

 GRAD AND PROFESSIONAL SCHOOLS

The Relationship Between Institutional Budget Models And Graduate Strategic Enrollment Management Structures

By Joseph H. Paris, Matthew Birnbaum, and Nicholas Dix

Graduate strategic enrollment management (SEM) professionals must become fluent in the mechanics of their institution's budget model in order to better understand how graduate enrollment headcount and tuition revenue translate into the resources that power the institution and fortify it to withstand a potentially uncertain future. This article provides a primer on common institutional budget models and the potential implications of these models on graduate SEM.

Hundreds of U.S. institutions of higher education started 2020 under significant financial pressures to operate with a balanced budget and the ability to meet their strategic goals. While the COVID-19 pandemic exacerbated these pressures (Butrymowicz and D'Amato 2020), for the past decade, many public universities experienced declining state appropriation revenue (Jaquette 2019; Li 2017; Mitchell, Leachman, and Masterson 2016), and undergraduate and international student enrollments (Smalley 2020). These realities have required institutions to consider difficult financial, organizational, and personnel decisions (Butrymowicz and D'Amato 2020; Geiger 2010; Li 2017) and seek alternative sources of revenue (Jaquette 2019). As the population of traditional-aged undergraduate students declines at an accelerating

rate (Grawe 2018), greater emphasis is being placed on strategies for increasing graduate and professional student enrollments and tuition revenue (Barr and Turner 2013; Jaquette 2019). As institutions pursue these revenue streams, there is an increased need to understand the role and function of graduate strategic enrollment management (SEM) and how its principles are informed by and work in conjunction with institutional budget models. This article provides a primer on common institutional budget models and the potential implications of these models on graduate SEM. It was written with three primary audiences in mind: administrators who work in graduate SEM or related areas; faculty members involved in graduate admissions; and graduate students engaged in academic research or similar pursuits.

Graduate Enrollment Management

Enrollment management practices began in the late 1980s as an attempt to predict matriculation rates for incoming undergraduate classes (Hossler and Bontrager 2014; Kalsbeek 2006). It has since evolved to include a strategic philosophy and comprehensive framework for identifying, recruiting, and yielding an undergraduate class with high predictors of academic success and defined characteristics that align with an institutional mission (Hossler and Bontrager 2014; Kalsbeek 2006). Over the past decade, institutions have attempted to apply similar practices to graduate education, resulting in the development of graduate enrollment management.

Graduate SEM considers the graduate student life-cycle, from pre-admission through the student experience, graduation, and alumni engagement (Pavlik 2015; Williams 2008). Although graduate and undergraduate SEM share similar underlying principles, there are substantial differences between undergraduate and graduate students. Graduate SEM encompasses strategies designed to address the diverse educational objectives of prospective and current graduate students and, therefore, requires distinct financial resources in order to maximize these outcomes.

One of the differences between graduate and undergraduate SEM is the approach to tuition discounting. Graduate SEM traditionally involves the financial support of graduate students through assistantships, fellowships, and other awards intended to enhance the affordability of graduate education. Unlike undergraduate merit-based and need-based scholarships and grants, these sources of financial support often require recipients to complete administrative, teaching, or research responsibilities in exchange for the benefits associated with the award (principally tuition remission, a living stipend, and health benefits). While the objectives of offering tuition discounts to graduate and undergraduate students are similar, the requirements and benefits associated with graduate tuition discounts differ substantially from those offered to prospective undergraduate students.

Graduate SEM models vary substantially across and within institutions due to differences in the size of the graduate student population and resources available to support graduate SEM functions (Diminnie 2012; Michel, *et al.* 2019; Williams 2008). Additionally, graduate SEM structures are influenced by organizational culture and the overall role graduate programs have in supporting the enrollment process, the institutional mission, and its financial vitality (Williams 2008). Further, the prominence of graduate education often is related to institutional typology. For example, institutions with high research productivity may place greater emphasis on graduate education as an institutional priority compared to institutions that focus on undergraduate teaching and training. Each of these factors and institutional characteristics influence graduate SEM structures.

Although SEM is commonly a function of a graduate school or centralized graduate admissions office, decisions about graduate enrollments tend to be more decentralized as opposed to the typical centralized undergraduate admissions model (Diminnie 2012; Kent and McCarthy 2016; Michel, *et al.* 2019; Orfield 2014; Williams 2008). These differences are in part due to the need to ensure graduate admissions applicants possess the discipline-specific qualifications and characteristics required for success in their chosen field (Diminnie 2012; Posselt 2016). Therefore, faculty are central to the graduate admission decision-making process. An implication of this is that graduate SEM practitioners within graduate schools or centralized graduate admissions offices need to develop and maintain relationships with academic units. Further, in most decentralized graduate SEM models, academic schools, colleges, or departments have primary responsibility for managing enrollment headcount and tuition revenue. Regardless of the model employed by a particular institution, there are inherent relationships between graduate SEM practices and institutional budget models. Successful graduate enrollment managers understand the effective practice of SEM strategies and its components (*e.g.*, recruitment, marketing, tuition discounting), and the

mechanics of the budget model and resource allocation process at their institution.

Institutional Budget Models

Institutional budget models can be understood as existing on a continuum; centralized budget models exist at one end, and decentralized models exist at the other. In centralized budget models, central administration allocates financial resources and directs financial decision-making processes. In decentralized models, academic schools and colleges receive financial resources, allocate resources to central administration through a formula, and generally make autonomous financial decisions. Many institutions use hybrid models that fall somewhere on the continuum. The extent to which a budget model is centralized or decentralized generally depends on an institution's size and organizational complexity and how it intends to deploy financial resources to attain strategic goals. How these models work is also subject to the whims of decision-makers who have discretionary powers outside the stated model.

Previous studies have considered institutional budgeting in the context of undergraduate enrollment management (*e.g.*, Brown and Gross 2014; Jaquette, Kramer, and Curs 2018). Fewer have been written about how

graduate SEM is shaped by institutional budget models. The need for this understanding is of particular importance given the variability of graduate SEM structures (Connor, LaFave, and Balayan 2014; Williams 2008) and institutional budget model characteristics (Lasher and Greene 2001). This article addresses the aforementioned gap in understanding and informs readers about the relationship between their respective institution's budget model and graduate SEM.

Common Budget Models in Higher Education

This section describes common budget models as they are conceptualized in higher education finance. However, these models are infrequently adopted and implemented in pure form (Barr and McClellan 2018) because informal relationships, strong personalities, and technological barriers exist across all campuses. Additionally, these models are shaped by external factors, historic and institutional traditions, and often unwritten agreements. Most commonly, institutions select the components and principles of budget models that align most closely with their mission and values. As presented in Table 1, incremental budgeting is the dominant centralized budget model and responsibility center management (RCM) is

TABLE 1 ► Percentage of Budget Models Used by Institutional Sector¹

Budget Model Used (2010–2011 Academic Year)	Performance- Based	Incremental	Revenue Center Mgmt.	Zero-Based Budgeting
All Institutions	19.6	60.2	14.2	30.0
Public Institutions	21.0	59.3	11.8	25.6
Doctoral Universities	25.5	78.7	21.3	00.0
Master's Institutions	19.6	73.8	8.9	16.1
Baccalaureate Colleges	17.2	72.4	20.7	13.8
Associate/Community Colleges	20.8	47.4	8.7	37.6
Private/Non-Profit Institutions	18.2	62.3	17.1	33.2
Doctoral Universities	24.0	56.0	48.0	20.0
Master's Institutions	14.8	71.6	12.3	25.9
Baccalaureate Colleges	19.1	58.4	15.2	37.6

¹ Adapted from Green, Jaschik, and Lederman (2011). Percentages may exceed 100% as some institutions employ a combination of budget models.

the dominant decentralized budget model maintained by higher education institutions.

Performance-Based Budgeting

Performance-based budget models, also referred to as formula funding and outcomes-based budgeting, use specified criteria and performance metrics to determine the allocation of resources. While more commonly implemented at the statewide level for public appropriations (Barr and McClellan 2018; Jones, *et al.* 2017), at the institutional level, performance-based budgeting has utility as a transparent, efficient centralized model for administering across-the-board allocations of resources. If properly designed and implemented, performance-based budget models can be effective in refocusing institutional priorities, meeting institutional goals, and promoting the attainment of outcomes such as graduate degree completion. Institutional performance-based models yield the greatest results when unit-level metrics are strategically aligned with institutional priorities.

Many states use performance-based budgeting to incentivize specific outcomes, simplify the budget development process, and allow for institutional level planning. Since states use varying metrics to define and measure performance, models vary considerably across states (Jones, *et al.* 2017). We include this in our primer because state formula budget models that include grad-

uate student input (*e.g.*, enrollment headcount) and output (*e.g.*, degree conferrals) metrics will impact graduate SEM at institutions within those states. For example, Tennessee's outcomes-based funding formula includes metrics for graduate degree completion (Rosinger, *et al.* 2020). Therefore, graduate SEM professionals working at institutions in states such as Tennessee might develop strategies to maximize the enrollment of graduate students with the greatest likelihood of degree completion. Table 2 presents an example of the effects of a state-level formula budget model on a hypothetical public university.

In this example, the institution received \$1,000 per FTE graduate student, \$100 per graduate credit hour generated, and \$10,000 per graduate degree conferred. The formula rewards institutions that graduate a high percentage of the graduate students it enrolls. It therefore incentivizes institutions to admit students with a high probability of completing a graduate degree. This model, and its associated incentives, serves as an example of the levers state departments of higher education use to increase the number of graduate degree conferrals. Other funding models may incentivize FTE headcounts more than graduation rates, resulting in different institutional responses.

At the institutional level, performance-based budget models can serve as powerful tools for rewarding productivity and the attainment of mission-driven

TABLE 2 ➤ Example of the Effects of an Outcomes-Based Funding Model on GEM University¹

Metric	Rate	Outcome	Outcomes-Based Revenue for GEM University	Percentage of Total Appropriations for Fiscal Year
Graduate Enrollment by Headcount	\$1,000 per FTE ²	3,000 FTE ² graduates enrolled	\$3,000,000 for graduate FTE ²	1.5
Graduate Enrollment by Credit Hour	\$100 per graduate credit hour	36,000 graduate credit hours generated	\$3,600,000 for graduate credit hours	0.5
Graduate Degree Completion	\$10,000 per graduate degree completed	340 graduate degrees completed	\$3,400,000 for graduate degree completion	6.5

¹ Adapted from Barr and McClellan (2018).

² FTE = Full-time equivalent.

outcomes. Advocates of these models believe they are rational, transparent, and remove politics from decision-making. However, these models may also reproduce existing structural inequities in which well-resourced units are better equipped to achieve greater performance and, therefore, receive the corresponding incentives. Graduate SEM professionals in institutions with performance-based budget models should pay attention to how adjustments to performance metrics may affect available resources for graduate SEM. In performance-based budgetary environments, graduate SEM professionals require an understanding of how graduate student enrollment headcount, graduate tuition revenue, graduate degree conferrals, and graduate student retention rates serve as measures used to assess performance at the central and unit levels. An increase in one or more of these measures may result in increased resource allocations. Conversely, a decrease in one or more of these metrics may result in financial pressures for the institution, especially if the attainment of these measures is directly tied to the level of state appropriations provided to a public university.

Those involved in graduate SEM at institutions with formula or performance-based budget models should consider the following questions:

- Does my institution's budget model include performance metrics that incentivize specific graduate student inputs (*e.g.*, enrollment headcount, credit hours) and outcomes (*e.g.*, graduate degree conferrals)? If so, what strategies can be developed to maximize performance based on these metrics? How can a centralized graduate school or graduate admissions office collaborate effectively with academic colleges, schools, departments, and programs to maximize performance?
- Is my institution's budget model driven by indicators of graduate student quality (*e.g.*, academic quality, diversity, talent, ability)? If so, what strategies can be developed to maximize the quality of the graduate student body?
- What happens if a unit or department does not meet a performance metric? How will this affect

the availability of resources in the short-term (*i.e.*, current fiscal year) or long-term (*i.e.*, subsequent fiscal years)?

Incremental Budgeting

Incremental budgeting relies on small changes based on the budget of the previous fiscal year (Barr and McClellan 2018). A fundamental assumption of incremental budgeting is that institutional priorities and the opportunities that exist in the broader marketplace are stable, thus providing a basis by which predictions can be made with reasonable accuracy. However, in times of uncertainty, incremental budgeting may limit responsiveness to changes to institutional priorities, market conditions, or emerging opportunities (Barr and McClellan 2018).

Institutions with incremental budget models may be challenged to respond to rapid changes in the marketplace. For example, institutions may experience difficulty responding to unexpected increases in operating expenditures or decreased revenue due to a pandemic. In addition, the more fluid nature of the graduate admissions process presents unique challenges to the incremental budget planning process because it does not account for changes in future enrollments and revenues. Incremental budgeting places added pressure on graduate SEM as a critical anchor to bolster undergraduate enrollment shortfalls or to balance an increase in unanticipated expenses. Therefore, the nature of incremental budgeting, in its purest form, provides minimal incentives for exceeding enrollment goals.

Those involved in graduate SEM at an institution with an incremental budget model should consider the following questions:

- How have marketplace trends or strategic opportunities been accounted for in the development of my institution's budget?
- How does my institution incentivize program growth and entrepreneurial activities?
- How does my institution allocate resources in support of graduate SEM functions?

Responsibility Center Management

The previous models discussed in this article generally apply to institutions with centralized organizational structures in which financial decisions are made by central administration and financial resources are allocated by central administration to the academic colleges, schools, and departments. Responsibility center management (RCM), also commonly referred to as revenue center management, is a decentralized budget model that shifts responsibility for financial decision-making from central administration to “revenue centers.” Revenue centers are commonly individual academic units such as academic colleges, schools, or departments within a larger university structure. Under RCM, revenue centers are allocated a portion of the revenue they generate as a means of incentivizing entrepreneurial activities and strategies.

Given that there is often less centralized control at the graduate and professional levels, in RCM environments, revenue centers often employ SEM professionals who develop and implement strategies and tactics to achieve student enrollment headcount and net tuition revenue goals (Paris 2020). These SEM professionals frequently work within a “local” context in which they are responsible for building sustainable enrollments for a particular academic college, school, department, or program. SEM professionals embedded within revenue centers have the advantage of tailoring strategies to a specific set of academic programs and aligning these strategies with the underlying value propositions of each program. In theory, RCM affords revenue centers the decision-making authority to respond swiftly to changes in the marketplace. However, SEM professionals in RCM environments must also work within a set of constraints: a limited range of academic program offerings, uneven distribution of graduate SEM resources across revenue centers, and internal competition for resources (principally credit hours) that can thwart interdisciplinary collaboration.

Those involved in graduate SEM at an institution with a RCM budget model should consider the following questions:

- How do revenue centers engage in coordinated efforts to attain institution-wide graduate enrollment and tuition revenue goals (*e.g.*, development of interdisciplinary academic programs) or are GEM practices fragmented and academic program centric?
- How are revenue centers resourced to effectively manage graduate enrollments and tuition revenue?
- To what extent are graduate SEM practices aligned with the broader institutional mission or the “localized” mission of each revenue center?

Zero-Based Budgeting

Zero-based budgeting can be applied in both centralized and decentralized organizational structures. This model has one prevailing notion: each item in the budget must be justified when the budget is being developed. In other words, no program, initiative, or service is assumed to continue from one fiscal year to the next (Barr and McClellan 2018). Given its start-from-scratch underpinnings, zero-based budgeting may invoke anxiety regarding program or service discontinuation. Therefore, not only do SEM professionals play a central role in ensuring robust enrollments, but in quelling fears that essential services in support of students may be suspended or discontinued. Conversely, a strength of zero-based budgeting is the close linkages between institutional priorities and planned allocations of the financial resources to support these priorities. Unlike incremental budgeting, the rebuilding of zero-based budgets is time and labor intensive and often only applies to small academic and administrative units (Barr and McClellan 2018).

SEM professionals should be aware of zero-based budgeting because the model may result in substantial fluctuations in the allocation of resources that support specific programs and services. Fundamental to zero-based budgeting is the concept of return on investment (ROI), which ties resource allocation to outcomes. Graduate SEM professionals should understand how the institution calculates the ROI on the resources allocated

to support the graduate SEM functions of each unit (Paris 2016). The calculation of ROI can be challenging because (1) the expenditures and returns often are not directly linked; (2) while expenditures are easily quantified, important educational outcomes are not. SEM professionals at institutions using zero-based budgeting should understand the need to justify each dollar allocation and be prepared to lose resources if the return is deemed inadequate.

Those involved in graduate SEM at an institution with a zero-based budget model should consider the following questions:

- ▶ How are institutional priorities and planned allocations of financial resources linked to annual enrollment headcount and tuition revenue goals?
- ▶ How is the relationship between graduate enrollment and tuition revenue metrics related to the financial stability of programs and services?

- ▶ What tools, resources, or data are available to demonstrate efficiency and return on investment?

Discussion

Presented in Table 3 is a four quadrant matrix that highlights potential attributes and considerations based on the level of centralization inherent in budget models and graduate SEM structures.

The historic reliance on undergraduate tuition revenue has resulted in many institutions developing robust undergraduate enrollment management models. However, the declining enrollment of traditional-aged undergraduate students has placed greater focus on graduate enrollment as a means of ensuring fiscal sustainability. As institutions turn to graduate education to balance their budgets, those responsible for graduate education may experience increasing pressure to implement SEM practices. However, they are likely to become

TABLE 3 ▶ Attributes of Institutional Budget Models and Graduate SEM Structures, by Level of Centralization

Budget Model	Graduate SEM Structure	
	Centralized	Decentralized
Centralized	▶ Provides greatest alignment between senior leadership's interpretation of university mission, overall graduate enrollment goals, and budget model principles ▶ Maximizes financial decision making authority at the university level ▶ Supports the influence of graduate SEM on university decisions that may affect graduate education ▶ Promotes expedient reallocation of resources toward specific priorities and emerging opportunities ▶ Separates university decision making and service delivery at the "local" level	▶ Provides minimal alignment between senior leadership's interpretation of university mission, unit level graduate enrollment goals, and budget model principles ▶ Supports minimal influence on decision making at the university level, particularly on decisions that may affect graduate education ▶ Limits expedient reallocation of resources toward strategic priorities at the "local" level
Decentralized	▶ This model may exist in limited institutional settings. Given the nature of this model, graduate SEM structures are likely to exist both at the central (e.g., Graduate School) and Academic Unit (college, school, department) levels. In pure form, this model is unlikely to function effectively in meeting institutional goals due to the misalignment between financial decision making authority and the graduate SEM structures necessary to generate financial resources at the academic unit level.	▶ Provides greatest alignment between primary financial decision making authority and the strategic priorities of the academic units within which graduate SEM functions. These priorities are not always the same as university priorities. ▶ Misaligns university decisions (e.g., setting tuition prices) with the strategic priorities at the academic unit level. This misalignment may present specific challenges for graduate SEM.

frustrated if they do not believe they have the access to the resources necessary to do so. Because access to resources is dependent on the principles of a budget model, it is critical for graduate SEM practitioners to understand the relationship between these principles and the resources available to support the execution of graduate SEM strategies.

The matrix we present illustrates four possible quadrants connecting budgets and graduate SEM structures based on the centralization or decentralization of these models. Institutions rarely fit into a single quadrant, as few institutions implement a discrete budget model nor a fully centralized or decentralized graduate SEM structure. The size and scope of graduate education at any specific institution requires it to adopt budget and graduate SEM models to meet particular objectives and needs. Large and complex institutions with high numbers of graduate programs are more likely to have decentralized budget models and graduate SEM structures. Conversely, small institutions with fewer graduate programs are more likely to have centralized budget models and graduate SEM structures.

As noted in the matrix above, institutions with a decentralized budget model and centralized graduate SEM structure may experience problems because of competing priorities that arise between academic units and the centralized graduate SEM unit (*e.g.*, graduate school or graduate admissions). In this configuration, academic units are responsible for revenue generation and establishing their own priorities, yet are dependent upon the performance of a centralized graduate SEM unit that provides administrative and technical support and conducts prospective student outreach. However, the centralized graduate SEM unit does not bear the financial responsibility for the attainment of enrollment goals. Further, the centralized graduate SEM unit may lack the resources and “local knowledge” of the academic programs for which they recruit prospective graduate students.

A centralized budget model and decentralized graduate SEM structure also presents specific challenges. This arrangement may seem attractive to institutional leaders because it keeps perceived costs lower by limit-

ing the need for a large centralized graduate SEM unit. However, it results in the delegation of many graduate SEM functions to academic units that may not have access to the data, technology, personnel, and the financial resources needed to effectively execute enrollment management strategies. This may also result in the duplication of graduate SEM efforts among numerous academic units.

It may be tempting for institutional leaders to believe that developing graduate SEM structures similar to undergraduate enrollment management models will yield comparable results. However, some budget models may not support centralized graduate SEM structures. For example, RCM models are best aligned with decentralized graduate SEM structures as revenue generating activities are incentivized at the academic unit level. Further, graduate SEM relies on close working relationships and collaboration between administrators and graduate faculty members to meet goals (Posselt 2016).

Conclusion and Advice for Practitioners

This article concludes with some further context to the ideas we presented. Individuals new to graduate SEM must become competent in the skills and language of the profession. Mastering these competencies is not enough to be successful because their application occurs within a budgeting model. Budget models exist within an organizational context and institutional culture. As strategic enrollment management has evolved, each subsequent approach promises better solutions to complicated problems if only the end users can adopt them quickly (or at least faster than their competitors) and identify the proper level of resources needed to execute them effectively. Increasingly, these approaches ask decision-makers to believe in rational decision-making informed by data. Practitioners familiar with campuses, perhaps especially in matters related to graduate education, know that data are rarely current enough, accurate enough, or robust enough to convince everyone of the proper rational decision to a given problem. They also know that campus leaders frequently make decisions that seem rational from their perspective but not nec-

essarily to those who are actually tasked with carrying out the decision.

The existing financial pressures on institutions are likely to persist for the foreseeable future. Woodard and von Destinon (2000) suggest that “no one budgeting model is sufficient to meet the changing financial landscape and shifting needs of higher education” (p. 336). Even if an institution perfects and fully integrates its GEM model and budgeting system, managing graduate enrollments presents challenges. For example, if campus leaders had forewarning of COVID-19, there are lim-

ited and constrained actions that could have reasonably been taken to ensure adequate graduate enrollments.

Overall, GEM professionals should remain prepared to make the case for the support of graduate education and the potential it could have in addressing declining undergraduate student enrollments. Understanding the opportunities and challenges presented by the type of budget model an institution maintains allows GEM and related professionals to develop strategies designed to generate new resources necessary to support the strategic needs of the organization.

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