

Key Findings

Information Technology Alignment in Higher Education

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Alignment is defined as “the proper positioning or state of adjustment of parts, or an arrangement of groups or forces in relation to one another.”¹ For an information technology (IT) organization, “proper positioning” within an institution becomes inherently more important as technology emerges as a common thread in collegial and institutional activities. In ever more circumstances, the actions of the institution and the IT organization affect the decisions of the other.

Yet alignment can be difficult for IT leaders in higher education to achieve. The heart of information technology’s alignment with an institution is a common understanding of that institution’s priorities. But higher education’s idiosyncrasies cloud the process. Individual colleges frequently operate as independent entities, creating distinct organizational cultures and managing many academic, research, and administrative activities locally. IT leaders also can be caught in the binds of contradictory priorities at both the institutional and technology level, for example, facilitating an increase in institutional access while maintaining rigorous standards, or simultaneously promoting universal connectivity through 24 x 7 networks while decreasing costs.

The challenge, therefore, is to align *organizational* plans, investments, priorities, and actions not only with *institutional* priorities emanating from the leadership but also with relevance to the rapidly shifting goals of disparate colleges, schools, and departments. Information technology’s constant evolution further complicates the alignment process. Alignment’s multifaceted aspects require an interconnected web of strategic leadership activities—IT strategic planning, IT governance, communications, and measurement/assessment—to ensure that an institution and its IT organization uphold parallel strategies, plans, and outcomes. The EDUCAUSE Center for Applied Research (ECAR) examines this critical yet complex process in its study, *Information Technology Alignment in Higher Education*. Focal study areas include

- the environmental and leadership contexts in which alignment-seeking processes and activities take place;
- the state of the practice of IT planning, governance, communication, and measurement in higher education, (what we do, how frequently we do it, who we do it with [or to!], and what difference it makes);

- the effectiveness of our planning, governance, communications, and measurement activities and, more importantly, the specific practices that we deem to be either strongly effective or ineffective; and
- an extrapolation of the identified state of the practice and industry trends to form a vision of the state of the art in these areas of activity and possible future directions for ECAR readers and their colleges and universities to consider.

Methodology and Study Participants

ECAR used a multifaceted research methodology to collect both quantitative and qualitative data about IT strategic planning and alignment:

- A literature review to identify and clarify issues and create a working set of issues to be tested.
- A quantitative online survey of 483 EDUCAUSE member higher education institutions.
- Qualitative telephone interviews with 22 higher education IT executives.
- An in-depth review of 57 IT plans found on the Web.
- Four case studies from on-site visits to Calvin College, the University of Cincinnati, the University of Delaware, and The University of Memphis.

Key Findings

Much was learned or confirmed about the IT alignment process. ECAR's *Information Technology Alignment in Higher Education* offers insight and guidance about alignment activities: IT strategic planning, IT governance, communications, and measurement/assessment. Just as important is to temper these activities to suit the institutional context.

One Size Fits One

There is no optimal method to achieve alignment. We all know that colleges and universities are enormously diverse in terms of size, complexity, mission, culture, leadership, and a host of other variables. As one survey respondent noted, "There is no textbook approach to all this. No one set of approaches works at all campuses, at all times. Successful strategic thinking depends on the successful interaction among campus and IT leadership, mores, and culture. It ain't about bits and bytes."

Recognizing that in higher education "one size fits one," an effective planning process must take into account both the unique character of the institution as well as the breadth of planning processes and methodologies available. Our case studies, in-depth interviews, and study of IT plans on the Web highlight this diversity. We found differing relationships between institutional and IT planning; much variation in the focus, content, and scope of plans; a multitude of unique processes used to birth and carry out a plan; and no consistent methods for assessing or modifying processes and plans.

Institutions must look outward as well as inward in the alignment process. Strategic planning is greatly enhanced by a broad, deliberate, and formal look at external forces in the environment and how they might affect higher education. Today, this need to understand the external world is becoming even greater, driven by increasing globalization and connectivity, the ever accelerating pace of change, increasing complexity of the regulatory environment, new types of educational competition, rising potential for disruption, and a more volatile economic environment.

The IT leaders we interviewed did target some external areas for study, most often tracking technology directions. Others tracked technology vendors closely or make use of consulting organizations to help understand technology futures. Other areas of external scanning cited were legislative changes, economic forecasts, and higher education trends. The environmental tracking and forecasting practices described by our interviewees or mentioned in actual IT plans, however, are largely informal and localized. And yet, 58 percent of our survey respondents identified changes in the external environment as a top trigger for changes in IT priorities. This gap between the growing impact of the external environment and the relatively scant effort going into environmental scanning tells us that higher education IT leaders would do well to carefully review their processes and practices for gathering and acting on such information.

Institutions Reporting Greater IT Alignment

ECAR's research found several similar characteristics among institutions that agreed that their IT organization is aligned with campus priorities (see Figure 1). A closer look reveals the intertwining roles IT strategic planning, IT governance, communications, and measurement/assessment play in achieving IT alignment.

Figure 1: Which Institutions Report More IT Alignment?

<p><i>Institutions that ...</i></p> <ul style="list-style-type: none">▪ clearly articulate campus vision and/or priorities▪ consider planning important and closely linked to the institutional budget▪ publish an institutional or a campus IT plan or engage in planning activities continuously▪ report dynamic or stable environmental climates (as opposed to turbulent or volatile climates)▪ perceive their IT governance process to be effective▪ perceive their IT strategic planning process to be effective▪ have greater communication with and involvement of key constituents, especially faculty and deans▪ clearly document objectives at the time IT initiatives are approved

Clearly Articulate Campus Vision and/or Priorities

There is no doubt that an overall campus vision is important. A study of top-performing organizations found that a compelling and shared vision/mission was key to the success of top-performing

organizations.² And if that vision is considered worthy, it is likely to be more fully embraced by participants and have stronger impact on the institution.³

Looking at respondent opinions, most agreed (74 percent) that the institutional *vision* at their campus is clearly articulated, and 66 percent agreed that institutional *priorities* are clearly articulated. The link between IT alignment and institutional vision and priorities was a recurring theme in both our survey data and interviews. Interviewees told us that they were extremely aware of the importance and usefulness of their campus vision and priorities in bringing about IT alignment. In fact, Figure 2 illustrates that those respondents who perceive a clear institutional vision reported more central IT alignment than those who did not perceive a clear institutional vision.

Figure 2: Institutional Vision and Central IT Alignment (N = 399)



Consider Planning Important and Closely Linked to the Institutional Budget

The budgetary process is well recognized as a powerful tool for alignment. Our study substantiates this common wisdom, finding that most institutions do explicitly link their IT plans to the institutional budget (78 percent). Nearly three-fifths (59 percent) further reported that funding for their IT initiatives is allocated at the time of approval. Given that the budgetary process is well recognized as a powerful tool for alignment, it is a positive finding that 83 percent of institutions agreeing that central IT priorities are aligned also link their IT plan to the campus budget. Only 50 percent of those who disagreed that central IT is aligned link their IT priorities to the institution’s budget.

Publish an Institutional or a Campus IT Plan or Engage in Planning Activities

Colleges and universities are planning in earnest. Today, 90 percent of responding institutions said planning is important, and 81 percent have created an actual overall institutional plan. Most importantly, it appears that institutional planning may pay off in terms of IT alignment with institutional

priorities. Those campuses that place more importance on planning, produce an institution-wide plan, or continuously engage in planning activities also reported more IT alignment.

This trend continues into the IT arena. Of respondents, 57 percent reported that they already have an institution-wide IT plan in place, with another 25 percent currently developing their first IT plan. These IT plans are most likely to be found at the institutions where there is already an overall campus plan. Further, more than half (54 percent) of central IT organizations have written an explicit vision statement for their unit, with three-fourths (75 percent) of these statements linked explicitly to the institutional vision.

Both the academic and practitioner literature are clear that the primary reason for IT strategic planning is to align technology with institutional goals and priorities. Our data support this idea. As Figure 3 shows, more than three-fourths of respondents (76 percent) identified IT alignment as a top reason to engage in strategic planning, and 74 percent said that, indeed, IT planning does have considerable impact on the level of IT alignment achieved. Perhaps most striking is the overall comfort level of respondents with IT alignment. An overwhelming 85 percent of respondents agreed with the statement that “central IT priorities are aligned with institutional priorities.” Further, 70 percent agreed that IT efforts in campus departments are then aligned with institution-wide IT priorities. This finding is consistent across Carnegie class and public and private institutions.

Figure 3: Why IT Plans

Purpose	Number of Institutions	Percentage of Institutions
Align technology with institutional priorities	367	76.0%
Secure financial and other resources	255	52.8%
Enhance IT service levels	218	45.1%
Identify competitive opportunities	102	21.1%
Document institutional IT priorities	98	20.3%
Build alliances with key decision makers	80	16.6%
Improve communications with users	78	16.1%
Identify new service requirements	72	14.9%
Identify internal improvement opportunities	70	14.5%
Increase top management support	38	7.0%
Fulfill an administrative mandate for planning	34	7.9%
Keep an eye on the leading edge	18	3.7%
Orient a new leader to the state of IT at the institution	6	1.2%

Report Dynamic or Stable Environmental Climates

Almost half (45 percent) of respondents characterized their organizational climate as “dynamic,” while another one-third (35 percent) said their climates are “stable.” The remaining one-fifth (20 percent) said they are living and working in “turbulent” or “volatile” institutional environments. Our data suggest meaningful differences between these populations with respect to planning and IT alignment.

Those who perceive turbulence or volatility reported that their institutions are less likely to consider institutional planning important and link it closely to the institutional budget; less likely to report that their institutional vision and priorities are clearly articulated; and more likely to have new top leadership. In contrast, those institutions reporting a dynamic climate are more likely to emphasize planning, link it to the budget, and report clear institutional vision and priorities. In the end, IT alignment may work best in a favorable climate. Eighty-six percent of respondents reporting stable or dynamic environments said that IT is aligned with institutional priorities (compared to only 69 percent of those in turbulent or volatile environments).

This finding is important. Few institutions will escape a period of turbulence, defined as times of rapid and hard-to-predict change, with its resulting high levels of uncertainty.⁴ Indeed, it is easy to argue that current world conditions and trends are increasing turbulence for all. And during times of turbulence, research has shown that “information sharing, participativeness, long-term planning, and credibility of leaders decrease.”⁵ So we have a contradiction—planning and alignment appear to be both more critical and more difficult in unfavorable organizational climates.

Perceive Their IT Governance Process to Be Effective

Our survey data support academic research findings that a key enabler of IT alignment is close relationships between IT and non-IT organizations and staff.⁶ Survey respondents and interviewees emphasized the centrality of involving key constituents in meaningful and creative ways—to gain input for determining IT directions, initiatives, and priorities and to maintain ongoing communications about IT progress and achievements. Interviewees said that this is at the forefront of their thinking as they design IT governance, planning, and implementation processes. Indeed, unless a plan is shaped by many and known by all, the view of IT may be incomplete, incorrect, or incoherent.

Yet the data do not show great satisfaction with IT governance. Just over half of respondents (56 percent) agreed that their IT governance process is effective, and only 45 percent said that it is well understood. In terms of involvement of constituents in the IT governance process, key administrators are most involved (76 percent agree), whereas the academic constituents—those most closely connected to the core missions of the university—are much less involved. Only 56 percent of respondents said that faculty members are involved in the governance process, and only 45 percent said that deans are involved.⁷

Our data also suggest, however, that formalization matters. By far the most common IT process identified by respondents for gaining advice on IT policy and programs is an academic IT advisory committee (67 percent) or administrative IT committee (63 percent). Over half of responding institutions (51 percent) have both academic and administrative (or combined) committees for IT. Further, 45 percent of institutions involve students on their IT committees. Figure 4 illustrates that respondents whose institutions operate a formal structure feel IT governance is more effective.

Figure 4: IT Governance Effectiveness, by Advisory Process

		IT Governance Effectiveness	
		Mean*	Standard Deviation
Institution has academic advisory committee	Yes	4.72	1.326
	No	4.28	1.454
Institution has administrative advisory committee	Yes	4.69	1.313
	No	4.38	1.481
Senior IT leader makes independent decisions	Yes	4.08	1.362
	No	4.70	1.362
Students participate in advisory committees	Yes	4.83	1.250
	No	4.36	1.453

*Scale = 1 (very strongly disagree) to 7 (very strongly agree)

Perceive Their IT Strategic Planning Process to Be Effective

Respondents are also only partially satisfied with their IT strategic planning—two-thirds (66 percent) of respondents said that their IT strategic planning process is effective. Where IT leaders have a clear institutional vision and priorities to guide them and where the IT plans are integrated into the institutional budget, respondents are more positive about their IT strategic planning. Even though institutions are not enthusiastic about their IT governance process (only 56 percent agreed that it is effective), it appears to be extremely important. Institutions reporting effective IT governance are much more likely to report effective IT strategic planning (82 percent) than those who do not report effective IT governance (31 percent).

This analysis of IT strategic planning confirms our intuition: effective IT planning is positively associated with perceived IT alignment with institutional priorities. In other words, IT planning is an important process for gathering campus information; situating this information in the broader context of IT, the campus, and external trends; and garnering resources to accomplish initiatives supportive of the institution’s purpose and goals.

Have Greater Communication with and Involvement of Key Constituents

The involvement of key constituents, especially the president or chancellor, is critical to creating a culture of strategic planning and alignment. In fact, Jerry Luftman’s research on IT alignment identifies senior executive support as the top enabler of IT alignment.⁸ Further, his study of inhibitors and enablers to IT alignment found that the top inhibitor was the lack of close relationships between IT and non-IT organizations and staff.⁹ Indeed, broad-based and meaningful involvement of campus leaders and constituents is central to achieving alignment of IT initiatives with overall campus goals

and strategies. While this is generally accepted as “common wisdom,” our study underscores the importance of this practice.

For example, we found that, in general, presidents take an active role in overall institutional planning—as champions, participants, or sponsors. Approximately half of central IT organizations “almost always” or “always” ask the chief administrative officer (52 percent), the provost/academic vice president (53 percent), and the chief financial officer (51 percent) for input. In addition, where the senior IT leader has a seat on the cabinet, top administrators, especially executives, are more frequently solicited for input into central IT initiatives than at institutions where the top IT leader is not a cabinet member.

With respect to communicating to constituencies, respondents overwhelmingly agreed that central IT keeps their constituencies well informed. Over 90 percent of respondents agreed that they communicate with their chief financial officer, provost or academic vice president, and chief administrator as often as necessary. Further, approximately two-thirds not only agreed but agreed strongly. Though 69 percent of respondents agreed that their IT priority setting process is broadly inclusive, we see communication focused on senior administrative executives. In contrast, fewer respondents were adamant that they communicate with deans (only 40 percent strongly agreed) and faculty (only 31 percent strongly agreed).

Clearly Document Objectives at the Time IT Initiatives Are Approved

IT performance assessment is not yet widespread across higher education. Measurement of IT is complicated by the fact that so much of its value comes from intangible benefits that are nearly impossible to quantify. An in-depth study of 80 CIOs by Peter Seddon et al. found that the top inhibitor to IT evaluation was the “inability to identify intangible benefits.”¹⁰ Intangible benefits are elusive and almost limitless, with examples including enhanced reputation, increased competitiveness, integration across organizational processes, improved customer relations, higher levels of innovation, and new workforce knowledge and skills.

One-third (33 percent) of institutions said they include measures in their IT initiatives at the time they are approved. In the private sector, that number is much higher—a recent *CIO Magazine* survey found that 58 percent of respondents stated that measuring the value of IT was a requirement for all new IT initiatives.¹¹ As Figure 5 illustrates, we also found that institutions that produce an IT plan are more likely to include measures with their IT initiatives as well as publish performance expectations for existing IT services. It is likely that the discipline of IT planning may play an important role in motivating the use of metrics.

Figure 5: IT Initiatives with Documented Objectives and Measures, by Type of Plan

		IT Initiative Has Documented Objectives	IT Initiative Has Measures
Has institutional plan	Yes	64.3%	36.0%
	No	45.1%	13.5%
Has IT plan	Yes	73.5%	43.1%
	No	40.4%	19.4%

Institutions that do measure most often use “softer” methods such as self-assessment (74 percent “usually” to “always”). Customer satisfaction analysis and surveys are not yet standard practice with just under half (47 percent) of institutions using them “usually” to “always.” Only a handful of institutions use full methodologies such as the Malcolm Baldrige process or the Balanced Scorecard, which has received much attention in the private sector. Further, it appears that performance dashboards (9 percent use “usually” to “always”), although relatively new, are gaining popularity.

Conclusion

Our data provide a snapshot of IT strategic planning and alignment perspectives and practices in higher education—in terms of campus planning activities, organizational climate, leadership involvement, IT governance, IT planning, and IT performance measurement. Respondents brought extensive and varied leadership and planning experience to our study and came from very diverse institutional settings. It is most interesting, then, that we found so few meaningful differences among institutions of varying Carnegie classifications, public and private institutions, and institutions of varying size. The IT strategic planning and alignment practices and views, although admittedly tailored to institutional cultures, appear to reflect a commonality that crosses institutional boundaries.

Endnotes

1. Merriam-Webster Dictionary Online, <<http://www.m-w.com/>>.
2. C. Garfield, *Second to None: How Our Smartest Companies Put People First* (Homewood, Ill.: Irwin Professional Pub., 1991).
3. In the ECAR study, *Information Technology Leadership in Higher Education: The Condition of the Community*, we found that respondents very often cited the mission of higher education—its contribution to society through teaching, research, and community service—as a motivating force for their choice of career at a college or university.
4. K. S. Cameron, M. U. Kim, and D. A. Whetten, “Organizational Effects of Decline and Turbulence,” *Administrative Science Quarterly*, Vol. 32, 1987, pp. 222–240.
5. *Ibid.*, pp. 220–240.
6. J. Luftman, “Enablers and Inhibitors,” *InformationWeek, ABI/INFORM Global 700*, Sept. 14, 1998, p. 284, <<http://www.informationweek.com/>>.
7. This pattern was also seen in R. N. Katz et al., *Information Technology Leadership in Higher Education: The Condition of the Community* (Boulder, Colo.: EDUCAUSE Center for Applied Research, Research Study, Volume 1, 2004).
8. Luftman, *op. cit.*, p. 283.
9. Luftman, *op. cit.*, p. 284.
10. P. B. Seddon et al., “Measuring Organizational IS Effectiveness: An Overview and Update of Senior Management Perspectives,” *The DATA BASE for Advances in Information Systems*, Vol. 33, No. 2, Spring 2002.
11. “Measuring IT Value,” *CIO Research Reports*, February 27, 2001, <<http://www2.cio.com/research/surveyreport.cfm?id=1>>.

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*A copy of the full study referenced above will be available via subscription or purchase through the
EDUCAUSE Center for Applied Research (www.educause.edu/ecar/).*
