Grant Report

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Using Activity-Based Costing to Manage More Effectively

Michael H. Granof
Professor

David E. Platt
Assistant Professor

Igor Vaysman
Assistant Professor

Department of Accounting
College of Business Administration
University of Texas at Austin

The PricewaterhouseCoopers Endowment for
The Business of Government

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Foreword

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On behalf of The PricewaterhouseCoopers Endowment for The Business of Government, we are pleased to present this report by Professors Michael Granof, David Platt, and Igor Vaysman, "Using Activity-Based Costing to Manage More Effectively."

In this report, Professors Granof, Platt, and Vaysman demonstrate how activity-based costing (ABC) can be used by executives to manage more effectively. The applicability of the ABC model presented has far-reaching implications for all organizations. This model can clearly be applied to government and nonprofit organizations, as well as universities. Instead of measuring traditional "inputs" of salary and administrative costs, ABC accounting provides a methodology to measure the costs of "outputs."

This report arrives at an opportune time. Both the public and nonprofit sectors are working hard to quantify their "outputs." The federal government is now engaged in dramatically improving its ability to document "outputs." This increased emphasis on measurement can be linked to two recent events in the federal government. First, the Government Performance and Results Act of 1993 legislated that the executive branch document its performance and the cost of its services to the American public. Second, the rise in the number of franchise funds and reimbursable programs throughout the federal government has now made it necessary for federal executives to develop new methodologies to understand and document the "true costs" of providing services within their own organizations and to other units within government.

We trust that this report will be useful to executives at all levels of government who are now involved in quantifying their performance and financial costs.

Paul Lawrence
Partner, PricewaterhouseCoopers
Co-Chair, Endowment Advisory Board
paul.lawrence@us.pwcglobal.com

Ian Littman
Partner, PricewaterhouseCoopers
Co-Chair, Endowment Advisory Board
ian.littman@us.pwcglobal.com

Executive Summary

Although universities and other governmental organizations can boast of elaborate accounting systems typically featuring thousands of accounts, their faculty and administrators often lack the most rudimentary cost information on the programs that they manage and the activities in which they engage. The systems are almost always based on a form of fund accounting and are intended to satisfy legal and donor stipulations rather than to provide information for administrative decisions.

In this project we show how activity-based costing (ABC) can be applied to a single department of a major institution of higher education and thereby provide more management-oriented information than the systems currently employed. ABC has an advantage over conventional accounting systems mainly in that it allocates "overhead" costs to programs and activities in a way that is more reflective of the factors that influence them. Although ABC has occasionally been adopted in governmental and not-for-profit settings, it is usually applied to repetitive processes rather than the more costly intellectual activities.

We chose to apply ABC in a university setting because of the widespread concern about the rising costs of higher education and the unique characteristics of universities that make for special challenges. Universities are characterized, for example, by an absence of well-defined products or outcomes, unusual interrelationships among outcomes, and capacity constraints that are seemingly elastic. We opted to focus on a single department, the accounting department of a large business school, both to make the project manageable and because in universities key decisions, such as whether to add new programs or courses, are typically made at the lower portion of the organization chart.

Although our project was a case study, we believe that we learned several lessons that are applicable not only to universities, but also to other governmental and not-for-profit organizations. These include:

- The primary benefit of ABC may be not that it is an improvement upon an already adequate accounting system, but that it provides the structure for the establishment, for the first time, of a true management-oriented system.
- To be successful, a system must be flexible. Rigid allocation rules cannot readily be imposed upon organizations, like universities, characterized by decentralized management systems.
- ABC, by assigning costs to previously-unmeasured factors in decisions and providing a measure of the full cost of programs and activities, helps identify circumstances in which goals and objectives are out of line with spending decisions.

Introduction*

University faculty and administrators, it has been said, know the value of everything but the cost of nothing. Indeed, although they may add new courses, programs, and extracurricular activities after having eloquently set forth the benefits, they often lack even rudimentary information about the costs. Large universities may maintain intricate accounting systems, often with thousands of accounts. However, the systems are almost always based on a form of fund accounting and are intended to satisfy legal and donor stipulations rather than to provide information for administrative decisions.

In our study we show how activity-based costing (ABC) can be applied to institutions of higher education and, we believe, can result in improved information of benefit to academic administrators, legislators, voters, and consumers. We conducted a field study of a large college of business that is part of a major state university. We compared the information that was available with that which we believed to be decision-relevant. On the basis of our findings we developed and tested an ABC model to provide the decision-relevant data. The purpose of our study was not to develop a complete, working model, but rather to demonstrate the feasibility and benefits of applying ABC in an academic environment. We also sought to identify the obstacles that colleges would face in applying ABC and to discern the limitations of our approach.

* *The authors gratefully acknowledge The Pricewaterhouse-Coopers Endowment for The Business of Government for their support of this study.*

Despite the unique features of business schools, we believe that our model can be adapted readily to other colleges and institutions of higher education. More importantly, our findings can be generalized to other government and not-for-profit organizations in which personnel routinely engage in multiple activities or programs. These include hospitals (especially those associated with medical schools), public schools, police departments, fire departments, health departments, social service agencies and governmental agencies.

The Virtues of ABC

Activity-based costing is now an accepted element of the accounting and control systems of industrial and service firms, and it has been employed in both governmental and not-for-profit organizations. ABC is a product of the technological era. Conventional managerial information systems can trace their roots to the industrial age, when labor was the dominant factor of production. Within these systems, overhead cost is first allocated from service departments to production departments and then distributed, using an "overhead charging rate," to specific products. This method was developed to measure manufacturing processes in which overhead was either immaterial or was mainly a function of direct labor, which, in turn, was dependent upon production volume. Moreover, in a conventional industrial setting, production departments were mainly responsible for the key manufacturing activities and were clearly distinguishable from service departments, which provided only ancillary support.

In the service economy (as well as in modern, computer-driven manufacturing facilities), direct manufacturing labor is no longer the overriding factor of production and the distinction between production and service departments has become decidedly blurred. Overall product and service costs are more influenced by research, materials handling, procurement, equipment maintenance, quality control, and customer service requirements than by direct labor.

To compensate for the deficiencies of the conventional information systems, ABC requires firms to collect costs in specially constructed "activity pools" rather than service departments or overhead cost centers. Each of the pools corresponds to a group of similar business processes or activities that are homogeneous in that all costs assigned to the pool are influenced or driven by a common factor. The activity pools can cut across departmental boundaries and can include overhead costs incurred by production as well as service departments.

After collecting the costs in the activity-based cost pools, the firm distributes them directly to its various products or services by means of a "cost driver." A cost driver is similar to an overhead charging rate, but it should represent the factor that has the greatest influence on the behavior of the overhead costs within a particular activity pool.

Common cost drivers include production-oriented drivers such as cycle times, setups, number of purchase orders, number of machine hours and number of inspections. Other cost drivers address the cost of providing service resources by measuring specification changes, ordering characteristics, and other measures of clients' needs for attention.

While direct labor is often a cost driver, it should be used only when, in fact, the causal relationship between labor and the costs in the activity pool is stronger than that between the pool and any other potential cost driver. The total costs in each pool are distributed to the products on the basis of each product's cost driver volume. Thus, if a particular product requires 60 percent of the quality control inspections (a cost driver), then it is assigned 60 percent of the quality control costs (the related activity-based cost pool).[1]

[1] *This description of ABC is adapted from M.H. Granof, P.W Bell and B.R. Neumann,* Accounting for Managers and Investors *(Englewood N.J, Prentice-Hall, 1993).*

The differences between ABC and traditional costing are highlighted in Figure 1.

ABC has now been adopted by governmental, academic and other types of not-for-profit organizations. However, it has been applied mostly to these institutions' repetitive processes, rather than to their intellectual activities.[2] For example, two recent articles that describe the application of ABC to universities concentrate on the activities of the support departments. These articles discuss ways to allocate the costs of libraries[3] and computing support[4], as well as other services. In fact, many of the activities carried out by these types of organizations are similar to those carried by businesses. Clerical functions, for instance, such as procurement and payroll processing, are common to all types of organizations. Thus, as noted in the books and articles promoting the use of ABC in the government and not-for-profit sectors, ABC is no less applicable to those sectors than to businesses. But these books and articles are directed mainly to the functions that governments and not-for-profits have in common with businesses, not to the unique, often "intellectual," activities in which they engage.

In many governmental and not-for-profit organizations ABC systems did not merely replace conventional cost accounting systems that provided reasonable, if not necessarily optimal, measures of costs. These organizations previously had either no, or inadequate, costing systems. For these organizations, ABC was the first real measurement system, and the primary benefit of ABC was in providing the structure for needed accounting reforms.

Unique Characteristics of Universities

We chose to apply ABC to universities rather than to another government or not-for-profit organization for two primary reasons. First, the costs of higher

[2] *See, for example, Brimson, J.A. and Antos, J.* Activity-Based Management for Service Industries, Government Entities and Nonprofit Organizations *(New York: John Wiley & Sons, 1994), and Kehoe, J., Dodson, W., Reeve, R. and Plato, G.,* Activity-Based Management in Government *(Washington, Coopers & Lybrand, L.L.P., 1995).*

[3] *D.D. Acton, and W. D. J. Cannon. "Activity-based Costing in a University Setting,"* Journal of Cost Management *(March 1997): 32-38.*

[4] *J.M. Trussel, and L. N. Bittner. "As easy as ABC,"* NACUBO Business Officer *(June 1996): 34-39.*

Figure 1
Difference Between ABC and Traditional Costing

	ABC Costing	Traditional Costing
Cost Pools	ABC systems accumulate costs into *activity* cost pools. These are designed to correspond to the major activities or business processes. By design, the costs in each cost pool are largely caused by a single factor—the *cost driver.*	Traditional costing systems accumulate costs into facility-wide or departmental cost pools. The costs in each cost pool are heterogeneous—they are costs of many major processes and generally are not caused by a single factor.
Allocation Bases	ABC systems allocate costs to products, services, and other cost objects from the activity cost pools using allocation bases corresponding to cost drivers of activity costs.	Traditional systems allocate costs to products using volume-based allocation bases: units, direct labor input, machine hours, revenue dollars.
Hierarchy of Costs	Allows for non-linearity of costs within the organization by explicitly recognizing that some costs are not caused by the number of units produced.	Generally estimates all of the costs of an organization as being driven by the volume of product or service delivered.
Cost Objects	Focuses on estimating the costs of many cost objects of interest: units, batches, product lines, business processes, customers, and suppliers.	Focuses on estimating the cost of a single cost object—unit of product or service.
Decision Support	Because of the ability to align allocation bases with cost drivers, provides more accurate information to support managerial decisions.	Because of the inability to align allocation bases with cost drivers, leads to *overcosting* and *undercosting* problems.
Cost Control	By providing summary costs of organizational activities, ABC allows for prioritization of cost-management efforts.	Cost control is viewed as a departmental exercise rather than a cross-functional effort.
Cost	Relatively expensive to implement and maintain.	Inexpensive to implement and maintain.

education are increasing far more rapidly than that of other goods and services. In fact, public concern over escalating costs led Congress, in 1997, to establish a special concern to investigate the reasons behind the increases and to make recommendations as to how the costs can be contained. The Appendix to this report provides background on the commission and summarizes some of its conclusions that are relevant to this report. Consistent with the commission's findings, we believe that proper cost information and computation are essential ingredients of cost control and containment.

Second, with respect to cost measurement and control, universities seem to present the Mount Everest of challenges. If adequate systems of measurement and control can be established in universities, then they can be imposed upon virtually all other types of organizations. By nature, universities are not amenable to the constraints required of sound management and cost control:

- Many members of university faculty are "free spirits" who have chosen academic careers so as to escape the authoritarian governance structures that are typical in other types of organizations. Viewing their scholarly efforts as having intrinsic, rather than monetary, value, they are often suspicious of practices that hold them accountable for measurable outcomes. Most certainly they disdain any linkages between the costs and benefits of their activities.
- University administrators lack the authority conventionally accorded managers. In contrast to most businesses, key decisions that affect cost are made by faculty and administrators at the lower, rather than the upper, echelons of the organization chart. Examples include decisions relating to:
  - course offerings
  - number of sections of a course to be scheduled
  - new programs, such as Ph.D. or Master's programs, either within a specific discipline or across disciplines
  - faculty research projects, and
  - teaching load reductions for administrative and research assignments.

  More tellingly, these decisions are often made with, at best, only a passing nod to cost implications. Although considerable attention may be paid to how the new activities will affect faculty and staff workloads, almost never is a dollar cost assigned. Even if costs are taken into account, the focus is invariably upon those that are short term and incremental. Often these costs are determined to be minimal, as the proposed activities seemingly necessitate no new faculty. All the same, the long-term, indirect costs may be considerable. For example, if existing faculty must direct their efforts to new courses, additional instructors may be required to teach the courses currently taught. Further, the new courses or programs may necessitate additional office and classroom space and place additional demands on ancillary service departments, such as the dean's office, the counseling staffs, and the technology support groups.
- Universities employ fund accounting systems. These are designed primarily for compliance rather than for providing the information needed for effective management. They are required because the funds of universities come from multiple sources and may be restricted for specific purposes. The salaries of individual faculty members may be paid out of several different accounts — a standard state appropriation account, one or more endowment accounts and one or more research accounts. In fact, even when faculty entertain new recruits, the dinner tab may have to be divided among two accounts — one for food, another for alcoholic beverages. In addition, some of these accounts may be under the control of administrators at the university level, whereas others may be under the control of college deans or department heads. Thus, the answer to simple questions, such as "What is the total compensation of faculty member X?" or "How much financial aid was given to Ph.D. candidate Y?" may require hours of research.
- The budgets of universities are likely to mirror their fund accounting systems. They are not

typically tied to strategic plans or measurable outcomes. Often allocations to colleges and departments are driven by set formulas or "across the board" percentage increases. To address the special needs of individual units or to promote high-priority projects, the central administration may "hold back" or "tax" a portion of the amounts a college or department would otherwise be given. The result is a budget process that is as complex as the accounting system and equally deficient in promoting sound management and control.

- The accounting systems of large universities may produce a plethora of periodic reports; most may be unintelligible to their intended users. In fact, the budgets and related financial documents are likely to be understood by relatively few university administrators — most likely budgeting and accounting officers but not senior academic officials.

- Universities lack well-defined objectives or measurable outcomes. With respect to their main "products" — teaching, research and service — more is not necessarily better. At the same time, quality is very much in the eye of the beholder. Thus, small classes are not necessarily less cost-efficient than large and may not even be qualitatively superior.

- The outputs of faculty — the key university employees — are interrelated and not clearly separable from each other. There are no obvious ways to distinguish between faculty research, teaching and professional service. In conducting their research, for example, faculty direct and train graduate students. In reviewing journal articles for academic publications (a form of professional service), they gain insights that will influence both their teaching and research.

- Just as the outputs of faculty are not readily separable, the distinctions between inputs and outputs and producers and consumers may be equally blurred. Ph.D. students, for example, may be appointed as research assistants and teaching assistants — positions for which they are compensated. In those positions they obviously provide service to the university and add to its research and teaching costs. At the same time, however, their teaching and research assignments are essential elements of their education and may be degree requirements. From that perspective, the research and teaching assistants are educational consumers rather than providers and their compensation may be interpreted more as financial aid (like a scholarship) than as a research or instructional cost.

- The costs and revenues of a university may be integrally related and certain costs may not be incurred unless they were to be explicitly funded from outside sources. For example, universities carry out certain research projects only if independently funded. Their students receive scholarships from private parties. They receive donations of computer equipment. It is not always apparent whether the funds received from outside sources are a substitute for resources received from state appropriations or whether they enable the university to carry out activities that they otherwise would not.

- The capacity constraints of universities are not clearly discernable. Faculty, for example, do not work a standard number of hours per week and hence can undertake additional assignments without any readily apparent reduction in the time devoted to other assignments. Similarly, new programs and activities can be added without any obvious sacrifice in the quantity or quality of existing ones. At the same time, capacity costs are proportionately high. Classrooms, laboratories and dormitories are subject to long planning, approval and construction processes and it often takes at least two or more years before new faculty positions can be approved and filled.

Description of the Study

This study applies the concepts of activity-based costing to the "intellectual" and business activities of a university setting. More specifically, we focus on the activities of one academic department as part of (and benefiting from the resources of) a larger College of Business. Our goals, however, are twofold: (1) to address some of the special problems of managing the university enterprise as discussed above; and (2) to demonstrate an improved conceptual model for measuring the costs of services provided by knowledge workers in not-for-profit and governmental enterprises.

Reason for Focusing on a Department Rather Than an Entire University

To test the feasibility and value of ABC in a university environment, we focused on the accounting department of a large public research university. The department is one of five academic departments in a college of business administration — the others being finance, marketing, management, and management science information systems. In terms of size and range of programs and activities, the department is comparable to a mid-sized college.

We opted to apply ABC at the departmental rather than the university level for several reasons:

- As previously discussed, university costs are as much affected by decisions made at the departmental and college level (e.g., those relating to course offerings, new programs, and research projects) as at the university level. Whereas the allocation of university-wide costs, including those of services such as maintenance and police, may be necessary to determine the "full" cost of an academic program or a student credit hour, such cost would be relevant for few routine operational decisions that university administrators are called upon to make.
- Our preliminary research indicated that the issues that we would have to address are more salient at the lower than at the higher levels. For example, one of the least tractable (and controversial) questions that we faced was how to allocate the compensation of faculty members among the activities in which they engage. By contrast, issues of allocating the cost of high-level administrative offices among the various colleges and other organizational units were not unlike those faced by a corporation in allocating its headquarters costs.
- The accounting system of a department was manageable and within the resource constraints of this project, whereas that of an entire university was not. The modern university consists of an extraordinarily wide range of organizational units — athletics, housing, food service, plant maintenance and police — in addition to teaching and research.

Features of the Department

The accounting department to which our study was directed consists of 25 tenure-track faculty, and approximately 20 lecturers and 8 staff members. It has direct responsibility for four degree programs: a

four-year undergraduate program (BBA) in accounting; a five-year combined undergraduate and master's in accounting program (PPA), consisting of two years of general undergraduate study followed by two years of specialized undergraduate and one year of graduate accounting studies; a stand-alone masters in accounting program (MPA), a one-to-two-year program; and a Ph.D. program. In addition, it offers both required and elective courses for university undergraduate students who do not major in accounting, for MBA students, and for several executive programs.

As is typical in research institutions, tenure-track faculty engage in three broad categories of activities: teaching, research, and "service." Promotion and salary increases are based mainly upon quality of teaching (as assessed by student ratings and other means) and research (as evaluated primarily by number and quality of publications). However, faculty are also called upon to fill various departmental administrative positions (e.g., directors of the various programs) and to serve on department, college, and university committees. They are further expected to serve as officers, editorial board members, and committee members of academic and professional organizations.

The department receives its resources from multiple sources. As summarized in Figure 2, its budgeted (state) funds are allocated from several accounts, the moneys in which are generally not interchangeable. These include accounts for salaries and wages (including separate sub-accounts for faculty, assistant instructors and teaching assistants, full-time and part-time administrative staff) and for "maintenance, operations and equipment." Faculty salaries are supplemented by income from endowments, such as professorships and fellowships, some of which are within the direct control of the department while others are under the control of the college. Further, the department receives both restricted and unrestricted grants from alumni, CPA firms, and corporations.

Figure 2
Departmental Expenditures by Source
Academic Year 1997-98

State Funds—Restricted Accounts	
Faculty salaries	76%
Staff salaries and wages	6%
Teaching assistant and assistant instructor salaries	7%
Maintenance, operations and equipment	2%
Total expenditures from state funds	91%
Endowment Income and Unrestricted Gifts	
Professorships and fellowships (faculty salary supplements and research support)	6%
Unrestricted gifts used for travel, dues and subscriptions, and miscellaneous departmental activities	3%
Total expenditures from private sources	9%
Total expenditures from all sources	100%

Features of the ABC Model

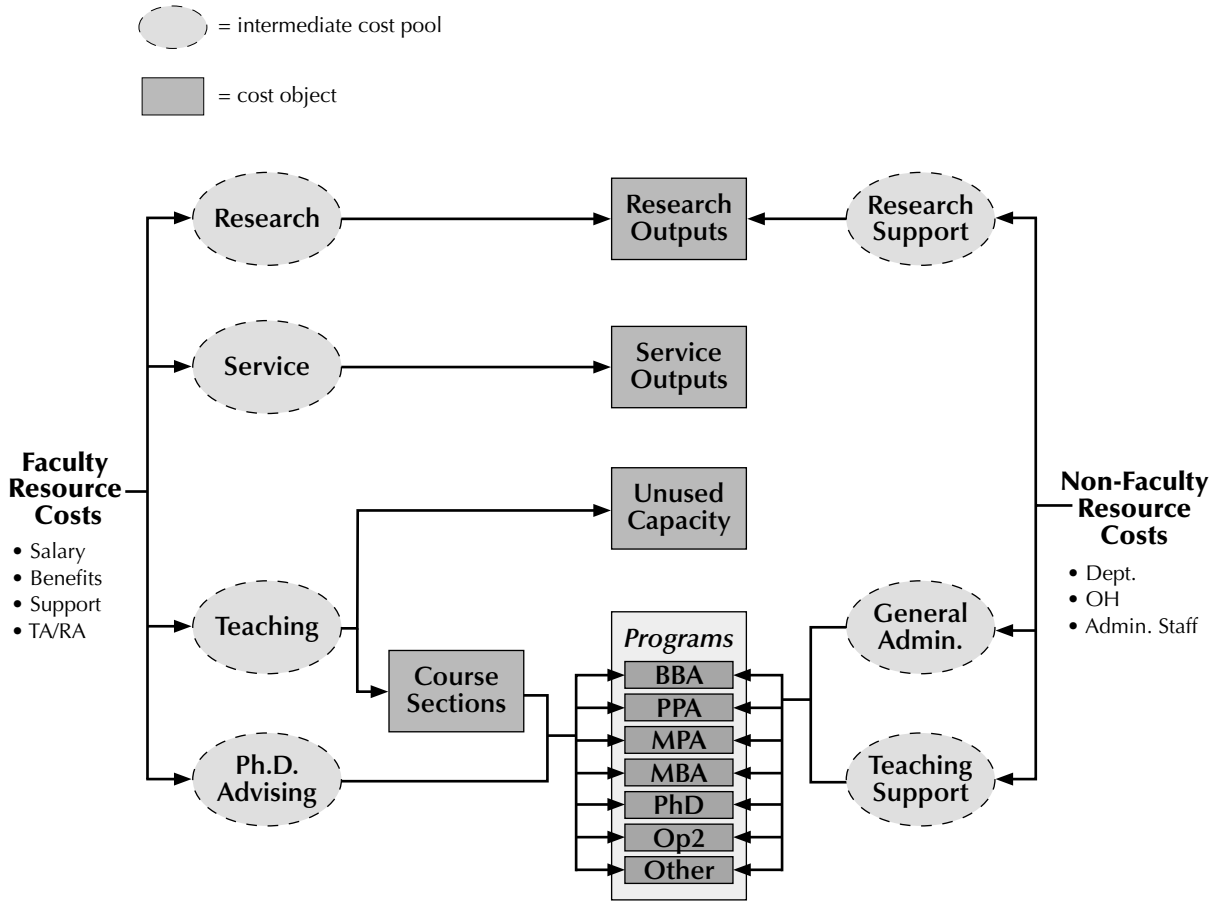
We developed our model in two stages. In the first, we focused exclusively on costs that were within the control of the department. The largest of these was faculty and staff compensation. Other costs included computers and other equipment, supplies and faculty allowances for travel, books and subscriptions, and other costs. In the second stage, we added college costs that benefited all academic departments. These included costs of the dean's office, computers and multi-media services, and career services. We also included a charge for occupancy. Our purpose in adding the college costs was not to extend our analysis to academic departments other than accounting. Rather it was simply to incorporate the college costs that benefit, in part, the accounting department.

First Stage

In the first stage, based on discussions with the department chair and other college administrators, we developed a set of multi-level cost objects. As illustrated in Figure 3, we began by allocating faculty compensation and related costs (such as miscellaneous allowances for travel, books, and journal submission fees) to four activity cost pools:

- teaching
- research
- service
- Ph.D. advising (distinguished from advising in other programs mainly because of the substantial time commitment required of several faculty members).

Figure 3
Design of ABC Cost Allocation System—Department Level



Owing to the magnitude of the dollars, this allocation was the most critical in our model. We made the allocation individual by individual, based on general guidelines, tempered by our own judgments as to the activities engaged in by each individual faculty member. Typically we assigned 50 percent of a tenure-track faculty member's costs to teaching. The university counts a "full" teaching load as four courses per semester. That is, a faculty member, such as a lecturer, who has no research or administrative responsibilities, is expected to teach that many courses. However, in light of their other responsibilities, tenure track faculty typically are assigned only two courses — 50 percent of the "full" load. Therefore, we assigned 50 percent of a tenure-track faculty member's costs to teaching. However, if a faculty member, whether tenure track or not, taught more or fewer courses, we changed this percentage accordingly.

The department's policy is to shield newer faculty from administrative assignments. Therefore, we assigned the entire non-teaching portion of assistant professors' compensation and related costs to research. By contrast we assigned smaller percentages of more senior (tenured) faculty's costs to research and assigned the balance to either service or Ph.D. advising. In this pilot project, we based the allocation on our own knowledge of the faculty member's activities. However, it is our expectation that were the model to be fully implemented, the faculty member himself would make the allocation, perhaps in consultation with the departmental chairman. Faculty members would have little incentive to "fudge" the percentages because, if and when their contributions to the department were to be compared against their costs, all costs and contributions would be taken into account. Gaming this allocation to make the cost-to-contribution ratios in one area look better would then cause those in another area to look worse.

Having allocated the faculty costs to the four activity cost pools, we then assigned the teaching portion of each faculty member's costs to the specific sections that he or she taught. We generally assumed that the faculty member devoted an equal amount of time to each section, but we made exceptions for new preparations or other special circumstances. Correspondingly, we added the compensation of teaching assistants to each section.

In the final allocation of faculty teaching costs, we assigned each section to a program. This allocation was based on the proportion of students in the section that were enrolled in the particular program.

Taking a similar approach with regard to staff and other administrative costs, we apportioned the expenditures among three pools of costs, comparable to those to which faculty costs were assigned:

- research support
- general administration
- teaching support.

Then, we assigned the teaching support costs to the specific academic programs. Both allocations were made on a case-by-case assessment of the particular duties of individual staff members.

The sum of the faculty costs and the administrative costs that were assigned to the academic programs constituted the first-stage costs — those that were within the control of the department.

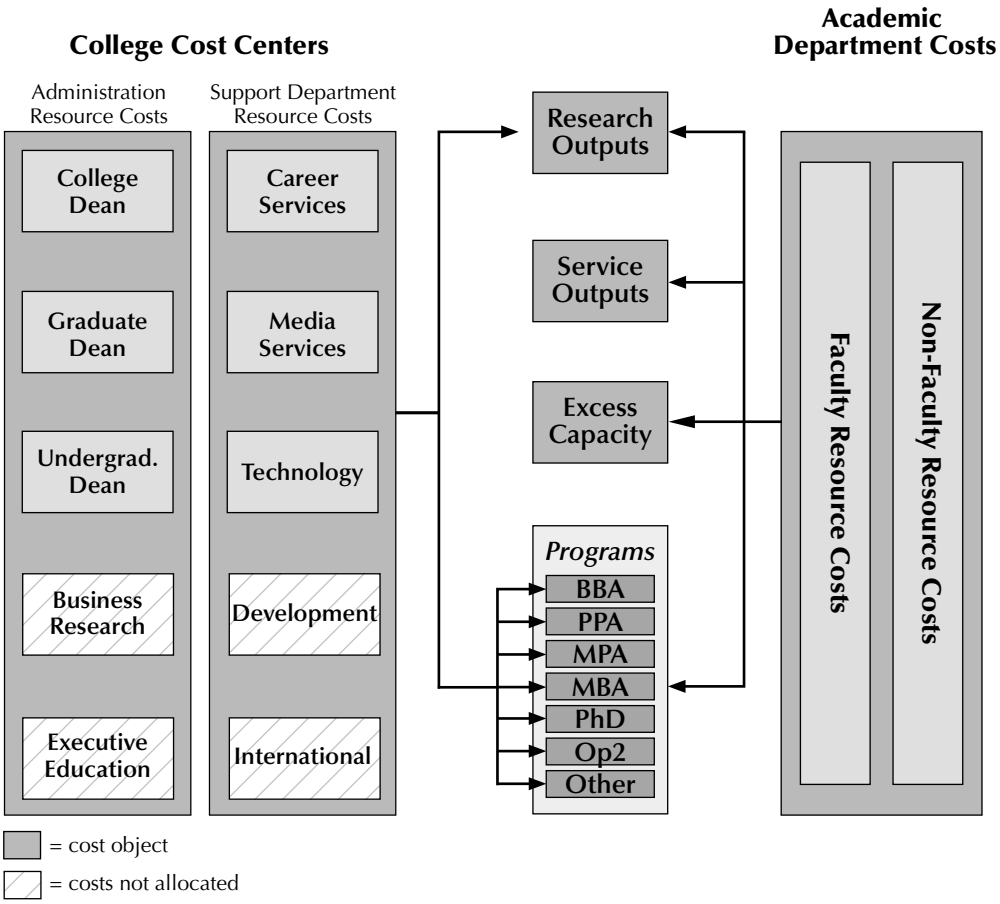
Second Stage

In the second stage of the project we identified and assigned various college costs to the programs of the departments. As illustrated in Figure 4, the College comprises several administrative and support departments. We directed attention to six specific cost centers:

- Career Services
- Media Services
- Technology (computer services)
- The College Dean's Office
- The Graduate Business Dean's Office
- The Undergraduate Business Dean's Office.

The Business School has several other service departments, including an office of international programs, an executive education department, a bureau of business research and a development office. We determined, however, that these departments do not provide sufficient support to the accounting department programs to warrant allocating their costs. Indeed, for some of these depart-

Figure 4
Design of ABC Cost Allocation System—College Level



ments, such as executive education, the accounting department provides support to the service departments rather than the other way around.

The Career Services Office coordinates job recruiting and employment advising for all students enrolled in the Business School, with the exception of Ph.D. students. However, it does not direct equal amounts of time per student to different programs. For the most part, students avail themselves of the office's services mainly in the last two years of their programs. Thus, the office might provide services to all students in the two-year MBA program, but to only half of those in the four-year BBA program. Similarly, most PPA and MPA students are committed to careers with major CPA firms. The recruiting programs of these firms are highly structured, and the firms conduct interviews within a specific window of time. Hence, the office provides intensive services to these students but only for a short period of time.

The Career Services Office is funded mostly by student fees. Moreover, the majority of its staff is assigned specifically to either graduate or undergraduate students and is paid from separate graduate or undergraduate student fee accounts. As a result, we were able to identify most of the office's costs as being applicable to a graduate (MBA and MPA and PPA-Graduate Year) or undergraduate (BBA and PPA-Undergraduate Years) category of programs. However, once we made this determination, we then had to assign them to a specific program within that category. Although we considered

doing this on the basis of student enrollment or some other "hard" percentages, we opted to rely on the considered judgment of the program's director as to how much time the office staff devoted to each of the programs.

Media Services provides, maintains and repairs classroom computers, projection equipment and recording equipment. In addition it provides various media-related services, such as creating slides and duplicating videotapes. As with most Business School units the department is funded from several different sources: student fees, user charges and operating budget.

Media Services keeps records indicating the affiliations of the departments that use its equipment. Accordingly, it was able to provide us with the number of "uses" by each of the academic departments (e.g., finance, management, accounting, etc.) as well as the name of the individual, usually a faculty member, requesting the equipment. It does not, however, keep track of the programs in which the equipment is used. Thus, for example, equipment used by the finance department could be used in an undergraduate or an MBA course. That used by the accounting department could be used in courses that served any one of its programs. To further complicate the cost allocation process, when students check out equipment Media Services does not note either the course or the program in which the student was enrolled. Further, it does not maintain records as to the number of service calls provided to the computer and other equipment in classrooms that were specially designated for MBA courses, each of which has a full range of multimedia equipment installed.

In general, we were able to base the allocation of Media Services costs on the number of "equipment uses" by each academic department, with costs assigned to programs based on our knowledge of which faculty member generally teaches in which program. However, we made important exceptions for certain categories of costs. Because the expensive equipment permanently installed in the dedicated MBA classrooms was available for use at all times and no record of actual usage is kept, we assigned (based on our discussions with the department's director) a disproportionately large equipment charge directly to the MBA program.

The Technology (computer services) Department had a relatively large budget, yet presented especially intractable allocation decisions. Its records provided comprehensive information as to expenditures by each of its divisions (e.g., training, networking, programming, etc.), but revealed little as to the beneficiaries of its services. Accordingly we were forced to allocate the costs to programs in proportion to number of students, after making assumptions about computer usage by program and their relative consumption of this department's resources.

The assumptions we were forced to make are illustrative of the challenges inherent in allocating costs in a way that is decision-relevant for managers. Departmental cost reports gave adequate information as to the costs of resources provided by the department. However, they were insufficient to measure how the resources were consumed and, hence, how to allocate them to particular groups of users. Thus, for this department there is no way to answer such pressing managerial questions as:

- What is the cost of supporting the present policy requiring all MBA students to purchase laptop computers, and what is the corresponding saving (if any) to the school when compared with providing computer labs?
- Which programs or groups of users are driving the increasing demand for computer support services?
- What is the cost saving associated with requiring all faculty and students to standardize on Intel-based Windows NT computers?
- What is the cost of supporting faculty computer users, and is it significantly different between departments?
- Should an internal charge for cost of support be imposed, and in light of such a market mechanism, should external sourcing be allowed?

The lack of useful data in this department also illustrates the importance of capturing operational data, in addition to traditional cost data, in an effective accounting system.

The costs of the three administrative Deans were allocated among their constituent programs based

upon the number of students in each program. This allocation is contrary to the spirit of ABC in that it does not reflect the consumption of resources by these programs. It was necessitated, however, by limitations on data availability, and, while a huge improvement over the existing measures of cost, it represents an approximation at best — one that rests on the inherently flawed assumption that all students are homogenous in their consumption of resources.

Our model, it must be emphasized, is exceedingly flexible. All "arbitrary" allocation rules can be easily overridden for any individual faculty member or cost item. Moreover, at least for the department to which it was applied in this study, it provided similar results, irrespective of subjective allocation decisions.

Added Feature — A Course Capacity Module
We added to our ABC system a "course capacity" module — a feature that proved extremely useful in highlighting potential scheduling inefficiencies. This module enabled us to calculate a measure akin to a cost of underutilized capacity — the cost of assigning fewer students to a course section than the section was intended to accommodate.

To develop this module, we categorized each course by type and assigned a capacity to it. The capacity was based mainly on the "close limits" that the department itself imposed on the course sections. Thus:

- Large lecture course 150 students
- Case course 60 students
- Standard discussion course 40 students
- Seminar 10 students

For each section, we calculated the ratio of students enrolled in the class to total student capacity and classified that proportion of the section's costs as "used capacity." The remainder of the section's cost was ascribed to "unused capacity" — a measure of the "opportunity costs" of under-enrollment.

Unused capacity may be the consequence of questionable policies, such as permitting faculty to teach two sections of a course when only one is needed. Our approach allows universities to quantify the costs of these policies. On the other hand, unused capacity cannot automatically be equated with inefficiencies — no more than can empty highways at midnight. Facing a need to staff certain courses at peak times (e.g., a fall or spring semester), a department may have to tolerate unused capacity in sections in off-peak times. Or, it may have to schedule sections at odd times (e.g., early morning or late afternoon) to accommodate students who require a particular course but have time conflicts with offerings at more popular times. And, of course, smaller classes may be qualitatively superior to larger courses.

Universities, of course, are not the only organizations to incur costs of unused capacity. Virtually all government and not-for-profit entities have "slack" in their systems — sometimes for legitimate reasons, sometimes as the consequence of careless scheduling or, as we found at the university, as a means of providing hidden "perks" to selected employees. To be sure, administrators can often identify unused capacity simply by comparing actual and potential outputs (e.g., as we did, by comparing actual enrollments with assigned class limits). They do not need cost data to point to potential inefficiencies. However, cost data add poignancy to the message and highlight the consequences of resource misallocation.

Examples of Problems and Issues Encountered

In applying our model we encountered several issues and problems. Although some may be unique to the college studied, we believe that most are common to other university departments and are typical of those that would be faced in applying the model to a wide range of governmental agencies.

- The outcomes of a university cannot readily be assessed in terms of quality. In our model a course taught by a senior professor would be allocated a far greater cost than one taught by a teaching assistant. Therefore, the senior professor may appear to be less efficient than the teaching assistant. But by more effectively capturing and presenting the cost data, we allow administrators to make an informed judgment (using student evaluations, reviews of

exams and course materials, and any other means) whether that is, in fact, the case.

- As in any organization, some employees are more productive than others. In our model, we allocated the cost of each faculty member's compensation-related costs among the various activities in which he engages. The compensation of a "slacker" tenured faculty member who devoted 100 percent of his time to teaching (and performed none of the research or service that is part of his job and in exchange for which he receives a reduced teaching load) would be assigned entirely to the class sections he taught. By contrast, only a small portion of the compensation of another faculty member — one who devoted only a small percentage of his time to teaching, but taught the same number of sections and worked far more hours — would be allocated to teaching. Thus, the sections of the slacker would be reported as more costly than those of the more productive faculty member. More properly though with obvious problems of measurement, a portion of the slacker faculty member's compensation should be assigned to "waste and inefficiency." We decided not to make that judgment.

- The department receives support from numerous sources, some internal and some external. Our general approach was to focus on departmental costs, irrespective of how the costs were funded. Thus, for example, we did not distinguish between faculty salaries paid from state appropriations and those paid from endowments that were under the control of the university. At the same time, however, we did not take into account the cost of activities that likely would not have been incurred had they not been independently paid for. Therefore, if a faculty member received an outside research grant that covered his salary for a semester, we did not include the salary as a departmental cost. Similarly, we excluded all financial aid to students from our calculations inasmuch as most of the financial aid, although within the control of the department, is from private donations.

- Ph.D. students are required to serve as teaching and research assistants in various stages of their program. In these roles they not only make significant contributions to the department, but receive substantial educational benefits as well. Nevertheless, we accounted for their compensation as if they were employees, assigning their salaries and benefits to the teaching and research pools.

- The accounting and information system of neither the department nor the college (which are part of the larger university-wide accounting system) was sufficient to support ABC and would require a major overhaul before it would be able to do so. Like the systems of many other government and not-for-profit organizations, the systems of universities are not typically designed to provide management-relevant information — and certainly not to "cost out" services, programs or activities. For example, the accounting system of the department did not automatically generate data on the total compensation of individual faculty members. We did our best to obtain reliable data, but acknowledge that they are not as accurate as required before they can be relied upon for decisions and publicly defended.

- The College's Executive Education Department sponsors numerous executive development programs and MBA programs targeted to special audiences. Faculty devote considerable time to these programs and are compensated apart from their normal salaries. Since faculty do not work a standard number of hours each week, it is almost certain that some of the time devoted to executive education takes away from time devoted to their other activities. Nevertheless, because faculty are compensated separately, we elected not to assign any portion of faculty time to executive education.

  The question of how to account for executive education is similar to that of how to account for a wide range of outside activities. For some of these activities, such as independent consulting, faculty may get monetary compensation; for others, such as scholarly lectures at other universities they receive only intangible rewards, such as enhanced prestige. Most activities involve costs to the university in that they detract from time that can be devoted to other pursuits. Yet faculty are encouraged to

engage in many of these activities because they provide benefits to both the university and the individual faculty member.

- The university does not charge colleges or other organizational units for the space that they occupy. From the perspective of these units, space, along with attendant utility and maintenance costs, are considered free goods. Space, however, is a major university constraint, always in short supply, and a relevant factor in decisions relating to courses, programs, and other activities. Accordingly, therefore, we obtained data on the number of square feet occupied by the various units and departments within the college and added a "shadow" cost to their budgets. We based this cost on the prevailing market price of office space in the area surrounding the university — an admittedly crude but nevertheless convenient measure.

An ABC Model for a University Department

Our specific results cannot be generalized beyond the department and college to which we applied our model. Nevertheless, they are of interest because they point to the types of findings that application of the model can produce and to classes of problems that are common in other academic, governmental, and not-for-profit organizations.

Finding One: Great Disparities Exist Among Various Programs

We found great disparities in the cost spent per student in the various academic programs. As indicated in Figure 5, the average cost per student in the Ph.D. program was $34,244. By contrast, the cost in the PPA program was only $9,346. These differences, however, greatly understate the gap

Figure 5
Annual Total Cost per Student in Accounting Programs, as Estimated by ABC Costing Accounting Instruction and Support Costs Only*
(Academic Year 1997-98)

	PPA	MPA	Ph.D.
Accounting Dept. Costs			
Allocated Instruction	$ 1,727	$ 2,935	$ 17,529
Space	1,311	2,227	13,300
Support Dept. Costs			
Allocated Support	3,729	6,821	2,355
Space	2,579	4,948	1,060
Total Cost	**$ 9,346**	**$ 16,931**	**$ 34,244**

** Includes all support costs but excludes cost of instruction in departments other than accounting. Also excludes accounting department unused capacity costs.*

between the two programs because the measures include only teaching and program-related administrative costs. They exclude financial aid (because, as previously noted, much of this comes from outside sources). Relatively few PPA students receive financial aid, and if they do it is generally in the hundreds of dollars. Ph.D. students, however, are typically supported with grants of over $10,000.

These huge disparities can be attributed mainly to the small size of the Ph.D. classes (usually in single digits), the higher rank of faculty who teach in the Ph.D. program (exclusively tenure-track faculty as opposed to lecturers and Ph.D. candidates), and special demands upon and rewards (such as reduced teaching loads) given to faculty who teach the Ph.D. courses.

In businesses, product costs can readily be compared with product prices and "out of line" expenditures can readily be identified. In governments and not-for-profits, however, expenditures must be linked to specific institutional objectives and the level of expenditures must be assessed in relation to the priority assigned to those objectives. We can only question whether the college and department faculty and administrators would opt for the same allocation of resources among programs and courses if they considered explicitly their costs and benefits. We are certain, however, that administrators of other government and not-for-profit organizations are similarly lacking the cost data necessary to assure consistency between expenditures and objectives.

Finding Two: Unused Capacity Is Costly

We became aware of the strikingly large costs of unused capacity. As reported in Figure 6, this cost exceeded the teaching costs that we had assigned

Figure 6
Annual Accounting Department Costs, as Estimated by ABC Costing
(Academic Year 1997-98)

Panel A: Accounting department costs, by output

	Cost	%
Research	$ 1,621,560	31%
Service	496,209	9%
Teaching	3,176,368	60%
Total	**$ 5,294,137**	**100%**

Panel B: Accounting department teaching costs, by program

		Cost	%
PPA	(A)	$ 932,840	29%
BBA*	(C)	468,823	15%
MBA	(C)	370,706	12%
MPA	(A)	352,163	11%
PhD	(A)	210,351	7%
Other	(C)	78,251	2%
	Subtotal	2,413,134	76%
	Unused Capacity	763,234	24%
	Total	**$ 3,176,368**	**100%**

(A) Costs incurred to provide courses in accounting degree programs
(C) Costs incurred to provide courses in support of college-wide programs

** A small portion of these costs is incurred to educate students graduating with four-year undergraduate accounting degrees. Most are for supporting accounting classes provided to all undergraduate students.*

to all of the academic programs except one. Examination of the data revealed situations such as the following:

- several sections of a multi-section course were oversubscribed while others were undersubscribed;
- two sections of a course were offered, so as to accommodate a single preparation for a faculty member, when one course would have sufficed;
- some elective courses were offered two times per year and were substantially undersubscribed in each.

As emphasized previously, this measure of unused capacity has to be interpreted guardedly. It is intended mainly to focus attention on potential inefficiencies; by itself it is not necessarily indicative of wasteful practices.

Whereas the cost structures of businesses are being constantly tested in the competitive marketplace, governments and not-for-profits have no comparable mechanism to detect and root out inefficiencies. Our results highlighted the sort of staffing inefficiencies that certainly are found in other academic, government and not-for-profit organizations.

Finding Three: ABC Accounting Provides Useful Efficiency Information

As shown in Figure 7, cost information presented in a traditional, account-oriented fashion provides information about the costs of resources being supplied (in this case, by the accounting department) to make it possible to carry out the college's mission. However, an ABC perspective on the same data provides (previously unavailable) information about what the college's constituents are getting for their money. It also provides managerial informa-

Figure 7
Annual Accounting Department Costs
Comparison of Traditional and ABC Cost Reporting
(Academic Year 1997-98)

Traditional Reporting		ABC Reporting	
Faculty salary and benefits	$ 4,253,309	Research	$ 1,621,560
Other than faculty salary:		Service	496,209
Research and teaching asst.	490,861	Teaching by program	
Admin. salary and benefits	309,581	PPA	932,840
Admin. expenses	109,986	BBA	468,823
Furnishings and equipment	43,286	MBA	370,706
Travel	39,900	MPA	352,163
Events	18,757	PhD	210,351
Miscellaneous	28,457	Other	78,251
	1,040,828	Unused capacity	763,234
Total expenditures	**$ 5,294,137**	**Total expenditures**	**$ 5,294,137**

tion that may be useful in assessing the school's efficiency in delivering its various educational and research outputs.

For example, the accounting department makes a substantial contribution to the MBA program, which is administered by the college rather than the department. Although obviously the department was aware of how many courses taught by its faculty were directed entirely or partially to MBA students, our model captured the financial value of its contribution. Unlike "number of MBA courses taught" or even "numbers of MBA student hours taught," the dollar value of the contribution takes into account the salary level of the faculty who teach in the MBA program (relatively high) and the extensive amount of teaching assistant and related support given to the MBA courses.

The problem of measuring the contributions of departments to programs and activities other than those for which they are directly responsible is generic to a wide rage of academic and nonacademic organizations. The information that we produced in our study — and which ABC is capable of providing — would unquestionably be of the type that administrators need to take into account in making budget allocations among departments, programs, and activities.

Finding Four: Support Services Do Not Benefit Programs Uniformly

As made clear in Figure 8, support services do not benefit programs uniformly. Whereas support costs (excluding space costs) were only $2,355 per Ph.D. student, they were $7,326 per MBA candidate.

Figure 8
Annual Support Department Costs, as Estimated by ABC Costing
(Academic Year 1997-98)

Panel A: Support department cost per student by program, excluding space costs

Program	#of Students	Cost per Student
Ph.D.	50	$2,355
MBA	800	$7,326
MPA	120	$6,821
PPA	540	$3,729
BBA*	1,640	$2,955

Panel B: Support department cost per student by program, including opportunity cost of space**

Program	#of Students	Cost per Student
Ph.D.	50	$3,415
MBA	800	$13,476
MPA	120	$11,769
PPA	540	$6,308
BBA*	1,640	$5,314

* *Undergraduate students (BBAs) are counted only for their last two years, when most of their classes are in the College of Business.*

** *Computed at the approximate retail lease price of $15 per sq. ft. per month.*

Program costs would therefore be seriously distorted if support costs were allocated based on head counts.

Finding Five: Space Costs Are Significant

Space costs, as discussed previously, although a precious commodity, is a free good at the university (as well as in many government and not-for-profit organizations). Yet, as is evident in both Figures 5 and 8, they are of huge consequence, rivaling in significance almost all other costs combined. Our computations, however, seriously understate the full cost of occupancy, in that the assigned cost is based on prevailing rental costs. It excludes related costs such as those for utilities and maintenance.

Lessons Learned

We believe that our project demonstrated the applicability of ABC to universities and other types of government and not-for-profit organizations in which personnel routinely engage in multiple activities and programs. We drew several lessons from our study:

- **The stronger the existing management accounting and information system of an organization, the easier it is to apply ABC. Yet the weaker the system, the greater the contribution of ABC.** Unfortunately, most governments and not-for-profits employ fund accounting systems that are designed primarily to insure legal compliance rather than to provide decision-useful information. Thus, we found it difficult to determine the compensation of individual faculty members, let alone the costs applicable to programs and activities. The conventional virtue of ABC is that it results in cost determinations that better capture the full measure of a product's cost. This is achieved mainly by tying overhead allocations to the factors with which the overhead most closely varies. In governments and not-for-profits, by contrast, the main contribution of ABC may be in encouraging the entity to establish the rudiments of a management-oriented accounting system.
- **There are currently no comprehensive manuals — and likely never will be — to provide off-the-shelf instructions on how to install an ABC system in government and not-for-profit organizations.** Each set of programs and activities, as well as each type of cost, presents different issues and problems. We correctly anticipated that many of the allocation issues faced by universities would be similar to those faced by industry. We were surprised, however, at the number and significance of the issues that were unique to universities. For example, questions of whether personnel (e.g., teaching assistants) are employees or "customers" and the issues of scholarship assistance and research support provided by outside parties have no obvious counterpart in industry. Yet they involve sums of considerable magnitude.
- **Flexibility is of the essence.** Rigid allocation rules cannot readily be imposed upon organizations, like universities, characterized by decentralized management systems. For example, we developed general guidelines for allocating faculty compensation costs among the three main activities in which faculty engage — teaching, research and service. However, we allowed for exceptions when the guidelines were inappropriate for individual faculty. By doing so, we were able to counter criticisms that our allocations were unrealistic. At the same time, we were able to demonstrate that changes from our allocation percentages to what others could reasonably propose tended to have little impact on the overall results.
- **University faculty and, no doubt, many non-accounting employees of governments and not-for-profits are not only skeptical of but are threatened by, attempts to quantify the cost of the activities in which they engage.**

Many faculty, for example, are understandably fearful of how data on the cost of their research might be perceived. Others are concerned that if the programs in which they teach have a high cost per student (perhaps because they require small classes or individual instruction, such as programs in music) they will be viewed as unnecessary drains upon university resources. Accordingly, if accountants are to gain the confidence and cooperation of members of the organization, they must be sensitive to their concerns. More importantly, they must accompany their reports with warnings that seemingly high costs or unfavorable variances (such as our measure of excess capacity) are not necessarily indicative of inefficiencies. Further, they must take all reasonable steps to assure that their data will not, in fact, be used to draw unwarranted conclusions.

- **ABC should be used to provide decision-useful information, not to develop a conceptually pure measure of costs.** In conducting our project we quickly realized that the full cost of courses and programs must include the myriad of university-wide costs, such as those of the President's office, admissions and student services. However, our focus was mainly on the accounting department and the business school, and the addition of the university-wide costs would likely have little effect on the decisions made at those levels. In light of the limitations of existing systems, the benefits of including these costs did not seem to justify the effort.
- **ABC can provide interesting insights into the costs of programs and activities.** Our study, for example, highlighted the cost of scheduling inefficiencies and pointed to the dramatic differences between the resources directed to the Ph.D. students and undergraduate students. No doubt, many of our findings could have been discerned without the benefit of our study or of ABC. The reality is, however, that they were not. Insofar as there is truth to the popular aphorism "what you measure is what you manage," then by measuring certain critical costs, ABC may force administrators to manage them.
- **ABC may highlight changes in circumstances that have taken place gradually over time and of which administrators might not yet be cognizant.** For example, in the Business School until a few years ago the computer support department consisted of a small staff of technicians. Their main job was to manage the school's mainframe computers and to install and support personal computers in the student computer labs and in faculty offices. Today, however, the influence of computers is pervasive and the technology group has a significant impact on virtually all programs and activities in which the school is engaged. Yet, we were unable to quantify meaningfully the group's contributions to any of these programs and activities. We raised questions, therefore, as to whether providing better cost data to the department could assist them with managerial as well as accounting reforms.
- **The rationale for using ABC in industry is to allocate indirect costs to goods or services based, not simply on what is convenient, such as direct labor, but on the factors by which they are most influenced.** We found that this rationale is no less compelling in universities than in industry. We allocated the costs of support services on the basis of the factors that most directly affect their magnitude rather than the conventional basis of, "number of students." The result was cost information that we believe is more useful for virtually all decisions that faculty and administrators are likely to make.
- **Despite their unique features, universities have much in common with other types of government organizations.** As public demand for increased accountability becomes more intense, governments must demonstrate that the benefits of the programs and activities in which they engage are commensurate with their costs. Accordingly they need accounting systems that properly measure and report these costs. In governments, no less than universities, managers and other employees may contribute to more than one program and activity. Hence costs must be allocated and ABC is therefore as likely to be of benefit to other types of government entities as to universities.

Appendix

The Need for Improved Cost Controls in Higher Education: The Conclusions of the National Commission on the Cost of Higher Education

Owing to concerns over rising costs of higher education, Congress established in 1997 the National Commission on the Cost of Higher Education. Constituted as an independent advisory body, the objective of the Commission was to review comprehensively the reasons for increases in college costs and prices and to make appropriate recommendations as to how they might be contained. The Commission issued its report in January 1998.[1]

The Commission acknowledged that "the United States has a world-class system of higher education," and that "American higher education remains an extraordinary value." Nevertheless, the Commission reported that "…rising college tuitions are real. In the 20 years between 1976 and 1996, the average tuition at public universities increased from $642 to $3,151 and the average tuition at private universities increased from $2,881 to $15,581."

Lest there be any doubt about the association between costs and tuition, the Commission pointed out that during a portion of this period of rising tuition, the instructional cost per student in public colleges universities increased from an average of $7,922 to $12,416 between 1987 and 1996, an increase of 57 percent, and in their private sector counterparts the increase averaged 69 percent, from $10,011 to $18,387. Warning that colleges and universities had best pay heed to their rising costs, the Commission noted that "Public anxiety about college prices has risen along with increases in tuition."

The Commission concluded that "Financing a college education is a serious and troublesome matter to the American people," and now is "on the order of anxiety about how to pay for health care or housing." Among the root causes of this problem: that academic institutions "have not seriously confronted the basic issues involved with reducing their costs and that most of them have also permitted a veil of obscurity to settle over their basic financial institutions." It advised that unless United States colleges and universities get their fiscal houses in order, "policy makers at both the state and federal levels could impose unilateral solutions that are likely to be heavy-handed and regulatory."

Nevertheless, the Commission emphasized that there is no clear cause and effect relationship between rising costs and rising prices. "Linking specific cost increases to price increases is a tricky matter," it noted. "Quite simply, the available data on higher education expenditures and revenues make it difficult to ascertain direct relationships among cost drivers and increases in the price of higher education."

[1] *National Commission on the Cost of Higher Education (NCCHE). Straight Talk about College Costs and Prices: Report of the National Commission on the Cost of Higher Education, 1998.*

A primary reason why rising tuition cannot be tied to rising prices, the Commission contended, is the absence of reliable data on college costs. "Institutions of higher education, even to most people in the academy, are financially opaque," it observed. "Academic institutions have made little effort, either on campus or off, to make themselves more transparent, to explain their finances. As a result, there is no readily available information about college costs and prices nor is there a common national reporting standard for either." Colleges, it said, "report on financial standards using one methodology; report expenditures using another; and conform to government cost-recovery principles with yet a third." It further points out that statistical data on college and university costs fail to distinguish between institutions that have markedly different missions and therefore have very little in common. Thus, the data may combine information from major research universities and universities with medical schools and other costly professional schools with that from small liberal arts institutions.

Our study confirms the Commission's assertion that the data on college costs cannot be relied upon. However, whereas the Commission emphasizes that the data are undependable owing to a lack of comparability, our research suggests that the problem may be far more basic — perhaps colleges and universities lack the accounting systems to produce proper data.

Our study was premised on the notion that cost information is an essential ingredient of cost control — one that appears consistent with the conclusions of the Commission. Both the Commission and other researchers have suggested several possible reasons for the increases in college and university costs. To cite but a few:

- Increase in faculty salaries and other labor costs
- Increase in the number of nontraditional students who require remedial and other special programs
- Student demand for high quality equipment and facilities
- Increases in numbers of programs and courses
- Increases in numbers of administrators
- Growth in the number of accreditation agencies and the demands that they place upon institutions.

Yet the Commission was unable to confirm any of these causes. "This Commission," it said, "finds itself in the discomfiting position of acknowledging that the nation's academic institutions, justly renowned for their ability to analyze practically every other major economic activity in the United States, have not devoted similar analytic attention to their own internal financial structures. Blessed, until recently, with sufficient resources that allowed questions about costs or internal cross-subsidies to be avoided, academic institutions now find themselves confronting hard questions about whether their spending patterns match their priorities and about how to communicate the choices they have made to the public." In other words, the Commission implied, colleges and universities do not know the cost of their courses, programs and other activities in which they engage.

About the Authors

Igor Vaysman (left), Micahel Granoff (middle), and Dave Platt (right)

Michael H. Granof is Ernst & Young Distinguished Centennial Professor in Accounting, Department of Accounting, College of Business Administration, University of Texas at Austin. Professor Granof received his A.B. from Hamilton College, his M.B.A. from Columbia University, and his Ph.D. from the University of Michigan. His research and teaching interests include accounting in governmental and other nonprofit organizations and financial accounting.

David E. Platt is Assistant Professor, Department of Accounting, College of Business Administration, University of Texas at Austin. Professor Platt received his B.S. from the Wharton School at the University of Pennsylvania, his M.B.A. from Syracuse University, and his Ph.D. from Cornell University. He is a CPA and has worked in manufacturing and public accounting. His teaching and research interests include managerial and cost accounting, non-financial measures of performance, and management control systems.

Igor Vaysman is Assistant Professor, Department of Accounting, College of Business Administration, University of Texas at Austin. Professor Vaysman received his B.S. from Trinity University and his Ph.D. from Stanford University. His teaching and research interests include managerial and organizational design, costing systems, and decentralization.

Key Contact Information

To contact the authors:

Michael H. Granof
Professor of Accounting
Department of Accounting
College of Business Administration
The University of Texas at Austin
CBA 4M.202
Austin, TX 78712-1172
(512) 471-5215

e-mail: mgranof@mail.utexas.edu

David E. Platt
Assistant Professor of Accounting
Department of Accounting
College of Business Administration
The University of Texas at Austin
CBA 4M.202
Austin, TX 78712-1172
(512) 471-5215

e-mail: platt@mail.utexas.edu

Igor Vaysman
Assistant Professor
Department of Accounting
College of Business Administration
The University of Texas at Austin
CBA 4M.202
Austin, TX 78712-1172
(512) 471-5215

e-mail: vaysman@mail.utexas.edu

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For additional information, contact:

Mark A. Abramson
Executive Director
The PricewaterhouseCoopers Endowment for
The Business of Government
1616 North Fort Myer Drive
Arlington, VA 22209

(703) 741-1077
fax: (703) 741-1076
e-mail: endowment@us.pwcglobal.com
website: endowment.pwcglobal.com

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The PricewaterhouseCoopers Endowment for
The Business of Government

1616 North Fort Myer Drive
Arlington, VA 22209-3195