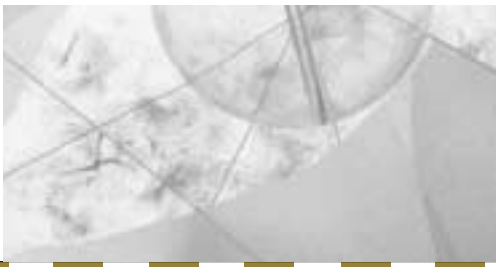


# Strategic and Financial Planning for Information Technology in Higher Education

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Information technology today is fundamental to the teaching, learning, and research missions of higher education. It is transforming the way universities do business and is fueling major changes in research, creative activity, and scholarly communication. It offers the potential for major innovation in the entire teaching and learning process. Michael McRobbie and Judith Palmer of Indiana University describe that institution's Information Technology Strategic Plan, which outlines a vision for the development, use, and application of information technology at Indiana University into the new millennium.



## The Goal for Information Technology at Indiana University

The goal of Indiana University's (IU) strategic plan is to enable the university to rise to a position of absolute leadership among public universities in the creative use and application of information technology (IT). The creation of new knowledge and the sharing of information are defining features of any university, thus the goal of excellence in the use of IT is an essential ingredient in achieving academic excellence for the institution as a whole.

The IT strategy must fit into the broader institutional strategy. IU operates under a universitywide strategic plan, which addresses three broad themes: establishing communities of learning, implementing methods of accountability and best practices, and meeting the responsibilities of excellence. The IT strategic plan supports and advances these institutional priorities. It recognizes and builds on the strengths of IU as a multi-campus institution with a formidable reputation in the arts, humanities, social sciences, basic sciences, and health sciences, and with an increasing emphasis on technology and applied science.

## The IT Strategic Plan

The IT Strategic Plan outlines the use of IT in research and academic computing, teaching and learning, telecommunications, and administrative support. It recognizes the transformational power of IT in higher education and the pace of technological change, both of which call for flexibility and experimentation in every phase of IT planning and implementation.

Two major themes are woven throughout the plan's ten key recommendations. The first is access. The plan should lead to improved access to information, computation, and communication for students, faculty, and staff. The second is life-cycle funding. The plan should put in place a reliable mechanism to sustain innovation through ongoing replacement and upgrading of information technology. The primacy of these themes is reflected in the strategic plan's recommendations.

## Recommendations

1. *Build a solid foundation of IT infrastructure and assure that sound fiscal planning permits maintenance of this infrastructure at state-of-the-art levels.* A stan-

dard amount per year must be budgeted to support life-cycle replacement of equipment and to assure appropriate levels of technical support for faculty, students, and staff.

2. *Students, faculty, and staff should be provided with reliable access to computing and network services, on and off the campuses.* The electronic borders between home, community, work place, and campus should become invisible, at little or no additional cost over current telephone technology.
3. *Incentives and support should be offered so that faculty and staff are encouraged in the creative use and application of information technology for teaching, research, and service.* Tenure and promotion guidelines, merit reviews, fellowships, and grants all present means for helping faculty and staff move along the IT learning curve.
4. *The university should assume a position of worldwide leadership in the use of IT to facilitate and enhance teaching and learning.* There are numerous ways IT can enhance teaching and learning, particularly by increasing access to resources and increasing the quality of instructional methods.
5. *To support research, the university should provide broad backing for basic collaboration technologies and begin implementing more advanced technologies.* Advanced data storage and high performance computing services, for example, are crucial to the ongoing support of university research.
6. *Institutional information systems should be prioritized, so that they work together in a seamless manner and accommodate an ever-increasing number of users.* Common interfaces and a common information delivery environment must be implemented to facilitate the integrated use of data.
7. *Plans for a converged telecommunications infrastructure must be accelerated.* The convergence of voice, video, and data technologies promise great savings and important new services if harnessed in a timely and effective manner.
8. *The university must provide IT tools, infrastructure, and support services to students so that they may effectively engage in learning and research.* This includes technology support centers and a seamless computing environment that crosses the borders between campus, home, and residence halls.

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9. *The digital library program should be expanded and a digital library infrastructure should be developed to support research, teaching, and learning.* IT has transformed the availability of resources. State-of-the-art libraries and professional librarians will be invaluable in helping the university community manage and mine the unprecedented amounts of digital information accessible today.
10. *Policies and procedures must be developed to protect the security of IT resources and data, safeguard personal privacy, and ensure that intellectual property rights are respected.* At the same time, traditional values associated with academic freedom, including access to information and freedom of discourse, must be preserved and promoted.

## Financial Planning Challenges

Information technology planning presents enormous financial challenges, in that IT affects nearly every institutional program, and is characterized by extremely rapid growth and demands that exceed capacity. An IT strategic plan should be accompanied by a business plan estimating recommended expenditures and outlining time horizons to accomplish major objectives. The fiscal analysis should reflect funding priorities for the plan, estimate the costs of each IT activity, and identify possible sources of revenue.

The development of a reasonable business plan in concert with a strategic IT plan is fundamental to the achievement of institutional goals. The plan should include institutional reallocations and a commitment to maintain current IT budgets in all units. For public institutions, the funding plan may incorporate a strategy for seeking additional state support. It is important to consider new and nontraditional funding relationships as well. These may include partnerships or sponsorships with outside public and private organizations, including the corporate sector. Financial officers must consider new paradigms to identify financial resources to support growing technological needs.

Strategies for allocating funds must also be reviewed. Central base funding of certain core central services and matching arrangements with campus or unit resources for more distributed services is one possible approach. Additionally, substantial investments of seed funding will be necessary to enable start-ups of new services, followed by bridge funding for the long-term transition of these services to base budget support.

For longer term investments, access to capital markets is crucial. In this arena, traditional definitions of operating and capital expenses have been blurred. The asset life of equipment is considerably shorter than traditional bricks and mortar infrastructure. However, in many cases the financial resources associated with major IT initiatives will be comparable to some building costs. This presents a challenge to both institutions and financial capital markets to develop a strategy that will allow longer term financing of major IT investments.

Finally, the human resource shortage in information technology presents a challenge that threatens the plans of any institution or organization. Higher salaries and greater incentives will be necessary to attract and retain quality IT staff. These efforts, however, can disrupt broader institutional compensation plans and must be approached carefully. Higher education also must meet the challenge of producing highly qualified graduates who ultimately will fill technology-related jobs.

## Conclusion

To most effectively harness the possibilities IT presents, institutions will best be served by articulating their unique identities and building on their strengths, so that their IT strategic plans align with their institutional visions and missions. Strategic plans should reflect institutional priorities; colleges and universities should thoughtfully consider their IT needs in light of their institutional missions. While the strategic paths chosen today will vary across institutions, the choice of these paths will be critical in setting the direction and trajectory for technological change in the decades to come.

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