Chapter 5
Sourcing Information Technology Services

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Organizing and Managing Information Resources on Your Campus

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Rising expectations for information technology (IT) services, high deployment and operations costs, and the scarcity of technical and financial resources are leading many higher education institutions to consider outsourcing selected IT services. The challenge of staffing and funding the IT enterprise is driven by a rapidly changing set of dynamics that combine to evolve, and even revolutionize, how campuses operate and how IT leaders conceptualize and implement IT services. In some cases, institutions can effectively and efficiently manage these investments internally. Graves offers an alternative of “relying on virtual operations—that is, contracting or partnering for capital, infrastructure, and services in the Internet economy” (Graves, 2001, p. 48). These partnerships or contractual relationships can be developed not only with private providers but also with other institutions, as well as internally among various campus IT providers. The question is not really one of deciding whether to outsource an IT service but rather of deciding who is best able to provide an IT solution to the campus: in other words, a more generalized sourcing decision.

Regardless of whether an IT investment decision is made in a traditional manner, such as deciding to spend a fixed amount of money over a fixed time to develop a new in-house system using a centralized IT provider, or in a less traditional manner, such as
partnering with a set of regional institutions to outsource a suite of services to several private providers, institutions need to develop comprehensive yet flexible decision-making methods that limit neither practical alternatives nor the ability to experiment.

Much of the reticence toward considering nontraditional IT sourcing solutions has evolved from the historic buy-versus-build question, and this question itself likely stems from the historic political and economic isolation of higher education noted in Chapter One of this book. Internal sourcing decisions are often bounded by organizational dynamics, that is, politics.

Today's outsourcing market complicates the situation by focusing on business process services rather than simply the IT services that support those processes. Because IT and business processes are inextricably linked, it is increasingly difficult to make effective sourcing decisions about either area in isolation. This complicates the campus political environment within which sourcing decisions are made.

**Forces Affecting Sourcing Decisions**

Campuses source their IT services in many ways, some of which are shown in Table 5.1. The most traditional model is to staff and fund an internal IT organization to develop and deliver a broad range of IT services to the campus. This “grow your own” model has its roots in the academic and technical expertise on college campuses that predated the availability of private sector IT services.

The 1970s saw the first commercially packaged administrative systems, which were modified and extended by campuses or by the provider to serve institutions’ unique needs. Some institutions sourced the operation of these systems to private service providers, while usually retaining internal control over academic computing operations. As campus computing services evolved to encompass networking and personal computing services during the 1980s, most campuses developed IT capabilities in academic units to deliver
<table>
<thead>
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<th>Arrangement</th>
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<td>Central provisioning</td>
<td>Delivering IT services from one or more centralized campus IT providers</td>
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<tr>
<td>Decentralized provisioning</td>
<td>Delivering IT services from multiple departmentally centered IT providers</td>
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<tr>
<td>Federating</td>
<td>Coordinating service responsibilities among campus IT providers</td>
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<tr>
<td>Professional consulting</td>
<td>Strategic planning, requirements gathering, and system selection</td>
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<td>Contract staffing</td>
<td>Contracted technical resources to supplement in-house staff for fixed-term projects</td>
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<tr>
<td>Project implementation</td>
<td>Project management, technical staffing, and migration and integration services</td>
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<tr>
<td>Services management</td>
<td>Data center operations, help desk operations, repair services, Internet service provider services</td>
</tr>
<tr>
<td>Remote hosting</td>
<td>Administrative systems, Web services, e-mail services, course management systems</td>
</tr>
<tr>
<td>Application service provider</td>
<td>E-procurement, course management systems, videoconferencing</td>
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<tr>
<td>Microsourcing</td>
<td>Small, focused service arrangements</td>
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<tr>
<td>Rebadged staffing</td>
<td>Transferring institutional IT employees to another campus unit or external provider</td>
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<tr>
<td>Sale-leaseback of assets</td>
<td>Data centers, telephone systems, network infrastructure, cable plant, and mainframes</td>
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<tr>
<td>Insourcing</td>
<td>Taking back previously outsourced IT services</td>
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more focused services than those provided by the central computing organization.

In the 1990s, the demand to integrate disparate administrative systems resulted in a tremendous investment in enterprise resource planning (ERP) systems, solving as well as creating problems (Hagel and Brown, 2001). Campus ERP systems are close cousins to their private sector counterparts and thus provide campuses with the option to outsource ERP operations. Other campus IT services—telephony, dial-up services, e-mail, e-commerce, digital video, Web hosting—have also grown in size and scope, enabling private service providers to compete directly with on-campus IT units to provide these services. The application service provider market, fueled by venture capital investments in the late 1990s, represents one possible view of how IT infrastructure services may be provided in the future.

**IT Integration**

The integration of IT into the overall institutional decision-making process is the most significant force influencing sourcing decisions. As McClure notes in Chapter One, campus IT units no longer control IT on campus; academic leaders have assumed more responsibility as a result of integrating IT into academic programs. Emerging standards and architectures have given campus IT units new reasons to collaborate—or fewer excuses not to collaborate. Multiple-campus collaborative efforts have increased with the advent of both the ERP and open source software movements.

Hawkins and Barone in Chapter Nine cite the movement away from isolated IT decisions; IT leaders must be involved in IT decisions but cannot assume full responsibility, either actively or accidentally, for making the programmatic decisions that drive the institution’s use of IT. Institutional IT decision making is also subject to “pendulum swing” forces, including changes in senior leadership, the natural evolution of academic programs on campus, the
institutional attention span associated with expensive long-term initiatives, and the impact of government regulations.

**Funding Mechanisms**

Funding also significantly affects sourcing decisions. In Chapter Four, Smallen and McCredie point out that many institutions still view IT projects as one-time expenditures rather than long-term investments. This view can limit the nature and growth of campus IT infrastructure to the availability of uncommitted funds and can limit the institution’s ability to commit to long-term service relationships with on-campus or private providers.

The outsourcing of IT does not generally result in overall cost savings due to service provider “uplift.” For example, outsourcers will generally raise (“uplift”) staffing costs by approximately 30 percent, not only because of profit margins but costs of recruitment, training, paid time off, and the cost of turnover—costs that campuses generally do not address, especially at the department level.

Campuses can expect that insourcing or federating services may result in additional administrative and coordinating overhead, and perhaps some duplication of services. For any sourcing decision, the cost difference between any current and proposed service arrangement needs to be balanced with anticipated service level or competitive improvements.

**Technology and Industry Trends**

Technology and industry trends also shape sourcing decisions. The life cycles of IT components, changing demand levels for services, and technology adoption cycles (both planned and accidental) require “awareness of the exponential properties of many variables” (Boettcher, Doyle, and Jensen, 2000, p. 3). The evolution of IT services, from experimental to boutique to commodity status, provides opportunities to re-source services if life-cycle stages can be tracked and managed. Issues of scale also affect sourcing decisions
from perspectives of infrastructure, end user support, and availability of alternative providers. Finally, emerging IT industry trends such as Web services, subscription-based software services, remote systems management, and the open source movement can provide new opportunities—or impose new risks and constraints—on the range and quality of sourcing options available to campus leaders.

**What Services Should You Consider Outsourcing?**

Candidate IT services that could benefit from outsourcing vary widely and are often unique to a particular institution. Some of the variables to consider in evaluating the potential for outsourcing are shown in Table 5.2. In general, services that are provided on an institution-wide scale and are being provided in an efficient and cost-effective manner have the best potential to attract a number of qualified service providers. Many institutions consider outsourcing common infrastructure, such as telephone or network services, and commodity services, such as equipment repair or e-mail provision. Campus decision makers need to be mindful that many of these services are built on significant capital assets, such as the campus cable plant. Consideration of these assets needs to be factored into sourcing decisions. Other services, such as disaster recovery and enterprise security, may be good outsourcing candidates due to their high cost of development.

Poorer candidates for outsourcing include specialized services that are provided to subpopulations of the campus community or are provided in unique ways to multiple communities. These services often lack the scale needed to attract qualified service providers. New and emerging IT services whose adoption cycle is not yet understood are also poor candidates for outsourcing. Service providers need longer-term usage-based commitments to lower their costs, and emerging technologies add risk to their pricing calculus. Many campuses find that these more specialized services are better
served by internal sourcing to an academic department or service unit rather than outsourcing.

The poorest candidates for outsourcing are IT services that comprise true campus-specific intellectual property. Although these services are rare, they are generally associated with research and development, instruction, and technology transfer.

Institutions may have policies and practices that they view as yielding competitive advantage. The IT services that support those practices would also be poor candidates for outsourcing, because the risks associated with a failed decision are high.

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<thead>
<tr>
<th>Variable</th>
<th>Example</th>
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<tr>
<td>Availability</td>
<td>Current staffing may not support around-the-clock services required for mission-critical services</td>
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<tr>
<td>Elasticity</td>
<td>Relationship of usage level to cost structure</td>
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<tr>
<td>Sunk capital costs</td>
<td>Previous capital investments in physical plant, staff, hardware, and software</td>
</tr>
<tr>
<td>Entry cost</td>
<td>Capital and staff training costs associated with starting an IT service</td>
</tr>
<tr>
<td>Experience</td>
<td>Advantage of prior experience</td>
</tr>
<tr>
<td>Growth and scalability</td>
<td>Ability to respond quickly to usage levels and infrastructure needs</td>
</tr>
<tr>
<td>Maturity and standardization</td>
<td>Mature and standardized services are subject to cost reductions by aggregation</td>
</tr>
<tr>
<td>Ownership</td>
<td>Institution decisions regarding capital items or sensitive IP assets</td>
</tr>
<tr>
<td>Providers</td>
<td>Number of qualified service providers</td>
</tr>
<tr>
<td>Security</td>
<td>FERPA, HIPAA, and other regulations</td>
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Sourcing IT services does not necessarily mean outsourcing to a private sector provider. Campuses should also consider sourcing options that are available within the institution, including insourcing, collaborating, or federating, as well as among other institutions through collaborations and joint operating agreements. Recently, higher education institutions have begun to collaborate on integrated interinstitutional ERP systems as well as on open source software development initiatives. Examples include the E-Book project of the Committee for Institutional Cooperation (see www.cic.uiuc.edu) and MIT's DSpace effort (see www.dspace.org/).

Many campuses possess several IT providers capable of providing scaled IT services to large segments of the campus community. These units have specialized capabilities that are often linked to faculty researchers and in many cases can deliver focused IT services at higher service levels than by leveraging a central IT service unit. Among the service areas most widely insourced are library catalogue services, administrative systems, scientific computing, and research computing.

In some cases, campus infrastructure services are most effectively delivered by a federated group of IT service providers, each focusing on different primary end user communities but collaborating on technology architecture and infrastructure operations. A good example would be a campus medical center operating its network infrastructure in collaboration with a central IT service provider that manages the rest of the campus network.

If a campus decides to source an IT service to an internal IT provider or federation, a number of actions will maximize the chances for success—for example,

- Establishing cooperative service-level agreements between service providers
- Establishing agreement on common costing, funding, and service-level models
• Establishing common compensation models and a “no raiding” staffing environment

• Ensuring ongoing communication among service providers, colleagues, and customers

• Conducting periodic evaluations of service levels and identifying and resolving service delivery issues

The Sourcing Decision Process

A process for making thoughtful IT sourcing decisions should begin with understanding the potential positive and negative outcomes of those decisions. Real or perceived costs may increase or decrease if the economics of a sourcing decision are at odds with existing campus models. Service levels may change in both planned and unplanned ways. Human resources and cultural issues may arise depending on the match of policy and practice between the institution and service provider. And successful or unsuccessful implementations of sourcing agreements can have political consequences, both positive and negative. These outcomes can result from making any sourcing decision: investment in an on-campus unit, migrating services from one campus IT provider to another, entering into an interinstitutional collaboration, or outsourcing.

Institutions should also identify situations in which IT sourcing decisions will be more difficult to make. Sourcing decisions are tougher when academic and IT decisions have historically not been linked. Decisions will be more complex when the institution is decentralized and has many IT providers. As with most other decisions, sourcing decisions are riskier when made in the midst of a crisis—administrative, operational, financial, or technical. Sourcing decisions are tougher to make when IT services are not already provided efficiently and effectively; this may mean that the campus does not have a good grasp of cost or service provision issues.
Viewing IT Services from a Business Perspective

Quality sourcing decisions cannot be made without the commitment to evaluate and view IT services from a business perspective, especially if outsourcing is being considered. As Hawkins and Barone remind us in Chapter Nine, higher education institutions often reject the business model and resist evaluation. To counter this historic posture, campuses should engage academic leaders, IT providers, and financial administrators in devising rules for making sourcing decisions that are driven by campus values (McCord, 2002).

Economic models should be collaboratively developed, should be defensible, and should be supported by solid metrics and measurement systems. Sourcing decisions are made more difficult when internal economics are not well defined or when multiple funding, cost allocation, and charge-back models are used. (See Chapter Four for a more extensive discussion of IT funding models.) In developing economic models, campuses should understand the differences between expenditures and costs and how to roll up costs into meaningful measures that link to IT services and institutional outcomes (Kaludis and Stine, 2001).

Campuses should develop methods for determining which IT services could benefit most from being sourced to a campus provider, federated, or outsourced. Once potential sourcing providers have been identified, a formal selection process should be used, even if on-campus sourcing is being considered. The selection process allows the institution to clearly identify its expectations and for providers to clearly identify their capabilities and costs. Provider proposals should be carefully analyzed to predict not only their direct costs but also their indirect cost impact on academic and business units. Life-cycle cost assessments are especially important if assets will be sold, leased, acquired, retired early, or abandoned as part of a sourcing agreement.
Even with an understanding of today’s requirements in hand, campus leaders will need to develop contingency plans and maintain a flexible future outlook. The higher education and technology environments continue to change rapidly and erratically and, as McCredie (2000) points out, “We will almost certainly misjudge the timing of significant changes” (p. 15). Campus planning and decision-making strategies must be capable of adapting quickly and nimbly as technology and business trends raise new opportunities and obstacles.

**Understanding the Negotiating Perspectives**

As the campus evaluates proposals and negotiates with outsourcing providers, it is important to understand the negotiating perspectives of both customers and providers and the barriers to understanding these perspectives fully. In deciding to re-source an IT service, the campus generally desires to improve service delivery, control or reduce costs, or take advantage of new technologies. At the same time, the campus wants to establish a manageable relationship that minimizes future risk while providing flexibility to pursue other options as they become available. The campus also generally exhibits considerable concern for the well-being of staff members who are affected by sourcing decisions.

A sourcing provider needs to understand clearly the specific requirements and service level expectations of a client so it can properly staff and manage the relationship. The provider should reduce its risk by gaining a commitment from the campus for a high volume of a standard service over a long time period. The provider should also establish a manageable relationship that will provide it with the opportunity to leverage its relationship with the customer to attract additional customers.

Thus, the customer often desires flexibility with cost controls, while the provider often desires specific requirements and long-term commitments. If these countervailing perspectives are not well
understood, conflicts can arise during the selection and negotiation process.

Mitigating Existing Institutional Barriers
An effective decision process must also mitigate existing institutional barriers to making good sourcing decisions—for example,

- Existing internal cost allocation models can skew an institution’s perception about the true cost of IT services.
- The campuswide distribution of IT talent can lead to complex and sometimes inefficient service provision models.
- IT organizational and governance structures can place pragmatic political boundaries around decision options.
- Relationships between state and federal governing agencies and labor unions can create decision constraints regarding contracts or personnel matters.

Other potential barriers to good sourcing decisions are shown in Table 5.3. These barriers sometimes become visible when sourcing to an on-campus provider, but are more likely to become visible when outsourcing or entering into a collaborative agreement with another institution. Previously hidden costs can be expected to appear in the form of an explicitly contracted charge, so it is helpful to understand these hidden costs before engaging in negotiation.

In Chapter Two, Penrod notes that institutions’ planning styles range from highly formal to highly informal. Although some campuses may be able to execute a successful internal sourcing decision using an informal process, external collaborations or sourcing agreements require considerable rigor in partner selection and contract negotiation to ensure success. Campuses generally use experienced outside consultants and legal counsel for large-scale outsourcing decisions and contract negotiations.
Table 5.3. Examples of Sourcing Barriers

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<tr>
<th>Barrier</th>
<th>Example</th>
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<tr>
<td>Fiscal-year general fund versus multiyear view</td>
<td>Difficult to establish life-cycle costing or commit to long-term contracts</td>
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<tr>
<td>Distributed planning and budget authority</td>
<td>Administrative overhead, diverse support environment, redundancy</td>
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<tr>
<td>Lack of costing and service-level data</td>
<td>Difficulty establishing service requirements or baseline costs</td>
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<tr>
<td>Reservation versus demand-driven model</td>
<td>Difficulty migrating to model where all services are charged for</td>
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<tr>
<td>Lack of fully loaded charge-back experience</td>
<td>Political fallout when the true costs of IT services are recognized</td>
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<tr>
<td>Multiple marginal costing</td>
<td>Campus units may hold different beliefs about IT costs</td>
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<tr>
<td>Human resource issues</td>
<td>Reassigning employees to new employers or having outside employees work on campus</td>
</tr>
<tr>
<td>Multiple support platforms</td>
<td>Increased support costs</td>
</tr>
<tr>
<td>Historic practices posing as policies</td>
<td>Customized services and higher costs</td>
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Improving Your Chances for Success

Once a sourcing decision has been made, the campus needs to provide ongoing support to ensure that the agreement is successfully executed and benefits are realized. This begins with active executive sponsorship and is accompanied by assigning talented administrators to manage the agreement. Particular attention should be paid to the transition plan, because this activity sets expectations for how the agreement will be executed and monitored.
In any sourcing situation, especially an outsourcing agreement, solid disaster recovery and business continuity plans need to be developed as outlined by McMillan and Sitko in Chapter Eight. Managing an outsourced service is sometimes more difficult than managing in-house personnel, so administrators should develop a well-documented management program that includes ongoing service level measurement, problem reporting and resolution procedures, and continuous improvement methods.

Campuses making outsourcing decisions should be prepared to change how they conduct business, especially confronting the thorny issues of simplifying and standardizing processes and services. Long-standing practices often are viewed as policy across the institution, and highly personalized and customized service delivery to specific communities or individuals is commonplace. For example, should the campus maintain a second (or third or fourth) groupware environment? Should the payroll office maintain seven payroll cycles for different employee groups? Should individual academic units maintain separate admissions systems? Should the campus ensure access to institutional IT services from diverse workstation platforms? If a campus chooses to outsource IT services, it will be faced with paying real dollars for each degree of customization and personalization.

Any outsourcing decision should be made with the understanding that the IT service may be brought back in-house or re-sourced to a different provider at the end of the agreement. So in addition to initial transition planning, institutions should prepare a termination and migration plan, remembering that transitions and migrations can magnify known risks. The insourcing process should include clearly defined exit points and associated migration plans, and these plans should be referenced in the contract. Institutions should seriously consider maintaining a retained IT service organization to ensure that the institution understands the re-sourced IT architecture and service model and to serve as an expert group sup-
porting the migration process. The retained IT service organization should develop and periodically review detailed migration and contingency plans in consultation with the sourcing administrator. Sample tasks for inclusion in these re-sourcing scenarios are shown in Exhibit 5.1.

**Conclusion**

Making IT sourcing decisions entails the same decision-making processes, regardless of whether the campus is considering shifting responsibilities to an on-campus IT provider, collaborating with another institution, or outsourcing to a private provider. Good IT sourcing decisions require deep knowledge of the current business and technology situations, a solid understanding of existing costs and service levels, a clear articulation of future service objectives, and an understanding of the terms and conditions under which future services will be provided.

**Exhibit 5.1. Sample Re-Sourcing Tasks**

- Administrative and technical migration
- Hardware and software inventory
- Facilities and infrastructure impact
- Restaffing, retraining, and supplemental staffing
- Service migration plan and testing
- Migration and parallel operations planning
- Acceptance testing
- Return of physical assets and backup media
- End user documentation and training
- Legal review of contracts
- Closing accounting and billing processes
IT sourcing options are complex and do not generally fall cleanly into either the “build and run everything yourself” or “always buy from someone else” categories. Every campus should approach sourcing options with the understanding that simplistic solutions will generally not be in its long-term best interest. As Lacity and Willcocks (2001) point out, “Those who approach outsourcing in all-or-nothing terms either incur the great risks involved in total outsourcing, or forgo the potentially considerable benefits of selective sourcing by committing to a policy of total insourcing” (p. 185). Any decision to significantly change the overall direction of IT or the sourcing of IT services represents a moment of truth for campus leaders.

As Penrod points out in Chapter Two, decisions are bounded by the degree of risk that campus leaders are willing to take and should be made with roles and responsibilities clearly defined. Transparent decision-making processes are critical because campuswide sourcing decisions often have an impact on existing institutional practices and economic models; poor decision making can result in lower service levels or services that are merely added to existing programs at additional cost to the campus.

To support IT sourcing decisions, campus IT leaders and their service organizations need to adapt culturally to a world that seems to be becoming less focused on internal technology provision and more on collaboration and partnerships and to avoid the negative interpretations that internal IT organizations often associate with any nontraditional sourcing decision. To move in this direction, IT leaders should evolve their thinking from that of a technical manager to that of a campus process facilitator and IT services architect.

As their institutions consider sourcing decisions, IT managers should ensure that these decisions are not made in isolation, but rather in collaboration with colleagues both within and outside the institution. Most institutions are making somewhat similar decisions about somewhat similar problems within somewhat similar
boundary conditions, and thus should make an active effort to learn from one another. As the noted technologist Mark Twain observed, “History may not repeat itself, but it does rhyme a lot.”

References


