Information technology (IT) governance consumes the time and attention of higher education’s IT leaders. In fact, among all issues, the management of governance was listed in 2008 as second only to funding as the area in which IT leaders spend the most time. Why is that?

The answer to this question is complex. IT in higher education has made a journey. It has moved from the laboratory to the enterprise and now pervades the fabric of higher education. Managing the institution’s infrastructure, its services, its online resources, and its data has literally become everyone’s responsibility. Everyone has a stake. IT governance is the institution’s approach to acknowledging everyone’s stake and to empowering the academy’s stakeholders in determining the directions IT is to take. To me, IT governance suggests no more and no less than engaging and aligning the ideas and efforts of a diverse community of interested and intelligent skeptics. A tall order.

A New Unification?

The Gospel of Luke contains the story of a man with two sons. The younger son demands his inheritance while his father is alive, and runs off to another country where he “wastes his substance with riotous living.” The younger son becomes a swineherd and ultimately resolves to return to seek his father’s forgiveness. His father welcomes him without reproach and counsels the jealous older son to “be glad, for thy brother was dead and is alive again; was lost, and is found.”

The issue of centralizing or decentralizing the management of higher education IT resources bears some resemblance to the story of the prodigal son. If we in central IT are like the prodigal son returning to the academy from whence we came, the challenge of IT governance remains: Will the son return to the family, and will the family embrace him? In our context, we must ask, can we pave the way for a “new unification” in the governance of institutional IT resources?

To answer this question, we must recognize that framing the problem as “centralization versus decentralization” is polarizing, unhelpful, and “out of time.” This dichotomy ignores both the past of IT in higher education and its future.

Accidental Governance: A History

The first modern computers have their roots at universities. The Mark I computer, ENIAC 1, and Manchester’s Baby were fired up within 24 months in the 1940s at Harvard, the University of Pennsylvania, and the University of Manchester, respectively. Their missions
were scientific and military. Our professional ancestors were scientists and mathematicians who had no need to craft IT governance. Computing was massive. It was centralized by dint of the technology itself, specialized in its purpose, and completely opaque in its operation to all but the expert. It was isolated.

The integrated circuit, the ARPANET, the invention of Ethernet, and other innovations made it possible for computing to move out of the monolithic university computer center and out to the laboratory. The emergence of commercial applications and third-generation programming languages made computing more widely applicable throughout the university enterprise, accessible to a broader user public, and less opaque to use. ERMA—the first electronic computer-based accounting application—placed this new tool in the service of university administration.

As the administrative uses of computing rose in importance, our prodigal son left the research environment, taking enterprise computing for his inheritance. By the 1970s, enterprise computing came to be dominated by the university financial system, payroll system, and student information system. In the following decades, the son’s attention was largely consumed by the network backbone, IT security, enterprise resource planning, Y2K, and other very real concerns that are largely peripheral to university researchers.

Local IT resources grew and by the early 1980s focused largely on research and departmental administration. This growth has been aided and abetted by the persistence of Moore’s law, the increasing ubiquity of networks, and a contract- and grant-based financing arrangement that vests purchasing authority for much IT in researchers. We spoke of continents (the university data center) and archipelagos—disconnected islands of information technology.

What has emerged can be fairly characterized as the accidental governance of the institutional IT enterprise. No one consciously decided, “I think what we need is 32 e-mail systems.” Decentralized funding and loosely coupled authority systems (shared governance) have combined to yield IT decision making that is distributed widely throughout the enterprise and often outside the influence of the central IT organization. The question of centralization or decentralization of campus IT is just a reflection of broader university governance. We are reminded that “a university consists of warring academic factions united by a common parking problem!”

As is the case of overall governance in higher education, the accidental or market governance of IT in higher education is not per se a bad thing. For example, university researchers are extraordinarily productive, and it is clear that higher education’s research mission has been transformed profoundly—first in the scientific disciplines, but increasingly in the social sciences and the humanities. As well, many schools and colleges within research universities have evolved highly professional IT organizations which themselves struggle with governing IT environments across disparate academic departments. This is certainly true of our schools of medicine. In many ways, the unplanned localization of institutional IT management smacks of rewarding faculty entrepreneurship and contributes directly and positively to scholarship and discovery.

At the same time, unplanned and uncoordinated localization of authority does pose great challenges for institution-wide compliance with security, copyright, privacy, identity, and other regulations; it makes it awkward for CIOs to account well for the breadth and depth of overall IT activity, and it can be inefficient.

If it is true that localization of authority in some arenas is critical, the vital governance question for CIOs and other institutional leaders is not “to centralize or not to decentralize,” but where to centralize (or not) and how to harmonize institutional efforts and investments in IT. Longer term, as the objects
of our attention become services and service delivery, the questions of where a service originates or who operates what parts of a service will be subordinated to the question of whether a service is effective, timely, engaging, secure, or trustworthy.

**Why Is IT Governance So Important, Now?**

The issue of harmonizing university efforts and investments in IT is gaining importance for some very compelling reasons.

**Eroding Funding Landscape**
- Some institutions will face revenue pressures from declining enrollments and rising expenditures as they outfit labs for a new generation of faculty in the wake of baby boom retirements. Rising federal budget deficits may depress revenues for university-sponsored research.
- Central IT organizations are likely to be under heightened pressures to lower costs or at least to hold the line on costs while doing more.

**Evolving Research Landscape**
- Many research endeavors are becoming more centralized. As the cost and complexity of projects like the Earth Simulator, Human Genome Project finding a cure for Parkinson’s Disease, or instruments like the Large Hadron Collider rise, the need to share resources on a wide—possibly global—basis rises.
- The nature of scientific inquiry in many fields is shifting from a priority on creating massive data sets to one of mining existing data sets for their scientific content. Such a shift also suggests an emphasis on collaboration and on an infrastructure, standards, and reward system that supports access to data, instruments, services, collaborative tools, and preservation of long-lived data sets.
- Demand for computationally intensive resources in social science and humanities research will rise, without a concomitant rise in localized funding support via contracts and grants.

**Teaching Becomes Part of the Enterprise Landscape**
- Regulatory pressures, new enterprise IT capabilities, and higher education’s drive to lower costs—as well as to enhance, engage, and improve learning outcomes—are conspiring to make teaching a matter of greater institutional concern. Where in the past an instructor was king or queen in his or her classroom, institutions are looking increasingly at best practice and at “course reinvention.”
- Incoming students and faculty members expect to use technology in their instruction. These factors suggest a growing need for central academic and IT engagement in matters related to instruction.
- A substantial and growing number of institutions have incorporated e-learning into their standard educational delivery and are increasing the footprint of the institution by delivering education at a distance over the network.

**Evolving External and Regulatory Environment**
- IT and data within higher education information systems are becoming increasingly regulated and scrutinized. This regulation ranges from pressures for disclosure and transparency to pressures for privacy. These pressures accent the need for common approaches, common solutions, and consistent high-quality data.
Higher education information systems continue to be subject to a large number of security threats. The ability to secure the gamut of institutional IT resources and data has become a compelling and increasingly urgent need.

**Changing IT and Information Resources Landscape**

- A robust middleware layer that can facilitate and mediate the authentication and authorization of students, teachers, and researchers across a global array of instruments, data, networks, images, and other resources is emerging. The adoption of standards, shared procedures, and trust agreements is making it possible to federate IT solutions, suggesting new IT governance options.
- Firms like Microsoft, IBM, Oracle, and others are racing to develop enterprise-level e-collaboration environments.
- The open content and open source movements are growing, reflecting and amplifying the powerful human urge to share resources, knowledge, solutions, and insights.
- The shift to a services orientation is also a trend designed to dilute the significance of “who owns what” or “who does what” in the network cloud.
- Breakthroughs in virtualization technology are making the question of who operates a service less relevant, allowing researchers (and others) to focus on the performance of a service and on the underlying relationship between the provider and consumer of a service.

All of these change drivers suggest the need for colleges and universities to seek a new unification and alignment of IT resources—a renegotiation, if you will, of roles and responsibilities for the management of institutional IT resources.

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**The Real Issue Is Service**

If our past can be likened to the uncomfortable departure of the prodigal son and our future to an increasingly richly interconnected infrastructure that makes digital learning and research resources available on demand (over high-speed networks) to all members of the community regardless of where those resources are hosted, what becomes of our historical conceptions of IT centralization or decentralization?

I suspect that the answer to this question is found—as in the story of the prodigal son—in the underlying relationship between father and son or, in our case, between service producer and consumer. At some institutions, the separation of central computing from local computing was an amicable one. In such institutions, responsibilities often seem to flow between central and local campus units in accord with flows of funds, expertise, supply, and demand. In other institutions, mutual trust is low. Time has erased memory of IT providers’ and researchers’ common ancestry. Local IT service providers and faculty at these institutions view central IT providers’ motives with suspicion, and our capacity to deliver services with skepticism. In truth, many of us in central IT roles think more about leveraging resources, saving money, and mitigating risk than we do about contributing to great teaching or research. ECAR studies confirm that we spend much of our time with provosts and business officers but less with deans, academic leaders, and major campus research investigators. Our IT colleagues in campus schools and colleges do not always echo our priorities, and they spend their time focused on different aspects of the mission than we do.

UC Berkeley CIO Shel Waggener argues convincingly that the issue is no longer about where a service is provided. IT-enabled services may be operated at a local campus unit, in the central IT or business organization, or in the Internet cloud. The issue is
the orchestration of the institution’s services and their quality. CIOs first need to establish credibility as service providers; then, reasonable people will support their proposals for new things.

While enterprise computing has become impossibly complex, specialized slices of computing have become less opaque, less costly, and easier to operate. In this environment, it really does come down to two questions: Who can provide the service better, and who can provide the service cheaper? In the current system of academic funding and incentives, service quality will often trump service cost. In research, for example, no one has received a Nobel Prize for conducting the most efficient research.

Changes to the funding system, governance, the incentive system, the service architecture, and the underlying technology are all needed to move higher education to higher levels of performance, accessibility, and accountability. Those of us in central IT need to rediscover the humility of the swineherd, remember our roots, and rekindle our attachment to the academic purpose. Our IT governance will flow from a “new reunification.” We need to fulfill our basic charge with distinction, because that earns us the right to seek reunification. We can lobby our leaders for mandates to centralize, but in the meantime we need to win reunification by simply and demonstrably doing a better job. Our first impulse must be to facilitate solutions rather than to enforce rules. We need to make the center visible in positive ways where the academic mission of the institution is delivered.

Our ability to realize the vision of an open and richly interconnected and accessible tapestry of information resources and services depends on massive investments in many areas. Such investments are necessary, but not sufficient. Sufficiency depends on the relationships between and among those who manage the institution’s enterprise IT resources, those who provide IT services in local units of the institutions, those who deliver instruction, and those who design and perform the research. Governance without trust is bound by rules and seems likely to promote the politics of division. Trust, anchored in demonstrated success as a service provider, is the glue that will bind the investments we will need to make.

**ECAR Study of IT Governance**

I am very proud of the study of IT governance that follows. Its timeliness is indisputable. In addition to the usual challenge that I place on ECAR Fellows at the beginning of each study to “produce the best contribution to the higher education IT literature, period,” this time I encouraged the investigators to simply “write the best piece of applied research on IT governance anywhere.” I think they have. In many ways, the study that follows represents the first empirical tests of the prevailing models of IT governance in a specific industry. Its results are of clear practical benefit, and the authors have taken pains to incorporate actionable advice systematically throughout the report.

As always, an ECAR research study is an extraordinary team effort. Ron Yanosky, acting as principal investigator, and Jack McCredie, who championed the topic within ECAR and brought his incomparable IT governance experience to bear on our study design and review, deserve the lion’s share of credit for the results of this yearlong effort. But they led a real team. Within ECAR, Fellows Robert Albrecht, Mark Nelson, Gail Salaway, Mark Sheehan, Toby Sitko, and I had the genuine pleasure of reviewing survey and chapter drafts, sounding out hypotheses, developing the study’s framing questions, checking the quantitative material, and evaluating preliminary findings. Toby coordinated as well the first-rate editorial and production team that included Nancy Hays, Gregory Dobbin, Susan Gollnick, Bob Carlson, Lorretta Palagi, and Stephen Larghi.
ECAR studies triangulate on the truth by incorporating the generous thinking and feedback of leaders within the higher education community at key stages of the research. ECAR would like to thank Andrew Clark, Chief Process Architect, Syracuse University; Brad Reese, Vice President for Technology and CIO, Roosevelt University; and Fred Siff, Vice President, CIO, and Professor of Information Systems, University of Cincinnati, for their generous assistance reviewing our survey drafts. We also wish to express our gratitude to the institutional and consortial IT leaders who partnered with us in arranging the secondary survey of non-IT participants in IT governance analyzed in Chapter 7: David Ernst, then of the California State University, Office of the Chancellor and currently at the University of California System; Bret Ingerman of Vassar College; Joanne Kossuth of the Franklin W. Olin College of Engineering; and the top IT leaders of several University of California campuses. We are grateful as well to the 28 IT executives, named in Appendix C, who participated in qualitative research to explain, illuminate, and invigorate quantitative findings. And we would like to thank the attendees of the IT governance summit that EDUCAUSE sponsored in Denver in September 2007 for their comments on this study’s preliminary findings and the valuable discussions that followed.

It seems it takes a village to produce an ECAR study!

Richard N. Katz
Boulder, Colorado

Endnote