

**Of Institutional Strategic Decisions & Performance Indicators:
A strategy to improve institutional effectiveness**

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Abstract

Recognition of the critical value performance indicators can play on institutional improvement transcends international boundaries. Several American and Mexican universities believe performance indicators can improve institutional decision-making while providing a valid mechanism to meet demands for accountability. Though those institutions value performance indicators, they also fear that current processes for defining indicators neither adequately connect the institutions with their constituents, nor necessarily relate directly to the decision-making patterns of the university. This paper discusses a conceptual basis for the development of performance indicators that effectively: a) improve internal decision-making processes, and b) meet the demands for accountability.

Introduction

This paper reports the strategy used by the University of Puebla (UAP), in collaboration with Pennsylvania State University (PSU), to introduce a system of performance indicators. The UAP seeks to improve the quality of its programs and services and to increase its efficiency and effectiveness as organization. It recognizes the value of evaluation and quality assurance mechanisms, not merely to demonstrate accountability to their multiple constituents, but more fundamentally, as a basis for

informing its goals and objectives, its strategic initiatives, and the analysis of its accomplishments and outcomes as part of a program of continuous quality improvement.

To meet these imperatives for improvement -for greater efficiency, effectiveness and accountability and to demonstrate of the quantity and quality of their engagement -the institution believes that decisions can be guided by more timely, useful, and accurate information on the manner in which they carry out their missions. The leaders at the institution believe that performance indicators can help improve both institutional decision-making and internal and external communications. However, they are also concerned that the current processes for developing performance indicators neither adequately connect the institutions with their constituents, nor necessarily relate directly to the decision-making and communication patterns of the university. The UAP turned to the Center for the Study of Higher Education at the Pennsylvania State University, with whom we already have effective working relationships, to assist in the development of a model for the development and use of performance indicators driven by the decision-making and communication needs of each organization. This project sought to accomplish three major objectives:

1. To improve internal decision-making processes,
2. To enhance internal and external communication of performance, and ultimately,
3. To improve the quality of university resources, operations, and outcomes guided by timely and useful information about the performance of the organization.

Background

The UAP set out to introduce performance indicators for external and internal reasons. Externally, it was not so much the pressure of government, but rather the lack of performance indicators that brought the university to set up a proper system of indicators. Since the beginning of the 1990s, several evaluation processes were introduced in Mexico -some of them containing performance indicators- but evaluation did not become a central part in the relation between government and universities (de Vries, 1999). Except for a few processes concerning graduate programs, no implications have been tied to evaluation.

An important shift occurred in 1996, when the federal government introduced a new policy: the

EAIR, Berlin, September 6-9, 2000.

Program for the Improvement of Teachers (PROMEP). Though initially presented as a program to improve qualifications of existing faculty, PROMEP started to establish development plans with the academic units of each public university, concerning basic inputs such as faculty numbers, enrolment predictions, and necessary infrastructure (libraries, laboratories, computers). Whereas faculty improvement is attended through grants for graduate studies, the other aspects are funded through the Fund for the Modernization of Higher Education (FOMES), by way of development project presented by the academic units. Although FOMES and PROMEP introduced a planning exercise concerning the inputs necessary to elevate Mexican higher education to international standards –stating the necessity to count with 70% of faculty being full-time, with graduate qualifications and adequate working conditions- it does not state explicit goals regarding processes and outcomes (de Vries, 2000).

As such, there has been no outside obligation to show performance. However, the BUAP considered that according to international experiences, performance indicators are sooner rather than later to play an important part. The need for a better process of selecting and implementing performance indicators is driven by several social, economic, and technological factors: The workplace (both inside and outside the university) is changing rapidly. Work roles are changing quickly, and persons hold an increasing number of careers over their lifetimes as well. The explosion of knowledge is reshaping academic programs, making the useful life of the technical, professional, and specialized training increasingly short. Staff in all occupations and organizations (including universities), need to engage in focused efforts to update and improve their knowledge and skills. Technological competence is essential for an ever-increasing range of fields, from secretarial and police services to professional and academic disciplines.

At the same time, a growing proportion of the population is enrolling in higher education. Changes in the demography and a broadening of participation increase the diversity of student interests, abilities, and preparation for university studies. As members of the Organization for Economic Cooperation and Development (OECD) and of the North American Free Trade Agreement (NAFTA), Mexico needs education, research, and service whose quality is assured through systematic international referencing, as the country grows evermore engaged in the global economy. The social and economic integration occurring globally leads to the necessity to place greater emphasis on the

EAIR, Berlin, September 6-9, 2000.

value and quality of programs and services. It causes government to look to the institutions of higher education as leaders and bell-weepers in the implementation of such processes.

As higher education institutions seek to transform themselves within the context of the aforementioned forces, they do so in an environment of increasing competition. New providers of university-level studies –with a rapidly growing private sector– press the universities to seek better, quicker, and cheaper ways of conducting their business. This pressure to work better, quicker, and more cheaply is occurring concurrently with the dilution and diminution of public resources for higher education. General state support for operating public institutions has increased marginally in the second half of the 1990s, and per capita expenditure for student enrolments has dropped slightly.

Institutions themselves have recognized that the current human and financial resource base cannot sustain the public university in the future¹. Incremental approaches to setting goals, allocating resources to programs and services, and evaluating quality on the basis of inputs -- student and faculty qualifications and expenditures – will not sustain nor inform in the current environment of rapid change.

The UAP recognizes that, in the absence of a set of meaningful performance indicators, external constituencies such as state and federal agencies may exert pressure to adopt criteria of success with little connection to the institution's mission and core set of values. Considering the legitimate claim for accountability by external agencies, we seek an information system that informs external constituents on the critical areas of performance that are of mutual interest to both institutions and these outside parties. Moreover, providing performance indicators without being asked for provides the university a leading position in the competition for funding, and the possibility to set the terms of debate.

Internal factors also play an important part. On the system level, public funds are allocated on an historical basis, not linked to performance. Even though this procedure is criticized every year by university presidents, it repeats itself within the university: funds allocated to each department are based on previous years, not on performance. The designation of any additional funds follows a

¹ See for example recent proposals by the National Rectors Association (ANUIES, 1999) for performance based funding.

EAIR, Berlin, September 6-9, 2000.

process of pressure on the president, who is faced, on a daily basis, with petitions from the academic units. This led to two types of problems: how to select among petitions, and how to review the effects of these funds.

After the change of president in 1997, the idea of performance indicators arose. In part this was due to the need for information on how the university was doing. Since the beginning of the 1990s, the BUAP started to seek new strategic directions. This implies that decisions are taken to significantly reorganize crucial functions of the university. These decisions, in turn, lead to a growing need for a system of indicators that provides information about the current situation and about changes in performance. Such a system has to do more than measure change: it has to guide the institution to improvement.

The most important consideration, however, was to shift the debate –and the political negotiations- from a scheme based on necessities to one dominated by a strategic planning of performance or outcomes. As such, the UAP does not seek to introduce additional data to simply gather or to provide more information. We are convinced that an information system driven by a system of indicators should be guided first and foremost by the establishment of the performance goals at the different levels of decision making in the institution. Potential performance indicators are selected and defined only after the performance goals have been identified. Consideration was also given both to the availability of the selected indicators and the related data and their ability to support the critical decisions that need to be made.

Cross-national learning and comparisons

Evaluation is an excellent example of where policy and practice can be adapted from one country to another. A study of western European higher education concluded that a “considerable degree of cross-national learning . . . has taken place” (Westerheijden, Brennan, and Maassen 1994, p. 21). For example, beginning in the mid-1980s, the Netherlands developed new policies for program review and quality assurance adapted primarily from the U.S. model of self-study, peer review, and self-regulation, giving particular attention to the quality of teaching and instruction. The emerging “Dutch

EAIR, Berlin, September 6-9, 2000.

model” was further adapted in universities in Denmark, Belgium, and Portugal. A performance indicators project, such as the one discussed here, holds great promise as a comparative and international endeavour.

The Dutch model, adapted from the American, in fact was built on two antecedent models: the French model of vesting evaluation in an external authority and the British model of a self-governing community of scholars (Cobban 1988). The intersection of these two models promulgates a dichotomy inherent to the development of quality assessment systems. This dichotomy, according to van Vught, is due to the differences between the model using external evaluators and the model using internal review by peers:

A quality assessment system that relies only on collegial peer review without any reference to the needs outside the higher education system implies the risk of an extreme isolationism of the higher education institutions from the rest of society (and thus the danger of the denial of legitimacy of their existence). A quality assessment system which is limited to only providing accountability to external authorities denies some of the basic characteristics of higher education institutions and, therefore, implies the risk of not being taken seriously by the profession.

The UAP decided to collaborate with PSU on this project for several reasons. First, both institutions are undergoing similar processes of organizational change in which assessing the internal efficiency is a key consideration. These processes implied new approaches for defining the allocation of resources to the different units and, as a result, a need for specific information that can guide these allocations.

A second reason lies in the growing need for comparability of education performance data between US and Mexico. The NAFTA treaty explicitly calls for comparability data in regards to undergraduate, graduate and professional education. In this respect, the project seeks to establish meaningful comparisons between institutions in both countries regarding basic data on students, staff and faculty, and regarding the influences of cultural and institutional settings on processes of change.

Lessons drawn from theory and international experiences

Universities *de facto* organize advanced knowledge and learning by virtue of how faculties and courses of study are grouped (Beecher 1989, Clark 1983, Ratcliff 1997b, Scott 1987, van Vught, 1994). Evaluations of academic programs are conventionally the purview of academic professional experts and the evaluation of administrative and support services are often viewed as ancillary to the academic enterprise.

The disciplinary, interdisciplinary, and professional programs are the cells and units of the university organism. These cells are loosely and dynamically related (Weick 1976). When knowledge is discretely housed among a single faculty or within a single department, courses of study can evolve largely independent of one another, minimizing the need for coordination and maximizing the discretion of individual faculty in determining content, processes of instruction, and means of assessment. Evaluation of single disciplines, subjects, or units, tends to be compartmentalized to the faculty or staff directly associated, yet the literature on university organization and administration frequently note its complexity. Simple bureaucratic or hierarchal models of governance do not explain the decision-making and communication patterns within the organization. Thus, conventional organization of academic work assigns the responsibility for evaluation to the lower levels of the organization, leaving institutional administration relatively weak in its ability to determine the quality of programs and services without the assistance of the academic experts of the field under study (van Vught, 1994).

Although this is the central point of international literature, practice used to be different in Mexico, up to the point that researchers have put in doubt if Mexican universities can be considered as bottom heavy (Kent, 1996). Government initiatives also have relied on definitions of quality from the outside, and self-evaluation hardly exists in México.

In our case, a first step consisted in defining the academic units as the main actors. In order to elaborate performance indicators, task groups were set up in each academic unit. Each task force consisted of the director of the academic unit and 5 to 6 academic leaders.

Quality and organizational performance

EAIR, Berlin, September 6-9, 2000.

A most sanguine and popular model for evaluating institutions and their programs and services is to determine their quality. Unfortunately, there is no absolute agreement as to what constitutes quality, so the model had to begin with defining what quality is.

A primary attribute of the quality model for evaluation is its political nature. Niklasson (1996) suggests that the quality model provides a least objectionable solution to the resolution of governmental and administrative need for decision-making and accountability and academic professional need to maintain the direct control over the formulation of programs. Thus the quality model reflects the knowledge organization in which they labour. Compared to models that rely on direct governmental steerage, the quality model relies on self-regulation and peer review as the basis for determining quality while governmental and administrative constituents oversee the processes by which academics go about determining program quality.

For governments, the quality model provides less agency time and resources to effect, particularly given the size and extensiveness of higher education in most developed and developing countries today. Also, experience in Europe and North America suggests that it is complex and difficult for governments to design and orchestrate program reviews and institutional evaluations. While consultants may be used for episodic reviews, it is difficult for an agency to sustain responsibility for detailed analyses over time (El-Khawas and Shah, 1998). In short, it makes sense for the state to engage the professions within and the stakeholders and the external constituents to achieve an operational definition of quality based on mission, rather than imposing a predefined notion of quality that may or may not correspond to the institution, its students, its community, and its organizational culture and environment.

The same principle is true for the institution: throughout the 1990s, it has proven difficult for the institution to define and review the quality of the academic units. Considering this, we started looking for a model wherein the units themselves defined standards and evaluated performance. As such, each academic unit oversees its own performance, whereas the institution has a more limited monitoring function, shifting the focus from control to supervision.

Four design principles

EAIR, Berlin, September 6-9, 2000.

The design rests on four principles supported by the assessment literature (Borden & Banta, 1994; Gaff & Ratcliff, 1996). To begin with, data are best when defined by the user. For a performance indicator to be useful, the data it conveys should inform a decision-maker about what is taking place at the institution in a manner that improves the decisions (Ewell, 1997). Second, performance indicators should provide information about the input, processes and outcomes associated with a particular institutional function or strategic area (e.g., enrolment management, learning, teaching, outreach community service). Performance indicators owe their value to their ability to link outcomes with inputs and processes, underscoring each strategic area or function (Borden & Banta, 1994). Third, performance indicators are best when used as a group. The information they provide should render a comprehensive picture of institutional strategic performance to enable strategic decisions to be made holistically. Finally, the best performance indicators, like the data they convey, are those that have been selected, defined, and selected by the end user (Whiteley, Porter & Fenske, 1992).

Considering these principles, the task groups of each unit started by defining their main weaknesses or problems in teaching, learning and research. For these, desirable and feasible outcomes were defined, expressed in performance indicators. A second step consisted in defining the processes that were crucial for obtaining these outcomes. Finally, these task groups defined crucial inputs for these processes. This process meant a reversal of the traditional scheme of planning in the university, based on negotiations over necessary inputs without clear statements on outcomes.

Strategic goals and planning

While the BUAP has engaged in planning activities in the past, the institution had not integrated strategic planning and budgeting at all levels and units of its organization. At the same time, at the beginning of the new term of government, the BUAP elaborated a development plan that set bold visions, missions and directions for the institution. These needed to be carried into the planning, resource allocation, and operations of every unit within the organization. Traditionally, the implementation of development plan followed a top-down approach, with several administrative units being responsible for parts of the plan. These units subsequently translated the plan into goals to be attained by the units, generally with little impact.

EAIR, Berlin, September 6-9, 2000.

While the purpose of the project was to establish a system of performance indicators, the first question we asked was: “For what organizational performance do we wish to have indicators?” Strategic planning and budgeting require clear performance goals from which indicators can be derived to evaluate progress toward those goals. Furthermore, to meet the aforementioned challenges, those goals articulate fundamental changes in direction, not merely incremental progress required to maintain the status quo. Both goals that stretch the organization and performance indicators that guide progress toward those goals were needed.

Instead of deriving performance indicators from the broad goals stated in the institutional development plan, we asked the academic units to define their own problems and priorities. In return for additional funding, units had to state goals that went beyond their current operation.

Organizational complexity and levels of performance

Strategic goals are not only ones that stretch organizational performance but they also guide decision-making in environments where multiple missions prevail. While universities provide teaching, research, and service functions and to do so, maintain a myriad of programs and services, they cannot meet each an every agenda, need, or expectation articulated by their various constituents and stakeholders. Strategic choices need to be made about how much support and effort should be invested in each strategic initiative undertaken. Levels of human and financial resources devoted to each initiative require close monitoring to insure careful stewardship.

For each strategic goal, information is needed to determine the performance of the organization in attaining it. In the workshops with the task groups, we asked them to answer questions representing ascending levels of attainment:

- » Have we reached a professional level of attainment?
- » Can we maintain activities at that professional level?
- » Can we achieve creativity and distinction in our attainment?

Such questions can guide decision-makers to address and answer a key interpretative question for each

indicator, “How much is good enough?”

There is however an additional problem when it comes to defining how much is good enough: Traditionally, academic units within universities have been reluctant to set goals that stretch their performance or to provide an answer to the question of how much is good enough. Strong cultural norms and academic values work against limiting or focusing direction. Organizational units, particularly academic departments, are only marginally driven by the strategic goals and priorities of the university as a whole. Often, there is little effort to work on priorities in the order of their importance or to match unit capabilities with opportunities to progress toward high priority aims. It proved crucial in working with the task groups –at least in the first phase- to shift attention from the evaluation of individual academic performance to the assessment of students.

Goals and resource allocation

But then, as many academic units observed initially, why should we set explicit goals? Whereas the units did not take into account the institutional goals stated in the Institutional Development Plan, the institution paid little attention to the units when it came to budgeting. Information upon which budget decisions were made were trivialized, reductionistic oversimplifications of institutional priorities and complexities. While the budget supported on-going operations, often it was necessary to lay aside some small amounts for unforeseen circumstances. Little strategic decision-making and resource allocation occurred at the unit level because budgetary processes did not include (and generally discouraged) allocations for capital investment (i.e., curricular reform, distance learning, or technological updating and upgrading). Everyday complexity of decision-making reflected expanding goals and objectives, declining monetary resources, and efforts to increase quality of accomplishments pull in opposite directions.

A first step in our design was to free up some funds, particularly for infrastructure and for the operation of reform plans. As a result, the workshops with each academic unit not only lead to a definition of reform strategies and indicators, but also translated these proposals into operational plans tied to budgets.

Good feedback

A performance indicator is a form of evaluation. A key characteristic of effective evaluation is feedback. That is, to the extent that the evaluation information is timely and useful to the decision-maker, it can be employed to make improvements. For example, if a student receives feedback on a term paper after the conclusion of a course, the student has no opportunity to improve his or her performance within the course. In such a case, the feedback is not timely and research shows the student is less likely to use the information to improve his or her learning. To be effective, evaluation information must be received at a time when some action can be taken for improvement. Further, the amount, form and substance of the evaluative information must be such that the user can readily access and employ it for improvement. Feedback received in a useful and timely manner is more likely to be valued and used, whether the individual be a president, dean, faculty member, or student (Ewell, 1997; Ratcliff and associates, 1996). Whether in the classroom or the boardroom, timeliness and usefulness are key quality of effective evaluation.

Within the process, each academic unit had to define not only its own set of indicators, but

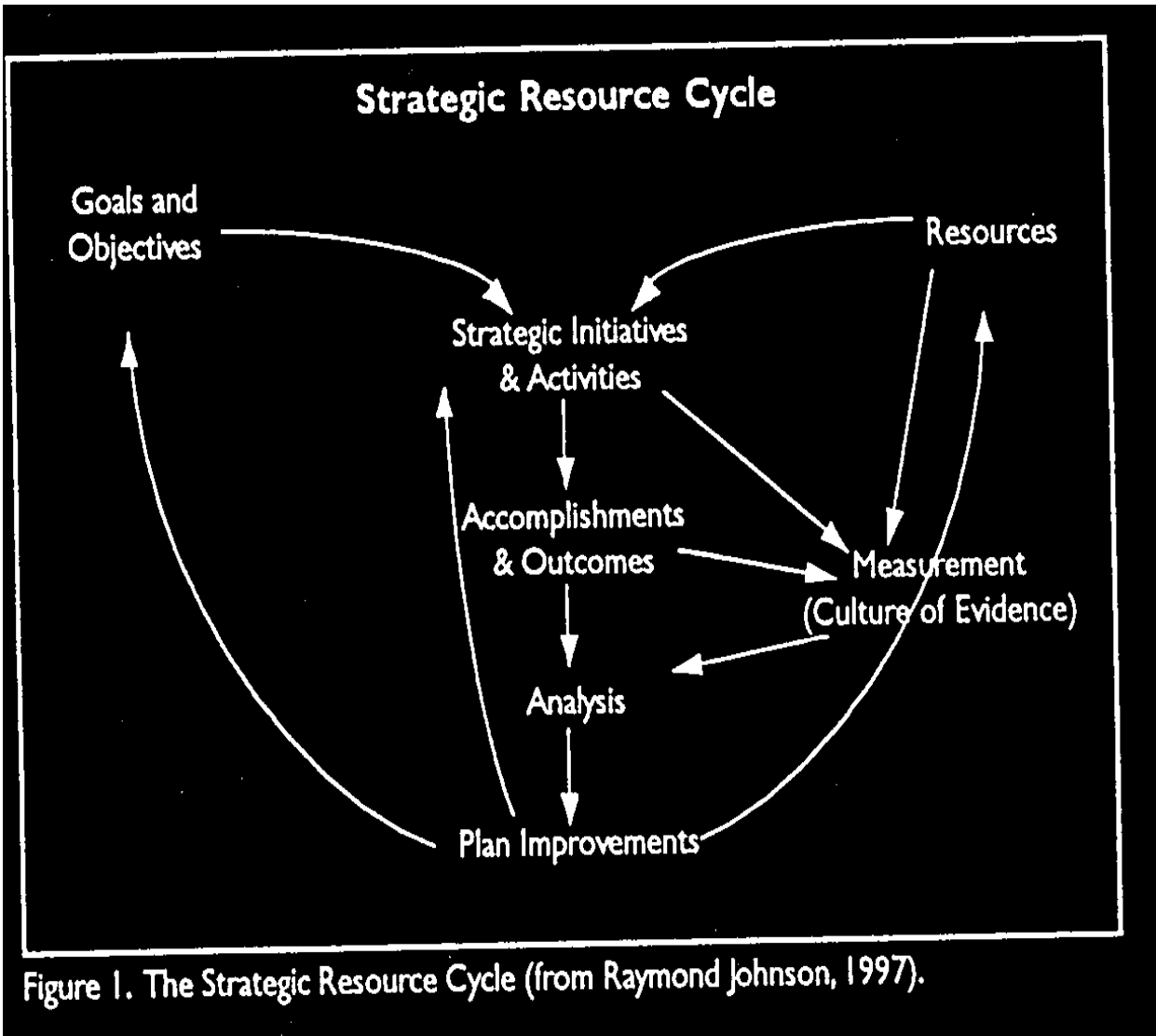


Figure 1. The Strategic Resource Cycle (from Raymond Johnson, 1997).

EAIR, Berlin, September 6-9, 2000.

also defined crucial moments for decision-making. The relationship between the evaluation information embodied in the performance indicators, the strategic decision-making within each unit, and resource allocation processes to be employed is illustrated in Figure 1.

Given the model portrayed in Figure 1, performance indicators are derived from performance goals stated by each unit. They consider three dimensions: **inputs** (resources), **processes** (strategic initiatives and activities), and **outputs** (accomplishments and outcomes). Analysis of performance is grounded in measurements of inputs, processes, and outputs relative to performance goals. Plans for improvement are derived from the interpretation of the gap between desired and achieved performance. Resource allocations are made upon these analyses and the resource capitalization requirements of improvement plans. Performance goals are modified to reflect the new evidence of institutional performance.

Thus, our design seeks to address problems in traditional strategic planning with a different perspective; one in which the academic units themselves:

1. Inventory performance goals and objectives at each key level within their organization;
2. Identify central decisions at each level embedded in key performance dimensions;
3. Identify the form, timing, and context of information needed to support decision making; and,
4. Select performance indicators to accomplish the decision-making and communication needs of each and across levels within each unit.
4. Use performance indicators as a basis for informed decision-making and communication within the organization of each unit.
5. Administrate an operational budget to attend their goals

The process of defining performance not only involved academic units, it also implied changes in the

operation of the several administrative offices during two stages:

1. *Design Stage.* The focus of this stage was the definition of the main performance goals in the strategic areas of each institution. This implied the establishment of a process to assist administrators in the identification of a) the critical institutional domains of their institution, b) the singling out of key decisions for each domain, and c) the identification of the different organizational units whose decision-making overlap in each of these key decision domains.

Once the key decisions and overlapping units had been identified, the next step was to assist the key administrators in the mapping out of the input, process, and outcomes that are associated with each key decision at each institution and to review their role in the process.

2. *Implementation and Evaluation Stage.* Currently the UAP is involved in a second stage, one in which the focus is on the selection or design of those indicators that can best inform key decisions in each institution's performance domain. During this stage, users within each organizational unit select those performance indicators that provide the best information to the various decision makers engaged in similar organizational functions and strategic areas. This phase also includes a series of pilot studies to refine the indicators before their full implementation across the units of the university.

Evaluation

In order to evaluate the design phase of the project, a series of data gathering activities were undertaken parallel to the design process itself. Before beginning to inventory the decision-making processes within the university, data were gathered from key internal and external constituencies regarding their perceptions about the critical decision-making and communication processes relative to each institution's mission and performance dimensions. Commonalities and, foremost, potential

EAIR, Berlin, September 6-9, 2000.

contradictions among these constituencies were particularly useful since they underscored the need for additional criteria for institutional effectiveness. Another goal of this evaluation component was to form a clear perspective of how the institution is viewed by its various constituencies and whether this portrait differs from the one fostered by the leadership at each institution. These pictures, then, were pertinent in mapping out the nature and quantity of the performance indicators and the context within they might best be used.

Assessment of the quality of indicators implemented was based on principles derived from communication theory and perceptual perspectives. Based on questionnaires and focus interviews with key internal and external constituencies, performance indicators were judged in two main areas:

A. Communication:

- *Readability.* The extent to which the set of indicators is easy to understand without extensive training.

EAIR, Berlin, September 6-9, 2000.

- *Completeness.* The extent to which the set of indicators provides a comprehensive portrait of a particular institutional function or strategic area.
- *Reliability.* The extent to which the indicators converge in providing similar information.
- *Replicability.* The extent to which information provided by the indicators is replicable by other means.

B. Decision making:

- *Timeliness.* Extent to which the performance indicators provided information when needed by both internal and external constituencies.
- *Quality.* Extent to which decisions in each strategic domain improved as a result of information provided by the performance indicators.
- *Acceptability.* Extent to which decisions reached by key internal constituencies were accepted and, thus, implemented by the different components of the institution.
- *Credibility.* Extent to which decisions reached by key internal constituencies are accepted and respected by key external constituencies.
- *Engagement.* Extent to which performance indicators facilitate engagement with the institution from internal and external constituencies.

At the conclusion of the design phase of the project, initial perceptions of decision-making and communication held by key constituents and decision-makers was contrasted with those associated

EAIR, Berlin, September 6-9, 2000.

with the design process. In this way, the impact of the project on the deliberations within the institution can be monitored and used for the refinement and improvement of the process of development. Particularly important were the surveys to assess student opinions on learning conditions, teaching methods, satisfaction, and alumni feedback.

Lessons learned

Most evaluation efforts view institutions of higher education as hierarchical organizations in which services and outcomes are generated via functions (e.g., instruction, research, public service, academic support) carried out by units (e.g., financial aid, academic advising, the registrar) organized in a hierarchical fashion. Researchers have long rejected this approach to higher education as a rigid entity (Cameron, 1987), yet it still permeates evaluation efforts in many institutions of higher education (Haberaecker, 1992). The UAP was no exception to this rule.

Our approach departed from conventional views of organizational functions and units in a number of ways. First, we made institutional strategic decisions and communications the twin foci of analysis and the principal bases for the selection of performance indicators. Second, we recognized that critical institutional decisions are carried out best, not by institutional units functioning in isolation but within the context and involvement of external constituencies as well. When such decisions affect primary functions to the institutions, they can be regarded as “strategic decisions” to the university. Third, we recognized that decision-making and communication often are made by multiple units not aligned hierarchically, and we give specific attention where overlapping decision-making where it occurs and to the way that similar evaluation information is used by different entities within and external to the institutions.

The advantage of using decision- and communication-structures as the primary means to identify performance indicators is twofold. First, it helps to identify those entities or units, inside and outside the institution, that overlap in a particular decision space. The more the number of entities overlapping in a particular decision area, the more critical this decision is for the operation of the institution. As shown in Figure 2, decisions Number 1 and Number 3 are more likely to be critical due

to the great number of constituents involved in them (Entities A, B, and C). This matrix approach allows for the specific examination of communication between units and entities over specific decisions. Thus, it enables the selection of forums and reporting schemes most likely to facilitate greater communication and understanding about the decisions as well as increase the likelihood that the decisions will be grounded in substantive information on the performance of the institution relative to its strategic directions.

This matrix approach to identifying overlap in decision-making also helps identify those units or entities that are the primary stakeholders for the institution. These stakeholders are relevant in the development of performance indicators since they are the ones that judge the effectiveness of the institution. In Figure 2, Entities A and C are stakeholders in the operation of the university due to their broad involvement in several decisions. The role of A and C may or may not be acknowledged by an examination of the traditional university organizational chart, illustrating the potential power of the proposed approach to identify dependencies and interrelationships of various otherwise unrelated organizational units.

Fig. 2 Decisions overlap and stakeholders

Units	Decisions				
	1	2	3	N
A	x	x	x		x
B	x		x		
C	x		x	x	x
D	x				
...	x				
N	x				

Astin (1991) argued that the best manner to examine the operation of an institution of higher education is a systemic one in which services or outcomes are the by-products of inputs and processes. This also

means that decisions vary as a function of whether they address inputs, processes or outcomes (see Figure 3). Within this context, then, performance indicators should also vary as a function of the particular element in the system about which they provide information. Yet, to obtain a comprehensive portrait of the institution, inputs, processes, and outcomes need to be examined concurrently and systematically.

The matrix represented in Figure 3 helps define the level of information specific performance indicators should address. It represents a matrix of decisions occurring across the institution. As the matrix unfolds, so will the demands for information in each organizational component.

Figure 3. Distribution of Input, Process, and Outcome Indicators in Decision-Making Events					
	Decisions				
System component	1	2	3	N
Input	X	X		X	X
Process	X		X	X	
Outcomes	X			X	X

While Decision Number 2 may traditionally rely on input information alone, and Decision Number 3 may conventionally use process information, wherever possible in the development of the system of performance indicators, input, process and outcome indicators will be selected and used to provide a

comprehensive basis for examining institutional functioning and to enhance the basis for decision-making.

Improvements

While breaking through bureaucratic networks implied extra work and political give and take, it showed several advantages:

First, priorities and their according financial needs turned out to be different when defined by the academic units, than when formulated by administrative offices. Several issues regarded as problematic by the administration were not considered as such by the units. Significantly, administrative units considered inputs as the main problem, whereas the academic units the organization of central processes as the central issue. As such, a typical answer from the administration was to assign extra resources, while units considered that agreements between faculty members on organizational aspects would lead to improvement.

By the same token, we were able to identify several administrative units that played a formal role in decision-making, but that did not make any decisions at all. Some of them merely delayed the process of decision-making without aggregating anything. A major problem for the academic units simply was finding out who did what within the administration of the unit, and, more over, what priorities each administrative office would be willing to fund. Several academic units indicated that they adapted their budgetary petitions to what they thought administration might be willing to support. Such a perspective affirms the position that local knowledge may be the most accurate for the unit, but adapting that knowledge to what is perceived as desirable by the administration re-institutes administrative hierarchy and *de facto* redefines optimum performance in relation to priorities established more centrally.

The exercise also showed important pitfalls for the PROMEP program. The development plans signed with PROMEP have a basic flaw due to its emphasis on inputs: most plans are made up as Christmas wishing lists. Units had either inflated or deflated their list of petitions for inputs – depending on the probabilities they saw of getting what they wanted- but rarely ever had considered desirable outcomes. Some resources asked for within the plans served very specific needs of

EAIR, Berlin, September 6-9, 2000.

academic groups or even individuals. Also, there were several lacks of sequence between faculty development, infrastructure and learning goals. Focusing on outcomes, it was possible to identify more specific needs for inputs, and to develop a more precise sequence of attending these needs.

A third point is that we were able to provide an operational content to the institutional development plan. Instead of urging units to come up with actions that fitted within the plan, we accommodated the actions the units thought necessary within the plan through a bottom-up process. We started to develop institutional goals as a product of combining, or grouping, performance goals of the academic units.

An important result of this procedure was higher efficiency: When the reforms were planned by the administrative units, costs tended to be higher and more actors are involved, without securing better outcomes. Budget for these reforms not only included operational costs for changes in the units, but also important administrative expenditures. The bottom up approach attended one of the major complaints by the academic units: that they were asked to comply with goals but without control over the necessary budget. An important step proved to be to decentralise part of the budget, and to assign special funds directly to academic units, to academic leaders, with a scope of several years. It proved feasible to reduce administrative costs and heighten impact at the same time.

In the fourth place, we found that explicit goals foster debate. Performance indicators related to outputs clarify goals and invite to discussion among the academic community, more so when funding is involved. In most academic units, performance indicators started to function as benchmarks that introduced a clearer sense of purpose. Furthermore, they improved collaboration within the units, when emphasis was shifted from individual performance to goals for the unit as a whole. Finally, the introduction of performance indicators improved the internal allocation of funds, and lead to a better position in the competition for outside funding.

Conclusions

No plan or model is perfect when people and universities are involved. Such was the case in our implementation of the bottom-up approach to performance indicators. Several at UAP found it difficult to break with traditional points of view. These difficulties are found within the units, but perhaps even more within the administration itself. Several administrative offices proved very

EAIR, Berlin, September 6-9, 2000.

reluctant to let academic units plan their own development plan.

Another problem faced by central administration was to justify these goals of the performance indicators project in absence of government petitions: public funding not always follows internal priorities. These difficulties notwithstanding, the performance indicators project has thus far served as a powerful tool in re-orienting the organization units and the academic cultures they host toward improved outcomes in teaching and research. Two results have been particularly important: first, the focus on academic units leads to a different and clearer definition of goals. When linked to the budget, performance indicators provide crucial benchmarks for development. Second, setting goals and providing performance indicators without being asked for gives the university a leading position in the competition for external funding, and the possibility to set the terms of debate.

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