

Where Innovation Matters, IT Matters

In May 2003, the *Harvard Business Review* published an intriguing article: “IT Doesn’t Matter,” by Nicholas G. Carr. The article has caused quite a stir, with many people arguing that it is dead wrong and many others saying, conversely, that it is on the money. Its central thesis seems unassailable: “As information technology’s power and ubiquity have grown, its strategic importance has diminished. The way you approach IT investment and management will need to change dramatically.”¹

Although accurate with respect to commodity services, this conclusion should not be a cause for panic in academia. It is, however, a warning about complacency. Put bluntly, those of us in higher education must be less protective of those IT components that *are* commodities, looking aggressively at ways to outsource or restructure rather than maintaining large, complex staff outside our areas of native competency. For those components that require innovative thinking and partnerships, we also must change our approach—we need to take great care to ensure that we are not merely pretending to be innovative, not throwing away (scarce) resources simply to be among the first on our block to do something. Rather, in a world of limited resources, we must be very strategic about our IT investments, ensuring that they are in fact driven by innovation tied directly to the academic mission of the institution. More than ever, we must seek partnerships for commodities (to bring down costs) and for innovative services (to maximize innovation and reduce risk).

Even among the most commoditized services, effective IT will continue to mat-

ter. As in the airline or train industry, small, subtle changes in services may have major implications for quality of service. Accepting Carr’s point, we in higher education should place our attention precisely on those areas in which intelligent planning in IT *does* matter and should invest in ways that strengthen our advantages. Institutions that understand this will continue to differentiate themselves, both directly in terms of market and reputation and indirectly in terms of services that are reliable, flexible, and robust.

As we consider the roles that IT must play in our enterprises, several major issues and opportunities emerge, some expected and some surprising. In particular, two big-picture issues represent both opportunities and roadblocks.

First, the pace has quickened. The “natural” lifecycle of IT-based services has not changed substantially in form over the past few years, but the pace has quickened, often beyond our ability to identify requirements and bring along stakeholders. More and more, services move from experimental to production to mission-critical in a year or less, often without sustainable funding models. The best way to develop and build innovative new services, such as wireless classrooms or collaboration technologies within a re-

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search group or department, is often *ad hoc* and funded on a nonrecurring basis. As those services gain success in an institution, expectations and demand skyrocket. Soon, challenging issues arise: the mix of distributed and central support is often historical; faculty become dependent before knowing the cost; and a thoughtful review of priorities and outcomes is conducted *ex post facto*. In short, we are burdened by success.

Second, outside demands are both increasing and distracting. IT-savvy organizations are increasingly responding to outside demands that detract from their ability to respond effectively to their communities. Many issues—from a crisis with publishing companies on how to allow access only by authorized users, to security attacks, to compliance with state or federal guidelines on immigration or copyright law—force organizations to attend to

unfunded mandates or administrative details that take time away from faculty and students.

Despite these challenges, innovative projects that critically depend on IT are flowering. These include projects in the following areas: learning management systems; digital content; security, privacy, and use policies; mobility and portability; and telecommunications and related services.

Learning Management Systems

Tools for enhancing learning using online technologies have shifted very rapidly from early adopters' experiments to core campus services, supporting myriad students in a thousand classes or more, twenty-four hours a day. The challenges are complex: vendor products in their infancy; shifting and imprecise community priorities; a lack of interoperability requirements with ERP (administrative) systems; and obstacles to faculty adoption. Meeting these challenges requires substantial thought, experiment, and dialogue. In contrast to just a few years ago, libraries, academic IT groups, extension programs, continuing education, and many other groups are now joint stakeholders in creating effective solutions.

Today, these systems are in fact touched by more students and faculty on a daily basis and in more fundamental ways than ERP systems, which cost two or three orders of magnitude more. What are our expectations for these systems as they mature into pedagogically effective tools? How do we support them effectively? These are hard questions. IT matters!

Digital Content

As faculty use online resources, they are creating outstanding course materials, reflecting pedagogical innovations, and creating intellectual content. The campus is full of forums, conferences, and dialogues on a number of important societal issues. Non-academic and academic departments debate new uses of campus resources and design new learning spaces, all of which may define the nature of the campus for decades to come.

How do we capture these materials for sharing with colleagues and students now or in the future? Web-based materials are rarely archived and often depend on software that will render them unviewable in a few years; rights to those materials are often unclear and almost always undocumented. Not long ago, materials had some chance of being maintained by default. If you put a scientific notebook on a shelf, it might still be around in two hundred years for someone to discover. Place the same notebook online today, and it may be unreadable in less than ten years—if it can be found.

Clearly, we are failing to harvest invaluable campus digital resources. Although this is an enormous task, smart campuses are engaging the community now in developing a vision for how to break this task into achievable pieces, in order to create a truly distributed, yet reliable, digital library model that allows users to find, manipulate, repackage, and build on institutional and other materials in new and exciting ways. IT matters!

Security, Privacy, and Use Policies

Well before September 11, the FBI was predicting growing problems in ensuring the integrity of academic, business, and government infrastructures. Since then, the idea has developed that colleges and universities, because of their openness and the power of their computing and communications infrastructures, are both a launch-point for many “cyberattacks” and a powerful engine for finding solutions to computer and physical security problems. At the same time, the higher education community is becoming more aware of how fragile privacy is and of the need to balance security requirements with sensible policies and best practices that protect academic freedom. While media associations take legal steps to ensure that campuses more aggressively protect intellectual property, institutions must ensure that their role as educators of students is not undermined.

How do we respond to these serious pressures without distorting the fundamental character of the academy? How can technology help? IT matters!

Mobility and Portability

Faculty desire easy and secure access to key campus resources from literally anywhere in the world. Students, wanting to study together at all hours, expect ubiquitous wireless access. Both faculty and students expect to be able to access rich multimedia (in the language lab or the library) from anywhere. Students in the field and abroad expect to stay “connected” while away. These needs are forcing higher education to confront contractual responsibilities and technical issues associated with vendor-licensed digital content, new security issues, a web of legal issues across domains, and more. IT matters!

Telecommunications and Related Services

Telecommunications, including on-campus and off-campus networks, are integral to all aspects of academic life. Whereas telecommunications is commoditizing, to be sure, the major challenges—and innovations—are still before us. No longer the realm of die-hard researchers, networks today need to function at higher levels of reliability because they are at the core of the campus educational infrastructure. Network quality of service, still “just around the corner,” needs to be invented, refined, and deployed. Campus networks are falling behind, not merely because they often have funding problems (however important) but also because the range of uses has grown by leaps and bounds and because satisfaction depends on robustness and predictability as much as on bandwidth. How do we encourage innovative uses of this resource in a sustainable way? IT matters!

IT Matters!

Even if there weren't all this innovation to consider, we would still have one major challenge—leadership. As more IT services become mission-critical, we need new management models that allow us to move agilely from vision to production. We need to use new technology to ease support burdens, “virtually” placing central support staff “right down the hall” from faculty or in the classroom. Finally, especially as budgets shrink, we need a dialogue on the most rational and sustainable models for prioritizing *and* funding critical IT services. In summary, wherever academic innovation is important, wherever increasing collaboration regardless of time or place is essential, wherever sharing of intellectual wealth is paramount, *IT matters*.

Note

1. Nicholas G. Carr, “IT Doesn't Matter,” *Harvard Business Review* (May 2003), 5–12.

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