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Decentralized IT Governance and Policy in Higher Education

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Overview

IT policy often shares the complexity, volatility, and improvisational character of the technology itself.¹

—Mark A. Luker, Vice President, EDUCAUSE

Over the past several years, information technology (IT) governance and policy have received substantial coverage in the professional literature and have drawn the attention of chief executives as well as IT leaders in colleges and universities.² IT governance and policy are at the heart of many of the decisions facing higher education, such as how to provide continuity and consistency, measure success, maintain secure systems, ensure compliance with state and federal laws, develop effective collaborative/social networks, manage costs, and optimize investments. Globally, “knowledge and innovation are at the core of economic development, accounting for over 50% of growth” and “education is the engine of development.”³ In *The Tower and the Cloud*, Richard Katz and his fellow authors detail the impact of IT “consumerization and industrialization” on IT governance and leadership in higher education.⁴ In institutions as complex as major universities, where governance is often shared broadly across academic disciplines and administrative units, IT policy development, implementation, and enforcement are not always straightforward. Broad-spectrum IT policies that might be perfectly appropriate for the institution at large might be ill-suited to specialized schools (medicine, business, and law), colleges, or departments. Such distributed units can be subject to external regulations or professional guidelines that require greater specificity or expansion of campus-wide policies. Yet, integration of IT governance and policy across the enterprise is critical to the future of higher education institutions. This bulletin explores this tension and recommends ways to address these concerns. The topic of IT governance and IT policy is addressed from the perspective of the relationship between policies that serve specific distributed or decentralized units of the institution and policies developed on behalf of the parent institution at large.

This bulletin draws on the findings of a 2008 study involving a quantitative survey of chief information officers (CIOs) at 28 American Veterinary Medical Association–accredited colleges of veterinary medicine (CVMs), as well as telephone interviews with CVM senior IT leaders.⁵ In addition, in-person and telephone interviews with university CIOs and IT leaders from other distributed units were conducted to generalize the findings in this study. From the quantitative and qualitative results of this research, the bulletin offers recommendations related to IT infrastructure, governance, and policy for central and distributed IT leaders and the constituencies they serve.

Highlights of IT Governance and Policy

For the purposes of this bulletin, I will use Peter Weill and Jeanne Ross’s definition of IT governance: “specifying the decision rights and accountability framework to encourage desirable behavior in using IT.”⁶ In his 2008 ECAR research study, *Process and Politics: IT Governance in Higher Education*, Ronald Yanosky observed that many institutions would improve their “IT governance by pursuing higher maturity and better

performance.... A decentralized or informal institutional culture and lack of participation were the top barriers to aligning IT with institutional goals.”⁷ He called for better metrics and improved engagement by framing IT issues in terms of the business and academic concerns of their constituents. However, many institutions still struggle with the dual challenges of how to effectively work within the academic culture of inclusiveness and shared decision making while better aligning the existing IT structure of the institution. Yanosky focused on four key processes: formal review and approval of IT projects; participation in institutional budgetary processes; measurement, reporting, and review of IT performance; and communication of IT governance decisions and processes.⁸ In their 2008 ECAR case study, Donald Spicer and Judith Pirani described the IT realignment that has taken place at the University of California Berkeley in recent years. As UC Berkeley’s current CIO, Stephen Waggener, posits, “The CIO used to be perceived as a defender of his organization.... [W]e have seen a sea change in discussions and collaboration. Now when an initiative comes forward, my advocacy is for the best-positioned solution—either locally or centralized.”⁹

IT Governance in Central and Non-Central Units

Strategic planning and IT governance. Similar to IT governance for the institution as a whole, IT governance for a distributed IT unit should be built on a framework based on an overarching strategy. Today, IT is integral to any enterprise, and the strategic planning process must include IT. In practice, however, this is not always the case. For example, recent surveys of business schools and CVMs found that 91% of business schools (N = 56) and only 67% of CVMs (N = 28) have an IT strategic planning process.¹⁰ Among business schools, 58% (N = 53) indicated that they had a formal IT committee.¹¹ When we look specifically at IT needs for research, the picture is even more worrisome. Within medical schools, for example, Bob Albrecht and Judith Pirani noted that only 9.1% of the respondents (N = 44) indicated that they have regular meetings to discuss IT needs for research with their top decision makers, and 46% (N = 50) do not engage in long-term planning to determine IT needs for research.¹² In his 2008 ECAR research study *Higher Education IT and Cyberinfrastructure: Integrating Technologies for Scholarship*, Mark Sheehan found that “[W]here a research-specific IT governance/advisory board existed, respondents reported that central IT’s integration of CI [cyberinfrastructure] was more effective,” and that “...an atmosphere of collaboration, resource sharing, and the active pursuit of economies of scale are all associated with more effective integration of CI resources.”¹³

Toward an integrated approach. In *The Tower and the Cloud*, Jim Davis observes,

Institutional and departmental IT units can no longer compartmentalize their services and are forced to wrestle with their respective roles, turf, and accountability about services that are inherently integrated.... Too often, we refer to IT services provided by a central organization versus those provided by individual units or departments. This has become a false dichotomy, creating an unproductive kind of competition among IT operations and preventing our common goal of a seamless, responsive, end-user IT environment.¹⁴

Most institutions face a complex array of governing structures that exist within decentralized IT units; in addition, each college, school, or administrative unit has its own culture and historical IT context. In his study of IT governance in higher education, Yanosky comments,

Among our respondents, IT governance performance and effectiveness were positively associated with frequent constituent participation, effective communication of [IT governance] decisions and processes, and the ability of key participants to describe [IT governance] accurately.¹⁵

There is no standard IT governance structure; each institution must look critically at its vision, mission, and goals, as well as culture and current organizational framework. For example, large research-intensive institutions thrive on innovation, creativity, and entrepreneurial spirit in their decentralized units. Yet this very need for independence and creativity can result in a complex, unmanageable IT governance structure. IT governance at any organizational level of the institution needs:

- *Simplicity*: A structure that simplifies IT governance; a well coordinated committee structure, emphasizing participatory decision-making while minimizing redundancy
- *Inclusivity*: An effective advisory structure that communicates on a timely basis to all constituents and, in turn, receives input from all constituent groups
- *Maturity*: An appropriate performance-measurement process, using best practices and industry standards
- *Specificity*: An integrated approach, tailored to your institution, your constituents, and your decentralized units

The late 2008 economic downturn and turmoil in the global financial markets have resulted in more scrutiny of budgets across the higher education enterprise. Effective IT strategic planning and governance will be critical success factors as institutions look for ways to collaborate, innovate, and control costs. By integrating IT on the home front, institutions will also be better prepared to capitalize on their external relationships with peer institutions, state and federal funding organizations, and private industry. When asked about collaborations within the College of Veterinary Medicine at The Ohio State University (OSU), Michael Lairmore, professor of the College of Medicine and chair of Veterinary Biosciences, cited caBIG, the cancer Biomedical Informatics Grid (<http://bmi.osu.edu/multiscale/project.php?id=30>):

caBIG is a voluntary network or grid connecting individuals and institutions to allow sharing of data and tools of cancer research. It is a very large example of a data-sharing policy, where data is stored across multiple institutions. The goal of this collaboration is to speed the delivery of innovative approaches for the prevention and treatment of cancer. The governance of caBIG is a federated model: a balance between central management and local control.¹⁶

IT Policies in Central and Non-Central Units

In addition to cultural differences and discipline-specific IT needs, the issues of concern to distributed units also differ. Using data gathered from business schools and colleges of veterinary medicine, Table 1 illustrates some of the variability that exists in top IT issues.

Table 1. Top IT Issues in Business Schools and Colleges of Veterinary Medicine

IT Issue	EDUCAUSE Ranking ¹⁷ (N = 589)	Business School Ranking ¹⁸ (N = 56)	Colleges of Veterinary Medicine Ranking ¹⁹ (N = 26)
Security	1	3 (tie)	1
Administrative/ERP/Information Systems	2	5	3 (tie)
Funding IT	3	2	2
Infrastructure	4	9	3 (tie)
Identity/Access Management	5	3 (tie)	4 (tie)
Disaster Recovery/Business Continuity	6	7	5
IT Governance, Organization, Leadership	7	10	8 (tie)
Change Management	8	–	8 (tie)
E-Learning/Distributed Teaching and Learning	9	8	6
Staff/HR Management/Training	10	1 (tie)	4 (tie)
Other—IT Strategic Planning	–	4	–
Other—Faculty Development Support and Training for IT	–	1 (tie)	–
Other—Web Systems and Services	–	6	–
Other—Clinical and Hospital Systems	–	–	7

Although central IT organizations have overarching IT governance and policy development roles in most institutions of higher education, some decentralized IT units have, for a variety of reasons, come to develop their own IT policies. As an example of policies within distributed units, I recently reviewed IT security policies on the websites of CVMs and their parent institutions; these findings were compared to Judith Caruso's 2003 study of security policies at doctoral research-extensive institutions.²⁰ Table 2 shows the percentage of CVMs and their parent institutions that have the 11 different security policy types that Caruso identified.²¹ Nine of the 11 security policy types are found in at least one-quarter of the CVMs.²² While this may not seem like a high percentage, when multiplied across all distributed units on campus, the number and diversity of policies—in this example, security policies—can quickly erode the intent and strength of the institution-wide policies. In all likelihood, these security policies are important to the CVMs, but what is less clear is how distributed IT security policies relate back to central IT governance and security policies. Upon examination, many of these decentralized IT policies appear to supplement policies that are perceived to be too general or without the specificity deemed necessary at the unit level. However, the

resulting effect at the institutional level can be a patchwork of governing committees, practices, and policies.

Table 2. Website Review: IT Security Policies

Policy Category	Percentage of DR Extensive²³ (N = 77)	Percentage of Parent Institution (N = 27)	Percentage of CVMs (N = 26)
Appropriate Use of Computing Assets (includes copyrights, privacy rights)	99%	100%	38%
System Access Control	83%	100%	35%
Authority to Shut Off Internet Access (special case of "Enforcement of Computing Policies")	89%	100%	35%
Data Security	80%	100%	31%
Network Security	78%	100%	35%
Desktop Security	70%	100%	27%
Physical Security of Assets	62%	100%	27%
Enforcement of Computing Policies (very similar to "Authority to Shut Off Internet Access")	75%	100%	35%
Residence Halls (special case of "Appropriate Use of Computing Assets")	75%	89%	0%
Remote Devices	51%	96%	31%
Application Development	32%	30%	4%

IT Leadership in Central and Non-Central Units

Yanosky noted that 81% of respondents to his survey indicated that IT governance is the responsibility of the institution's senior IT leader.²⁴ However, while IT policy is largely centralized in most institutions, college- or unit-level IT should play a significant role in IT governance, policy, and leadership as well. It is important for distributed units—such as CVMs, business schools, law schools—and central IT to identify ways to agree on a common framework that is flexible enough to address the needs of each unit on campus, with the goal of: "[a] common position, [a] common language, communicate[d] through multiple channels."²⁵

IT leadership at OSU begins with executive sponsorship: In his remarks to the OSU Board of Trustees on July 12, 2007, President Gordon Gee commented, "[We must] think, act, and operationalize ourselves as one university.... We must become agile and without boundaries. We must be both simple and complex.... We must be a student-centered university."²⁶ Kathleen Starkoff was appointed as OSU's CIO in summer 2008. While she is still developing her governance structure, her approach has been to develop advisory groups, utilizing not only the CIOs of the 11 other Midwest institutions that constitute the Committee on Institutional Cooperation (CIC) but also industry CIOs, her direct reports, faculty, and decentralized IT leaders. She is still considering how best

to involve the faculty and decentralized IT leaders in an advisory capacity—no small challenge at an institution with 3,118 faculty and over 1,600 employees with IT titles. Her goal is “one IT,” in keeping with Gee’s objective, where central IT would play a coordinating role in IT leadership within the university: “[C]entral IT should be able to think of strategy, architecture, ERP, etc., in a way that is not democratic, but is inclusive.... In governance, we [central IT] don’t want to be controlling; we want to be the compelling alternative—where we can make a difference.”²⁷ Starkoff is considering an IT Leadership Advisory Council of the 60 to 70 IT leaders on campus, with a small central group of 10 or so IT leaders as her direct advisors. University of Iowa CIO Steve Fleagle has addressed a similar concern at his institution, where about 50 people hold the top IT positions in colleges, schools, and administrative units: “[T]hat is a difficult group to manage because of its size; therefore we have an Executive IT Leaders group—a couple of people from the distributed unit IT leadership and a couple of central IT people working together on agendas, subgroups, and on keeping things on task.”²⁸

Fleagle provided a specific example of the IT integration that is occurring at his institution. Central IT has set up a desktop management service with the infrastructure—servers, licensing, patches, and so forth—managed centrally. Local units no longer require their own servers and associated infrastructure to set up new desktop computers. Moreover, the desktop management service provides the flexibility for distributed IT units to push the specific applications they use to their new systems, and they decide when to apply patches to fit their needs. Fleagle said the service provides an added bonus: “Now we can talk about best practices [in desktop management]. We can ask ‘How much should we be locking down our desktops?’”²⁹

What It Means to Higher Education

Writing in *CIO Magazine*, Fred Hapgood quoted Michael Schrage, author of *Serious Play: How the World’s Best Companies Simulate to Innovate*, who said, “The so-called information revolution itself is actually, and more accurately, a ‘relationship revolution’.... Every organization that has enjoyed success...[recognizes] that the quality and quantity of interaction matters every bit as much as the quality and quantity of information.”³⁰

Appropriately managing the considerable IT assets of a college or university has become a strategic necessity. Following are some principles that can guide overall IT governance and policy management.

“One IT” partnership. The IT environment within higher education increasingly relies on coordinated efforts among all IT-providing organizations throughout the institution. For example, a central IT organization can provide leadership, cohesion, and economies of scale with respect to core applications, data center strategies, network security, and compliance policies that impact the institution as a whole. These services work most effectively when they are implemented in coordination with distributed IT services designed specifically to meet the needs of individual schools, colleges, and units. Coordinated IT governance and policy creation serve to create partnerships between IT-providing organizations and can result in the successful fulfillment of the “one IT” concept in development at OSU.

The IT service management (ITSM) framework. ITSM is a discipline for managing IT systems that is centered on the customer's perspective of IT's contribution to the institution. The focus is on the relationship with customers. Metrics might include the percentage of incidents resolved on the first attempt or the number of changes made without creating an incident. If your institution has not implemented an ITSM framework, such as Information Technology Infrastructure Library (ITIL) or ISO/IEC 20000, this would be a good place to start. Any ITSM framework requires a long-range view of your organization and a strong executive sponsor. It can be developed in stages; it is a continuous improvement process. ITIL will help your organization quickly get at the root causes of errors, improve communication, and reduce the silos within your IT organizations across the institution. It does so by providing a common language and processes, leading to more consistent, reliable, efficient, and effective operations. Establishing an ITSM framework will improve the communication flow between central IT and decentralized IT units. For a thorough discussion of benefits across the institution, you can refer to the Yale University case study presented by Susan Grajek and William Cunningham, "ITIL: An Effective Methodology for Managing IT Services."³¹

Enterprise-wide IT security strategy. Security has been the number 1 or number 2 IT issue in the annual EDUCAUSE Top 10 Issues list for the past four years.³² Most institutions have addressed this threat through a coordinated, centralized solution. However, to ensure continuous improvement in IT security, an implementation standard should be adopted. By creating an enterprise IT security strategy and implementing enterprise-wide security standards and tools, another opportunity for partnerships exists between central and decentralized IT units. As with implementation of an ITSM framework, implementing an Information Security Management System (ISMS) standard, such as the International Organization for Standardization (ISO) standards, ISO 27001 and ISO 27002, will provide a common language and continuous improvement process for security across the institution.³³

Joint IT governance within IT units. Faculty and IT representatives need to be at the same table. Today, federal agencies often require collaboration beyond the institution, and more and more research projects require the collection of terabytes of data—sometimes even daily. Computationally intensive research demands are coming from nearly every decentralized unit in an extensive research institution. Success in this context requires that IT governance be a joint effort between IT leaders with discipline-specific knowledge and their academic leadership (faculty and faculty administrators).

Promote and fund IT partnerships and centers of excellence. Joint IT governance within units will help decentralized units roll up their college or school's strategic IT needs. Unit IT governance, however, must be combined into a leadership council that spans decentralized units and promotes IT centers of excellence. Higher education IT challenges span departments, disciplines, colleges, universities, and national and international borders. Research, particularly in fields such as medicine, high-energy physics, and bioengineering, requires levels of expertise that are difficult to acquire in a distributed model. For example, in his study of IT engagement in research at medical schools, Mark Nelson identified three key issues: "Demand for and complexity of IT infrastructure and services are growing; IT budgets for research IT are becoming less

sustainable; and IT engagement is mostly ad hoc and unplanned and needs improvement.”³⁴ Institutions need to consider how to incorporate the governance structure of individual colleges and other units into the institution’s IT community. It is not enough to have the senior IT leaders discussing policy with the other distributed units and central IT. A forum of the IT governance units across campus is beneficial not only to inform the distributed units of what policies exist centrally but also to solicit creative ideas and solutions from across the enterprise. Furthermore, a faculty advisory group is critical to inform the CIO’s office and assist in the IT strategy of the institution. This is analogous to the situation described by Katz et al. in which the senior IT leader is left out of higher leadership discussions: “You lose it in the translation when you are not sitting at the table.”³⁵ A model of this approach from a campus-wide perspective is Pennsylvania State University, which has developed a “cyberinfrastructure” business model, “optimizing the local [unit] investments to make a consortial institutional investment that is greater than the sum of its parts.”³⁶ Another example is the Ohio Supercomputer Center (OSC). Don Stredney, director of the OSC Interface Lab and research scientist, Biomedical Application, is helping to virtualize equipment at the state level, creating core research utilities available to faculty across the state of Ohio. The investigators who buy the original equipment still have priority access to the systems, but in the core facility there is no longer the worry of managing and maintaining the systems—that is handled by the OSC staff. In return, other researchers, often from very different research disciplines, can use a tool they previously could not afford.

Efficiency and cost-effectiveness across the enterprise. When asked about the current economic crisis, Starkoff replied, “I think the economic downturn will force efficiency and cost-effectiveness...which will naturally force IT departments to work together to consolidate, share, and leverage—there is a silver lining!”³⁷ In a recent poll of 50 CIOs conducted by the CIO Executive Board, over 50% are reevaluating their 2009 budgets, renegotiating IT vendor contracts, putting nonessential IT projects on hold, and reevaluating IT projects in general to conserve cash.³⁸

Beyond the enterprise—IT governance and web-based computing. Virtual collaboration through web-based tools, such as cloud computing, extends the institution’s IT opportunities well beyond its borders. Not only are Google Apps for Education (Google’s e-mail package for colleges), Microsoft’s Office Live, and other Internet cloud services providing institutions with cost-savings opportunities, but even small colleges now have capabilities within reach that were only dreams in the past—for example, supercomputing over the Internet from a standard PC and virtual laboratories. These opportunities require coordination and collaboration across the institution. To fully leverage IT capabilities—those available now and those that will be available soon through new cloud-computing tools—will require an efficient and effective partnership between distributed IT units and the centralized IT, a virtual “one IT.” As budgets shrink and colleges look for ways to cut costs, opportunities to fully extend the reach of the institution’s IT infrastructure become all the more critical. An example of this approach can be seen in business schools. At the 2003 EDUCAUSE Annual Conference, the Technology in Business Schools (TBS) Roundtable was announced to address the need for a community of practice. The TBS Roundtable mission is “To meet the unique information technology challenges faced by AACSB-accredited business schools and

colleges by fostering collaboration among the technology leadership of these business schools and colleges.” As a chair and founding member of the roundtable, this author is convinced it can be used as a model for other colleges and schools. As a measure of its value to the business school IT community, in 2008 the roundtable conducted its fifth annual IT survey and fifth annual conference. There are now almost 100 member institutions and many more who have participated in the surveys (see <http://www.tbsroundtable.org>).

Commit to change—transforming governance takes time. If, as was the case at UC Berkeley, your institution’s IT governance is said to be inefficient, ineffective, and characterized by an overly complex committee structure, a review of the IT strategic direction of the institution is probably in order. As part of its two-year IT strategic planning process, UC Berkeley completed an analysis of its IT governance structure in 2006. Waggener summed it up well:

It is time to shift the dialogue to considerations not of which is better, centralized or decentralized, but rather of what changes need to occur to provide support for communal technologies.... Working together in partnership, all of us—the departmental and the central IT units—will have to reinvent ourselves in the coming years if we are to remain an effective force of enablement for our campuses.³⁹

Key Questions to Ask

- How does our institution distinguish governance for central (enterprise-wide) IT from governance for IT in individual schools, colleges, and departments?
- What structures are in place to coordinate policy development across all IT operations in the institution?
- What are the primary drivers for adopting a hybrid governance model where decision making is balanced across central and distributed IT?
- In what ways are research, teaching, and service delivery impacted by having unit-specific IT governance and policy development?

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