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Recasting the Centralization- Decentralization Debate: Advancing the Innovation Support Cycle

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Overview

Executives are faced with tough decisions every day. Business decisions can determine the success of entire ventures. But organizational decisions are even more far reaching. They determine the ability of a corporation to succeed at every venture it undertakes, forevermore.

—*Decentralization: Fantasies, Failings, and Fundamentals* (N. Dean Meyer, 1998)

Centralization versus decentralization of information technology (IT) in higher education has been a subject of discussion since at least the mid-1950s. Current thinking, however, might be summed up by a slight paraphrasing of Ashley Morse and Jonathan Puleio of Cornell University, who claim that the debate over whether to centralize or decentralize is not so much about which strategy is more effective but rather how both strategies work best in combination. Each strategy might be more or less appropriate in a given circumstance. At the end of the day, organizations must decide which IT operations should be centralized, decentralized, or left alone.¹

Richard Katz, vice president of EDUCAUSE, claims that IT matters but that the debate over centralization or decentralization may not. According to Katz,

There is a deep literature that makes the case that on balance, decentralized approaches are best suited to organizations where innovation is the primary objective, whereas centralization is best where efficiency (capturing economies of scale and scope) is paramount. Like pharmaceutical companies and other R&D-intensive organizations, colleges and universities are hybrids; polarizing the choices of management approaches to either A (centralization) or B (decentralization) is bound to get us down the wrong path. Although it is essential that we operate cost-effective business environments, it is fair to say that no one ever won a Nobel Prize for the most efficient research.²

One can still find strong proponents for each business strategy. In late 2007, *EDUCAUSE Review* published a major article on the subject, “The Organization of the Organization: CIOs’ Views on the Role of Central IT.”³ This compendium of opinions from 13 IT leaders illustrates the multiple views on, various characteristics of, and general confusion surrounding the role of central IT and decentralized support.

In the article, John A. Bielec, vice president for information resources and technology at Drexel University, speaks to fostering innovation in an enterprise environment. Bielec says, “Rather than focus on centralization versus decentralization, academic versus administrative, or best organizational models, I prefer to focus on the effective delivery of IT services over a continuum of technology ‘innovation.’”⁴ We shall see that innovation is indeed the key to the solution.

William F. Hogue, vice president for IT and CIO of the University of South Carolina, states in the same article, “Let’s face it: if there were a proven, one-size-fits-all IT model for delivering innovation and consistently high levels of service to our colleges and universities, we would embrace it en masse.”⁵ This research bulletin will show that there is such a model, but embracing it requires that we extricate ourselves from the conundrum that these eloquent thinkers have articulated.

The model requires an entirely new perspective. Centralization and decentralization fit into a larger natural cycle that, in part, describes the “given circumstances” mentioned by Morse and Puleio. If we understand innovation as the underlying driver of significant achievement in research, scholarship, pedagogy, patient care, and the improvement (in efficiency and effectiveness) of administration, we see that in large measure, universities are innovation factories. In universities, innovation is generally the advancement of the academic enterprise, and it is largely the responsibility of the faculty as supported by the administration. The faculty drives innovation, and they require resources to implement their plans and achieve their goals. Resources include facilities, tools, time, and support. While the cost of these resources might appear high, the cost of not providing them might, in fact, be even higher.

This research bulletin explores the importance of focusing on innovation in decision making about IT. Acknowledging the apparent dichotomy between the efficient use of resources in a centralized IT model and the effective application of IT resources toward innovative research and pedagogy, the bulletin presents a model for IT service delivery that can be used or adapted in higher education institutions today.

Highlights of the Innovation Support Cycle

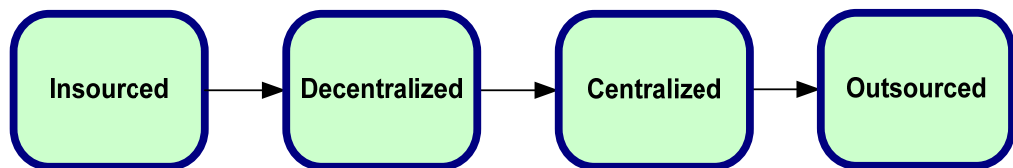
Supporting innovation isn't cheap. Costs for facilities, technology tools, faculty and staff time, and technical support continue to rise. The premise underlying the innovation support cycle is that much of the cost of innovation is driven by the maturity of the technical tools needed for innovative thinking and research.

In many universities, but especially those involved with scholarship and research, one would expect the bleeding edge of tool usage to be in the distributed units. At this extreme, new tools are generally immature, feature-poor, changing rapidly, and often problematic—at least as compared to well-established, well-integrated, mature tools that are implemented across the institution. Keeping track of these specialized technologies, including inventing/building tools as necessary or learning how to apply them to specific problems, is very time-consuming, and it often requires specialized support, along with the careful oversight of the faculty members using these technologies. In the early stage of tool maturity, therefore, point solutions, local control, and unit-specialized, discipline-specific support carries the day. These tools may have little to no institutional visibility.

Over time, a multitude of point solutions proliferate, and some commonality begins to be recognized. Faculty and staff, with a tool or two in common, can get together and look at license models, bulk purchases, and even shared support for distributed usage.

As more time brings more maturity, standards arise, vendors consolidate, open source applications might become commercially supported, and technologies can be controlled locally and supported centrally. At some point the tool can (ideally) be deployed and managed centrally without undue impact on the faculty. Ultimately, very mature tools become an invisible part of the technology environment, and these tools may even be managed outside of the institution.

The maturing of our tools takes them through a four-stage life-cycle, from new and unique to classic and commonplace. The middle two stages are familiar. I suggest that, like steam and ice, decentralization and centralization are two forms of the same thing. This is aligned with the Morse and Puleio statement that arguing for one over the other is pointless. They both have their place in the larger maturity cycle. Furthermore, I suggest that decentralization and centralization are bracketed by two other stages, insourcing and outsourcing, forming an integrated cycle. Tools can be:



Looking at tool maturity and understanding the cycle enables us to see that the way to support innovation without providing unbounded resources at each stage is to keep the tools moving through the cycle. This leads, most importantly, to the realization that maximizing innovation while minimizing cost lies almost entirely in managing the transitions between the stages.

New technology tools constantly arrive on our campuses. Most often, no single tool meets all our needs, and we think of these tools as immature or so discipline-specific that it is inefficient to support them for the entire institution. Over time, some of these tools mature—they cost less, include more features, work better together, and are practical to support. At some point these tools are taken for granted, and our attention turns to new, immature tools that promise to open new horizons of innovation. This is the innovation support cycle. Or at least it should be. Let's take a closer look at the four stages.

Insourced tools, as used here, are so unique (new, different, expensive, discipline-specific, or hard to obtain) that they are used only by a local unit for a specific purpose—a point solution. They may be shared within a small community of interest, and they have little institutional visibility. At one time, Macintosh computers were insourced tools.

Decentralized tools are technologies that have become less expensive, more common, and share a wider utility. They may be purchased or distributed with minimum institution-wide coordination. Efforts are made to provide site licensing or bulk purchases, group training, and so forth. Statistical packages are often decentralized tools.

Centralized tools are a class of technologies that have become ubiquitous. It is efficient for an institution to manage these tools centrally in order to deal with issues related to scale, including the need to manage cost, backup, security, versioning, continuous availability, disaster recovery, and so forth. Student and financial systems are often centralized.

Outsourced tools are a class of technologies for which appropriate external vendors exist. Broadband network access, voice communication, and e-mail services are in this category.

What It Means to Higher Education

Higher education generally desires to be both more innovative and more efficient. The best way to do that is to recognize that IT actually supports innovation in a cyclical way and seek to have our institutions endorse this strategy.

Recommendation 1: Ensure that every unit that the institution encourages to pursue innovation as described above has sufficient local IT staff. If your institution expects innovation but does not supply sufficient local, on-the-spot support staff, it is likely wasting its time and money on tools. Not each and every unit need be resourced to promote innovation. Institutions may wish to be selective.

Recommendation 2: Ensure that central IT is staffed sufficiently to uphold its part of the cycle. Every major centralized product requires dedicated staff to feed and care for it until it matures enough to be outsourced. Recognize that outsourcing does not entirely relieve the technical requirement, since integration and data feeds effectively tether the tool to central IT. Still, outsourcing should tend to relieve the pressure to grow the central IT staff.

Recommendation 3: Hire people with skills that match the stages of the cycle. Unless you are hiring staff for deep technical expertise in central IT, don't hire people who see themselves only as technicians or, worse, IT specialists. If allocation of technologists must be divided, then the first two stages belong in the units and the last two stages belong in central IT.

Recommendation 4: Analyze where your institution stands relative to tools and the indicated states. Use this model to inform strategic planning.

Recommendation 5: Have a policy that requires all significant IT acquisitions to be coordinated through a central body (often central IT or a governance/advisory sub-committee), and require that group to manage diversity. The purpose is not to prevent purchases but to assure the community that technological diversity is being monitored and managed within community guidelines.

Recommendation 6: Those units that have, through no fault of their own, bet on the wrong horse(s) need to be compensated, offloaded, bought out, reequipped, and/or retrained. After all, the pioneering users that invested in tools that have not carried the day deserve special treatment. Invest in the innovation support cycle.

Recommendation 7: Ensure that senior leadership makes its commitment to innovation clear, including supporting changes to business processes in order to further innovation. This is not change for its own sake or change for efficiency. It is change to clear some room to keep the cycle of innovation going. This is operationalized by IT governance (see Recommendation 9).

Recommendation 8: Balance the stages. Most of the bang for the buck is in moving systems (not support) from decentralized to centralized. The caution is not to let the centralized stage clog the innovation support cycle. Care must be taken to promote appropriate outsourcing. Within reason, even if it appears to cost more, moving a tool to an external provider buys you the space for innovation.

Recommendation 9: Make the CIO responsible for managing the cycles with the oversight of a strong IT governance committee (with both faculty and administrative representation). Give the CIO dotted-line responsibility to major unit-based IT organizations. Send the message that the committee is sensitive to the needs of the units but that the innovation support cycle will proceed.

Recommendation 10: Have a formal, technical diversity policy that enables units to make exceptions to institutional standards so long as they pick up the support and its cost. Rather than rejecting a technology tool, simply point out the cost. Enabling people to break from the pack is the very spirit of support for innovation. Uncomfortable and frustrating as it may seem from time to time, the whole point is to gain multiple perspectives, experiences, and insights.

Recommendation 11: Complementary to Recommendation 1, slowly replace local IT people who have the wrong skills with those who have the requisite innovation support cycle skills. Staff with interests in providing deep technical support should be transferred to central IT. In fact, changing the stage of a service, such as centralizing e-mail, can provide an opportunity to centralize the unit staff supporting that function as well. After centralization, they can be retrained or moved on.

Recommendation 12: Minimize development. There is a place for development and innovation in IT, but often it should be a separate business endeavor, demonstrating its profit, loss, or conscious contribution to the institution or higher education. The innovation support cycle is about deploying and supporting tools, not building them. The cycle is aimed at fostering innovation in the units, not in central IT.

Recommendation 13: Complementary to Recommendation 1, it is helpful, probably even necessary, to have a small (one- or two-person) staff that reports to the CIO, whose job is to steward the innovation support cycle and the people involved. People have to be paying attention, and, while the CIO is ultimately responsible, the logistics require support. The job of this group is to keep a finger on the pulse of the cycle, provide an analysis predicting stage changes and to see that it all works, bringing issues from the field back to the CIO.

Recommendation 14: Construct multiyear plans. Transitions from one stage to the next need to be identified, documented, and treated as near-mandatory items in budget discussions. When the innovation support bill comes due, pay it.

As we know, higher education does, in fact, seek efficiency and effectiveness, and it also fosters innovation through significant achievements in research, scholarship, pedagogy, patient care, and the improvement of administration. The stages and transitions of the innovation support cycle are not tolerated inefficiencies; they are

intentionally designed to support innovation. When the innovation support cycle is properly managed, the institution will efficiently meet its goals. Richard Katz points out the larger issue:

One of the dirty little secrets of higher education is that great discovery and great teaching are not always efficiency-seeking activities. If they were, we'd simply teach in our football stadiums (kidding!) or outsource our research. I think that we need to balance the self-evident (but unpalatable) truth that these activities are not efficiency-seeking with the fact that there are real economic limits facing us. We simply cannot—politically and morally—use the 'we are not efficiency-seeking' argument to rationalize waste and abuse. I cannot underscore this last point firmly enough.⁶

Key Questions to Ask

- To what extent does our institution want to buy innovation? What are the measures that demonstrate the commitment required to be a leader or early follower?
- How can we recognize the innovation support cycle and understand that execution of the transitions between stages is what really counts?
- To what degree are we spending our time proving we are living up to service level agreements and memos of understanding rather than truly advancing innovation?
- How can we ensure that our IT policies and practices lead to technologies that are sustainable over the long term?

Where to Learn More

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Endnotes

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5. William F. Hogue, "Addressing the Cause, not the Symptom," in "The Organization of the Organization: CIOs' Views on the Role of Central IT," *EDUCAUSE Review* 42, no. 6 (2007): 50.
6. Katz, "IT Matters," 52.

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