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# Don't Confuse a Tool with a Goal

## Making Information Technology Serve Higher Education

Information technology (IT) is not a given, but rather a socially constructed phenomenon. IT's benefits to higher education are wholly dependent upon how well campus leaders use IT as a tool to further their educational goals—rather than making accommodation to technology their goal. Stanley Katz, formerly class of 1921 bicentennial professor of the history of American law and liberty at Princeton University, believes that too often college and universities merely react to IT, rather than thinking creatively about how it might contribute to their basic educational mission.

Intro

By the turn of the century, **IT** pervaded its ***costly and confusing glory.***

## The Introduction of Computing into Higher Education

During the 1950s and 1960s, computers were used on campus primarily for scientific research, with some use of technology for instructional and administrative purposes by the late 1960s. At that point, most universities built centralized computer centers with increasingly powerful and costly machines, mostly for the benefit of the physical sciences. It was not until the early 1980s that the computing environment began to change and university departments were able to buy their own microcomputers. Then in the mid-1980s, on-campus computing transformed radically when the personal computer revolution took hold, and more imaginative and widespread development of instructional technology began. Soon after that, the Internet combined with the digital and telecommunications revolutions, setting off a stunning expansion of computing by university personnel, and increasing the range of computing possibilities. By the turn of the century, IT pervaded the campus, and the IT era had arrived in all its costly and confusing glory.

Computing and IT emerged on campus with little broad discussion of its larger educational implications, and even less about the relationship between the rapidly expanding technological revolution and the fundamental purposes of colleges and universities. During the 1990s, a land-rush mentality prevailed. The excitement was partly driven by the possibilities opened up by the Internet, but also by the hype of computing by both the federal government and the business community, from whose ranks universities draw many of their trustees.

IT's tremendous impact on campuses has been greatly influenced by how computing was introduced to higher education. Throughout the course of the development of computing on campus, educational goals generally have been secondary to organizational and financial concerns. The emergence of the chief information officer (CIO) job illustrates the conflict. Strong executive power has been placed in the hands of administrators who are likely to know little about either research or teaching, yet their potential impact on research and instructional computing is enormous. Thus, the command and control structure for computing and digital information has had unanticipated and possibly adverse consequences for the educational goals of the university.

## Campus Policies and Practices

A number of campus policies and practices raise concern for the potentially adverse—or at least sub-optimal—effect of IT on educational goals. The examples cited below are by no means an exhaustive list, but they do serve to emphasize the importance of not confusing tools with goals.

1. *Libraries.* One major educational activity deeply affected by IT is the library. Almost every step in the library process, from acquisitions to the delivery of books and journals, is now automated. Online databases have made the library as a place, a physical facility, potentially less important than ever. Yet, on many campuses far too little thought has been given to how IT is being permitted to change libraries. Do we know what we want the virtual library to be and to do? The library of the future needs to be broadly reconceptualized as we think our way into the university of the IT era.

2. *Intellectual Property.* Intellectual property rights are of great concern to libraries in the emerging E-copyright regime. The hottest intellectual property issue, though, stems from the development of educational software. Simply put, the problem is that universities now want to control potentially profitable electronic publications of faculty under their patent law policies—which would render such publications the property of the university. This differs from existing copyright law policies, which permit faculty to retain ownership and any profits derived from royalties. Much is at stake in the resolution of this issue, yet it seems that little enlightened contemplation has been

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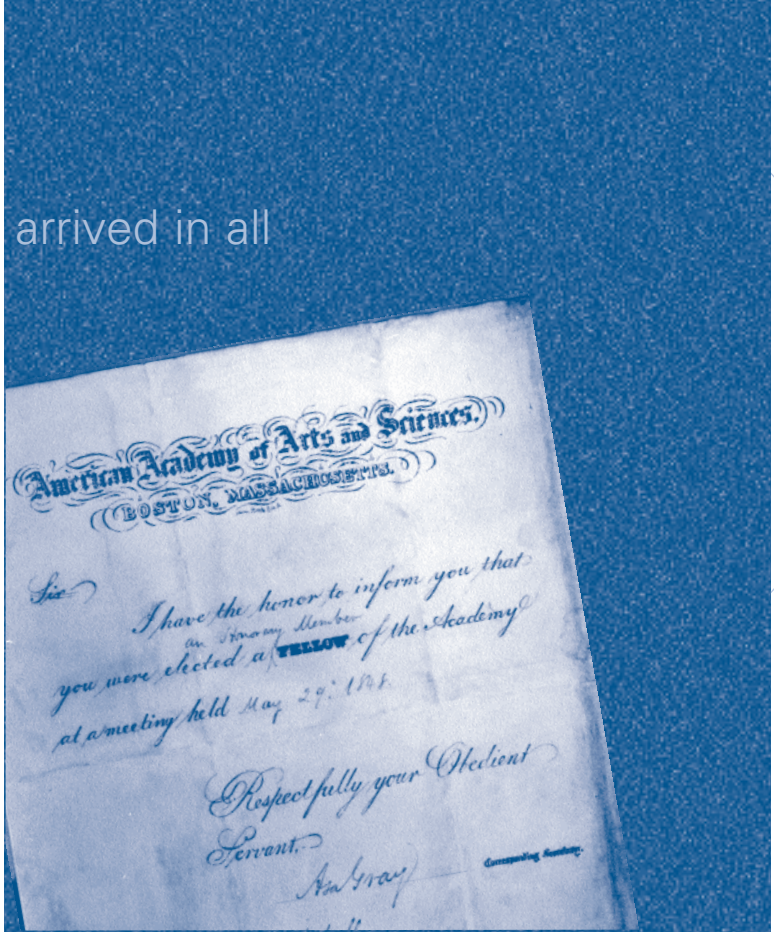


devoted to the ramifications of this question for the educational mission of the institution.

3. *Distance Education.* Suddenly, even elite universities are hungry to get into distance education. Much of this push is supported by business motives, not educational goals. Creative energy is being spent on using technology to fatten the university's bottom line rather than delivering higher quality educational experiences. Are we really thinking imaginatively about the pedagogical opportunities (and difficulties) of virtual education? The power of IT can be directed toward on-campus education as well as off-campus distance learning. We need to think about how it can best be used in conjunction with the physical presence of faculty and facilities.

4. *Commercialization.* The general impulse to become university.com is quite pervasive today, however poorly understood and articulated it may be. Cheerleaders for commercialization warn that if universities do not act now, the moment of opportunity will be lost. I believe they are dangerously wrong. The primary issue is whether the nonprofit university is subverting its mission in its quest for IT-related income. Commercial efforts provide more evidence that the tool represented by IT has become confused with the goal of enhancing teaching and learning.

## Proposed Solutions

Clearly, examples abound of IT driving higher education rather than the other way around. But what is to be done? I do not pretend to have a program designed to cure all the ills we face, but I would like to propose a few approaches for the near term.

1. *Institutions must review their governing rules and formal educational policies.* Higher education must specify and clarify the rights and responsibilities of faculty, students, staff, and administration in the new IT environment. Colleges and universities have already begun to take action in the area of intellectual property, but many others remain to be addressed. Among these are allocation of faculty time to dot.com activities; the copying of online research and teaching materials; limits on the use of the Internet and intranets by faculty, staff, and students; and electronic privacy. All parties need to better understand how to relate to one another in this environment.

2. *The campus IT authority and command structure needs to be reorganized.* CIOs must have the experience and background to be part of the academic culture, so that technology needs and opportunities are evaluated more in an intellectual and educational context than driven by administrative imperatives. Perhaps a combination of the CIO and librarian positions may be a good solution.

3. *Greater resources must be devoted to bringing the teaching and research functions of the university fully and quickly into the IT era.* The possibilities of IT instruction go far beyond delivering off-campus distance learning. Too many campuses, though, are leaving it to students and faculty to educate themselves on how to best use the technology. Colleges and universities need to investigate

the impact of technology on the learning process, and have the support of experts on-campus to put findings into practice.

4. *Institutions must pursue collaborative IT possibilities.* IT makes teaching, reading, and researching all readily feasible in a multi-media, multi-institutional environment, whereas the tremendous costs of IT make collaboration urgently necessary. Further, consortia present tremendous opportunities to expand institutions' horizons in virtual form to the entire world. If consortial activities are planned with thoughtful attention to educational values, everyone will be better served.

## Conclusion

Technology has unleashed a torrent of creative, frequently entrepreneurial activity that is so expensive, pervasive, and difficult to manage that the fundamental practices of teaching and scholarship in higher education have been shaken. Yet technology is not something that happens to us. We create it. It is our responsibility to ensure that technology serves higher education, first by thoughtfully considering on each campus what our fundamental educational goals are, and then by addressing how technology can serve those goals. That is more difficult than it sounds.

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