

The Future (If Any) of IT

The title of this column is intended to ensure at least a minimal readership. But I may be less successful with the content, particularly since I am stepping in at the end of a series of thought-provoking articles on the same subject. This series was stimulated by Nicholas Carr's "IT Doesn't Matter," a May 2003 *Harvard Business Review* article that claimed the diminished strategic importance of IT in ensuring competitive advantage. Jack McCredie, in his November/December 2003 *EDUCAUSE Review* article, asked whether IT matters to higher education in particular and cogently argued that it does. A May/June 2004 follow-up *EDUCAUSE Review* Viewpoints column by Richard Van Horn convincingly suggested that IT organizations will have to think differently if they are to thrive in financially strapped academic institutions whose leaders are skeptical of IT in the post-dot-com boom/collapse and in the face of increasing "commoditization" of IT.

So, what could drag an old warhorse out of retirement (besides the persuasive powers of the Viewpoints department editor!) to comment yet again on this prickly subject? After all, over the past five years since I was last in the academic CIO saddle, much has surely happened to render any comment of mine if not obsolete, then at least graying at the edges. The answer is that I am partly provoked by the thought that I have seen these arguments before. Repetitions are surely one of the less joyful consequences of a lengthy career in this field. The acronyms and names may change, but the same or similar concepts resurface

periodically. Perhaps I am also motivated by the need to point out some issues that may have been overlooked or insufficiently stressed in the previous dialogues. My comments in this column thus should be seen less as cogent argument and more perhaps as musings on my not-so-distant past.

Plus Ça Change . . .

Financially strapped academic institutions are nothing new (surprise!). Particularly in public higher education, the inability of most legislatures to insulate higher education institutions from economic cycles has necessarily led academic leaders to seek salvation where they may during lean years. These cycles almost predictably happen every few years regardless of who sits in the White House. And salvation is rarely to be found in institutional academic budgets, so it is the administrative campus services, including IT, that suffer the largest hits. Academic leaders have always questioned the value of IT during troubled times (and perhaps during not-so-troubled times as well) partly because they see it as a bottomless pit, partly because we are not always able to explain the future in terms that are meaningful to them, and partly because they do not want to take the time to understand. As Van Horn suggests, IT leaders need to show how their activities add value to the key teaching and research goals of the institution. IT for its own sake is not an attractive proposition.

This particular cycle is perhaps more marked than most because the dot-com collapse provides ammunition to the naysayers. After all, CIOs can no longer

complain that the private sector is luring their best people away with bucketloads of stock options. I find waving the dot-com flag somewhat bizarre, however, because the dot-com collapse really has little to do with the role of IT in higher education. Regardless of the collapse, we still have to register students, run networks (just try taking them away, as McCredie suggests, if you think they have no strategic value), assist users in an ever-changing world of technology, and develop campus policies to address new issues that could catch us by surprise (such as the epidemic of illicit downloading).

And "commoditization" is not new. Central IT organizations have continually faced the threat of extinction. Commoditized minicomputers (remember them?) were to make mainframes obsolete: they didn't. Personal computers were to replace everything at much lower cost: of course, they had the opposite overall effect, institutionally. Packaged administrative systems (now there's a real bargain for you!) were to replace older systems and be more cost-effective: the jury is still out. Every change brought applause for the coming demise of that fuddy central organization.

Why Does IT Survive?

IT organizations are still here. Why? This question is not about survival of IT as a whole but rather about survival of *central* IT organizations and their share of the institutional IT pie. IT as a whole will certainly survive, perhaps at even *greater* institutional overall cost. Decentralization only stimulates appetites for more. And woe to the provost who tries to recruit a

new faculty member with inadequate IT provisioning!

I argue that central IT organizations will indeed survive. IT is not static; it is ever-changing and moving forward, as McCredie so optimistically asserts. (Indeed, the term *information technologies* itself has been used only for the past fifteen years or so.) Central IT organizations provide essential services to certain classes of users where it is cost-effective to do so; they support key institutional activities and campus-wide infrastructure that demand the particular skills of a well-managed and well-trained IT staff or that require central coordination to create an institutional perspective; and they anticipate the future by engaging in projects that reflect the changing world of IT. Although the technologies and applications change, these functions remain constant.

Carr argues that the very pervasiveness of IT diminishes its strategic advantage to competing organizations. I doubt that argument applies to academe. What always struck me, in my years as a CIO, was how much IT folks collaborated across and among institutions to help each other make more effective use of IT. We recognize the power and strength that comes through collaborating, not through trying to obtain competitive advantage.

Commoditization does not anticipate the future. To accept the notion that commoditization has made central organizations obsolete is to accept that IT has finally reached the end of its journey. I suggest, as does McCredie, that the journey has only just begun. For sure, the commoditization of certain functions changes the picture. Freshmen now arrive programmed since birth into the finer points of IT. There is little more they need to know. They even arrive with their own e-mail addresses, so why do they need a dot-edu address, except for vanity purposes? Perhaps in the future, they and the institution would be better served by helping them latch on to their own private domain names. This would free them from dependency on proprietary domain names and e-mail services that impede lifetime portability and limit flexibility.

The centralization of services works only when IT organizations can effec-

tively scale their operations to meet the needs of armies of users. This need for scalability implies a need for at least a modicum of standardization, a word that flies in the face of an academic culture that thrives on differences. Yet some modest level of standardization is essential if user expectations of reliability, security, and dependability across the institution are to be met at an affordable cost.

Indeed, one of the continuing challenges for CIOs is to nurture and obtain community support for reasonable standards. I do not see the need for this kind of leadership disappearing in a changing IT world, even in the face of commoditization. The recent work on providing user cross-institutional authentication exemplifies the kind of standardization that cannot be addressed effectively except at an institutional level. And there remains the corresponding need for leadership in developing institutional policy and in adapting policy to an ever-changing milieu of technology.

Another role of centralized IT—the coordination and operation of campus-wide infrastructure and other institutional activities—is not likely to change in substance, although the details may change. Networks are not going away. Departments are not likely to contract directly with external commoditized ISPs. Colleges and universities are going to continue to demand capabilities that are ahead of the commoditized curve. Certainly, CIOs will wrestle with how much is enough. The timing of expansion will require good judgment. But there is nothing to suggest that the overall appetite for bandwidth and the evolution of consuming applications will not continue. And adequate headroom, particularly with the evolving dominance of VoIP and video-intensive applications, will continue to be a critical issue.

Van Horn suggests that the supposed commoditization of administrative systems favors wholesaling them out to applications developers and commercial facilities management operations. It is hard to argue against the massive inroads made by applications developers and their allied consulting organizations, though often at extraordinary institutional cost. But it remains to be seen how much business processes will change to

take maximum advantage of these commoditized applications and whether the massive investments pay off.

A third role of central IT organizations—anticipating the future—is one that is vital in the changing world of technology. Time and again, central IT organizations have demonstrated leadership in nurturing important new infrastructure and key technologies into campuses. IT organizations often bridge the gap between the advanced research of computer science and the commoditization of these technologies. This requires a particular sense of timing, along with an understanding of what is—or will be—required in an institution and what is practically possible on a large scale. And that again is where the strength of inter-institutional sharing, fostered by organizations such as EDUCAUSE and Internet2, is so important.

Is This Cycle Different?

This cycle is perhaps more intense because IT is such a large fraction of constrained institutional budgets; because many technologies have been or are being commoditized; because the trend toward decentralization is continuing; and because students arrive on campus already indoctrinated into IT. But none of these factors (except perhaps the last) are particularly new. IT continues to evolve and change, requiring leadership to bring the new benefits to institutions in a coordinated, secure, understandable, and stable manner, supported by wise and effective policies and standards.

Over the years I have often stated my belief that IT (or whatever its *nom du jour*) is the greatest adventure of our time. Even now, I still stand in awe of how much has been accomplished and how pervasively IT has filtered through our lives. For me, the most exciting loci of change were academic institutions. I am quite sure the future is bright.

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