as student aspirations evolve;

(E) *uncertainty*, or lack of goals, which can belie a weakness in the students' ability to complete the program should stress arise;

(F) *commitment*, whether it is the student's commitment to the program or ever-changing life commitments, students must constantly make the choices between them;

(G) *integration and community membership*, are important, and mirror the interaction of the student and university members; and the opposite,

(H) *isolation*, occurs when there is little to no such interaction (p. 4).

Southerland (2006), again criticizing the lack of consideration for adult learners, identifies a complex theoretical framework wherein the factors are grouped as: (A) predisposition/personal background; (B) personal goals; (C) perception of self; (D) compelling circumstances; (E) means; (F) enabling circumstances; (G) institutional fit/treatment of non-traditional students; and (H) academic and social experiences (p. 15). Dickerson (2006) emphasizes that *ethos*, or sense of community, is critical for non-traditional students because he believes it is "the perception of community support and ambition to learn that most directly affects a student's success" and submits that it can be demonstrated in small ways (p. 32). Further he states that institutions can show support to its non-traditional students by demonstrating a willingness to rework structures and mission to benefit them. Ideas such as offering late office hours or free coffee are inexpensive ideas that can go a long way to creating a sense of community. Reasonably, *institutional fit* as a concept is a repeated theme among writers the field. Chapman saw the fit as being a measure of student qualities, prior academic performance, and institutional qualities: location, cost, programs, financial aid, and so on (Chapman, 1981).

An institution can never admit as many new students within a single term as it already has enrolled; therefore, focusing on retention efforts is one of the most cost-efficient methods of maintaining student enrollments. Theorists and enrollment administrators accept the fact that institutions cannot address or influence personal factors that lead to attrition. However, during the enrollment planning process, academic organizations must determine whether they are able to influence institutional structures affecting retention and attrition rates in order to facilitate retention goal setting.

### 2.3.3 Research in Cognate Areas

There is a significant amount of available research to support EM theories relating to college choice and persistence:

- Alexander and Smith (2001) studied academic and social involvement as retention factors. This study supported Tinto's theory that the more active a student is in the community, the more likely they are to persist.
- Deis, et al. (2002) examined whether raising admissions standards would have an effect on retention. Their study showed a trend that appeared to correlate the factors, but the authors emphasized that retention efforts still must exist as a function of every university and should be incorporated at all levels.
- Johnson and Bishop (2003) explored correlations between persistence and pre-enrollment factors such as GPA, SAT scores, hours of study, and student self-confidence. Their findings showed that high academic achievement correlated closely with persistence.
- U.S. Department of Education, National Center for Education Statistics published a report in 2002 entitled *Participation Trends and Patterns in Adult Education: 1991 to 1999*. This study explored the trends in enrollment and identified the growing pool of non-traditional students in the coming years.



Although most studies are tailored to the institution where they were researched, a healthy review of research findings is recommended for those desiring to participate in enrollment planning processes.

## 2.4 Institutional Theories

Theories on the institutional behavior affecting enrollment vary widely depending on university function. Applying these theories requires the reader to understand the institution as an organization which operates in a very different fashion than a corporate, for-profit environment. Although there are many higher education organizational theories, the researcher highlights several which affect an academic organization's ability to successfully influence enrollment. In practice, these concepts combine to create a new framework under which the enrollment planning administrator must operate in order to help the institution meet its goals.

### *2.4.1 Internal Organizational Theories*

*Academic Enterprise.* Hossler and Hoeszee (Black, 2001) identify the university as an academic enterprise (p. 69). This theoretical organizational structure is neither clear nor finite; those who work with the enrollment manager (e.g., faculty) are typically unaware of the complexity of the field and may judge the professional's work with uninformed scrutiny based on closed systematic thinking. Hossler indicates that faculty participation has a positive influence on prospects and students, yet it is difficult to obtain faculty support for implementation (1984). The researcher postulates that faculty are focused on issues related to their academic area of expertise and may approach issues based on their individual research training.

*Organizational Systems.* *Organizational systems theory*, originally credited to Peter Senge, examines the relationships of complex organizations: closed systems analysis focuses on internal organizational unit structure and functionality; conversely, open systems analysis focuses on intra-unit communication and change external to the enrollment management functional areas. Hossler and Hoeszee (Black, 2001) identified higher education (particularly large universities) as a series of decentralized silos with independent closed systems which can add difficulty in fostering intercommunication critical to the advancement an organization (p. 61). Successful EM efforts require open systems (Whiteside, 2004), since absolute control over all aspects of enrollment by a single enrollment manager organization-wide is both unrealistic and politically unpopular at most institutions (Black, 2001). Hossler postulates that open systemic communication between academic departments, admissions, and other university services help one another to function optimally. This sentiment is echoed in other texts framed as advice to the enrollment administrator to identify and make structural changes to existing organizations.

*Organizational Structures.* Organizational units that typically fall under the purview of enrollment at the university level include, but are not limited to: admissions, financial aid, orientation, registrar (including registration and graduation), student services (including career planning, advising, counseling services), institutional research, and retention programs. Clearly, all of these functions may not necessarily fall under the purview of the individual graduate or professional school. Penn (p. 18-9) identifies four conceptual models ranging from loosely coupled models with influential impact to tightly

coupled models requiring more direct leadership for organizational structures to position themselves to impact enrollment:

- *Committee-based model* is a first-response to enrollment issues and can look at a particular problem area or holistically at enrollment in an organization; this model is typically made up a range of stakeholders from faculty, staff, and administrators; however, it has little ability to implement change.
- *Coordinator-based model* is where a mid-level manager monitors function and whose personality affects the type of influence on institutional procedural policy.
- *Matrix-based model* is where director-level staff of enrollment-related functions who report in a sort of chain-link fashion to a senior-level administrator (usually at the dean level) who is responsible for coordinating the communication and depends on the voluntary cooperation of distributed units to make change.
- *Division-based model* is preferred; it is one where all major offices report to one senior-level administrator with a direct link to the provost or president.

Therefore, in assessing or adjusting the organizational structure to improve enrollment functions, academic organizations need to consider which structure will work best given the organizations specific resources.

*Revenue maximization theory.* Revenue maximization theory is a concept postulating that colleges and universities attempt to spend every dollar provided in the best way possible (Bowen, 1980). According to Hossler (1984), institutions need to be careful that being too thrifty can cost the organization the prestige and reputation necessary to bring in necessary enrollment revenue. For example, Institution 'X' staffs its admissions office just enough to get applications processed, but does not provide enough staff and resources to attend to the many other aspects of admissions: recruitment, responding to prospects, marketing, measuring, and coordinating the effectiveness of

recruitment efforts. Unknowingly, Institution 'X' undermines its efforts by sacrificing its reputation and wasting the money it believed it was trying to save.

These internal concepts are not the only ones that affect the organization's influence on enrollment; an institution's external environment also plays a role.

#### *2.4.2 External Organizational Theories*

*Resource dependency theory.* Resource dependency theory is the relationship between an organization and the external environment in which it operates (Pfeffer, et. al, 1978). Hossler and Hoeszee (Black, 2001) believe that the uncertainty in higher education places institutions in a unique position requiring them to make connections with external forces to manage its interdependence (p. 59). The authors also believe that enrollment managers can create leverage to shift enrollment management to a priority for those at the institutional level by identifying: (1) the available resources by conducting environmental scans; (2) the relationship of these resources to enrollment; and (3) the impact their unit can have on improving these resources.

Graduate schools in particular must be sensitive to external forces such as labor market changes, local or regional trends in graduate degree offerings, or corporate entities within the local communities. Not only can such factors affect immediate enrollment (Whiteside, 2004, p. 51), but they can also have a long term affect on program relevance that graduate schools must immediately respond to in a way that undergraduate programs may not. For example, if the only major symphony orchestra and opera company leaves a local region, there may be a significantly decreased interest or need for Masters of Music degree; over time, the program's enrollment may decline without specific job

opportunities. Since graduate programs are usually considerably smaller than their feeder undergraduate programs and are generally more expensive to maintain, it may be best to merge this fictional music degree program with an existing MFA program offering Music as a concentration, while an undergraduate Bachelor of Music degree may not have the same enrollment concerns because it is often considered standard undergraduate educational programming.

### 2.5 Validity of Research and Literature Summary

Unlike newer research studies, enrollment management is a systems approach (Black, 2001, p. 281); applying strategies used in business and non-profit management to higher education is practical for increased resource efficacy. The theory and research presented here are relevant to the enrollment planning project because they either directly impact or are important considerations throughout the enrollment planning process. The most relevant literature found was the most dated; nearly all of the writers (with the exception of Southerland) concurred and quoted the same early texts repeatedly. Most of the published works were found in books and anthologies rather than in peer-reviewed journals. The fact that most authors are practitioners; not researchers, may be a contributing factor in the lack of literature and research in journals today. Most of these theories are relatively indisputable without additional research.

### 3 METHODOLOGY

The case study method is most appropriate to complete this project since a case study is an empirical inquiry that investigates a phenomenon based in real-life context. The goal of the project was to create an enrollment plan for a graduate school and analyze the process. In order to accomplish this, the SEM methodology was modified to focus on activities that occur primarily within the selected unit. The researcher organized the plan using Massa's (Black, 2001, p. 153) recommended eight part framework so the finished plan:

- (1) Develops a clear vision and its relation to the institutional mission;
- (2) Performs a 360-degree environmental analysis and forecasts future trends;
- (3) Acknowledges strengths, weaknesses, limitations, opportunities and trends;
- (4) Articulates the immediate position of the institution and identifies the future course;
- (5) Outlines goals and identifies specific strategies for achievement;
- (6) Determines budgetary resources to achieve each goal;
- (7) Identifies accountability to specific individuals; and
- (8) Develops a progress evaluation plan and redirects efforts when necessary.

Since Massa specifies that this process must take place in a group setting, cannot be written or validated by a single individual, and must involve stakeholders at various levels, the researcher utilized a steering committee to complete the process.

Since the proper development of a strategic enrollment plan requires preliminary research and feedback from multiple parties, the phasing of the project took place in overlapping layers. First, data collection procedures took place to complete the 360° environmental analysis. This entailed both quantitative and qualitative data collection from internal sources including faculty, staff, current students, applicants of the graduate school, and data sets stored within the university system. Additionally, an external validation took place to assess the industry trends and competitors at the national, regional, and local levels as appropriate. This initial step was critical to the development of the plan and is detailed more specifically in the methodology section of this paper.

Second, using Penn's (1999) description of the committee method, a steering committee of stakeholders representing the unit was formed to review the data through a series of meetings (p. 18). This committee was made up of faculty, administrators and staff, and was representative of every academic department and represented the unit's diversity. The steering committee meetings offered the primary opportunity to review, interpret, and discuss the collected data, creating responses to each of eight steps mentioned above. The researcher played a double role as the committee facilitator since the process required someone knowledgeable about the process to steer the committee through the data review and discussion stages.

The steering committee discussion and responses eventually formed the basis for the final enrollment plan. Following this step, the researcher wrote the responses in prose form, filling in an outline that provided a historical and cultural background for readers, a context for the research findings, a basic description of the process, a vision for the

school, specific goals, accountability, and methods of measuring success; thereby fulfilling the eight steps of Massa's framework.

Finally, Massa (Black, 2001) indicates that in order for the plan to be successful, it should be inclusive, and have upper management support for future implementation. Therefore, the outcome of this study, the *Strategic Graduate Enrollment Plan* was reviewed by the Senior Associate Dean of The Volgenau School for feedback. The feedback was incorporated into the plan which is scheduled for school-wide presentation in November 2008.

Once completed, analyses and reflection of the process provide specific guidance on the process for duplication.

Given the breadth and depth of the SEM planning process, the case study is the most appropriate format for this research endeavor. The project time line and agendas for each of the steering committee meetings are included in the final project.

### 3.1 Population Segmentation

The full population in this case study is comprised of any constituent involved with graduate studies at The Volgenau School. The population is inclusive of faculty and staff members who work primarily with graduate studies, graduate students currently enrolled in VSIT&E programs, and prospective graduate students who demonstrate interest in the school. Since this population could not be equally assessed in exactly the same way, the population was 'role' segmented to collect information. The role of each sub-population is distinctly different:



(1) Faculty, administrators, and staff work for the school and thus provide the product/service the school offers; this subgroup, is an internal public.

(2) Currently enrolled graduate students are customers who pay for the product/service and are external publics.

(3) Newly admitted graduate students are potential customers who are interested in the product/service and thus are also external publics.

The following paragraphs specify the research instruments, data collection, treatment and analysis for each population by role; a graphic representation of the methodology is in Appendix B. In the reflection portion of this paper, the research findings are summarized; and in the actual Strategic Graduate Enrollment Plan, the data are reported in charts and graphs as appropriate.

### 3.2 Research Instruments, Data Collection, and Treatment

#### *3.2.1 Faculty and Staff Feedback*

An interactive assessment to collect qualitative data from faculty and staff of The Volgenau School occurred in May 2008. The researcher invited all 337 faculty and staff who work with graduate students to participate in an online survey. The invitation was sent by email to the complete the list serv maintained by VSIT&E Office of the Dean. The survey was described as a unit self-study to give participants a frame of reference for their input. The format was a series of comment fields that asked for observations on the strengths, weaknesses, opportunities, threats, and trends (referred to as SWOTT analysis) for The Volgenau School to recruit, enroll, retain, and graduate its students (Dickenson, 2005). After two weeks, the responses were less than 10, and after a reminder email was sent, the number increased by 50% bringing the total response count to 15.

The SWOTT analysis is a commonly accepted way to qualitatively evaluate an organization (Whiteside, 2004, p. 60). Strengths and weaknesses are internal factors, while opportunities, threats, and trends are external factors. The data was collected using an online survey tool with large comment fields to collect phrase or sentence responses. For each of the five SWOTT areas, the responses were collected and organized into themes. The original plan to classify themes that were represented in at least 50% of the responses as ‘major’ and those indicated in 25-49% of the responses as ‘minor’ was abandoned to the low response count. Instead, the researcher summarized the responses for each section and reported them in order of frequency. The responses were later quoted and summarized to the steering committee as appropriate.

### *3.2.2 Current Student Assessments*

The researcher chose to do multiple assessments of current students both qualitatively, using surveys and focus groups; and quantitatively, using existing datasets from university resources.

The first assessment was an online survey. Adapted from a survey given by the University of Colorado Boulder to its graduate students in 2003, the survey purposed to assess the qualitative satisfaction of the currently enrolled student body. (“Graduate student survey,” 2003). In May 2008, the researcher invited all 1700 graduate students to participate using the list serv maintained by the VSIT&E Office of Graduate Student Services. Comprised of 80 questions, the survey took approximately 20 minutes to complete. As an incentive to complete the survey, there was a drawing for four \$50 cash gift cards. After two weeks, a reminder email went out to improve the response rate. The

final response rate was 8% of the total invitations, and was lower than the anticipated 10%. Seventy-one percent of those who began the survey completed it. These low rates can be explained by the time of year (May) and the length of the survey. The data from this survey was reviewed and highlights were later reported to the steering committee.

*Focus groups.* To collect additional qualitative data, three focus groups were planned to follow up on themes that emerged from the current student survey. There was a question on the survey which asked respondents to volunteer to participate, and flyers were posted in Science and Technology II on the Fairfax campus to solicit additional volunteers. The original plan to segment volunteers into groups based on background, degree level, and satisfaction experience was abandoned because of the small number of participants. The initial and final focus groups only had one participant each, and the second focus group had two persons. Seventy-five percent of the total participants were international students. Therefore, to achieve diversity in responses, the researcher included information from a focus group completed by the VSIT&E Director of Graduate Student Services earlier in the term when more domestic students participated. Six questions, supplemented by follow-up questions when necessary, were planned for the sessions conducted by the researcher. The focus group sessions each lasted less than one hour, were recorded, and summarized. The data was reported in prose form as anecdotal evidence to support and clarify the survey findings.

In addition to these direct methods of collecting data, the researcher collected quantitative data by using existing data sets maintained by the university provided additional data on the enrollment, success, and continuity of students enrolled in the

programs. The DataMart data warehouse system, maintained by the university, is regularly used to report enrollment information for each term in aggregate. This project utilized existing reports to compare enrollment data from the previous three academic years. Mason's Institutional Research & Reporting (IRR) and Institutional Assessment offices, publicly report aggregate data on their websites that pertain to official enrollment and graduation information; this information was reported into a graphic representation of the *enrollment funnel* for annual comparisons. IRR also supplied a report (minus any personally identifiable data) to The Volgenau School for retention purposes. The dataset was reused in this study to create a current student profile to identify the enrolled student population. The Office of the Registrar provides additional reports to The Volgenau School for a variety of enrollment-related matters; these data (minus personally identifiable data) were also supplied to the researcher and reused to analyze VSIT&E's graduate attrition rate and drop out student profile.

The original plan to collect and match survey data with existing university data to perform multiple regression analysis to look for correlations of success, indicators of attrition, and public opinion was abandoned in part due to data constraints and complexities related to maintaining personal student information using an external survey tool. When extracting data from the Banner system, the data points were difficult to parse; for example, if a student, left for two terms and returned the existing system could not track that information within the student record. Unable to account for this unexpected data issue, the researcher instead performed correlation crosstabs using existing data sets separately to ascertain whether any single factor was statistically

significant. In addition, the researcher employed the resources of Mason's Statistical Consulting Center to complete a logistic regression to find out whether there were any statistically significant factors for attrition. The researcher recognized existing student responses as a reflection of our public image, therefore their potential to encourage or discourage new students was considered an indicator of *public opinion*.

The committee later identified areas of great concern or importance to the recruitment, enrollment, retention, and graduation of students. Findings that showed a high correlation for retention or attrition of current students or that showed extremes in public opinion were presented to the committee as potential key performance indicators that should be monitored in the future.

### *3.2.3 Newly Admitted Student Responses*

The Volgenau School systematically offers new applicants an opportunity to provide voluntary feedback about the school and the admissions process when accepting or declining our offer of admission. This data is not stored with any personally identifiable information after it is received. Again, the original plan to match the data collected with existing data compiled during the application process to perform multiple regression analysis to look for correlations of likelihood of admission and indicators of likely enrollment was abandoned to simplify the process. However, a comparison between confirmed and declined responses offered useful information for assessing opportunities to affect change in our yield. This information was later presented to the steering committee as recruitment and enrollment factors that should be monitored in the future.

Quantitative data for admissions was collected and reviewed from multiple sources. The Recruitment Plus CRM system managed by University admissions, provided prospect and recruitment data in aggregate. The previously mentioned DataMart data warehouse system is also regularly used to report admissions information for each term in aggregate. These data were reported by comparing data from the previous academic years to identify trends.

#### *3.2.4 Market Research*

In order to conduct a true 360° environmental analysis, this process also necessitated a review of environmental and market conditions on the national, regional, and local levels along with competition analysis. Though previously unplanned, this data included information found through: the National Science Foundation for national engineering enrollment, graduation, and regional production trends; the American Society of Engineering Education for local and regional competitor comparisons; the U.S. Bureau of Labor Statistics for information about the National Capital region's labor and industry trends; the Washington Post for an article on trends in degree offerings among local competitors in the metropolitan area; and additional institutional comparison data provided courtesy of the school's Director of Business Development. Highlights and trends found in the market research were also reported to the steering committee.

The researcher collected historical and present day statistics of the graduate school; this information formulated the "History and Culture" section of the final enrollment plan.

### 3.2.5 Steering Committee

In October 2008, a steering committee was formed to complete the data review process culminating in the final enrollment plan. The researcher pre-identified nine individuals among faculty, administrators, and staff of The Volgenau School to form a steering committee representative of the unit's diversity in educational attainment, rank, gender, and ethnicity; then vetted the selections with the Senior Associate Dean. Once confirmed, invitations were issued to join the committee via personal communication and those declined invitations were redirected to new individuals using the same process.

The steering committee had a series of three, three-hour long meetings to complete their role in the process. The researcher played a dual role by acting as the facilitator during the meetings. The first meeting focused on retention and graduation; the second focused on recruitment and enrollment matters; and the final meeting on creating a vision and goals for the plan. For each of the first two meetings, in advance, the researcher sent an article with information relevant to the meeting topic for the review and members were encouraged to complete a SWOTT worksheet to gather their thoughts to prior to the meeting (Dickenson, 2005). During the meetings, the researcher presented data findings relevant to the meeting topic, and encouraged members to make notes on the SWOTT worksheet as they listened to the data review. The review process was participatory, members were encouraged to ask questions and share during the data reviews if they had something to offer or needed clarification. At the end of the first two meetings, the group formulated its own group SWOTT analysis and *confrontation matrix*. As a business strategy, the confrontation matrix allows the internal and external themes to

be considered creating both (1) offensive and (2) defensive positions while allowing (3) opportunities to make necessary adjustments to (4) restore strengths and (5) survive while making (6) major changes to improve the organization's position. This analysis method is the most commonly accepted way to conduct a SWOTT analysis. These first two meetings formulated the "Institutional Position" portion of the final enrollment plan.

In advance of the final meeting, the researcher compiled emerging themes from the confrontation matrix; having used the steering committee meeting discussions as a means to collect qualitative data in written form. The summary of the minutes from each meeting provided a clear set of ideas that helped to formulate the plan. During the final meeting, the researcher divided the steering committee into smaller work groups which were tasked with: (1) creating a visionary response to the school's mission statement, then (2) identifying goals to meet the vision. Once the goals were identified, the smaller groups then came up with strategies, key performance indicators, accountability assignments, and budgetary comments. Acting as the facilitator, the researcher guided the groups through each section of the process, moved around to work with each of the groups, and took notes. Finally, the researcher took the notes from each group within the steering committee and compiled them based on theme and concept. This meeting formulated "The Vision," "Our Goals," and "Conclusion" sections of the plan.

### 3.3 MAIS Project Committee Evaluation

The final presentation of the project is the form of a binder which responds to each of the eight steps of Massa's SEM plan framework which responds to each portion of the enrollment process: recruitment, enrollment, retention, and graduation. The faculty



members making up the MAIS project committee will evaluate the researcher's progress through the process by reviewing the binder designed to include: the final Strategic Graduate Enrollment Plan, steering committee presentations and notes, market research, and qualitative and quantitative data collected through assessments in aggregate.

The process rubric should include: (1) demonstration of critical analysis skills, (2) demonstrated appropriate and adequate data treatment, (3) communication of core concepts and ideas to steering committee, (4) application of plan and management of the process, and (5) the handling of the final production in relation to the original vision; in addition to typical project rubrics. The researcher provided this rubric to the members of the search committee as a form of self-evaluation, and asked members to rank her on a scale of 1 to 5, where 1 is poor and 5 is superior. Fifty-five percent of the committee responded and gave the researcher the following performance rankings:

- Demonstration of critical analysis skills - 4.25
- Demonstrated appropriate and adequate data treatment - 4.40
- Communication of core concepts and ideas to steering committee - 4.80
- Application of theoretical concepts - 4.50
- Management of the process - 5.00
- Delivery of the final product - 4.80

Given that the committee members are over 50% faculty, the researcher submits this data to the committee to assist the overall evaluation of her performance and project delivery.

## 4 RESEARCH FINDINGS

In summary, the information uncovered through the analysis provided a foundation for the steering committee to respond to in the process. The research is specific to the case study; however, it gives an example of the type of findings a graduate academic organization may uncover when duplicating this process.

### 4.1 National and Regional Conditions

The US is experiencing increased competition for international students from nations such as Australia, China, and Europe. This fact contributes to the declining trend in international enrollment nationally. The National Capital Region is leading nationally in research and development production areas within the science and technology sector. However, the regional IT super-sector labor market declined by -1.8 % (compared to the national decline of -1.4%) over the last year. Although unemployment rates rebounded just before the recent congressional ‘bailout,’ the unemployment rates are likely to increase in the short term. These regional factors must be considered within any recruitment effort; the commonly accepted notion that students return to graduate school during economic downturn may hold true, however, the national economic crisis creates an additional level of uncertainty.

### 4.2 Recruitment

Up to this point, interest in The Volgenau School’s programs is on the increase; there was a 36% increase in prospect inquiries for Fall 2007 from the previous year and a

58% increase for Fall 2008 from Fall 2007. In spite of this, the conversion rate from prospect to applicant is paltry—for Fall 2007 only 13% of our prospects applied for graduate study, in Fall 2008 the conversion rate increased to 22%. The growth in the university's reputation is a major factor in this increased interest; however, the school will need to: (1) increase the number of prospects, (2) improve the tracking of prospective student efforts, and (3) engage our prospects further to encourage them to apply.

#### *4.2.1 Applications*

The Volgenau School has seen its application volume rebound from an eight year low in Fall 2005 of 1356 applications to an eight year high in Fall 2008 of 1923. The volume of accepts has exceeded that of any fall term in the past eight years, and demonstrates a trend towards becoming more selective; in Fall 2008 the school achieved the lowest acceptance (selectivity) rate at 60% than it has in the past eight academic years.

#### *4.2.2 Confirmations*

Confirmations of new graduate students fell five percentage points to 60% for Fall 2008 term from the previous two years. Mid-season, the school began to track applicant feedback and determined that the school has a high deferral rate of newly admitted students due primarily to visa and funding issues. Of those students who declined our offer of admission, they cited the (1) amount of the financial award offer and (2) the length of time it took to obtain an admissions decision as the top two reasons for selecting another institution. The unit has a vested interest in continuing its efforts to

address these two issues to improve the enrollment of new graduate students. By a slim margin, confirmed students cited the (1) location, (2) quality of the faculty and the (3) reputation as their top reasons for selecting the school; the latter two areas also had the largest gap score of -0.9 (which measures the difference between what applicants desired in a graduate school and how they ranked our school). This conflicting information is interpreted as a communication lapse during the yield phase of the admissions process; the unit will need to find ways to highlight these strengths as part of our recruitment and yield strategy.

#### 4.3 Enrollment

Only 78% of the students who accepted our offer of admission for Fall 2008 actually enrolled; this number is up slightly from 75% in Fall 2007 and 77% in Fall 2006. The enrollment of new graduate students, while rebounding slightly from the last two years, is still hovering in the mid-500 headcount. The overall yield rate of 47% for Fall 2008 is 3 percentage points below the average yield among our competition within the local region in 2007. The yield rate and headcount are benchmarks to monitor carefully.

New graduate degree students represent approximately 24% of the currently enrolled student population for the Fall 2008 term (counting new non-degree students, this figure is 30%); the figure typically ranges between 25-30% each term. This information puts into perspective the role that the Office of Graduate Admissions has in producing FTE and for resource allocation. Feedback from student surveys demonstrates that graduate applicants feel the services of this office leave something to be desired in terms of (1) speed and (2) helpfulness as the top two major issues. Although it has made

considerable improvements, the office has several challenges to face in assisting the unit to meet its goals:

- (1) it has highest international (F1 visa) application volume of 42% in Fall 2007 (compared to the College of Science at 24% and the College of Humanities and Social Sciences at 10%), these applications are the most time consuming for processing and follow-up with the least probability of return on investment (F-1 students are 3.5 times less likely to enroll than domestic students);
- (2) it has the highest walk-in volume of any graduate admissions office on campus (1350 applicant walk-ins in 12 month period, though it is open to the public only 20 hours per week);
- (3) it has the latest published application deadlines of any graduate admissions office university-wide (January 15 for Spring; August 15 for Fall);
- (4) it processes its own non-degree applications (one of three graduate units that does this campus-wide); and
- (5) it receives, like most admissions offices, the vast majority of its time-consuming applications between October to May (72% in academic year 2007, and 61% in 2008).

The functionality of the admissions office must be considered as one of the essential factors of the unit's FTE goals.

#### 4.4 Retention

A profile of the school's typical graduate student is male (77%) of European (38%) or Asian (33%) heritage, in the late twenties (33%), a US citizen or immigrant visa holder (domestic) (77%), living in Fairfax County (59%), paying in-state tuition rates (68%), attending a Masters degree program (68%) most likely in the CS (39%) or ECE (28%) department, attending school part-time (83%), with a mean of 22 credit hours and a mean GPA of 3.51. The school's attrition rate increased one percentage point this academic year from the last. An average of 88% of the students who last attended during

academic years 2006 or 2007 without returning voluntarily dropped out of their programs; 45% did so within the first 3-9 credits of study. A basic calculation demonstrates that an estimated 64.6 graduate FTE was lost in 2007 and 80.5 FTE was lost this past fall due to attrition. The Statistical Consulting Center assisted in determining that there was a statistically significant correlation between GPA and the likelihood of attrition. The unit needs to determine the relevance of this information and address the attrition rate, accounting for the high number of military personnel and company-sponsored students who have anecdotally demonstrated the high transience tendencies.

Current student survey and focus groups highlighted a few areas that students desired additional support including: advising, networking opportunities, dedicated graduate student space, and higher quality computing resources. The top five obstacles to completing study were: Work/financial commitments (80.7%), travel to campus (63.8%), course scheduling (61.1%), family obligations (51.3%), program structure or requirements (37.1%). The unit can evaluate opportunities to increase the program flexibility to meet student needs. The top seven items current students wanted to see improved (in order of importance) were: (1) better faculty/staff support knowledge/helpfulness, (2) improved faculty expectations/performance/attitudes in the classroom, (3) increased in summer course offerings, (4) increased hands-on lab experience opportunities, (5) improved funding opportunities, (6) improved advisor/advising services, (7) improved the frequency and depth of course offerings, and (8) frozen tuition rates. Students felt that most of our facilities and support systems were just adequate, they were mostly concerned about the classroom/computer resource

support (insufficient software, memory, outdated; lack of information/access/space or inadequate support staff). Certainly, not all of these matters can be addressed immediately; others, such as increased summer offerings, are not in the best interests of the academic unit to change at all. However, the school has active plans to create a dedicated graduate student space within the coming academic year and it can address the quality of education and advising concerns, improve opportunities for networking, and address classroom/computer resource support concerns.

#### 4.5 Graduation

The Volgenau School has a strong graduation rate as evidenced by the ranking it received from the ASEE in both MS and PhD degree production. The time to degree for MS students is approximately two years and PhD at five years for full-time students and ten for part-time. The number of degrees conferred during academic year 2007 was a strong 553; this number was up from 517 in AY2005, but down slightly from 571 in AY2006.

## 5 ANALYSES AND REFLECTION

The researcher elected to use the reflection method to analyze the process of developing an enrollment plan for a graduate school. In addition to responding to research questions posed at the outset of this project, included are thoughts on key areas of the process: group participation, data collection, research methods, time frame and planning, adaptation, consultation, and evaluation. On each of these, the researcher offers advice to improve on the methods employed in this project.

### 5.1 Modifying this Process for a Graduate School

This process works very well at the graduate level; although it is clear that many issues that may arise are outside the realm of the individual graduate school's influence; for example, in the case study the tuition rate increases came up. However, this knowledge can give administrators who represent the academic organization at the university level the ability accurately express the concerns of its constituency, with specific data available to support the claim. The modified enrollment planning methodology is simplified and less cumbersome compared to true SEM planning at the university level; for example, the steering committee is likely to be considerably smaller and its members to have more recent hands-on experience than administrators at the highest levels. Another example, the data collected is very specific to the academic organization's area' therefore, findings are likely to be highly consistent with the



committee members' experiences. As a result, the process is considerably shorter and possibly less involved than one at the university level, yet the plan is still highly relevant to the graduate or professional school for immediate implementation.

On the other hand, since most graduate schools are comparably smaller than their umbrella institutions, such academic organizations are limited as to the types of organizational structures that can be created through the planning process to affect enrollments. As a result of research stemming from this project, the case study is utilizing the *matrix-based* organizational model wherein director-level staff of enrollment-related functions are reporting in a sort of chain-link fashion to a senior-level administrator at the dean level who is responsible for coordinating the communication and depends on the voluntary cooperation of distributed academic departments to make change (Penn, 1999, p.19). This model is most appropriate since the unit has a limited number of functions that operate within its realm; it is also a micro version of the *division-based* organizational model recommended by most researchers at the university level.

In order to adapt the SEM plan method to use at the unit level, the researcher had to consider that many factors normally considered in a SEM plan for a university must be reduced considerably to factors within the unit's control. Downsizing the length of the current student survey used in this process is appropriate for future assessments. Additionally, the plan needs to acknowledge university strengths and weaknesses that may not be addressable by the unit, but must be considered in the planning process. The plan developed by the case study was very good at taking such factors into consideration.

## 5.2 Group Process and Data Sharing

Developing an enrollment plan for a graduate school is a challenging task: it requires a vast array of skills in writing and editing, presentation and group facilitation, organization and planning, data research and analysis, just to name a few. The process most certainly requires the active participation of a group. The researcher for this project was fortunate enough to have a variety of participants that contributed to the process, including:

- the Senior Associate Dean who co-chaired the committee and provided feedback to strengthen the final SEM plan;
- the Director of Graduate Student Services who presented retention research during the initial steering committee meeting;
- the Director of Business Development who presented a competitor analysis during the second committee meeting;
- the Director of the Statistical Consulting Center who completed and presented findings to respond to attrition questions during the final retention meeting; and
- the Graduate Admissions staff members who helped document the steering committee feedback for collection and review in addition to assisting with meeting setup.

Even with all of this assistance, the process is quite large in scope. In duplicating this process, future facilitators would be best served by creating and meeting with the steering committee prior to data collection, to determine exactly what kind of data would be most

useful to evaluate and to solicit assistance from those who have expertise in those areas to participate in the data collection and presentation process (Whiteside, 2004, p. 49).

The data collection process was extensive; at the institution where this study was conducted, enrollment data are scattered among multiple sources. The university does have an Office of Institutional Assessment which has a considerable amount of data available online and is linked to the Office of Institutional Research & Reporting; however, these two sources focus primarily on current and historical student data. The researcher was challenged to locate and piece together information from earlier phases in the ‘funnel,’ namely recruitment and admissions data which were stored in other databases with a short historical record. Limited experience with a project of this magnitude made the project a bit cumbersome for a neophyte. When duplicating this process, future facilitators should make a complete list of available data, its locations and resources and should compile the basic data into a single enrollment funnel report. Appendix C is a sample “Enrollment Path” informed by research related to this project; the path was used as a reference throughout the entire planning process.

Another data challenge was market segmentation. The case study prefers to segment its populations as ‘domestic’ and ‘international,’ the latter delimited as those requiring F or J visas for study; however, that information was not always consistently available to extract from reporting resources. There are infinite ways to increase the complexity of the data collection and analysis methods that can increase the validity and value of the research; if the enrollment planner is prepared and allows for flexibility in data reporting.

Market research is a critical component of developing an enrollment plan grounded in reality; the researcher failed to include mention of this in the original proposal. The researcher needed to become intimately acquainted with respected research and reporting organizations specific to the graduate schools area to complete the project (Whiteside, 2004, p. 52). In the case study, the National Science Foundation and the American Society of Engineering Education proved to be excellent resources. Further, state and national data resources that provide data on labor market trends, population, industry and educational trends should be scanned for signs of relevance to the enrollment planning process. In the case study, the U.S. Department of Labor, State Council of Higher Education in Virginia, and periodicals such as Washington Post were a few of the resources that contributed information relevant to the planning process.

Information sharing is critical to enrollment planning; having data to provide a frame of reference or to challenge pre-existing ideas, makes the discussion and evaluation phase of the process extremely valuable to the academic unit. Introducing new ideas into research structures can be challenging; the planner(s) must have high credibility and support from academics within the organization. From a pedagogical perspective, utilizing the scaffolding teaching method—building on concepts already familiar to internal publics and providing anecdotal evidence—was effective in linking the new theoretical frameworks of enrollment planning. This is particularly important to develop buy-in with committee participants and with other members of the academy once the plan is adopted.

### 5.3 Planning and Project Shortcomings

The original time frame of this project was structured to occur between May and October 2008. This plan was problematic, because students and faculty were departing for the end of the Spring term and did not respond in healthy numbers. Further, arranging steering committee meetings that involved faculty participation was next to impossible during summer months. In duplicating this process, the researcher recommends that the process occur during the academic year and run from approximately September to January or March instead; using this timeline recommendation, immediate implementation is possible and the plan is laid out in time for fiscal planning.

The researcher experienced disappointing response rates from faculty and staff; increasing participation from this group within the process is important. Besides the survey timing, the low response rate may have occurred because the survey was associated with the researcher as an individual due to HSRB requirements. Further, the survey was not attached to an incentive for participation, due to resource limitations for the project. The researcher recommends that facilitators seeking to duplicate this process consider the presentation method and incentives for faculty and staff participation carefully.

There is a general trend towards using experienced consultants to assist universities in this process. The researcher attended an enrollment management conference and found that the newer trend is to employ a consultant on university campuses that focus on enrollment planning strategies. It may be useful for facilitators duplicating this process to utilize a consultant or someone experienced to assist

throughout the initial enrollment planning process. The researcher came across many unexpected challenges during the process that could have been avoided by having consultation guidance; particularly since enrollment planning literature is usually vague about the process.

#### 5.4 Project Evaluation

The researcher employed a project-evaluation process to determine the quality of the process as a whole. Those duplicating the process should solicit feedback to ensure that the process is on track and that the participants in the process are engaged enough to produce a quality outcome. In completing this project, 55% of the steering committee members responded to the assessment and indicated that the size of the committee and the amount of time spent on the process was appropriate; although the researcher would have preferred to add an additional meeting. Anecdotally, several times during the process, individual committee members stated that they ‘enjoyed’ the meetings and ‘looked forward’ to them. Ultimately, the committee members rated the resulting Strategic Graduate Enrollment Plan as ‘excellent’ (on a scale of ‘poor’ to ‘superior’).

#### 5.5 Final Comments

Adapting the strategic enrollment management planning process to use at the graduate or professional school level was both challenging and educational; improvement in this process would likely come with repeated involvement. An executive summary of The Volgenau School’s *2008 Strategic Graduate Enrollment Plan* is located in Appendix D; the entire document is available to view online at

<http://ite.gmu.edu/graduates/2008SGEP.pdf>. To review the complete project binder: including steering committee meeting presentations, agendas, notes, surveys, aggregate responses, and data analysis; please contact The Volgenau School of Information Technology and Engineering at George Mason University.

## 6 CONCLUSION

Taking advantage of the interdisciplinary nature of the higher education program, this study is a culmination of coursework the researcher completed between Fall 2005 and Fall 2008 to prepare a career in enrollment management. The courses most relevant to this project included:

- *Higher Education in the U.S.*, which taught the historical framework under which higher education in the US was created. The researcher developed a fuller sense of the higher education scene and the historical events that have led to its place in society, which directly relates to the study of enrollment issues.
- *Organization & Administration in Higher Ed*, which taught the structure and leadership challenges facing the academy, and how administrators can rise to the leadership challenge.
- A *Student Services* course, which describes every aspect of student life and university culture; many of these services, directly participate in the enrollment and retention of our students.
- The *Contemporary College Student*, as defined in today's world and the issues affecting them, particularly the rise of the non-traditional student, allowed the researcher to better understand the population the university system serves.
- *Public Policy Models* which analyzed models used approach policy problems, improved the understanding of the complexity of policy-making and to be able to retroactively trace policies back to determine how they were made and how to affect change.
- *Problem Solving & Data Analysis I*, which taught techniques for managers to use research to solve problems through data analysis. This course was the foundation upon which the researcher's data analysis skills were built in order to make



professional data-driven decisions and to understand the peril of not accounting for independent variables affecting policy decisions.

- *Communications, Marketing, & Public Relations*, focused on how the traditional business application of marketing and communicating can benefit non-profit organizations. This course taught the foundation of marketing and communications and how important it is for administrators to understand that every level of an organization needs buy-in from internal ‘publics’ for success with external ones.
- *Education Law*, where the law and higher education intersect and how current issues in the legal system affect decisions made at an institutional level. Particularly laws as they relate to admissions, FERPA, and dismissal issues should be familiar to administrators working with enrollments.

The researcher recently completed a practicum which included working with the Office of the Registrar, Office of the Provost in Enrollment Planning, and the Office of Admissions in Information Management. The researcher employed skills learned within her academic program to this project and now has a clearer understanding of her own strengths and weaknesses to practice and strengthen in order to affect personal and professional growth. She predicates that her course choices have resulted in a program of study that has strengthened her six years of experience in Admissions focusing on recruitment and operations. This combined education and experience have prepared her to tackle such a project with a view towards a professional career in the field of enrollment management.

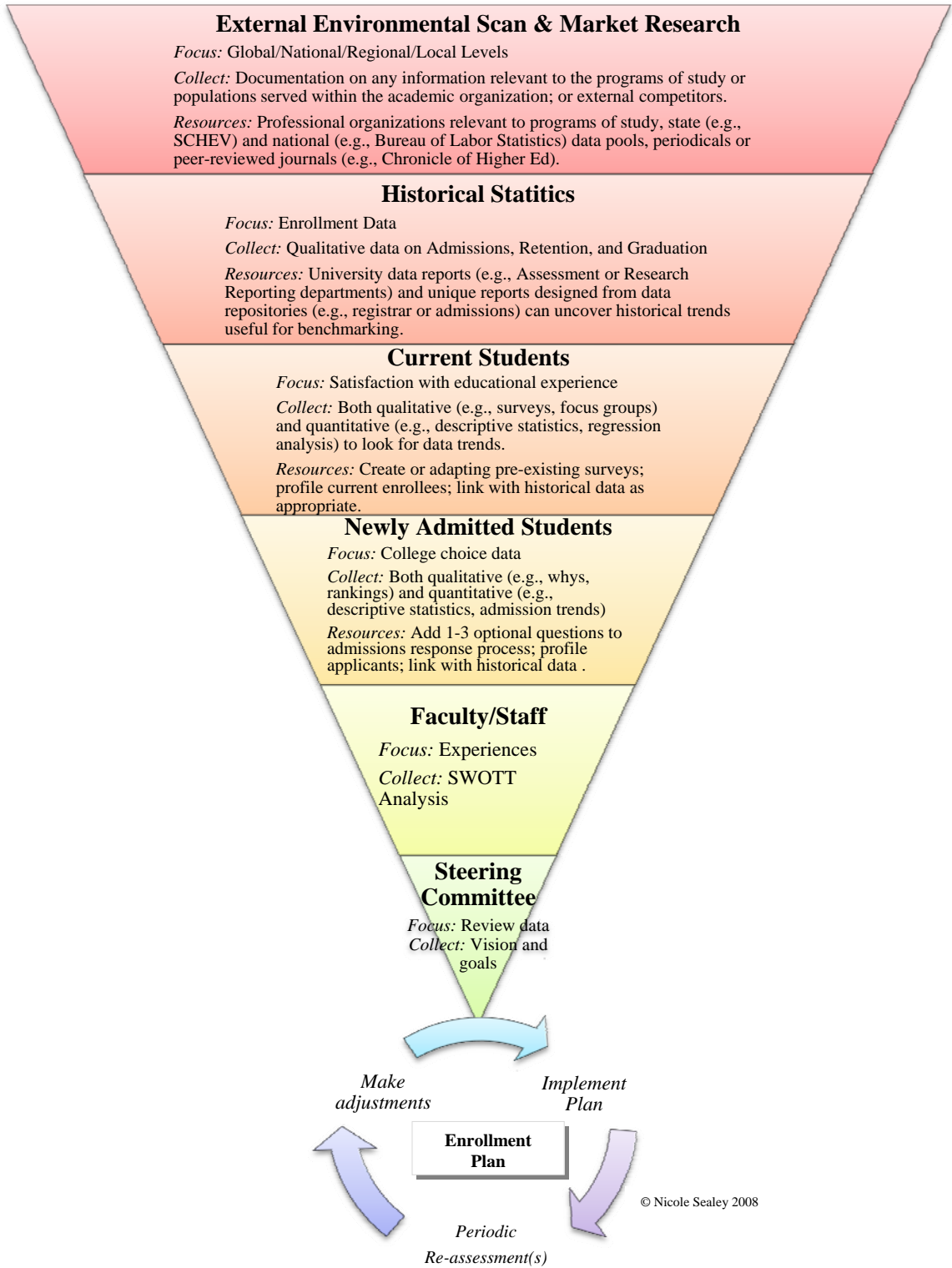
## APPENDIX A: Glossary of Terms

- *Attrition*, the rate of students who leave an institution without returning. Understanding how and why an institution loses its students and addressing institutional weakness to correct the loss is important. *Indicators of attrition* are defined as disjointed matriculation, academic difficulty, and dissatisfaction with educational experience.
- *Census*, is the reporting of official enrollment data, usually by a university institutional research departments. In the case study, the census is usually taken 6 weeks after the first day of classes each term. Most data available for the study is retrieved after the census date, unless otherwise noted.
- *Enrollment*, the FTE or headcount of students matriculating at an institution.
- *FTE*, an acronym for *full-time equivalency*, is identified at George Mason University as a calculation of the students' total credit hours divided by the nationally accepted full-time credit load which is 12 credits for graduate students. Student FTE is calculated each semester (Ko, 2007).
- *Headcount* or *student headcount* is the number of individual students whose administrative records indicate that they were registered in a credit-bearing course as of the university's enrollment census date for each semester (Ko, 2007).
- *Graduation rates*, are the measure of the students who complete a program and earn a degree; these are usually measured as an institutional graduation rate (if a cohort of students were followed for a given time period) in a ratio to overall or competitive institutional graduation rates.
- *Institutional supply* is the number of students that an institution could comfortably accommodate, which is limited by the number of students the institution is willing to enroll (Black, 2001, p. 37).
- *Integrated marketing* is the avocation of segmenting of both institutional stakeholders and markets to target marketing and PR efforts to achieve institutional-wide goals (Hossler & Hoezee, 2001, p. 62)
- *Participation rate* is the proportion of the target population that actually enrolls in

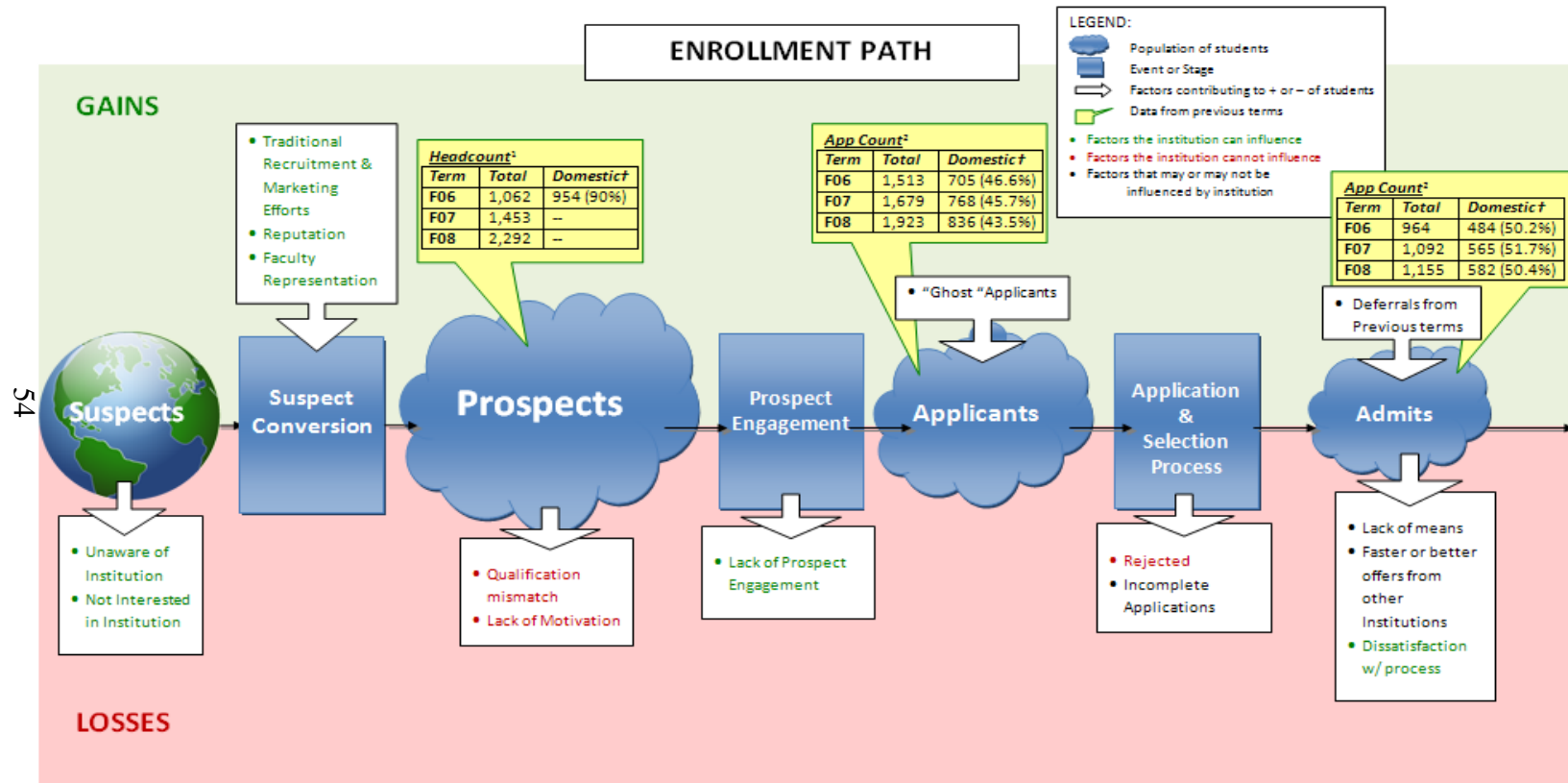
higher education (Black, 2001, p. 43).

- *Persistence* is the rate at which enrolled students return to continue a program from a starting point to an ending point; usually institutions measure the number of students who persist from the beginning towards the completion of the given program without breaks in enrollment.
- *Public(s)*, a marketing term to describe constituencies or groups of persons to which an enterprise aims. This term can be used to describe a group of people inside an organization as *internal publics* or persons outside the organization as *external publics*.
- *Prospect*, short for *prospective student* which identifies any person who shows interest in the institution.
- *Retention*, for the purposes of this project, refers to the rate at which students from a previous term return for the following term.
- *Selectivity rate* for this project refers to the percentage of applications that are actually admitted to an institution.
- *Student demand* in higher education is the number of people in the market population to be served multiplied by the proportion that seeks enrollment in a program/institution (Black, 2001, p. 38).
- *Suspect*, short for *suspected prospective student*, is a term commonly used by admissions professionals to indicate individuals in the target population who have not yet shown interest in the institution. These persons are usually identified through third parties such as data mining companies.
- *Yield rate* refers to the percentage of accepted students that enroll at an institution.

## APPENDIX B: Enrollment Plan Methodology Chart



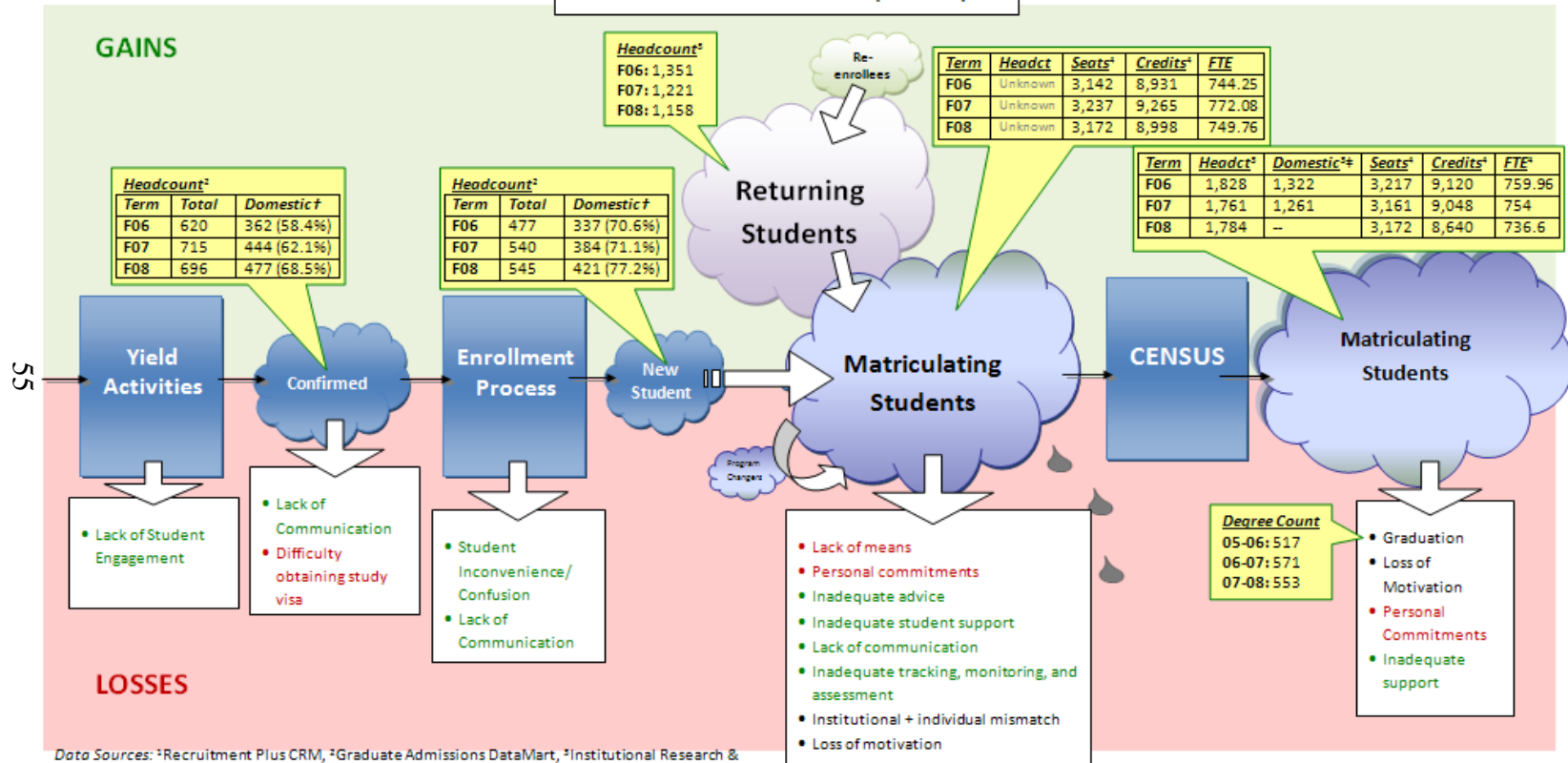
## APPENDIX C: Enrollment Path



*"Moving from Theory to Action" (Whiteside, 2001, p. 75-95)  
and "Developing a SEM Plan for a Graduate School" (Sealey, 2008)*

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## ENROLLMENT PATH (cont'd)



Data Sources: <sup>1</sup>Recruitment Plus CRM, <sup>2</sup>Graduate Admissions DataMart, <sup>3</sup>Institutional Research & Reporting, <sup>4</sup>Office of the Provost.

<sup>+</sup> 'Domestic Students' are defined as those not requiring an F/J Visa to attend; reported after census

<sup>#</sup> 'Domestic Students' are defined as those not holding any visa type

## APPENDIX D: Case Study Executive Summary

### The Volgenau School of Information Technology & Engineering 2008 Strategic Graduate Enrollment Plan Executive Summary

This strategic plan for graduate enrollment is intended to strengthen The Volgenau School's graduate enrollment through the 2010 academic year. To accomplish it, a self-study was conducted to assess the school's ability to influence its graduate student enrollment. A steering committee evaluated the self-study research findings and identified positive and negative factors to achieving success in recruiting, enrolling, retaining, and graduating the unit's graduate student population. Consequently, the committee's responses to the research findings formulated the basis of this strategic plan for graduate enrollment. The plan includes a clear vision for the direction of graduate enrollment and specific goals to achieve it.

*Graduate Enrollment Vision Statement.* The Volgenau School endeavors to strengthen its commitment to excellence in graduate studies and education by engaging in the following activities:

1. Increasing our visibility throughout the National Capital Region and beyond by drawing attention to our reputation, core values, and achievements;
2. Attracting and retaining high quality students, from all backgrounds, who will then move out into the global community as leaders in research and innovation;
3. Providing students opportunities for positive interaction with leaders in the academic community, research, industry, and government;
4. Increasing our program availability to a larger community through distance education; and
5. Establishing strong, long-term links to alumni for life-long learning partnerships in the academic family among graduate students.

*Goals.* In order to make progress towards realizing our vision for the future, in spite of current challenges, the steering committee sets forth a five prong approach to address our graduate student enrollment:

*Goal #1:* Increase the visibility of the school through reputation-building promotions within the National Capital Region with the purpose of attracting more local students.

*Goal #2:* Expand the breadth and depth of graduate courses offered through distance learning with all due urgency.

*Goal #3:* Improve the retention of currently enrolled graduate students at both the MS and PhD levels, focusing on strengthening our graduate advising process and services, as well as quality curricular and co-curricular experiences.

*Goal #4:* Focus on improving our first year graduate student experience from admissions through end of the first full year of study.

*Goal #5:* Increase collaborative engagement between organizational structures (e.g., admissions, student services, business development, academic departments) to support enrollment goal achievement.

During the following academic year, the committee will reconvene to review any progress made towards achieving the goals of the strategic plan and make adjustments where necessary to assist the academic unit in realizing its graduate enrollment vision.

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*The entire Strategic Graduate Enrollment Plan created for The Volgenau School of IT & Engineering is available to view online at <http://ite.gmu.edu/graduates/2008SGEP.pdf>. To review the complete project: including steering committee meeting presentations, agendas, surveys, aggregate responses, and data analysis; please contact The Volgenau School of Information Technology and Engineering at George Mason University.*



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## CURRICULUM VITAE

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