

The Need for Performance Management Systems in Public Higher Education

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Spending in higher education has increased at phenomenal rates and is demonstrating diseconomies of scale. The primary driver is increased administrative spending. Most universities are managed with a compliance, rather than a performance, mentality. Performance management systems (PMS) are rarely developed in higher education or utilized by management to highlight continuous improvement. A conceptual framework of how to develop a PMS architecture is presented. PMS is illustrated using a regional public university's data. The conclusion is that it is virtually impossible to accomplish the institution's mission effectively and efficiently without the ability to make informed, fact-based decisions through a PMS.

INTRODUCTION

Public higher education has become a growth industry (Greene, Kisida & Mills, 2010). Spending on education in the United States (US) is now approximately 15% of annual government expenditures and student debt has swelled to more than \$1 trillion (Thompson, 2017). Exponentially rising costs over the past few decades have placed the accessibility of US colleges in jeopardy.

While costs have increased, concerns over quality have emerged. Belkin (2017) reports that college seniors are unable to make cohesive arguments, assess the quality of evidence in a document or analyse tabulated data. Arum and Roksa (2011) support the concept that students lack critical thinking skills.

This paper advocates the issue is one of governance. Specifically, leadership is not demanding metrics that inform management of where and how to improve. US public universities, like most government entities, are managed with a compliance mentality due to copious budgetary, regulatory and legal requirements. Accordingly, compliance requirements often overshadow administrators' views of organizational performance, so that performance takes a back seat to compliance.

Performance, as defined in this discussion, relates to outcomes resulting from an effective and efficient accomplishment of mission. Budget accounting relates to functional authority to consume resources and often has little relationship to activities that are tied to outcomes since activities that create outcomes often cross budget lines. The result is a tangled Gordian Knot of resources that obscures the activity-outcome relationship and hampers the ability to manage effectively and efficiently.

While compliance requirements are mandatory and necessary, they are not sufficient for assessment of entity performance. Furthermore, budget accounting and financial reporting requirements under

generally accepted accounting principles (GAAP) obscure relationships between resource consumption and outcomes (Herzlinger, 1996; Rahman, 2015; Gordon & Fischer, 2011), which makes internal analysis for continuous improvement problematic.

While concerns over costs and quality continue, nothing in the public higher education management accounting model changed. Current GAAP provides financial statements that are not very useful (Herzlinger, 1996). Other suggested approaches to supplement GAAP financial reporting for colleges and universities have met with overwhelming preference of knowledgeable users of university financial statements for purposes of making internal business decisions (Gordon & Fischer, 2015).

This paper's premise is that rising costs and declining quality are the result of the inability to obtain relevant and reliable operational data, coupled with a severe lack of accountability of universities to their stakeholders. These conditions can lead to toxic cultures where decisions are made based on internal politics in the vacuum of reliable information. This, in turn, leads to the dysfunctional results the industry is currently experiencing (Parker, 2013; Martin, 2012).

Accordingly, this paper's purpose is to describe and propose a performance management conceptual framework for public universities to enhance sense-making of operations and to stimulate a continuous improvement dialogue. This paper begins by reviewing the relevant literature on the use of performance management systems (PMS) in universities and related research on accountability and monitoring. A framework is suggested for a PMS designed to inform administration about opportunities for continuous improvement and illustrate application of the framework. Finally, the discussion offers conclusions based on the belief that the suggested framework affords transparency and provides accountability for effective and efficient use of institutional resources.

LITERATURE REVIEW

This review is divided into components. First, a discussion of previous research on costs and quality in higher education is presented. Next is a review of the extant research on the use of PMS in higher education. Finally, the lack of substantive PMS because of traditional higher education governance is examined. The discussion concludes with a presentation of a PMS conceptual framework for universities.

Management of Costs and Quality in US Higher Education

The trajectory of costs has continued to spiral upward unabated, as higher education has become a growth industry in the US and Big Business. Callan (2008) reports that spending in higher education has increased at a rate of almost double that of healthcare. From 1982-2016, the US Bureau of Labor Statistics reports tuition and fees have grown at about 800%, which is almost four times the change in the consumer price index (CPI) (SHEEO, 2017). From 1990 through 2016, tuition grew an average of 6% a year, more than double the rate of inflation (Mitchell, 2017).

While enrollment has increased, US higher education spending has increased at a faster rate causing diseconomies of scale. From 1993-2007, enrollment increased 15%, but instructional spending increased 39% per student, while administrative spending per student increased at over 60% per student (Greene, Kisida & Mills, 2010).

The primary driver of college and university costs is administrative spending. Vedder (2004) notes that some universities spend as much as 80% of their total budget on administration. Similarly, Rahman (2015) reports the major part, 70%, of higher education expenditures are related to administrative costs. Gordon and Fischer (2011) found similar results in an analysis of spending in a state-supported university system. The US Department of Education also reports administrative positions at colleges and universities grew by 60 percent between 1993 and 2009 which Bloomberg reported was 10 times the rate of growth of tenured faculty positions (Campos, 2015).

Management of higher education has been under scrutiny for decades due to a continuing cost spiral without actively addressing the issue (Guskin, 1994; Bowen, 1980; Levin, 1991; Zemsky & Massey,

1990; Langfitt, 1990). A lack of accountability, coupled with governance issues, appear to be at the heart of the solution (Gordon & Fischer, 2011; Fischer & Gordon, 2016; Alach, 2017b; Doost, 1998).

Ironically, decades ago, the Governmental Accounting Standards Board (GASB) in its Concept Statement No. 1 (GASB, 1987) identified the ability to evaluate stewardship of governmental entities as more important than those of private enterprise. Despite this admonition, Herzlinger (1996) notes that the operations of most governmental entities are, not only shrouded in secrecy, but that their financial reports are not useful for purposes of evaluating management stewardship.

Coupled with issues of rapidly rising costs, concerns over quality are emerging (Immerwahr, 2004; Symonds, 2003). Arum and Roksa (2011) point out that US college graduates do not improve their critical thinking skills through college. This finding is supported by Belkin (2017) who reports college graduates show little or no improvement in critical thinking over four years of studies. However, these findings are disputed by Loes, Salisbury and Pascarella (2015) who report collegiate organized instruction is positively associated with critical thinking gains regardless of students' precollege preparation or background characteristics.

Declining quality and rising costs over decades without change in the management model would seem to confirm that governance is the root cause. In fact, Zemsky and Massey (1990) believe that administrators of US universities, who decide resource allocations and policies, have lost their sense of discipline and mission focus.

As conditions deteriorate, it is noteworthy that management accounting systems are simply not employed in universities (Rahman, 2015). Without a formal PMS, management will not be consistently and systematically informed of ways to promote effective decision making about costs and quality.

Performance Management Systems in US Higher Education

Performance has long been a concern in higher education. Performance indicators were explored as early as the 1960s (Choong, 2013), but no consensus was reached on which model or dashboard better displays efficiency and effectiveness of higher education's instruction, research and public service achievements. During the early years of experimentation with performance measures, multiple accounting displays sprang up in multiple states for various reasons (Deweese and Gaither, 1997; Dill, 2007). As a result, both the Financial Accounting Standards Board (FASB, 1980) and the Governmental Accounting Standard Board (GASB, 2003) endorsed the concept of reporting both financial and nonfinancial information, but neither Board proscribed reporting nonfinancial information.

The only financial and nonfinancial reporting mandate for US higher education is the Integrated Postsecondary Education Data System (IPEDS) a system of interrelated surveys conducted annually by the National Center for Education (NCES, 2018) maintained by the US Department of Education. Nevertheless, IPEDS data is not a PMS. Furthermore, IPEDS data is unaudited and self-reported. Past research shows it is subject to management manipulation (Martin, 2013).

Over the past three decades, discussion of US higher education performance measures has become more prevalent because of rising costs and declining quality. Performance measures popularity evolved as they were a basis for better allocation of resources, a better method to provide information to the external public and afford organizational benchmarking (Dill, 2007; Cullen *et al.*, 2003; Turner, 2011).

Alach (2017a) reports research output is the most commonly reported performance measure, but this is a very narrow dimension of performance. Much of the performance literature in higher education centers on teaching and research. Much of the research comes from outside of the US, and a great deal of it is in the form of case studies. This perspective on PMS relates to the entity, or departments within the entity, in terms of its degree of accomplishment of mission and goals in an efficient manner. This is a much broader definition than merely evaluating teaching and research and addresses management of the university.

A PMS is a tool for management's internal use to highlight a path to continuous improvement. Continuous improvement is the conduit through which externally reported results are improved.

While some research exists on employee performance in higher education, little exists on management systems that enable continuous improvement. The basic idea is to develop an information

architecture that systematically provides information that enhances the probability of institutional improvement (Forrester, 2011). This implies a need for disaggregated data.

In government, there has been concern that management often has a *laissez faire* attitude concerning the need to hold individuals responsible for meeting goals and objectives (Pollitt & Bouckaert, 2000; Doherty & Horne, 2001). Nevertheless, attempts to bring PMS into government and higher education have been met with significant resistance (Alexander, 2000). Taylor & Baines (2012) suggest that much of the resistance is focused on the notion that performance measurement techniques come from the business world. Garretson (2006) notes that many higher education organizations are led by managers who have never worked in corporate environments where they have had exposure to applications that revolutionize business/administrative processes (Garretson, 2006).

Consequently, administrators may not understand what a powerful tool a PMS represents. Or, as Drengenberg and Bain (2017) note, educators may attempt to emulate business metrics and practices without an understanding of how to adapt them to higher education, which results in a simplistic PMS that is not meaningful.

Case Studies

Broad and Goddard (2010) undertook a case study based on semi-structured interviews in two separate universities in the United Kingdom (UK) that purport to use PMS. They concluded that PMS in these two universities are amorphous and that the universities appear resistant to change. While both universities had strategic visions and strategic documents, there was little evidence of the use of performance metrics so that the PMS was essentially decoupled from management. Accordingly, their use dwindled.

Furthermore, metrics utilized by these universities were measures mandated for external reporting for various regulatory and accrediting associations that had little relevance for internal purposes of improvement (Broad & Goddard, 2010). While the strategy documents in these cases set targets, they were not integrated into a PMS. Essentially, the PMS operated in a void, with no formalized feedback and was not utilized as a management tool.

Broad and Goddard (2010) found that some departmental data was utilized at the university level but was condensed to the point that departments lost their identity so that there was no way to determine how individual departments were performing. It was suggested that this was due to the ability to avoid blame at the departmental level, which diminished the ability to take corrective actions. This defeats the purpose of establishing a PMS.

Broad and Goddard's (2010) findings parallel the findings of other research concerning the efficacy of strategic planning. Gordon and Fisher (2015) found that while universities uniformly create strategic documents because of accreditation requirements, they do not follow up with actual results compared to planned results. In other words, it appears typical that university management establishes a partial and superficial PMS but does not use it. Consequently, it operates without feedback and is of little utility for management purposes.

Cultural change is required before meaningful performance management can take hold. Many institutions are mired in autocratic management (Melo, Sarrico & Radnor, 2010) and it will require real leadership to change the governance model in higher education (Hubbell, 2007). Reduced usefulness of financial statements and diminished ability to evaluate stewardship produce conditions that are ripe for agency problems. The stewardship duty is recognized as more significant in governmental entities than in private industry (GASB, 1987). Higher education management has the option of disclosing information about the university on a voluntary basis. Withheld disclosure potentially represents bad news, whereas transparent disclosures tend to represent good news (Mahoney, 1995). Currently, management makes decisions on what to disclose, and given previous research that suggests administrators may manipulate self-reported data to IPEDS (Martin, 2013; Martin, 2012), a more structured and defined reporting model could make resource consumption and outcomes more transparent for stakeholders.

Lack of PMS as a Governance Issue

Related research concludes that non-profit organizations can evolve into worker cooperatives (Pauly & Redisch, 1973). In a worker cooperative, the elite workers, in this case administrators, establish policies and pay that favor themselves. This theory could provide support and explanation for the diseconomies of scale in higher education driven by administrative costs that Greene, Kisida and Mills (2010) and Ginsberg (2013) report.

Additional research related to agency theory points to governance issues with non-profits. Krishnan, Yetman and Yetman (2006) found that non-profit entities can distribute “profits” to managers by management decisions to spend more than necessary to accomplish the entity’s mission. This conclusion is consistent with Greene, Kisida and Mills (2010) who concluded that university administrators are essentially *de facto* owners, acting in their own self-interests through the purposeful allocation of higher pay to themselves and/or causing additional administrators to be hired so that their own workload is reduced. These findings are similar to Pauly and Redisch (1973) above and suggest the operation of agency issues, as well as concerns of moral hazard and ethical judgment. Relying solely on GAAP financial reports obscures these facts.

Research specifically conducted on the University of Illinois admission scandal attempts to clarify the interactions between cognitive biases, environmental factors, organizational structures and ethical misconduct by administrators (Harris, 2015). He relies on “ethical fading” as an explanation of how administrators can rationalize misconduct in the pursuit of university mission. Harris (2015) concludes that the potential for misconduct in universities is higher than is normally assumed by the general public.

Moore *et al.* (2006) argue in an environment of increasing scrutiny, as higher education is currently facing, that moral seduction pressures are increased. To compound the problem, Ginsberg (2013) supported by Alach (2017a) claims that the expansion of university administration has not been accompanied by appropriate controls.

Beyond financial reporting, Martin (2013) discovered evidence of “managed” data reporting which indicated a shift in spending choices from administration to instruction. He analysed self-reported IPEDS data from universities and concluded that purported shifts in spending were probably the result of changes in expenditure classifications made by administrators, rather than actual shifts in resource allocations to instruction. He further speculates that the motivation for reporting misleading data is to combat the criticism of “administrative bloat”. He maintains that manipulation is easily done since there is no independent verification of self-reported data, indicating an agency issue.

In short, administrative resistance to change in the *status quo* could be a result of contented administration. Administrative contentment is exacerbated by GAAP accounting that obscures resource allocations, rather than making them transparent. Administrators’ lack of understanding of the power of PMS to inform decision making could be another factor in continuing decline in cost productivity and quality.

A Performance Management Conceptual Framework

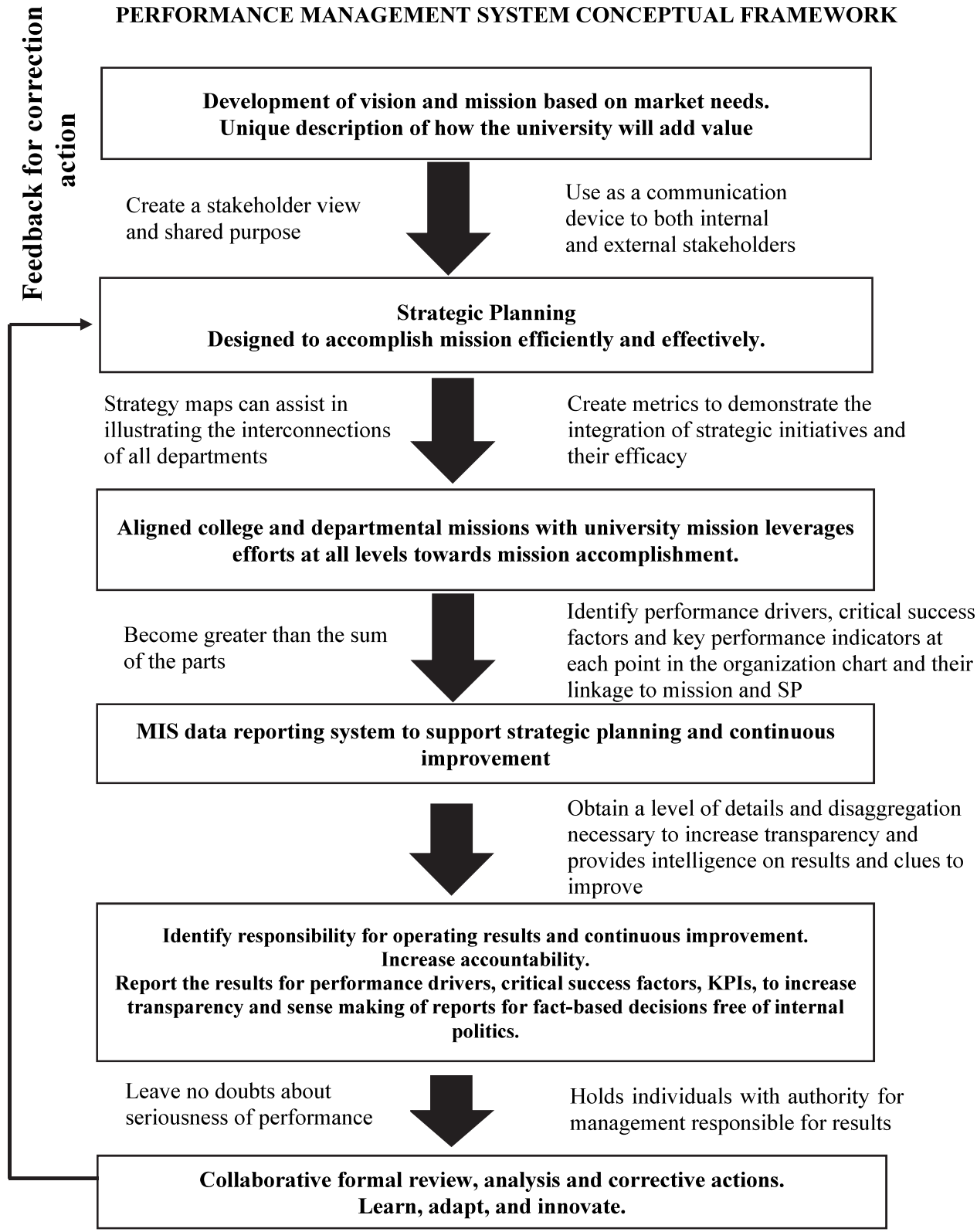
A conceptual framework for a performance management system should be holistic and promoted by leadership that insists on the use of transparency, metrics and fact-based decisions. Figure 1 is a graphical display of how a holistic, conceptual framework for a PMS might work. Furthermore, mission and strategy need alignment to enhance performance, and this alignment precept applies to all organizations, regardless of purpose (Anderson, 2017).

The mission of any organization provides a context for performance. Without a profit metric, the context for performance becomes crucially important, as there is no metric reflective of overall performance for non-profit and governmental agencies. Unfortunately, most university missions are long and amorphous, full of platitudes. Most are formulated in isolation based on what educators think the university should do, without reference to market needs. This may be one reason the market is so unsatisfied with college graduates.

The strategic planning process should be designed to establish strategic initiatives to accomplish the university mission in an effective (quality) and efficient (cost) manner. Unfortunately, it appears most

university strategic plans are developed as a response to accrediting requirements, rather than actual strategic thinking. Once developed for the accrediting agencies, strategic plans usually are shelved until the next accreditation cycle.

FIGURE 1
PERFORMANCE MANAGEMENT SYSTEM CONCEPTUAL FRAMEWORK



While many universities have a superficial planning process that checks all the boxes, substance is lacking not only from the strategic thought perspective, but also from a deployment perspective. Strategic plans are very powerful management tools for continuous improvement purposes. Thoughtful strategies and management review of results based on measurable goals and objectives provide insightful intelligence on progress toward goals and clues concerning continuous improvement.

Once the university mission is established, all departments, support and academic, should create missions that are aligned with the overall mission. Doing so communicates to all faculty and staff as well as other stakeholders what the overall objective is, which is often lost in the daily grind. The result is that all employee efforts are focused on accomplishing mission and the efforts are leveraged toward an overall common goal.

Once missions are aligned, critical success factors and key performance indicators (KPI) are established for each department and point on the organisational chart to create a mosaic of performance metrics. These metrics should highlight two dimensions: effectiveness and efficiency.

An information system should be designed and built around the architecture of the PMS. Reports from the information system can be derived at top levels and drilled down from there to the lowest organisational level to highlight strengths and weaknesses at different points in the value chain. The result is to provide transparent reports that make sense of operations for continuous improvement and to filter out any internal political dynamics so that decisions are fact-based. That is, resource consumption rates (efficiency) can be linked to outcomes (effectiveness).

Making specific individuals responsible for results of specific processes over which they have control will increase accountability. Increased accountability, coupled with increased transparency, produces improvement.

Finally, top management should require formal assessment of results on a periodic basis. The purpose is not to meet accreditation requirements, but to discover where and how operations and results can be improved, taking corrective actions, and closing the loop.

Note that the budget is ignored in this conceptual framework. Budget accounting accomplishes a completely different objective that is not performance related, but compliance-oriented. Therefore, it is of little use for a PMS.

If leadership is not serious about a PMS, the same result that Broad and Goddard (2010) reported will likely occur. That is, a PMS will be superficial or unused, if not both. The real issue is one of leadership fostering the idea that a PMS paves the road to continuous improvement.

ILLUSTRATION AND ANALYSIS

The data for this explanatory PMS example is from a Southern regional public university (RPU). The university has grown rapidly over the last few years and has five academic colleges. RPU's PMS appears to be relatively like most universities in that it is quite rudimentary. For example, there are no higher-level goals and objectives directly associated with mission that can be identified. The same is true for the strategic plan. While there are numerous strategic initiatives, there are no measurable goals associated with them.

What follows is a set of suggestions concerning an appropriate PMS to be used by one of the five academic colleges, hereafter referred to as the College 3. College 3 follows the example of RPU in that no goals or objectives derive from the mission. College 3 also has an elaborate strategic plan with numerous initiatives and plans. However, the plan confuses metrics with deadlines. All metrics are identified as deadlines with no measurable goal.

With respect to lower level metrics and operational data, the devil is in the details. Exhibits 1, 2 and 3, illustrate how disaggregated data might be used to assist administrators in evaluating stewardship and performance.

Financial accounting and reporting for higher education does not present data in a form that enables a linkage of resource consumption to outcomes because GAAP format is required. Nevertheless, administrators can supplement GAAP with more managerially adept information, disaggregated and

formatted in a way that enables transparency and accountability. For example, Exhibit 1 displays the direct costs for each academic college in RPU together with the performance of each college with respect to direct costs and tuition earned.

Exhibit 1 utilizes Value Stream Accounting (VSA) which organizes costs by value streams, the academic colleges that produce the core mission of universities, so that cost allocations become more transparent and responsibility for costs more obvious. Prior research finds the VSA presentation is preferred by knowledgeable university administrators i.e., 88% versus 12%, preferring GAAP reporting for internal decision making (Fischer & Gordon, 2016). Note the allocation of costs by college and between academic colleges, as well as the allocation of costs to administrative support costs, identified in Exhibit 1 as Entity Sustaining Costs, are much more transparent. In this example, only 24% of all expenditures are directly controlled by the academic deans, who administer the college core mission.

Exhibit 1 also calculates the cost of each college to award a degree. These costs can be used for intra-university comparisons as well as inter-university comparisons with peers. It is interesting that the dean of College 3 boasted that the college was the most efficient college at RPU. Apparently, the claim was based on average class size rather than efficiencies or effectiveness. While the College 3 may have been the most productive with respect to class size, once cost and other financial measures are included, the college is not the most efficient.

A commonly used measure of cost efficiency is cost per degree. College 3 is the second lowest utilizing this measure. Exhibit 1 also shows that the college is the third highest in terms of return on revenue. Therefore, the dean's claim is somewhat suspect, but neither was it challenged since the data in Exhibit 1 not compiled or made available for decision-making.

From this point, an operational dashboard can be initiated, and administration can drill down to lower levels of the organization. For example, see Exhibit 2, a VSA report for College 3. This college has five academic departments. Each department represents a value stream within the college. The college devotes 81% of total expenditures to the classroom and 19% of total expenditures to administration. These results can be compared to peer colleges as a measure of efficiency and productivity. Three academic departments are clustered in the range of 27-29% for return on revenue. Two others fall above and below that range. Note the totals for the college tie back to the College 3 column in Exhibit 1.

It should be noted that the data presented in Exhibit 2 is a combination of estimated and actual data because a large percent of the actual data is considered proprietary by the Dean. Using information from other sources, estimations were made for the unavailable information. The purpose of the presentation is to illustrate how a PMS can be constructed.

EXHIBIT 1
VALUE STREAM OPERATING STATEMENT OF REGIONAL PUBLIC UNIVERSITY

Total Tuition Revenue	College 1	College 2	College 3	College 4
Total Direct College Expense	\$ 5,000,000	\$ 15,000,000	\$ 9,000,000	\$ 3,000,000
Net Operating Margin of Colleges/Unassigned	\$ 4,000,000	\$ 9,000,000	\$ 8,000,000	\$ 3,000,000
Return on tuition	\$ 1,000,000	\$ 6,000,000	\$ 1,000,000	\$ -
Total Other Revenue	20%	40%	11%	0%
Entity Sustaining Costs				
Instruction				
Academic Support				
Research				
Public Service				
Institutional Support				
Student Services				
Operation and Maintenance of Plant				
Scholarships and Fellowships				
Auxiliary Enterprises				
Depreciation and Amortization				
Total Entity Sustaining Costs				
Net Margin on Entity Sustaining costs compared to other revenue				
Net Entity Margin				
Direct cost per FTE student				
Per Degree granted	College 1	College 2	College 3	College 4
	10,250.17	21,997.60	10,483.53	15,297.45

EXHIBIT 1 (CONTINUED)
VALUE STREAM OPERATING STATEMENT OF REGIONAL PUBLIC UNIVERSITY

Total Tuition Revenue	College 5	Unassigned	TOTAL	Percent
Total Direct College Expense	\$7,000,000		\$39,000,000	
Net Operating Margin of Colleges/Unassigned	8,000,000	\$2,000,000	34,000,000	24%
Return on tuition	(1,000,000)	(2,000,000)	5,000,000	
Total Other Revenue	-14%	0%	\$92,000,000	
Entity Sustaining Costs				
Instruction			25,000,000	
Academic Support			17,000,000	
Research			1,000,000	
Public Service			1,000,000	
Institutional Support			17,000,000	
Student Services			11,000,000	
Operation and Maintenance of Plant			9,000,000	
Scholarships and Fellowships			3,000,000	
Auxiliary Enterprises			10,000,000	
Depreciation and Amortization			13,000,000	
Total Entity Sustaining Costs			\$107,000,000	
Net Margin on Entity Sustaining Cost compared to other revenue			-\$15,000,000	
Net Entity Margin			-\$10,000,000	76%
Direct cost per FTE student				
Per Degree granted	College 5			
	13,378.47			

EXHIBIT 2
VSA FOR COLLEGE 3 DISAGGREGATED BY DEPARTMENT (THOUSAND \$)

College 3	Dept A	Dept B	Dept C	Dept D	Dept E	Total
Revenue (tuition)	\$ 2,100	2,550	1,300	1,650	1,400	9,000
Total Direct Expenditures	\$ 1,500	2,000	800	1,200	1,000	6,500
Dept Operating Margin	\$ 600	550	500	450	400	2,500
Return on revenue	29%	22%	38%	27%	29%	
Other Revenue						
College Sustaining Costs i.e., administrative cost						\$ 1,500
College Operating Margin						\$ 1,000
College Return on Tuition as a %						11%

A deeper dive into the data can be conducted into operational metrics to create an operational dashboard within College 3 by department.

Beginning at the top of Exhibit 3, the most productive department in terms of SCH production is Department B. The most efficient department in terms of cost/SCH is Department E. Curiously, while Department B generates the most SCHs, it is quite costly relative to the other departments. Furthermore, while Department E has the lowest cost per degree, Department B has the highest cost per degree.

Exhibit 3 provides administrators in College 3 with disaggregated data that can be analysed to determine why the Exhibit 3 results were obtained. Analysis of the data exposes innocuous reasons for the results or even reasons outside of the control of individual department leader. On the other hand, there may be practices by one or more department chairs with positive results that can be emulated by other chairs to improve efficiency. In other words, once the data is analysed, administrators *learn* what needs to be addressed.

The next group of statistics relates to class size and faculty/student ratios. While it is somewhat of a mixed bag, in general it conforms to the cost data discussed earlier.

The second section of Exhibit 3 illustrates the cost of faculty deployment by Instruction, Research, Service and Administration. One indication of why Department B is high cost with the lowest return on revenue may relate to the relatively high use of faculty assigned to administrative responsibilities.

Given the recent criticisms of administrative bloat (Desrochers & Kirshstein, 2014), the compliance report data illustrates how research and teaching FTEs compare to administrative FTEs. Again, Department B stands out with the lowest ratio, indicating a relatively high number of administrative FTEs. The college has an exceptionally low ratio, indicating the possibility of administrative bloat at the college level.

EXHIBIT 3
COLLEGE 3 OPERATING DATA BY DEPARTMENT

Productivity	Dept A	Dept B	Dept C	Dept D	Dept E	Total
SCH (student credit hours) Taught	9600	24000	5000	6000	5000	
Direct departmental Cost/SCH	168	180	125	210	75	
Cost per degree granted	14,557	25,556	17,424	12,778	6,021	9,829
Average class size						
Graduate	63	58	13	30	32	32
Undergraduate	40	63	32	44	29	29
FTE Faculty	14	26	12	9	6	67
Student/Fac FTE	29	17	22	38	37	41
SCH/Faculty FTE	683	879	499	504	1020	732
Degree/Faculty FTE	7.9	4.5	6.6	9	19.1	11.7
Faculty Deployment by Function	(in 1,000)					
Instruction	\$1,000	1,200	400	700	500	\$503
Research	\$300	300	200	200	25	\$1,025
Service	\$100	150	100	100	150	\$600
Administration	\$100	350	100	200	100	\$850
Total	\$1,500	2,000	800	1,200	775	\$6,275
Teaching FTE/Admin-staff FTE *	5	6	5	6	4	2
Research FTE/Admin-staff FTE*	3	2	3	3	3	0.67
*from compliance report						
Effectiveness						
Research \$/peer reviewed journal articles	\$30	35	23	15	35	
Admin-staff \$/peer reviewed journal articles (includes college)	\$55	55	38	32	70	
Grad school admission reject rate by program	5%	0%	3%	0%	0%	
Grad school pass rate by program	70%	95%	90%	97%	98%	
Grad school results- critical think &/or competency exams %	80%	65%	80%	50%	45%	
Miscellaneous						
Online SCH/total SCH	35%	65%	30%	25%	35%	
Plant capacity classroom utilization						75%

The effectiveness section in Exhibit 3 indicates the cost-efficiency of research. While Department E has the highest cost, it may be due to the department's mission, which is technical application rather than applied research.

Within the effectiveness section is an analysis of the quality of graduate programs by department. Note some programs have a 0% reject rate for applicants. However, the same department has the highest completion rates which is a cause of concern.

Finally, the mix of online and face to face SCHs may be of interest. Presumably online SCHs are less costly. However, the costliest department, Department B, has the highest percentage of online classes.

DISCUSSION AND CONCLUSION

With a portfolio of performance measure metrics, administration gains better insight into operational effectiveness and efficiency. Without top-level information on goals and objectives of RPU, it is difficult to opine concerning effectiveness and efficiency of the university. Administrators are essentially flying blind. Their only ability to influence internal opinion and external stakeholders is to construct a narrative about performance, since GAAP accounting will not provide insight. Without data to form fact-based conclusions, the constructed narrative is not debatable.

Exhibit 1 provides information concerning resource allocation between academics and administration and efficiency of each academic college through calculation of a return on revenue. This creates greater transparency concerning administration's resource allocation decisions and college deans' management expertise. Furthermore, this reporting format enables a connection to strategic planning. For example, if College 5 contains a degree program that is established to meet a strategic need, it could explain the negative return on revenue.

By drilling down within each college, administrators can obtain more departmental-specific information. For example, while all departments in College 3 have positive returns, Department B has the lowest. This begs the question: why? By the same token, Department C has the highest, which once again begs the question: why? Are there best practices that can be gleaned from Department C? Are their justifiable management decisions made with respect to Department B which causes the low return? Is Department B a high cost area due to a low number of students?

Efficiency answers are not known without obtaining additional information from Exhibit 3, which provides detailed operational data. It turns out that Department B services the greatest number of students but has a relatively low number of degrees awarded. Department E, the highest return on revenue, serves the lowest number of students but has the lowest cost per degree. Why is this? Are these professors lower paid, yet graduating more students?

One clue concerning why Department B is costlier is provided under faculty deployment. A significant number of Department B faculty is deployed in instructional administration. Is this justified?

Data on effectiveness is important to consider. Research results based on faculty and administrative deployment gives a unique insight concerning teaching and research effectiveness.

The trends in costs and quality in higher education are continuing to deteriorate with little change in the management model. PMS in higher education is underdeveloped. Without disaggregated data, administrators are precluded from making effective decisions.

Administrators of US public universities have a fiduciary duty to proactively manage public resources to accomplish the university mission, which in all universities is devoted to the public good. It is virtually impossible to accomplish the mission effectively and efficiently without the ability to make informed decisions through a PMS.

The purpose of a PMS is to provide hints clues and ideas about where to look for areas ripe for improvement. A PMS stimulates administrators to begin a dialogue and to become active and proactive. The traditional approach to management in higher education is passive and budget-focused. A new and more enlightened approach is necessary to resolve the crisis of cost and quality as a proactive activity.

LIMITATION AND FUTURE RESEARCH

This study illustrates and examines PMS using only one college within an institution. The work is limited as many of the data elements are at best estimates due to lack of authentic data being provided by the College Dean.

Future research should be undertaken to replicate the analysis using actual data from several colleges within multiple institutions over time to verify the cost-efficiencies and administrative contribution of Performance Measurement System to higher education.

REFERENCES

- Alach, Z. (2017a). The use of performance measurement in universities. *International Journal of Public Sector Management*, 30(2), 102-117.
- Alach, Z. (2017b). Performance measurement maturity in a national set of universities. *International Journal of Productivity and Performance Management*, 66(2), 216-230.
- Alexander, F. K. (2000). The Changing Face of Accountability: Monitoring and Assessing Institutional Performance in Higher Education. *The Journal of Higher Education*, 71(4), 411-431.
- Anderson, D. (2017). COSO ERM getting risk management right. *Internal Audit*. (October), 38-43.
- Arum, R., & Roksa, J. (2011). *Academically adrift: Limited learning on college campuses*. University of Chicago Press, Chicago, IL.
- Belkin, D. (2017). Many colleges fail in teaching how to think. *The Wall Street Journal*, 269(130), A1.
- Bowen, H. R. (1980). *The Costs of Higher Education*. Jossey-Bass, San Francisco, CA.
- Broad, M., & Goddard, A. (2010). Internal performance management with UK higher education: An amorphous system? *Measuring Business Excellence*, 14(1), 60-66.
- Callan, P. M. (2008). The 2008 national report card: Modest improvements, persistent disparities, eroding global competitiveness. *Measuring Up 2008*, The National Center for Public Policy and Higher Education: San Jose, CA.
- Campos, P. F. (2015). The real reason college tuition costs so much. *New York Times Opinion*, April 5, 2015, SR4.
- Choong, K. K. (2013). Understanding the features of performance measurement system: A literature review. *Measuring Business Excellence*, 1(7), 102-121.
- Cullen, J., Joyce, J., Hassall, T., & Broadbent, M. (2003). Quality in higher education: From monitoring to management. *Quality Assurance in Education*, 11, 5-14.
- Desrochers, D.M., & Kirshstein, R. (2014). *Labour Intensive or Labour Expensive? Changing Staffing and Compensation Patterns in Higher Education*. AIR Delta Cost Project: Washington, DC.
- Deweese, V., & Gaither, G. (1997). The Texas A&M University system model: One size does not fit all. *Assessment Update*, 9, 6-7.
- Dill, D. D. (2007). *Quality Assurance in Higher Education: Practice and Issues*. University of North Carolina: Chapel Hill, NC.
- Doherty, D. L., & Horne, T. (2001). *Managing Public Services: Implementing Changes – A Thoughtful Approach to the Practice of Management*. Routledge: London, UK.
- Doost, R. K. (1998). Financial accountability: A missing link in university financial reporting systems. *Management Auditing Journal*, 13(1), 57-74.
- Drengenberg, N., & Bain, A. (2017). If all you have is a hammer, everything begins to look like a nail – how wicked is the problem of measuring productivity in higher education? *Higher Education Research and Development*, 36(4), 660-673.
- Financial Accounting Standards Board (FASB). (1980). *Statement of Financial Accounting Concepts (SFAC) No. 4 – Objectives of Financial Reporting by Nonbusiness Organizations*. FASB: Norwalk, CT.
- Fischer, M., & Gordon, G. (2016). Public college and university financial statements; Reformat enables strategic cost management. *Cost Management*, November/December, 1-7.

- Forrester, G. (2011). Performance management in education: Milestone or millstone? *Management in Education*, 25(1), 5-9.
- Garretson, R. (2006). The accidental CIO. *Insight*, 76, 62-70.
- Ginsberg, B. (2013). *The Fall of Faculty: The Rise of the All-Administrative University and Why it Matters*. Oxford University Press: New York, NY.
- Gordon, G., & Fischer, M. (2011). Accounting strategy to improve public higher education management. *Journal of Accounting and Finance*, 11(3), 11-25.
- Gordon, G., & Fischer, M. (2015). Strategic planning in public higher education: Management tool or publicity platform? *Educational Planning*, 22(3), 5-17.
- Governmental Accounting Standards Board (GASB) (1987). *Concepts Statement No. 1 -Objects of Financial Reporting*. GASB: Norwalk, CT:
- Governmental Accounting Standards Board (GASB) (2003). *Reporting Performance Information: Suggested Criteria for Effective Communication*. GASB: Norwalk, CT:
- Greene, J., Kisida, B., & Mills. J. (2010). Administrative bloat at American universities: The real reason for high costs in higher education. *Policy Report No. 239*. The Goldwater Institute, August 17, 2010.
- Guskin, A. E. (1994). Restructuring the role of faculty. *Change*, October, 16-25.
- Harris, N. F. (2015). The organisational trap of ethical fading: Privileging clout in admissions at the University of Illinois. *Proceedings of the 2015 AERA Annual Conference*. Chicago, IL, 31.042.
- Herzlinger, R. E. (1996). Can public trust in nonprofits and governments be restored? *Harvard Business Review*, March-April, 97-107.
- Hubbell, L. L. (2007). Quality, efficiency and accountability: Definitions and applications, *New Directions in Higher Education*, No. 140, Winter, 5-13.
- Immerwahr, J. (2004). *Public Attitude on Higher Education A Trend Analysis 1993-2003*. Public Agenda: New York, NY.
- Krishnan, R., Yetman, M. H., & Yetman, R. J. (2006). Expense misreporting in nonpublic organisations. *The Accounting Review*, 81(2), 399-420.
- Langfitt, T. W. (1990). The cost of higher education: Lessons to learn from the health care industry. *Change: The Magazine of Higher Learning*, 22(6), 8-15.
- Levin, H. M. (1991). Raising productivity in higher education. *Journal of Higher Education*, 62(3), 241-262.
- Loes, C. N., Salisbury, M. H., & Pascarella, E. T. (2015). Student perception of effective instruction and the development of critical thinking: A replication and extension. *Higher Education*, 69, 823-838.
- Mahoney, P.G. (1995). Mandatory disclosure as a solution to agency problems. *University of Chicago Law Review*, 62, 1047-1112.
- Martin, R. E. (2012). Higher education governance as a barrier to cost containment, *American Enterprise Institute for Public Policy Research*. American Enterprise Institute Conference. Available at <http://www.aei.org/events/2012/08/02/stretching-the-higher-education-dollar/> (accessed May 26, 2018).
- Martin, R. E. (2013). Do colleges and universities manage their financial reporting? *Challenge*, 56(5), 85-99.
- Melo, A. I., Sarrico, C. S., & Radnor, Z. (2010). The influence of performance management systems on key actors in universities: The case of an English university. *Public Management Review*, 12(2), 233-254.
- Mitchell, J. (2017). Colleges pull back tuition's long rise. *The Wall Street Journal*, 270(19), A2.
- Moore, D. A., Tetlock, P. E., Tanlu, L., & Bazerman, M. H. (2006). Conflicts of interest and the case of auditor independence: Moral seduction and strategic issue cycling. *Academy of Management Review*, 31(1), 10-29.
- National Center for Educational Statistics (NCES). (2018). *Overview of IPEDS (Online)* Available at: <http://nces.ed.gov/ipeds/use-the-data/overview-of-the-data/> (accessed April 24, 2018).

- Parker, L. D. (2013). Contemporary university strategizing: The financial imperative. *Financial Accountability & Management*, 29(1), 1-25.
- Pauly, M., & Redisch, M. (1973). The not-for-profit hospital as a physicians' cooperative. *The American Economic Review*, 63, 87-99.
- Pollitt, C., & Bouckaert, G. (2000). *Public Management Reform: A Comparative Analysis*, Oxford University Press: Oxford, UK.
- Rahman, M. (2015). Approaches to managing costs in American higher education. *Journal of Knowledge Globalization*, 8(1), 1-34.
- State Higher Education Executive Officers Association (SHEEO). (2017). *State Higher Education Finance: FY 2016*, SHEEO: Boulder, CO.
- Symonds, W. (2003). Colleges in crisis, *Business Wee.*, No. 3830, April 28, 79.
- Taylor, J., & Baines, C. (2012). Performance management in UK universities: Implementing the balanced scorecard. *Journal of Higher Education policy and Management*, 34(2), 111-124.
- Thompson, D. (2017). This is the way the college 'bubble' ends. *The Atlantic*, (July 26), available at <https://www.theatlantic.com/business/archive/2017/07/college-bubble-ends/534915/> (accessed May 24, 2018).
- Turner, D. (2011). *Quality in Higher Education, Sense*. Rotterdam: Netherlands:
- Vedder, R. K. (2004). *Going Broke by Degrees: Why College Cost So Much*. The American Enterprise Institute: Washington, DC.
- Zemsky, R. M., & Massey, W. (1990). Lost containment: Committing to a new economic reality. *Change*, 22, Nov/Dec, 16-22.