

Is Strategic Planning for Technology an Oxymoron?

by Martin Ringle and Daniel Updegrave

In preparing for battle I have always found that plans are useless, but planning is indispensable.

-- Dwight D. Eisenhower

Introduction

Strategic planning for technology is a topic that has received so much attention it hardly seems worthy of further discussion. The CAUSE Web site, for example, includes dozens of articles on strategic planning as well as copies of technology plans that have been contributed by more than eighty colleges and universities. What more needs to be said? Apparently, a great deal. In an effort to investigate strategic technology planning, we queried more than 150 technology officers in higher education around the country.² The results were surprising. Roughly 10 percent of the respondents indicated that they simply don't do strategic technology planning at all, saying it is a frustrating, time-consuming endeavor that distracts from rather than contributes to the real work of building and maintaining an adequate technology infrastructure.

The vast majority of technology officers, however, devote a considerable amount of time and energy to strategic and financial planning. In most cases, their efforts follow the traditional model of institutional planning; that is, a committee or task force gathers information, conducts interminable discussions about what the institution needs, and ultimately drafts a huge document that meets with overwhelming approval by the three people who actually have time to read it. The relevance of the document to day-to-day operations, the quality of services, and the implementation of new initiatives is often questionable, although, oddly enough, few people seem to be concerned about this. There is something about the development of a strategic plan for technology that makes it worthwhile despite these shortcomings.

It is our contention, in this paper, that there are two distinct aspects of strategic technology planning. One is socioeconomic and the other is pragmatic/technical. The traditional focus on the creation of a planning document tends to merge these aspects and obscure the distinction, often leading to confusion and frustration. The differences between socioeconomic objectives -- which are essentially strategic -- and technical goals -- which are primarily operational -- are non-trivial: while the former need to be stable and comprehensive, the latter need to be agile and responsive to rapid changes in technology and in users' needs. We believe strategic planning for technology is not an oxymoron, yet a failure to appreciate the dual

character of technology planning can make it seem that way. Many technology officers with whom we spoke intuitively recognize the essence of good planning and achieve impressive outcomes with a minimum of frustration. Our goal in this study is to bring these underlying practices and perspectives together into an explicit -- and relatively simple -- model of a good technology planning process.

What are we trying to accomplish?

To many people both inside and outside of information technology, the reason for technology planning seems apparent. It is to look ahead and determine which forms of hardware, software, and technical support will be required to meet the future needs of the institution. In conversations with more than 150 technology officers, however, this obvious goal barely surfaced. Indeed, most technology officers express skepticism about anyone's ability to accurately predict which kinds of technology will be needed beyond the next two or three years. The motivations for strategic technology planning that were most frequently mentioned were the socioeconomic ones of:

- * aligning technology with other institutional priorities;
- * disseminating knowledge about technology needs and constraints;
- * building alliances with key decision-makers;
- * lobbying for (and obtaining) financial and other resources;
- * addressing existing technology needs; and
- * keeping an eye on the leading edge.

Aligning technology with other institutional priorities

Technology organizations that enjoy the greatest success are those whose agendas clearly serve the priorities of their institutions. Without a strategic planning process for technology, it may be difficult to identify the connection between technology initiatives and the institutional goals they are designed to support.

Disseminating knowledge about technology needs and constraints

The strategic planning process is an essential vehicle for dispensing information to the community about current operations, achievements, and constraints of the information technology enterprise. There is a likelihood that members of the

community will pay greater attention to this kind of information during a planning exercise because it is provided in the context of goals that are important to them.

Building alliances with decision-makers

In order for a technology effort to be successful, key individuals within the community -- faculty, senior officers, and others -- must understand the importance of an initiative and, to some extent, take ownership of it. This type of understanding and endorsement is best achieved when those individuals play a role in the formulation of the initiative itself, as they might during the planning process.

Lobbying for (and obtaining) financial and other resources

Financial resources are critical to virtually all information technology efforts (information technology is, unfortunately, an expensive business). Except in rare instances, the strategic planning process is the primary way institutions identify their required long-term funding levels for technology and obtain funding commitments.

Addressing existing technology needs

Many technology officers indicate that strategic planning is often a reactive process for accommodating unmet needs. This is not quite as negative as it sounds. It represents an approach to technology that relies on proven needs to drive future enhancements. While it does not propel institutions into technological leadership, it helps them optimize the use of scarce resources and avoid costly mistakes. This approach is especially valuable for smaller or less-wealthy institutions.

Keeping an eye on the leading edge

Some institutions, however, use strategic planning to track the leading edge in order to gain competitive advantage with respect to faculty and student recruitment, research, and other priorities. This approach is limited primarily to research universities, technical institutions, and other colleges and universities that have decided to make advanced technology a centerpiece of their institutional agendas.

As you will note, each of these goals has far more to do with social and economic concerns than with technological issues. This is underscored by the fact that the most common trigger for a strategic planning process is the arrival of a new chief academic or information officer. When responsibility for information technology falls into new hands, the need for a strategic technology plan often becomes a

priority. Understanding the non-technological aspects of technology planning can help shed light on why so much of technology planning can be an unparalleled waste of time.

Why does strategic technology planning fail?

Some technology officers and a surprising number of chief academic officers³ believe technology planning fails because technology evolves too rapidly, there will never be enough resources to satisfy technology demands, or users have no way of knowing what they will need in the future.

Many of our respondents, however, provided a different set of answers. They blamed, for example:

- * failure to tie technology to institutional mission and priorities,
- * failure to get the right people on board,
- * excessive focus on technical detail, or
- * lack of suitable leadership.

It's critical to remember that a plan is a statement about priorities and their implementation, given our best knowledge at planning time, and that all kinds of events will cause the unfolding of history to differ from the plan.

Failure to tie technology to institutional mission and priorities

The number-one reason strategic planning efforts fail, according to technology officers, is that they are "orphaned" by being done independently of the institutional planning process.⁴ In order for technology planning to be successful, the exercise must be broadly understood within the community as something that contributes to the institutional mission. More specifically, technology planning must be explicitly linked to teaching and research activities, fund-raising, recruitment, and other institutional priorities in a way that reveals the cost-benefit relationship between technological resources and the institution's ability to pursue its goals. Too many technology planning efforts take these relationships for granted rather than making them explicit.

Failure to get the right people on board

Each institution has a number of decision-makers who can play a pivotal role in pushing technology plans forward or making them grind to a halt. Unless such people are brought into the technology planning process in an effective way, the process can be crippled. In some cases, however, these critical people don't want to participate in technology planning. They may be unfamiliar with or openly hostile to technology. Focusing on outcomes (institutional benefits, for example) rather than technical details is a key to gaining their attention and involvement. Ignoring them is not a viable option.

It is important to solicit input from all campus constituencies.

Excessive focus on technical detail

For many reasons, focusing on technical details in a strategic planning process can be counter-productive. As mentioned above, it dampens the interest of vital participants; it tends to obscure, rather than illuminate, genuinely strategic issues; and its relevance diminishes quickly when the planning process looks at a horizon of more than a few months. The issue of whether to provide network access to residence halls is strategic; the decision of whether to achieve this by installing copper, fiber, or wireless transponders is not. An extraordinary amount of energy and money is wasted on efforts to define -- sometimes to the level of specific hardware configurations -- the kind of technology that should inhabit desktops and conduits years into the future. There are miles and miles of dark fiber in the ground that provide silent testimony to such mistakes.

Lack of suitable leadership

Strategic planning processes can suffer as badly from too much leadership as they can from too little. Anecdotes abound of chief technology officers who assume a mantle of techno-mysticism and exercise near-total control over the planning process. The community is tacitly asked to trust that the information organization and its officers will do what's best. At the opposite end of the spectrum are technology officers who serve as little more than clerks to the planning process, allowing committees or campus communities to vote with their feet on new directions for technology. Suitable leadership for technology planning requires the chief technology officer to guide the process along, identify critical choice points, solicit input, and ensure that personal agendas, including one's own, do not divert the process from serving the broader needs of the community.

A more agile approach to planning

It appears there are some common practices that contribute to healthy technology planning processes, regardless of the size and type of institution. The following ten-step method is an effort to fuse these practices into a comprehensive approach. This approach should be viewed as a model -- to be adapted to fit the individual needs of a campus -- rather than as a blueprint. A guiding principle of this method is to separate the socioeconomic aspects of a technology strategy from the operational aspects, while nevertheless ensuring coherence between the two components. The first five steps of the method focus on the strategic overview, the latter five on the operational dimension.

Step 1 – Review institutional objectives. Before initiating any strategic technology planning, it is vital to bring senior officers, deans, faculty, and other key people into the process, identify their priorities, and solicit feedback on ways in which technology might -- or might not -- support the institutional objectives they consider to be most critical. This first step, while obviously vital for new technology officers, is equally important for long-time incumbents. Too often, experienced technology officers take this step for granted, only to discover that players and priorities have changed and long-standing assumptions are no longer valid. Needless to say, this kind of oversight can lead to disaster.

Step 2 – Establish a framework of strategic technology objectives. In order to build a framework of strategic objectives, a broad effort must be made to survey all institutional constituencies. Typically, this involves the distribution of a survey to selected focus groups in order to solicit information about problems, unmet needs, future goals, and so forth.⁵ An exercise of this sort is likely to consume several months, hence it should be performed, ideally, at five-year intervals. It is especially important to strike a balance between focusing survey questions on institutional priorities and allowing respondents sufficient latitude to express individual objectives. Above all, this type of solicitation should concentrate on strategic objectives rather than on technological details. The outcome should be a brief annotated list of pedagogical, research, administrative, communications, or similar objectives that can be directly enhanced through the application of existing or new technologies.

Step 3 – Prioritize objectives. Even in a small institution, the list derived from Step 2 can be formidable. It is necessary, therefore, to identify broad points of convergence and to prioritize them according to costs and benefits. For political reasons, this step needs to be taken by an appropriate campus technology committee rather than by the chief technology officer or the information technology organization. Ideally, such a committee should include representation from all constituencies -- faculty, students, staff, library, the information technology organization -- as well as key financial, academic, and administrative officers. While the prioritized list should provide an explanation of how the objectives relate to wider institutional concerns -- and some discussion of costs and benefits -- it should be as brief as possible, a memo rather than a tome. For most institutions, the days of eighty-page strategic

technology plans are gone, hopefully forever. The effective horizon of the list should not be more than five years.

Step 4 – Invite key group review. Before the framework of strategic objectives is finalized it should be vetted among key groups -- such as the institution's senior staff -- to allow critical decision-makers an opportunity to consider financial and policy ramifications of the objectives. If such groups don't have a chance to review the objectives, substantial obstacles to their implementation may arise later. In some cases, it may be necessary for these groups and the technology committee to refine the framework until consensus is achieved.

Step 5 – Disseminate strategic technology framework. The outcome of Step 4 should be made available to the community at large. The brevity of the document should permit many forms of distribution, ranging from an article in the school newspaper to a posting on the campus Web server.

The discussions need to be managed and to take place in a context that does not have a "rah-rah" tone. While advocacy is no less of an issue these days, it needs to be more attentive to ROI [return on investment] and the expected value that technology adds to an activity or institutional function.

Step 6 – Translate objectives into operational goals. In an ideal world, Steps 1 through 5 should consume no more than six months and should be repeated every five years. On an annual basis, however, the information technology organization must identify operational goals that can be used to address the strategic objectives. The initial development of these technical goals should not require broad input from the community; indeed, delegating this level of decision-making to committees or end-users is often counter-productive.

Step 7 – Discuss operational goals with key people. The annual list of operational goals developed by the information technology organization should be circulated to key financial, academic, and administrative people to obtain feedback and support for changes in technology, services, procedures, and policies.

Step 8 – Disseminate operational goals. The list of operational goals should be made available to the community at large to ensure there is sufficient awareness of technical innovations and their strategic benefits to users.

Step 9 – Enable continuous input. Members of the community should be encouraged to express their technology needs to the information technology organization on an ongoing basis. Such items should feed into annual assessments of progress toward completion of operational goals.

Step 10 – Conduct retrospective assessment. Progress toward annual goals should be evaluated each year, prior to the development of the following year's goals; similarly, an assessment of progress toward strategic objectives should be generated as a prelude to each five-year strategic planning exercise. As with the documents that describe objectives and operational goals, assessments should be as

brief as possible, indicating targets that have been reached as well as the reasons why targets have been missed, modified, or abandoned.

Increase fungibility

For many people, strategic technology planning is just another name for long-term financial planning. While this is a somewhat parochial view, it nonetheless underscores the central role of funding issues in technology planning. Traditionally, strategic funding requests and allocations involve many layers of authority and a substantial amount of justificatory detail, regardless of whether an institution is large or small, public or private. The amount of time it takes to analyze funding needs, gain approvals, and locate or create resources, is often out of sync with the windows of opportunity for technological innovation. Anecdotal evidence of this is plentiful. By the time an institution has dotted the last "i" and crossed the last "t" on capital funding for a campuswide network, the envisioned technology may have changed sufficiently to render the plan obsolete.

One way to address this problem is to earmark a significant amount of fungible capital resources for technology and allow it to be allocated as required. While it may not be possible to justify future technology needs in detail, good planning should permit an institution to estimate the level of financial resources that it can and should devote to technology for a period of several years. A further refinement of this approach is to create a "rapid reaction fund" as part of the annual technology operating budget. By allowing unused funds to carry forward across fiscal years, an institution can establish the type of budgetary flexibility that will allow it to maintain technical stability despite the peaks and valleys in user demand, infrastructure modification, and technology innovations.

Fungibility can also be increased with respect to staffing. Typically, institutions struggle with the choice of either outsourcing or providing internal support for technical operations. The problem of recruiting and retaining qualified staff -- along with rapid changes in required skill-sets -- impels many colleges and universities toward selective outsourcing despite their apprehensions about having staff members whose primary loyalties lie outside of the institution. There is a third alternative: closed-end contracts. Recognizing that it is becoming increasingly difficult to keep high-quality technical employees for more than three years, some institutions are designating certain positions as multi-year contract positions. While the turnover rate remains high, it occurs with greater predictability, hence with less disruption. More importantly, it enables the institution to modify position requirements as changes occur in technology and the needs of users. It is, in some sense, a way of introducing fungibility into staffing, a concept that is largely alien to the traditions of higher education and that makes sense only in the context of a job market as competitive as that of high technology.

Be best, not first

About ten years ago, word started to circulate in higher education that the future of networking was going to be Fiber Distributed Data Interface (FDDI). In an effort to reduce future costs, many institutions began to pull dozens of strands of fiber into concentric rings around their campuses, into buildings, up to closets, and down to wall plates. Today there are miles of unused fiber lurking beneath our campuses and crowding conduits within our walls. Although FDDI has been employed in many places, alternative technologies such as fast Ethernet have vastly superseded it. Much of the visionary network planning of the late 1980s appears oddly naive in hindsight. There is an important lesson in this for technology planners: Within higher education, institutions are more likely to gain competitive advantage through technology if they are best rather than first. Because the pace of technological innovation is so fast, being the first one on the block to adopt a new platform or strategy yields little more than a quick flash of attention. Indeed, establishing an environment in which technological missteps are rare, resources are optimally deployed, and users are continually satisfied is far more likely to serve the strategic needs of the institution and engender lasting, rather than transitory, recognition.

Use outside assistance carefully

Within the past few years, a growing number of colleges and universities have sought external assistance from consultants or from so-called model institutions for their strategic technology planning. Reading someone else's strategic technology plan or hiring a consultant to guide the strategic planning process, however, should be done with great care. In order for a planning process to be fully effective, it must be internally managed. If plans from other institutions are acquired, they should be read with a very critical eye. Likewise, the use of an outside consultant should not be viewed as a way to relieve the institution of its responsibility to define priorities and understand the full implications of moving in one technological direction or another.

Conclusion

Getting bogged down in lengthy, complex, and confused technology planning is one of the more expensive -- and potentially self-defeating -- exercises an institution can undertake. It is extremely easy to lose sight of the most critical objectives and become embroiled in pointless arguments about particular vendors, platforms, micro-standards, and the like. However, the alternative -- to simply fly by the seat of one's technological pants -- is hardly a sensible option. The key to making optimal use of time, energy, and institutional resources is to understand the important differences between long-term socioeconomic technology planning and short-term operational technology planning. It is important to focus on process rather than document, and to devise mechanisms that enable funding, staffing, and other assets to be readily allocated and re-allocated, as circumstances require.

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