IT Outsourcing in Higher Education

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IT Outsourcing in Higher Education
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The mission of the EDUCAUSE Center for Applied Research is to foster better decision making by conducting and disseminating research and analysis about the role and implications of information technology in higher education. ECAR will systematically address many of the challenges brought more sharply into focus by information technologies.

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## Contents

**Foreword**  
ECAR background • Knowing when to outsource • Introduction to the study • Contributors to the study  

**Chapter 1** Introduction  
Purpose, objectives, and scope • Classification and definitions • Application service providers • Survey methodology  

**Chapter 2** Executive Summary.  
Key findings • Higher education’s special constraints • Risk assessment • The decision to outsource • Conclusions for the higher education sector  

**Chapter 3** Survey of IT Outsourcing in Higher Education  
Who outsources? • Who makes the decision? • Reasons to outsource and the benefits • Implementation time • Satisfaction with vendors • Types of functions outsourced • Outsourcing process problems • The ASP model • Vendor selection criteria  

**Chapter 4** Analysis of ASP Services and IT Outsourcing  
Scope of ASP and IT outsourcing services • The trends driving outsourcing • Using an ASP • Comparing IT outsourcing in higher education, the commercial sector, and government • Business process operations outsourcing  

**Chapter 5** Higher Education IT Outsourcing: Future Trends and Market Forecast.  
U.S. IT forecast • U.S. ASP forecast • Canadian forecast • Comparison with commercial and government IT outsourcing • The problem of human capital  

**Chapter 6** Lessons Learned: Conclusions and Recommendations  
Summary of observations • Viability of the ASP model • Outsourcing likely to grow • Approaches vary by type of institution • Human factors affect higher education outsourcing • Experience needed in planning and definition • The customization issue
The EDUCAUSE Center for Applied Research (ECAR) was launched on January 1, 2002, to create a body of research and analysis on important issues at the intersection of higher education and information technology. At its inception, ECAR is discharging this mission through a program of symposia and through the publication of both concise biweekly research bulletins written for a senior executive audience and research studies of significant depth. Feedback obtained through a series of focus sessions conducted in the second half of 2001 served to set ECAR's tentative 2002 research agenda. In 2002, no fewer than four major studies would be undertaken and delivered. These studies would cover such areas as networking, administrative information systems, IT management practice, and technologies to support teaching, learning, and other academic endeavors.

This study on IT outsourcing in higher education belongs under the heading of IT management practice. Known for years as contracting out, facilities management, or various other terms, outsourcing is a familiar practice in higher education. Among some in higher education, the outsourcing of IT activities is a familiar alternative. For most, IT outsourcing came of age (perhaps prematurely) during the height of the dot-com frenzy. Shaped in large measure by the easy availability of venture capital, the belief in the inexorability of the "new economy," the emergence of new technology architectures (the Web, enterprise resource planning (ERP), portals), and more dramatically by acute skill shortages in the U.S. IT workforce, new firms large and small emerged to manage a wide range of IT services "anytime, anywhere" over the Internet. The idea of the hollow corporation consisting only of a network of service providers linked by a common vision and a lean corporate executive staff sparked the corporate imagination and fueled the growth of IT outsourcing.

Of course, the dot-com bubble burst, bringing the demise of many prominent outsourcing firms and application service providers (ASPs). While the excessive hype of the dot-com phenomenon left only small trails in higher education, the underlying concepts surrounding IT outsourcing have remained sound and in fact have matured over time. Most observers agree that the real power of the Internet is its ability to unbundle services, information, transactions, and institutional activities over distances and across time. In a robust networked environ-
ment, IT outsourcing makes it possible to identify the best-of-breed of an online service—business or educational—and to acquire such services at a cost made reasonable by spreading those costs across many possible consumers. Well, that’s the theory.

**Many Important Questions**

IT outsourcing in higher education is not a sexy topic, and in some quarters of our esteemed industry it’s a downright unpopular subject. Unbundling is fine as long as it’s not your organization and your job being unbundled. Change is great—for someone else. IT outsourcing is an emotional topic and has therefore been shaped, perhaps more than any topic, by fears, rumors, myths, and folklore. Is IT outsourcing more cost-effective? Under what conditions? Are those who outsource satisfied with the results? Who is really driving the outsourcing decision … and who should drive the decision? What are the effective practices related to IT outsourcing? These and other important questions have been left to the pundits, while the rest of us swap anecdotes and contend with our anxieties.

This study attempts to answer some of these questions, but of course limitations of time, resources, and data leave much to be done by successor studies. This publication is the culmination of nearly six months of effort by INPUT, a respected market research firm based in Chantilly, Virginia. It was a risky endeavor to take on a possibly unexciting, unpopular, and emotionally charged topic with a research firm that supports IT outsourcing on the basis of years of analysis in the commercial and government IT markets, yet has little experience in higher education. Not surprisingly, lessons were learned. Indeed, the learning curve about higher education’s idiosyncrasies is steep. Perhaps ECAR’s learning curve about the merits of IT outsourcing was also steep. Despite these risks and growth pains, the resulting study is substantial, reasonable in rigor, and, in most of its findings, reassuring.

Our colleagues and we have discovered that large pockets of higher education are knowledgeable, steady, and somewhat skeptical outsourcers of IT services. As an industry, higher education can be best characterized as a late adopter, or perhaps more accurately as a selective adopter, of this approach. We are assured, as if we really need assurance, that higher education is not monolithic. Indeed, different segments of higher education appear to have differing goals, methods, priorities, evaluation yardsticks, and outcomes vis-à-vis IT outsourcing.

To the extent that this study’s data and analysis paint a picture of an industry struggling in different ways with IT labor shortages, these data confirm what we already know. To the extent that the study illustrates how fundamental approaches such as sole-sourcing and competitive bidding can be used either successfully or not, the study may enrich debates often polarized as “either-or” dichotomies and help us to understand the conditions under which different methods succeed or fail.

This study in most ways reassures us by confirming what our anecdotes tell us and establishing that while we are indeed a community of skeptics, we are neither crazy nor retrograde. Higher education’s skepticism vis-à-vis IT outsourcing appears reasonable when reconciled with data showing increasing dissatisfaction by early IT outsourcing adopters in the commercial and government sectors. At the same time, this study confirms my suspicion that IT outsourcing is terribly important and to some extent inexorable. The data clearly demonstrate that we cannot all keep up. The choice for institutions wishing to remain competitive through IT innovation will likely be between focused or widespread IT outsourcing, rather than between IT outsourcing or not. Clearly
even our most prestigious research universities are outsourcing, albeit at the margins of innovations. In a very sound strategy to rapidly acquire new technology skills and to then assimilate those skills organizationally, research universities appear to outsource as an IT skill augmentation strategy.

This study also uncovers the power of mythology. To me, the data suggest that higher education is an industry “of two minds” about this topic. On one hand, there are those of us who treat this as either an opportunity or an inexorable medicine; on the other hand, there are those who, if not openly hostile, believe that IT outsourcing is not for them. Many of those who don’t outsource now are unlikely ever to do so. This may be disappointing news to this study’s corporate readers, but again, it’s better to know bad news with reasonable certainty than to approach a market with uncertain (and unfounded) optimism.

In the end, this study makes the case that IT outsourcing in higher education is here to stay and will likely grow in economic importance over a five-year forecast period. For this reason alone, this study was worth undertaking and is a worthy reference.

Finally, as you read, reflect on IT outsourcing and the nature of decision making at your institution. Interestingly, in a great many cases, the primary representatives of EDUCAUSE who form the core of the survey response group underlying much of this analysis do not play a significant role in the IT outsourcing decision. Clearly, the extent of the IT leadership’s involvement varies widely across higher education segments. Notwithstanding this variability, this study suggests to me the need to debate and discuss how these consequential decisions will be made on campus and who is to be accountable for them. In many cases, IT outsourcing decisions appear to have been made elsewhere in the organization, resulting perhaps in reports of disappointing outcomes. Are presidents outsourcing to either “fix” or lower IT costs? If so, how do information technologists effectively inform those actions?

**Important Contributions**

This study has been an adventure. It is the product of many people’s time and effort. In particular, Brian Hawkins and the EDUCAUSE Directors deserve great thanks for their commitment and vision in support of ECAR and this study. Certain board members of the past also deserve special thanks. Thank you Ron Bleed, Bill Graves, Polley McClure, Don Riley, and Richard West. ECAR Fellows Bob Albrecht, Mary Beth Baker, and Diana Oblinger provided guidance and direction to enhance the work of our colleagues Ellen Hassett, Peter Cunningham, Emillia Kancheva, Matt Newsome, and Sara Wells.

ECAR studies are made possible in part through the generosity of our sponsors. These leaders share our desire to inform decisions with good data and analysis, and they contribute toward this goal without expectations of influencing study protocols or results. Karen Willett and PeopleSoft Corporation were ECAR’s earliest supporters. Deborah Elias-Smith of SCT, Andrew Vaz of Cap Gemini Ernst & Young, and Cheryl Hewett and Mike Humke of Hewlett Packard share our vision and have helped underwrite this study.

Two outside readers were especially instrumental in establishing the tone that would balance corporate enthusiasm with higher education skepticism. Paula King of the University of California, Merced, and Jeff Noyes of the University of Texas at San Antonio invested more time than anyone should ask of volunteers.

Finally, a study cannot exceed the quality of its inputs. The EDUCAUSE community has been absolutely magnificent in sharing its time, viewpoints, and opinions with the research team on this project. Nearly 300 busy executives responded to this survey. Upping the ante, numerous colleagues at
Cabrini College, Drexel University, George Mason University, Mercy College, Neumann College, the University of Maryland, and the University of Pennsylvania generously shared their time in qualitative interviews. A smaller number of our colleagues really climbed the mountain with us. They let our research team spend one to two days at their institutions in discussion with scores of campus stakeholders. Deserving particular thanks are Hilary Baker, David Ernst, and Richard West (California State University), Nasim Merali (University of Alberta), and Ray Brown (Associated Colleges of Central Kansas). We in higher education are known for our eagerness in sharing our successes and our efficiency in burying our mistakes. These colleagues shared not only their time, but also their challenges, hard decisions, victories, and defeats. They remind us that leaders acknowledge and learn from mistakes.

And, of course, the EDUCAUSE staff never ceases to amaze me. When all the dust settles from a major research initiative, someone still has to organize the formatting, style, production, Web posting, pricing, and communications to support the study’s release. I thank them all, knowing that any attempt to single out individuals would inevitably fail. I will make an exception for Nancy Hays and Greg Dobbin. They have worked with our graphics partners to develop a beautiful and highly functional format that will serve ECAR and its subscribers and customers for years. Thank you.

Richard N. Katz
Introduction

This study provides higher education institutions in the United States and Canada with an analysis of IT outsourcing as it applies to them. It provides data on current and projected spending patterns, types of IT outsourcing services, experiences, vendor performance, and other matters to help them determine to what extent and in what manner the study applies to their individual conditions.

It provides university planners and IT professionals in U.S. higher education institutions with an outlook for the development of IT outsourcing, including applications services, over the next five years. Moreover, it provides empirical data regarding spending patterns, performance benchmarks, and peer expectations. Such data can serve as benchmarks to compare their own existing or planned outsourcing projects, priorities, and allocations.

Objectives

The objectives of this study are to

- determine the extent to which higher education institutions are using IT outsourcing services;
- estimate actual and forecast IT outsourcing spending in higher education;
- identify the forms of IT outsourcing being used and planned;
- identify and analyze the experience of educational institutions with various forms of IT outsourcing, including applications services;
- develop an understanding of why IT outsourcing is or is not used in higher education and the conditions that make outsourcing attractive or not;
- identify the decision makers responsible for IT outsourcing;
- determine criteria used for vendor selection and evaluation;
- identify types of outsourcing contract vehicles used;
- determine the levels of satisfaction in existing contracts with IT outsourcing and its vendors;
- identify project success factors and sources of failure;
- provide profiles of select IT outsourcing vendors in the higher education market;
- analyze the application service provider (ASP) services being used by educational institutions, their cost, success, and outlook; and
- compare the use of IT outsourcing in higher education with commercial and government IT markets.

The market forecast of IT outsourcing is important for two reasons. First, it provides university planners with projections of how specific market segments are expected to
grow—and why—along with the issues that inhibit that growth. Second, it guides vendors serving the higher education market in positioning their products and services.

**Scope**

This study covers institutions of higher learning in the United States and Canada. The classification scheme of the Carnegie Foundation for the Advancement of Teaching serves in classifying U.S. postsecondary institutions. The 2000 Carnegie classification scheme identifies

- DR (doctoral/research) institutions, both extensive and intensive;
- MA (master’s/comprehensive) institutions;
- BA (baccalaureate) institutions;
- AA (associate’s colleges); and
- specialized and tribal institutions.

Proprietary, postsecondary professional institutions are outside the scope of this report. IT outsourcing in education levels K–12 is also excluded.

**Canada’s Higher Education Sector**

Although the research covered Canada, the small response sample (only 12 Canadian institutions of higher education responded to the survey) makes survey-based conclusions indicative at best. The 12 respondents represent 3 percent of Canada’s higher education institutions.

Pervasive public funding of higher education in Canada and the absence of a developed private university segment, as exists in the United States, make Canadian higher education quite different from that of the United States in structure. However, the challenges of IT and IT outsourcing appear to be very similar. This report assumes that the same trends and issues are shaping IT outsourcing in Canadian higher education as in the United States.

Discussions with vendors active in both U.S. and Canadian markets, the survey data obtained, and the case study on the University of Alberta conducted for this report all support this contention.

**IT Outsourcing Classification**

The project addresses three operational services categories: processing services, business process operations, and IT outsourcing. The latter includes

- infrastructure services (platform operations),
- applications management (software development and maintenance),
- applications services (combined platform and software operations),
- distributed services (desktop services),
- network services (not involving platform operations), and
- e-learning services.

The above categories cover ASP services primarily in applications services and processing services. There is little agreement in the industry on what constitutes ASP services except that customers obtain application software through a network rather than on their own platform.

INPUT has considered ASP services in detail and factored them into the industry structure depending on what customers perceive they are buying: a software product, a network platform to operate the software product, or an integrated platform and software service. Whether or not the software is proprietary or packaged affects vendor but not buyer categorization.

**Definitions**

Both university officials and vendors of IT outsourcing services to the higher education industry talk about “outsourcing” within a wide semantic range. Overall, they tend to label as outsourcing any and all arrangements whereby an institution buys IT-related services from an external vendor.
They also use the term to describe a wide variety of arrangements for “shared services” whereby central IT organizations compete for business from semi-independent units within the same organization or from other educational organizations that are considered external clients. However, they agree that almost all hosted IT relationships are described as “IT outsourcing.”

Outsourcing was called “systems operations” in the 1990s and 1980s and “facilities management” in the 1970s and 1960s. INPUT uses a clear set of definitions developed over the past 25 years of studying the subject and defines outsourcing as a long-term (greater than one year) contract between a customer and a vendor in which the customer contracts all, or a major portion, of an organizational operation or function to the vendor. Outsourcing vendors now provide a variety of services in support of customers’ information systems and electronic business requirements.

Vendors can plan, control, provide, operate, maintain, and manage any or all components of the customer’s information systems environment (equipment, networks, applications, systems) at either the customer’s site or the vendor’s site. Various Internet and Web-related categories of outsourcing service have emerged to include Internet-managed services (included in infrastructure operations).

The equipment involved may be owned by the customer or the vendor. In some markets, such as the U.S. federal government, options are described by the terms COCO (contractor owned, contractor operated), and GOCO (government owned, contractor operated).

For inclusion in INPUT’s outsourcing market forecast, the operation, or function, must be solely information systems outsourcing or include information systems as a major component (at least 30 percent of the costs) of the operation (business operations or business process operations). Note that business process operations are not included in the overall electronic business and IT software and services market.

Several critical components define an outsourcing service:
- An identifiable area of the operation is delegated to a vendor.
- A single vendor is responsible for performing the delegated function.
- An intended long-term relationship exists between the customer and the vendor where the contract term is for at least one year.
- The customer does not intend to perform the function with internal resources.
- The contract may include non–information-systems outsourcing activities, but information systems outsourcing must be an integral part of the contract.

**Application Service Providers**

INPUT classifies ASPs as value-added resellers of various types that make the software applications provided to them available to their clients on a pay-as-you-go basis through either a fixed-price or a “pay-by-the-sip” agreement. From the customer’s point of view, the key is to be able to pay only for the amount and level of services actually used—and to have the flexibility to scale up or down rapidly as business conditions change.

Arrangements with ASPs usually have the following characteristics:
- Vendor functions as a reseller that delivers software applications (and/or value-added services) to remote end users for a fee.
- Vendor serves as both a one-to-many delivery channel and a distribution mechanism for software.
- End users pay a fixed-price subscription or a variable usage fee based on transaction count or number of users.
- Users have access to the applications, usually under a service-level agreement.
SLA), without the responsibilities of management or maintenance.

- Either vendor or user may own the software license.
- Vendor supplies minimal customization for integration with customer’s legacy IT infrastructure.
- Vendor assumes responsibility for the underlying delivery networking infrastructure and host hardware by providing them directly or through outsourcers.
- Vendor and user may be connected via the Internet or a virtual private network (VPN).
- Vendor manages, supervises, or monitors the operation of these delivery mechanisms, usually under the SLA.
- Vendor is responsible for application maintenance and upgrades, end-user billing, provisioning, and overall systems management.
- “Full-service” vendors may also provide end users with integration services, application customization, training, helpdesk and technical support, and even business process analysis.

Business process outsourcing (BPO) is a relationship in which one vendor is responsible for performing an entire business/operations function, including the IT outsourcing that supports it. The IT outsourcing content of such a contract must be at least 30 percent of the total annual expenditure for INPUT to include it in the business process operations market. (The IT operational services market forecast excludes the BPO segment.)

Information technology outsourcing can be viewed as a component of the business operations outsourcing market—that is, IT systems outsourcing is a business/operations function, as illustrated in Figure 1-1. However, to delineate outsourcing contracts that are solely IT from those that include IT as well as other functions, IT outsourcing will be segregated from business operations outsourcing. As Figure 1-2 shows, IT outsourcing is divided into four service components.

Infrastructure operations outsourcing describes a relationship in which a vendor is responsible for managing and operating a client’s computer system/data center (platform systems operations) or developing and/or maintaining a client’s application as well as performing platform operations for those applications (applications systems operations). Internet-managed services comprises a complementary subsector related to, but distinct from, traditional mainframe-oriented platform operations.

Distributed systems (desktop services) describes a relationship in which a vendor assumes responsibility for the deployment, maintenance, and connectivity of personal computers, workstations, and client/server and local area network (LAN) systems in the client organization. In addition, this market segment includes management services for a wide variety of portable, wireless, and other handheld computing/telecom devices that are increasingly Internet enabled.

For a contract to be considered a distributed systems outsourcing contract, it must include a significant number of the individual services listed below:

- software product supply
- equipment supply
- equipment/software installation
- equipment maintenance
Network management outsourcing is a relationship in which a vendor assumes full responsibility for operating and managing a client’s data telecommunications systems. This may also include voice, image, and video telecommunications components.

Beginning with the current forecast report, this segment has been divided into traditional IT network management and Internet network management. While this subsegment is expected to grow rapidly during the forecast period, toward the end of the period the distinction between the two segments will become increasingly less important as “Internet enabled” becomes the new standard.

Application management is a relationship in which the vendor has full responsibility for developing and maintaining all of a software application or software function. Beginning with the current report, this segment has been divided into IT applications and Internet/Web applications, to highlight e-business– and e-commerce–related applications.

Like network management, the Internet/Web segment is expected to grow rapidly. However, toward the end of the forecast period, the distinction between IT applications and Internet/Web applications will become less important as most, if not all, software applications are sold and used in Internet/Web environments.

INPUT believes that during the 2001–2006 forecast period, the traditional, legacy IT applications segment of the applications operations market will grow slowly, at a compound annual growth rate (CAGR) of 11 percent. The Internet applications services stream that represents software delivered via the Internet by software developers such as Oracle, PeopleSoft, and SAP will grow much faster, at 47 percent. However, this growth will moderate toward the end of the period, as many developers abandon their direct distribution channels in favor of partnering with ASPs—which is already happening. Accordingly, the very high growth of the third-party software, or ASP, segment will moderate as the market matures and as vendor consolidation is largely completed.

The processing services market comprises transaction processing, utility processing, and other processing.

- **Transaction processing**: The client uses...
vendor-provided information systems—including hardware, software, and/or data networks—at the vendor’s or customer’s site to process specific applications and update client databases. The vendor typically provides required application software.

- **Utility processing**: The vendor provides basic software tools (language compilers, assemblers, database management systems, graphics packages, mathematical models, scientific library routines, and so on), enabling clients to develop and/or operate their own programs or process data on the vendor’s system.

- **Other processing services**: The vendor provides a service—usually at the vendor’s site—such as scanning and other data entry services, laser printing, computer output microfilm, CD preparation, and other data output services. This category also includes backup, contingency, and disaster recovery services.

The definitions provided focus on the services covered in the outsourcing contract. For example, an application operations contract can include all facets of IT outsourcing (platform operations, desktop services, and network and application management).

The key to INPUT’s market definition is the service contract. If a customer wants to outsource only the network, the contract would be considered network management outsourcing. If an airline, for example, wishes to outsource its reservation operation, which includes not only the network but also its infrastructure, applications, and the people running the operation, the agreement would be considered a business operations outsourcing contract. Table 1-1 shows the service components that may be included in each outsourcing service category.

### Table 1-1. Outsourcing Service Components

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<td>Data Center Management</td>
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<td>Client/Server Operations</td>
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<td>Equipment Maintenance</td>
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<td>System Software Maintenance</td>
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<td>Application Software Maintenance</td>
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<td>Application Development</td>
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<td>LAN Management</td>
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<td>Network Management</td>
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<td>Transaction Processing Services</td>
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<td>Other Professional Services</td>
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<td>Business Process Operations</td>
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The largest, most visible contracts awarded over the past year typically have been application operation outsourcing contracts because they included managing the infrastructure (various computing platforms) and supporting legacy applications. In the past, most application and platform operation outsourcing contracts included network management, but recent contracts have also included desktop services.

INPUT has several exclusions from the outsourcing category. For example, project-based services are not considered part of outsourcing. Thus, systems integration and application development projects are excluded. Also excluded are services that were never intended to be performed internally. Maintenance-only services do not constitute an outsourcing function in themselves. However, responsibility for hardware and software maintenance is assumed in most outsourcing contracts. Additional exclusions include processing services contracts of less than one year, voice-only network management, and business operations with minimal information systems content. For example, outsourcing the marketing communication function to an outside agency isn’t covered by INPUT’s analysis. A function or business operation must have at least 30 percent of its budget attributed to information technology to be included.

Methodology

After project initiation and substantial development of a questionnaire, EDUCAUSE conducted a Web survey of its members during November and December 2001. INPUT conducted telephone and e-mail interviews to supplement this survey. INPUT also conducted in-person interviews and teleconferences with college and university officials, vendors, and executives of educational organizations, as well as with contacts in commercial and government markets.

Data derived from proprietary INPUT resources and databases that have been developed for these markets over the past 25 years augmented the survey effort.

EDUCAUSE Membership Survey

Figure 1-3 compares the distribution of the study’s survey respondents, EDUCAUSE membership, and the universe of higher education institutions according to Carnegie...
classifications. Figure 1-4 compares the survey sample with the Carnegie classification distribution. In these figures and throughout the report, INPUT uses research to refer to doctoral/research universities, MA to refer to master’s colleges and universities, BA to refer to baccalaureate or bachelor’s colleges, and AA to refer to associate’s colleges. Where noted, specialized institutions are referred to simply as specialized, and tribal colleges and universities as tribal.

The survey sample overrepresents larger, MA- and PhD-granting institutions in comparison with community colleges and specialized colleges and universities, reflecting the composition of the overall EDUCAUSE population. (See Table 1-2.)

The survey included institutions that outsource as well as those that do not. Survey respondents whose colleges and universities do not outsource were asked about their reasons for not outsourcing and their perception of the suitability of outsourcing to meet their needs.

INPUT compared the survey data with prior INPUT surveys on outsourcing and vendor satisfaction, as well as with results from recent surveys by media and other professional organizations.

**Secondary Research**

INPUT consulted publications and other data from higher education, the commercial IT industry, and government sectors, as well as its own vendor and industry information.
In April 2001, the EDUCAUSE Board of Directors approved a business plan creating ECAR, the EDUCAUSE Center for Applied Research. ECAR was established as a vehicle to investigate how higher education will meet the financial and programmatic challenges of the information technology boom and how those challenges can become opportunities for the entire market and its constituencies. To begin the process, ECAR observed that

- IT decisions in higher education are of increasing programmatic and financial importance;
- consequential higher education IT decisions must be made prudently and after considerable research, yet scant rigorous and data-based analysis of higher education's IT practices exists; and
- EDUCAUSE is in a unique position to foster rigorous and credible research in this domain.

Later, in August 2001, EDUCAUSE selected two proposals for eventual publication as ECAR research studies for the benefit of ECAR subscribers. One of these proposals addresses the timely and often problematic area of IT outsourcing. INPUT, a 25-year-old IT research firm, was selected to conduct this research.

**Why IT Outsourcing?**

The concept and practice of outsourcing, under a variety of forms and labels, are familiar in higher education.¹

There is little controversy about outsourcing ground maintenance, food services, bookstore operations, printing and reprographics, and other institutional support or “ancillary” functions on campuses across the United States and Canada. Such outsourcing is typically motivated both by the institution’s desire to focus on core competencies and mission, and to reduce costs. To date, there is slight evidence demonstrating the long-term programmatic or financial effects of these outsourcing activities.²

More recently—dramatically so in the commercial sector—the emergence of reliable and secure high-speed networking and of Web-enabled services has fostered the rapid growth of IT outsourcing and, even more recently, the emergence of application service providers (ASPs). INPUT research estimates that IT outsourcing is a $57-billion (and growing) business in the commercial sector, which makes it an important area for research and evaluation by colleges and universities.³
Scope and Methodology

Because higher education remains a tentative and skeptical adopter of ASP and IT outsourcing, little data exists to assess and evaluate longitudinal trends or model practices. Nevertheless, the size and growth of IT outsourcing, and its inherent risks, suggest that higher education needs a proactive plan, along with observations about trends, directions, and practices. IT outsourcing needs to be on higher education’s “watch list,” as shown by the recent attention The Chronicle of Higher Education has focused on the subject.4

The ECAR study of higher education’s experience with, and outlook for, ASP models and IT outsourcing is based on research conducted between September 2001 and March 2002. The study’s scope was limited to higher education institutions in the United States and Canada.

Methodologically, this study used

◆ an extensive review of the secondary literature in this domain;
◆ a comprehensive review of INPUT studies, analyses, and data relating to IT outsourcing trends and practices in the commercial and government sectors;
◆ a survey of 1,359 EDUCAUSE member institutions, yielding 286 responses;
◆ telephone interviews of IT practitioners in higher education as well as commercial providers of IT outsourcing solutions for higher education; and
◆ on-site and in-depth studies of three illustrative examples of IT outsourcing in higher education.

Because higher education as a whole has been slower than other sectors to adopt IT outsourcing, the dominant approach taken in this study is comparative.5 ECAR believes that at an early stage of a new technology or business practice it is most useful for higher education decision makers to understand

◆ the state, extent, and experience of the practice in other sectors of the economy;
◆ the state, extent, and experience of early adopters within higher education;
◆ the lessons learned from experiences both within and outside higher education;
◆ the technology trends both inside and outside higher education;
◆ the early insights about effective practice from any sector adopting ASP and IT outsourcing; and
◆ how the vendor marketplace for these services is evolving in support of higher education.

This framework constitutes the scope and method of this study.

IT Outsourcing Defined

The ASP model and IT outsourcing have been around for decades in various forms and under different names, such as “time-sharing” and “contracting for services.” For the purpose of this study, ASP and IT outsourcing were defined broadly to include a wide range of technology-related services that can be contracted for by a college or university.

ASP and IT outsourcing can also cover a broad range of services that may include the “rental” of contract programming staff, an institution’s purchase of services (e-procurement, for example) hosted by another organization, the management of IT facilities, and the purchase of IT systems integration services. INPUT has developed a specialized rubric and taxonomy to clarify the IT outsourcing activities that this study describes in detail.

Key Study Findings

This study concludes that IT and operational services outsourcing is currently a $782-million business among U.S. institutions and a $63-million market annually
among Canadian institutions of higher learning. While modest compared with the scope of such activities in the commercial or government sector ($57 billion and $6.2 billion per year, respectively), IT and operational services outsourcing in the higher education segment is forecast to grow at a compounded growth rate of 17 percent per year over the next five years.

While the IT and operational services outsourcing market is present and poised for growth in all arenas, not all communities fully support the idea. All sectors express caution and skepticism about the current climate and market for IT outsourcing, with higher education expressing perhaps the greatest caution and skepticism.

Documented IT outsourcing experience by higher education has been thin and often anecdotal. On the basis of years of systematic analysis of both governmental and commercial sectors, INPUT recommends that higher education approach IT outsourcing with caution. While commercial and government sectors have been early and continuing adopters of ASP and IT outsourcing, and investments by these sectors are expected to continue growing at double-digit rates, some worrisome trends are in evidence:

- Over the past four to five years, INPUT surveys have recorded a significant rise in customer dissatisfaction with outsourcing vendors.
- Public and private organizations able to maintain adequate IT infrastructures are reluctant to outsource, but they do so in order to redeploy in-house staff to core-critical projects.
- Companies often have difficulty distinguishing between core and noncore functions, or they fear that outsourcing could lead to a loss of valuable proprietary assets.
- Outsourcing vendors can thrive, but only if they are strong financially at the start.

This analysis describes an outsourcing marketplace that can be complex and risky—particularly the new and emerging ASP market. INPUT research indicates that some commercial firms remain wary of ASPs, finding them sometimes ill suited for their needs or viewing them as high-risk options because of deteriorating financials.

At the same time, ECAR survey data suggest that among those in higher education who understand the ASP model, many see this practice as a potentially less controversial and a lower risk alternative to traditional outsourcing. About half of all institutions reported that their ASP experience met their expectations. The experience of public institutions was a lot more positive than that of private institutions. While 66 percent of public institutions reported that their ASP experience met or exceeded their expectations, only 31 percent of private institutions reported that their experience met their expectations, and none reported that their ASP experience exceeded expectations. Moreover, 17 percent reported that their ASP experience was worse than expected.

The dynamic, complex, and risky nature of the ASP and IT outsourcing market suggests that higher education’s posture of caution and skepticism is well founded, particularly in light of higher education’s unique legacy of shared governance and public accountability. Indeed, institutions that may have already served constituents for centuries and plan to continue doing so view new and risky techniques designed to lower costs in the short term with particular caution.

Despite this prudent, guarded posture, higher education currently engages in outsourcing, and a certain portion of the sector is likely—of sheer necessity—to increase the level of activity in the future. The study survey of EDUCAUSE membership produced the following findings:
Forty-two percent of colleges and universities report that they engage in ASP and/or IT outsourcing.

The decision to outsource largely appears to be an institutional one. However, when non-IT management is overly involved in the decision to outsource, lower satisfaction results.

The overwhelming key driver of the IT outsourcing decision is a real or perceived lack of in-house skills. (In the same vein, many institutions that do not engage in outsourcing report that in-house IT staffing is adequate. Higher education institutions that do not engage in IT outsourcing also frequently cite poor cost-benefit ratios as a reason.)

IT outsourcing activity in higher education is distributed among segments such as IT infrastructure, application management, and application services.

While 46 percent of public institutions report that e-learning and distance learning activities are suitable for IT outsourcing, only 31 percent of private institutions share this view.

Despite current outsourcing, about one third of all survey respondent institutions are considering in-sourcing (bringing back in house) functions previously outsourced. This intention to in-source currently outsourced functions is not significantly different between public and private institutions.

Special Constraints

Because of its differing nature, higher education’s approach to IT outsourcing is subject to special constraints that don’t affect government and commerce. Their unique sense of purpose and responsibility, for example, causes institutions of higher education to accept (or be expected to accept) a different approach to employee relations than that of either public or private employers. In general, higher education strives to be perceived as a preferred employer compared with commercial firms or government. The field offers attractive incentives such as better nonsalary benefits and working conditions—despite wage levels that have historically lagged these other markets.

The culture of higher education can deter the adoption of ASP and IT outsourcing. Public and private institutions alike report that employee concerns represent the single most important obstacle to outsourcing. These concerns do not appear to arise from collective bargaining, as only 12 percent of survey respondents said that employee concerns were related to organized labor.

Risk

Like some in higher education, many decision makers in commercial firms are attracted by the potential benefits of IT outsourcing, including access to more skilled resources, potential cost-savings, greater predictability of IT investments, and better ability to focus on the firm’s core competencies. These firms are keenly aware that the transition from traditional business to e-business requires an enormous commitment to improving (in some cases, rebuilding) IT infrastructures. IT outsourcing is one strategy for coping with the rapidly escalating costs associated with expanding IT departments, including the recruitment and retention of in-house staff.

Other commercial firms, like some colleges and universities, are reluctant to turn over control of sensitive data and business processes to outsiders who may or may not understand a particular industry or a particular firm’s requirements. Firms also are wary of entrusting vital operations to vendors that, for financial or other reasons, may not be able to deliver on their contractual promises. When viewed through the lenses
of many colleges and universities, where longevity of organizations, business, and outsourcers is expected, these types of risks produce even greater wariness.

Commercial firms that outsource their IT activities often experience an evolutionary restructuring that creates new business partnerships, new customer partnerships, and new configurations of competition and efficiency. There is some evidence that outsourcing may lead to “the end of the firm as we know it.” IT outsourcing will likely promote similar, if slower, organizational changes in higher education. The case studies and other examples of outsourcing described in this study show that outsourcing often generates new and unforeseen forms of cooperation among institutions. This phenomenon may have even greater potential when higher education institutions share IT services. Evolution, once begun, cannot be easily reversed.10

Outsourcing neither creates nor eliminates risk; rather, it changes the mix of risks.

**Outlook for IT Outsourcing**

Evidence from many sources suggests that higher education may be slower than either commercial firms or government organizations to adopt IT outsourcing because of traditionally strong ties that bind colleges and universities to their employees and also because of genuine differences in mission and history. Higher education’s implied employment compact suggests a reticence to engage in IT outsourcing as a means of reducing labor costs, which can mean forgoing some of IT outsourcing’s potential benefits. Administrators in higher education generally agree with the members of the Associated Colleges of Central Kansas consortium (one of the three case studies conducted for this report), who said simply, “Saving money isn’t our most important goal.”11

Although higher education enjoys a continuous inflow of talented youth and faculty, like government and the commercial sector it too is having a hard time meeting its particular requirements for skilled IT staff. Students can be mobilized to monitor desktops and networks, but only rarely to implement and operate complex enterprise resource planning (ERP) systems. Neither is faculty available for such tasks. Local, skilled IT labor markets must be developed.12

Although the education sector does benefit from the attention of some highly specialized and education-centric IT vendors, the absence of the largest players has several negative consequences for higher education. There are fewer available vendors, and the market is less competitive and arguably less innovative. As with the pharmaceutical industry, innovation tends to occur in proportion to the size of the market opportunity.13

Accordingly, as long as outsourcing contracts awarded by higher education are valued in the millions of dollars rather than the hundreds of millions—or billions—common in other markets, the supply of outsourcing vendors will grow more slowly.14 To attract more large vendors to the market, higher education will have to increase opportunities, expand contract awards, and streamline the decision-making process.15

The ASP model, while likely to remain attractive to higher education as a whole, will not fulfill its potential until the market matures for both vendors and institutions.

Ultimately, the promise and risk of outsourcing will impel higher education to rethink many of its organizational assumptions and practices. Why? Because outsourcing serves to disaggregate functions that were previously held tightly and forces managers to adopt ever more creative partnering relationships.16
Neither commercial IT managers nor administrators in higher education are succeeding in justifying their outsourcing projects solely on a total-cost-of-ownership (TCO) or return-on-investment (ROI) basis, but they are increasingly convinced that the risk/reward ratio is favorable. When universities miss a payroll because of a malfunctioning ERP installation, or when they confront an IT budget perceived as spiraling upward and out of control, colleges and universities come under intense pressure to explore innovative and cost-effective solutions, including IT outsourcing. There is no evidence yet to determine how outsourcing activities motivated by institutional dissatisfaction perform relative to initiatives pursued for more positive reasons.

Study survey respondents made it very clear that outsourcing is not without pain. Yet, many institutions believe they are incapable of supporting complex and comprehensive IT environments themselves, largely because they lack a highly skilled IT staff. In addition, few believe they can meet the rising needs of their stakeholders efficiently and cost-effectively. Colleges and universities may proceed cautiously and with appropriate skepticism, but a confluence of trends is making IT outsourcing an attractive alternative.

Conclusions

Like counterparts in the commercial sector and in government, some IT leaders in higher education appear knowledgeable about IT outsourcing. Higher education is a conservative adopter of this relatively new practice. Its slow progress toward IT outsourcing in particular seems to emanate from a unique sense of history and mission, including a strong bond between institutions and their employees.

Notwithstanding caution and skepticism, IT outsourcing is occurring at a moderate level in the sector and is expected to increase by 17 percent per year over the next five years. IT outsourcing drivers in higher education are less frequently financial than a recognized need to acquire scarce IT skills. The availability of IT labor in a college or university’s local labor market may significantly influence the institution’s attitudes and practices regarding IT outsourcing.

Of those institutions that outsource, many are tasking a variety of IT activities. Mature areas of IT outsourcing have achieved greater penetration in colleges and universities, while newer disciplines, such as business process outsourcing (BPO), are less widely understood and used (e-learning, or distance learning, is an exception).

There are significant differences of attitude, preference, practice, and behavior between private and public institutions in key outsourcing areas. Likewise, there also are heightened differences among key segments of higher education, such as research universities, baccalaureate institutions, community colleges, and master’s institutions.

Many institutions engage in formal and often public competitive bidding, while others lean toward sole-source selection of “trusted partners” as IT outsourcers. Service-level agreements (SLAs) and the skills to manage them appear to be important components in the IT outsourcing domain. Clear project specification and management and real internal acceptance of the IT outsourcing decision also appear to be important, if not critical, factors for success.

The ASP model and outsourcing remain viable options in the general IT landscape for colleges and universities. These options may allow higher education to remain current, move quickly, and leverage economies of scale in highly competitive markets for scarce IT talent. However, data suggesting that the vendor market is largely an evolving one and, hence, poses a number of risks,
appear to temper the promise of IT outsourcing. Despite these risks, some colleges and universities are increasingly likely to adopt IT outsourcing in coming years.

In addition, the uniqueness of higher education may suggest a similarly unique and evolutionary journey vis-a-vis ASPs and IT outsourcing. In particular, colleges and universities may choose to collaborate to maximize resources, perhaps sharing services and hosting for one another in preference to engaging a commercial vendor. Such a choice would reflect a higher level of trust in like institutions and a willingness to trade some potential cost savings for relationship durability and reduced risk.

Endnotes

1. This report uses a working definition of outsourcing that emphasizes two aspects of the outsourcing relationship: the customer transfers to the vendor (1) a defined set of operational responsibilities on a (2) multiyear contract basis that may or may not include the transfer of hardware and staff.

2. “Significant economies can often result from contracting out various institutional services. Approximately 90 percent of the facilities-management functions are contracted out with very cost-effective solutions.” Richard Wertz and Dennis Gribenas, Privatization of Campus Services at Community Colleges in the United States: An Analysis of the Current Status, monograph published by the National Association of College Auxiliary Services, 1998, p. 4.

3. ASP vendors are specialized, third-party outsourcers that aim at making specific software applications available to clients on a streamlined, multiyear, pay-as-you-go basis. (“Third-party” means that ASPs typically distribute software developed elsewhere rather than their own proprietary products.)


5. “The movement toward privatization or outsourcing of campus services in higher education will have significant impact on colleges and universities. Previously ... it has been pointed out that turning over the administration of too many services to outside contractors may have a negative impact on the spirit of collegiality in higher education. The ‘family’ or ‘college’ or ‘university community’ may not exist in the same fashion with private business operating the nonacademic aspects of the institution. ... Being the first to privatize a service is not a good position to be in, yet the pressure to privatize continues to grow stronger, and institutions may be forced to privatize services that few if any institutions have privatized before. This situation will create enormous pressure on the institution to carefully plan and implement each step in the privatization process.” Richard Wertz, Outsourcing and Privatization of Campus Services: An Overview and Guide for College and University Administrators, monograph published by the National Association of College Auxiliary Services, 1997, p. 59.

6. More than three quarters of all survey respondents (77 percent) reported that they were familiar with the ASP model-public somewhat more so than private institutions. Not surprisingly, research institutions appear to be most familiar with the ASP concept. Surprising was the markedly more negative stance of BA institutions toward the ASP model. Comparatively, the highest proportion of respondents unfamiliar with ASPs were BA institutions, and they reported a significantly greater range of problems. While the reason is unclear, it appears that the bulk of BA institutions with this negative experience were public rather than private institutions (possibly because BA institutions were more likely to select a vendor through sole-sourcing).

7. Wertz and Gribenas, op cit., p. 2: “Recent higher education financial history has seen the federal and state governments squeezed by deficit and public pressure for ‘no new taxes,’ leaving the students with the responsibility of replacing these lost revenues. [Non-IT] contracted service is a way for colleges and universities to make up some of this lost revenue... The dynamics of these systematic problems appear to require more than just short-term fixes and point to a restructuring in higher education finance which includes contracted services” (Kettinger and Wertz, 1993).

“... A good understanding of the management of contractual services is necessary if the function is to meet the college’s goals and mission. Fiscal responsibility does not become a priority until it is understood that poor management can no longer be subsidized. Higher education is a $125-billion industry with more than a million employees, but, in the past, it has failed to employ the good business sense taught in its own classrooms” (Klinger 1992).
8. One manifestation of this difference is a much higher level of employee resistance in higher education to outsourcing, even when euphemisms such as “privatization” or “contracting for services” are used. While government organizations also are subject to similar resistance to outsourcing initiatives, government at both federal and state levels has taken a strong, pro-outsourcing position as a way to save money and streamline operations. The severity of government’s IT skills shortage leaves it less choice in the matter.

9. Even though 12 percent of public institutions (versus 8 percent of private institutions) reported that collective bargaining was an important obstacle to outsourcing, all types of institutions agreed that employee concerns were a significant barrier to their outsourcing initiatives.

10. Similarly, every level and branch of government is availing itself of outsourcing solutions either as a means of assuring the survival of the agency’s mission, as a way to streamline and standardize for ensured interagency functioning, or as a way to compensate for fiscal shortfalls. In the past, government buyers were either obligated by their unique requirements or conditioned by habit to buy mainly custom IT solutions and meet their IT needs internally, insofar as possible. Over recent years, that attitude has changed dramatically. At present, even the Pentagon and the intelligence agencies strive whenever possible to purchase commercially available, off-the-shelf IT solutions and customize, if necessary, only on a small scale. Outsourcing is one of the best ways to achieve this end because vendors are able to leverage their investments over multiple clients, which not only lowers costs for government buyers (and enhances profits for vendors) but also enables an important cross-fertilization of technical expertise that would not otherwise occur.

11. Commercial firms will be increasingly attracted to IT outsourcing, partly to save money but more importantly as a way of reallocating scarce IT resources to higher value-added, proprietary projects and away from noncore utility functions. Outsourcing offers the collateral benefit to commercial firms and higher education alike of promoting a new range of partnerships and a higher level of collaboration with customers and other stakeholders in its business processes. The majority of survey respondents agreed that a shortage of in-house IT skills and a lack of operating efficiencies were the primary reasons to outsource. Cost-savings wasn’t identified as the most important benefit of IT outsourcing and was ranked relatively low as a reason to outsource.

12. For the federal market, which will suffer the loss of an entire generation of skilled IT staff to retirement, IT outsourcing is inevitable. The government market will not be able to afford or attract the top level of IT skills that its increasingly sophisticated systems demand. It’s unlikely that any time soon government will represent the top job market for new graduates, who see much more attractive career paths working for outsourcers and commercial firms.

13. On the subject of IT outsourcing vendors, there is an important difference in the types of vendors active in the higher education, commercial, and government markets. Because the estimated current and projected future size of the higher education market opportunity for outsourcing vendors is still relatively small, top-tier vendors such as EDS, Accenture, Siemens, and CSC will remain reluctant to invest in it. IBM Global Services is an exception, but even this firm may retreat if profits are disappointing over the next few years. Also, many second-tier outsourcing vendors, such as Getronics and ACS, that are active in the commercial market don’t find the higher education market attractive.

14. Higher education has a general reputation among vendors for having a Byzantine and often diffuse organizational structure that undermines decision making and managerial authority and accountability. Yet, vendors have similar complaints about buyers in other markets. The case studies conducted for this report illustrate perhaps most forcefully the extent to which complex outsourcing projects depend on the ability of leaders, whether in higher education or elsewhere, to build the required trust and cooperation among their colleagues at all levels.

15. Higher education appears to need an outsourcing vendor selection process that tests alternatives objectively, even if it falls short of a full competitive bidding process, or it requires a fully integrated e-marketplace. Using consultants exclusively in the bid preparation and evaluation process can leave institutions with an unfinished learning curve that can handicap them later. Alternatively, many institutions use consultants as a knowledge acquisition and transfer activity.

16. Success in IT outsourcing hinges in large measure on excellent project specification and management, as well as on real acceptance by the university community.
During November and December 2001, in coordination with this research effort, EDUCAUSE conducted a Web survey of its 1,359 U.S. and Canadian members. The focus of the survey was to draw out membership experience concerning IT outsourcing, including any use of and familiarity with application service providers (ASPs).

The survey yielded 286 responses, a rate of 21 percent. Compared with the average survey response rate of 10–15 percent, the EDUCAUSE survey response rate implies a high degree of confidence in the survey findings.

The survey respondents included public and private member institutions, those that outsource IT as well as members that do not. In addition, the respondents covered the spectrum of Carnegie classifications. Additional details concerning the makeup of survey respondents are provided below.

Survey respondents were queried about specific, targeted areas of high-priority interest in order to answer, among others, the following questions:

- How extensive is IT outsourcing in higher education? Who outsources? Who influences the decision to outsource and to what extent?
- What are the reasons to outsource IT in higher education? What are the benefits? What are the problems and issues? What has the IT outsourcing experience been in higher education?
- What IT functions are being outsourced in higher education?
- How and on what level are higher education institutions outsourcing? What is the outsourcing process like? What do their IT organizations look like?
- Who are the IT outsourcing vendors in higher education? How are these vendors selected?
- What direction is IT outsourcing taking in higher education? (This issue is addressed in the chapter offering a forecast of market size and growth.)

Finally, where possible, INPUT supplemented initial survey responses with follow-up calls to survey respondents, as well as certain IT outsourcing vendors, to clarify and expand on specific answers provided to survey questions.

This chapter analyzes the survey results from multiple perspectives, with special emphasis on cross-tabulations that offer insight beyond the simple results of the survey questionnaire.
While a slightly smaller proportion of higher education institutions outsource, outsourcing institutions exhibit the following characteristics on a cross-tabulated basis:

- They likely are consortium members.
- They have a less centralized IT infrastructure.
- They lack critical in-house IT skills.
- They are more than satisfied with any IT outsourcing experience they may have had in the past.
- They are likely to continue to outsource (if they’ve outsourced in the past).
- They used a competitive bidding process to select their IT outsourcing vendor.
- They judge vendor capability and experience as the most important selection criteria.

**Respondent Characteristics**

Table 3-1 shows that more public than private institutions responded to the survey (58 percent and 42 percent, respectively), which is a proportionate share of these segments in higher education generally, and in the EDUCAUSE population specifically. The table summarizes overall survey respondent characteristics by whether the institution is public or private and whether the institution outsources IT or not.

Table 3-2 depicts survey respondents more specifically, by type of institution, public versus private, and outsourcing versus non-outsourcing.

Again, by a margin of 58 percent to 42 percent, a majority of respondents to the EDUCAUSE survey do not outsource. However, a few important trends and variances, which appear in Table 3-2, should be considered while evaluating the survey data that follows in this chapter:

- Sixty-seven percent of research (PhD) institutions that responded to the survey are public. These results closely mirror the overall proportions of public and private institutions in the United States. Fifty-six percent of master’s (MA) institutions that responded were public, a percentage far greater than their general distribution in U.S. higher education in this segment. The majority of specialized and Canadian institutions that responded are public.
- Nearly all of the associate’s (AA) institutions that responded to the survey are public.
- Nearly 90 percent of the bachelor’s (BA) institutions that responded are private. The tribal institutions that responded are private.
- Private institutions indicate a slightly greater propensity to outsource IT functions than do public institutions.
- Finally, although the number of survey respondents in the tribal, specialized, and Canadian institutional type areas was low, respondents indicated that more of these types of institutions outsource than do not outsource.
Table 3-1. Overall Survey Respondent Characteristics

<table>
<thead>
<tr>
<th>Type</th>
<th>Do Outsource</th>
<th>Do Not Outsource</th>
<th>Subtotal/Total</th>
<th>Percentage of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>68 (41%)</td>
<td>99 (59%)</td>
<td>167/286</td>
<td>58%</td>
</tr>
<tr>
<td>Private</td>
<td>52 (44%)</td>
<td>67 (56%)</td>
<td>119/286</td>
<td>42%</td>
</tr>
<tr>
<td>Subtotal/Total</td>
<td>120/286</td>
<td>166/286</td>
<td>286/286</td>
<td>100%</td>
</tr>
<tr>
<td>Percentage of Total</td>
<td>42%</td>
<td>58%</td>
<td>100%</td>
<td>—</td>
</tr>
</tbody>
</table>

Table 3-2. Overall Survey Respondent Characteristics by Institution Type

<table>
<thead>
<tr>
<th>Institution Type</th>
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<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Do Outsource</td>
<td>Do Not Outsource</td>
</tr>
<tr>
<td>Research (Doctoral)</td>
<td>37/55 (67%)</td>
<td>18/55 (33%)</td>
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<tr>
<td>Research (Doctoral)</td>
<td>20 (36%)</td>
<td>35 (64%)</td>
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<tr>
<td>MA (Master’s)</td>
<td>44/78 (56%)</td>
<td>34/78 (44%)</td>
</tr>
<tr>
<td>MA (Master’s)</td>
<td>35 (45%)</td>
<td>43 (55%)</td>
</tr>
<tr>
<td>BA (Bachelor’s)</td>
<td>7/57 (12%)</td>
<td>50/57 (88%)</td>
</tr>
<tr>
<td>BA (Bachelor’s)</td>
<td>23 (40%)</td>
<td>34 (60%)</td>
</tr>
<tr>
<td>AA (Community Colleges)</td>
<td>49/52 (94%)</td>
<td>3/52 (6%)</td>
</tr>
<tr>
<td>AA (Community Colleges)</td>
<td>17 (33%)</td>
<td>35 (67%)</td>
</tr>
<tr>
<td>SPEC (Specialized)</td>
<td>18/27 (67%)</td>
<td>9/27 (33%)</td>
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<tr>
<td>SPEC (Specialized)</td>
<td>15 (56%)</td>
<td>12 (44%)</td>
</tr>
<tr>
<td>Tribal</td>
<td>0/5 (0%)</td>
<td>5/5 (100%)</td>
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<tr>
<td>Tribal</td>
<td>3 (60%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>Canada</td>
<td>12/12 (100%)</td>
<td>0/12 (0%)</td>
</tr>
<tr>
<td>Canada</td>
<td>7 (58%)</td>
<td>5 (42%)</td>
</tr>
<tr>
<td>Subtotal/Total</td>
<td>120/286</td>
<td>166/286</td>
</tr>
<tr>
<td>Percentage of Total</td>
<td>42%</td>
<td>58%</td>
</tr>
</tbody>
</table>
Most Survey Respondents Do Not Outsource

The majority of survey respondents (58 percent) do not outsource IT functions, as shown in Figure 3-1. Of those institutions that do outsource, more private institutions (44 percent) than public institutions (41 percent) outsource, but this statistical difference is insignificant.

Figure 3-2 breaks down outsourcing and non-outsourcing institutions by institution type. MA and BA institutions reported a higher level of outsourcing than research universities. As a segment of this sample, associate’s institutions reported the lowest level of outsourcing. Tribal, Canadian, and specialized colleges and universities were proportionally more frequent IT outsourcers, but their respondent numbers were small and do not allow for general conclusions about these types of institutions.
Outsourcing Institutions Report Greater Decentralization

The majority of all institutions surveyed report centralized IT organizations. However, as Figure 3-3 shows, of those institutions that outsource, a greater percentage have decentralized IT organizations.

Outsourcing Often an Institutional Decision

Survey respondents were asked the extent to which their individual institution or its units had authority to outsource an IT function. While non-outsourcers, as a group, are fairly split on the matter, outsourcers, as a group, report that they have more authority over the decision to outsource. (Results appear in Figure 3-4.)
In all—non-outsourcers and outsourcers alike—more than 35 percent report no authority over the decision to outsource. For many, outsourcing is an institutional decision. Respondents from public institutions report having greater authority over the decision to outsource than do those from private institutions, as shown in Figures 3-5 and 3-6.

![Figure 3-5. Outsourcers’ Authority to Outsource, Public versus Private](image1)

![Figure 3-6. Non-Outsourcers’ Authority to Outsource, Public versus Private](image2)
Whether or not they exercise the authority, survey respondents at research universities have considerably greater decision-making authority than do their counterparts elsewhere in higher education. Figures 3-7 and 3-8 show outsourcing authority by institution type.
State Governments, Collective Bargaining Influence

A significant percentage of public institutions, whether outsourcers or not, report no influence by state government. Interestingly, respondents that do outsource report somewhat greater state government influence. Somewhat surprisingly, a number of private institutions report the moderate influence of state government on institutional decisions about IT outsourcing. (See Figures 3-9 and 3-10.)

Figure 3-9. State Government Influence on Outsourcers’ Decisions, Public versus Private

- Not at All: 59% Public, 92% Private
- Moderately: 38% Public, 8% Private

Figure 3-10. State Government Influence on Non-Outsourcers’ Decisions, Public versus Private

- Not at All: 41% Public, 94% Private
- Moderately: 53% Public, 6% Private
While public institutions are slightly more likely than private institutions to feel the influence of collective bargaining on the decision to outsource, the majority of both public and private institutions reported no influence at all. Of all institution types, only AA institutions reported moderate influence by collective bargaining on their decision to outsource. Figure 3-11 shows the influence of collective bargaining on outsourcers’ decisions for public versus private institutions, and Figure 3-12 shows this influence by institution type.

**Figure 3-11. Influence of Collective Bargaining on Outsourcers’ Decisions**

**Figure 3-12. Influence of Collective Bargaining on Outsourcers’ Decisions, by Institution Type**
More Consortium Members Outsource

Table 3-3 illustrates the extent to which higher education institutions participate in consortia and outsource, do not participate in consortia and outsource, participate in consortia but do not outsource, and do not participate in consortia and do not outsource. The matrix represents all types of institutions, public and private, as well as research, MA, BA, and AA.

Exactly the same percentage of nonconsortium members are non-outsourcers as consortium members are outsourcers. The only specific institutional arena in which this overall finding doesn’t hold true concerns BA and AA institutions (slightly more nonconsortium members outsource).

Reasons For and Against Outsourcing

A lack of in-house IT skills and the benefit of operating efficiencies are the primary reasons to outsource. These are the same reasons commercial and government entities give for outsourcing. As Figure 3-13 shows, overall, cost savings ranked relatively

<table>
<thead>
<tr>
<th></th>
<th>Non-Outsourcing</th>
<th>Outsourcing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nonconsortium</td>
<td>Consortium</td>
</tr>
<tr>
<td></td>
<td>Member</td>
<td>Member</td>
</tr>
<tr>
<td>Private</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>Public</td>
<td>54%</td>
<td>47%</td>
</tr>
<tr>
<td>All</td>
<td>56%</td>
<td>44%</td>
</tr>
<tr>
<td>Research</td>
<td>51%</td>
<td>49%</td>
</tr>
<tr>
<td>MA</td>
<td>56%</td>
<td>44%</td>
</tr>
<tr>
<td>BA</td>
<td>59%</td>
<td>41%</td>
</tr>
<tr>
<td>AA</td>
<td>57%</td>
<td>43%</td>
</tr>
</tbody>
</table>

Figure 3-13. Primary Reasons to Outsource
low as a reason to outsource. However, given a greater focus on cost savings and/or more budget restrictions, public institutions placed higher importance on cost savings than did private colleges and universities.

Analysis by Carnegie class, shown in Figure 3-14, revealed that a few concerns are more important than others. More BA institutions cite a lack of in-house skills as a reason to outsource. MA institutions appear more concerned with operating efficiencies, while AA institutions are most concerned with cost savings and access to innovative services. Interestingly, AA institutions also seem to vest decision authority outside the IT organization, suggesting that the IT outsourcing decision in this segment may be motivated by presidents’ and chancellors’ desires to cut IT costs and spur innovation.

According to 59 percent of survey respondents, the primary reason not to outsource is adequate in-house IT staff, as shown in Figure 3-15. Of the non-outsourcing respondents, more private (64 percent) than public (56 percent) institutions found their in-house staff adequate. Survey respondents indicated that cost is the second most important reason not to outsource IT functions.
Main Benefits of Outsourcing

With the notable exception of BA institutions, almost all types of institutions report access to superior technical resources as the primary benefit of outsourcing. This clearly corresponds with the primary motivation to outsource IT functions—a perceived lack of in-house skills. However, results from public versus private institution respondents, shown in Figure 3-16, varied slightly. Although public institutions still consider access to superior technical resources to be the primary benefit, private institutions consider better functionality the primary benefit. Lower risk and cost savings also are cited as significant benefits among all types of institutions. In all cases, reduction of IT staff ranked low on the benefits list.

Different types of institutions, however, weigh certain benefits differently. In Figure 3-17, for example, clearly more research institutions believe they can streamline operations by outsourcing IT functions. This might be due to the size and, generally, the more decentralized organizational structure of research institutions. MA institutions focus on...
cost savings and lower risk. BA institutions seek better functionality, lower risk, and IT staff reduction. AA institutions, having more limited IT budgets, benefit from better technical solutions and lower risk.

**Implementation Cited as Drawback**

The most significant problems higher education institutions encountered with IT outsourcing relate to implementation. Either vendors did not fulfill their promises, the implementation took longer than expected, or the project went over budget. These laments echo problems experienced in the commercial and government outsourcing arenas, where poor project management and insufficient requirements management are generally responsible for implementation failures.

Private institutions are more likely to suffer from implementation issues than public institutions. (See Figure 3-18.) Private institutions also are more likely to encounter lack of cooperation among internal units. Accordingly, successful implementations occur where cooperation and communication across all affected units is greatest. However, public institutions feel more strongly that their vendor’s lack of knowledge of higher education needs constitutes a problem. Public institutions also suffer slightly more often than private institutions from technical problems, flawed internal processes, and resistance from collective bargaining units.

Different types of institutions encounter different problems and issues when outsourcing IT functions, as Figure 3-19 illustrates. Research institutions perceive the biggest issue to be that vendors do not fulfill their promises satisfactorily. MA institutions show the greatest concern over long project implementations. BA institutions are most likely to suffer from budget overruns and technical problems. AA institutions most frequently encounter lack of cooperation among internal units.

**Implementation Time**

While a majority of survey respondents indicated that their implementations required less than 6 months to complete, more than 10 percent of all implementations took more than one year. Figure 3-20 shows implementation time for public and private institutions.
Additional Spending

While most institutions that outsource don’t expect added spending for auxiliary IT outsourcing services, of those having such expectations, private institutions expect to spend more on additional IT outsourcing-related services than do public institutions. Compared with other types of institutions, significantly more research institutions—whether public or private—indicated (by yes answer) that they expect to spend additional resources on IT outsourcing-related services. Figure 3-21 shows percentages by type of institution.

Satisfaction with Vendors

As Figure 3-22 shows, all respondents that outsource are more than satisfied (above a 3.0 ranking on a scale of 5) with their outsourcing vendors. While the detailed results are not depicted herein, the same is true of the rankings related to criteria such as cost, reliability, customer service and project management, performance to service-level agreement (SLA), back-office integration, flexibility, and security.

Private, particularly BA, institutions reported slightly higher vendor satisfaction than public institutions. Associate’s institutions reported the lowest vendor satisfaction and, not surprisingly, are among higher education’s least enthusiastic outsourcers.
Unlikely to Switch Vendors

A large majority of respondents from institutions that outsource would not switch vendors once contracted. However, the responses vary slightly by institution type. (See Figure 3-23.) While private institutions indicate a higher vendor satisfaction rank than public institutions, they are more likely to switch their current provider. This behavior is very similar to that found in the commercial sector. Despite having the highest satisfaction rank, BA institutions also are more likely to switch vendors. AA institutions, which were least satisfied with their current vendors, are most likely to switch. Research institutions were least likely to switch current IT outsourcing vendors. It may be reasonable to infer that the costs of switching IT vendors in public institutions, owing to public scrutiny and collective bargaining, are higher than at comparable private institutions.

Figure 3-23. Probability of Switching Outsourcing Vendors
Bringing Outsourced Function In House

Although most institutions are unlikely to switch vendors, 34 percent are considering bringing the outsourced function in house, with public and private institutions exhibiting no significant difference. However, as Figure 3-24 shows, BA institutions fell away from the norm. While BA institutions are among the most likely to switch current providers, they are the least likely to in-source the currently outsourced function. This finding confirms that BA institutions in particular lack in-house IT skills.

Outsourcing Additional Functions

Despite the possibility that some outsourcers may bring certain outsourced IT functions in house, those that outsource appear to maintain a commitment to IT outsourcing. A significant number of respondents are considering outsourcing additional IT functions to new vendors. As Figure 3-25 shows, research institutions, which are most likely to in-source currently outsourced functions, are also most likely to outsource other functions to new vendors.
Respondents Outsource Diverse Activities

Outsourced functions are almost evenly distributed, with IT infrastructure, application services, and e-learning listed as the most frequently outsourced functions, as shown in Figure 3-26. When outsourced IT functions were broken down by institution type, the survey data yielded significant differences among certain categories of respondents. Public and private institutions exhibit a wide divergence of views regarding the suitability of distributed services and e-learning for outsourcing. (See Figure 3-27.)
Public community colleges were most positive about outsourcing e-learning functions. Private institutions, except for larger private universities, are much more likely to outsource functions that are unrelated to academic instruction, such as network services, network operations, and infrastructure operations.

The most favored type of outsourcing among research institutions was e-learning; the least favored were distributed and application services. Of all the institution types, BA institutions reported the highest outsourcing levels in the area of IT infrastructure. Not surprisingly, these respondents were less favorably disposed toward outsourcing distributed services, especially e-learning or business process outsourcing (BPO). Community colleges showed greater enthusiasm for outsourcing in almost all areas, particularly application management and services, and e-learning. Figure 3-28 gives the breakdown by institution type.

![Figure 3-28. Outsourced Function by Institution Type](image-url)
Outsourcing at Enterprise Level

Most survey participants (83 percent) reported that outsourcing occurs at least at the enterprise level, with more than half reporting outsourcing at the enterprise level only, as shown in Figure 3-29. Twenty-six percent of the respondents reported they outsource IT functions on multiple levels (enterprise, division, and program), while 17 percent outsource only on one level, either division or program, but not enterprise.

Consultants and Staff Transfers

Outsourcing project management reveals a basic consistency in key practices. Consultants are used widely, staff is transferred relatively less often, and SLAs don’t appear to change frequently. (See Figure 3-30.) Analysis by institution type shows that public institutions are more likely to use consultants in the outsourcing process, and a higher number of private institutions report transfer of staff.

Figure 3-29. Levels of IT Outsourcing

Figure 3-30. IT Outsourcing Process
Employee Concerns and Insufficient Planning

While resistance from collective bargaining units is barely an issue, employee concerns, insufficient planning, and budget overruns are problems faced in the course of outsourcing. As Figure 3-31 shows, private and public institutions assign comparable weight to these obstacles.

Although all types of institutions ranked employee concerns high, research and BA institutions most frequently identified these concerns as an issue. (See Figure 3-32.) BA institutions are much more likely to encounter budget overruns during IT outsourcing. This likely reflects the BA segment’s preference for negotiated sole-source procurements.
ASP Model

As Figure 3-33 shows, the large majority of survey respondents (77 percent) are familiar with the ASP model. Public colleges and universities are slightly more familiar with ASPs than private colleges and universities. BA institutions seem least familiar with the ASP model, and research institutions appear to be most familiar with this concept.

Of those familiar with the ASP model, a slight majority of all institutions report having selected an ASP to outsource IT functions. As Figure 3-34 shows, a slightly higher percentage of private institutions use an ASP...
than public institutions. AA institutions reported having signed a contract with an ASP most often. BA institutions reported the fewest sign-ons with ASPs, reflecting both discomfort and unfamiliarity with the ASP concept.

About half of all institutions found that their ASP experience matched their expectations. A large majority (66 percent) of public institutions reported their ASP experience was as good as or better than expected. None of the private institutions reported that their ASP experience was better than expected, and a slightly larger portion reported that their ASP experience was worse than expected. Table 3-4 shows how the various types of institutions rated their ASP experience.

### Table 3-4. ASP Experience versus Expectations

<table>
<thead>
<tr>
<th>ASP Experience</th>
<th>All</th>
<th>Public</th>
<th>Private</th>
<th>Research</th>
<th>MA</th>
<th>BA</th>
<th>AA</th>
</tr>
</thead>
<tbody>
<tr>
<td>As Expected</td>
<td>50%</td>
<td>54%</td>
<td>31%</td>
<td>50%</td>
<td>52%</td>
<td>20%</td>
<td>62%</td>
</tr>
<tr>
<td>Better than Expected</td>
<td>8%</td>
<td>12%</td>
<td>0%</td>
<td>7%</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Worse than Expected</td>
<td>10%</td>
<td>0%</td>
<td>17%</td>
<td>7%</td>
<td>10%</td>
<td>20%</td>
<td>0%</td>
</tr>
<tr>
<td>Liked ASP, Wrong Vendor</td>
<td>4%</td>
<td>0%</td>
<td>2%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>15%</td>
</tr>
<tr>
<td>Needed More Customization than Expected</td>
<td>14%</td>
<td>5%</td>
<td>14%</td>
<td>7%</td>
<td>10%</td>
<td>13%</td>
<td>8%</td>
</tr>
<tr>
<td>Regretted Using ASP</td>
<td>6%</td>
<td>5%</td>
<td>5%</td>
<td>7%</td>
<td>5%</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>ASP too Ill-defined</td>
<td>3%</td>
<td>0%</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>13%</td>
<td>0%</td>
</tr>
<tr>
<td>ASP too Limited</td>
<td>6%</td>
<td>0%</td>
<td>2%</td>
<td>7%</td>
<td>0%</td>
<td>0%</td>
<td>8%</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
<td>14%</td>
<td>21%</td>
<td>14%</td>
<td>14%</td>
<td>27%</td>
<td>8%</td>
</tr>
</tbody>
</table>
**Vendor Types Selected**

The type of vendor selected for IT outsourcing depends on the product and end use. ASPs are most often selected for application-oriented efforts like e-learning. Systems integrators are most often selected for outsourcing of IT infrastructure. Figure 3-35 shows the various IT functions and the percentages of institutions choosing the different vendor types.

Public and private respondents reported slightly different practices regarding how they award outsourcing contracts. Both types of institutions use competitive bidding more often than sole-sourcing. (See Figure 3-36.) Although the differences in selection practices are minor, not surprisingly public institutions are slightly more likely than private institutions to use competitive bidding.
Examining the same issue from the viewpoint of institution type reveals that a strong majority of responding colleges and universities still prefer competitive bidding over sole-sourcing. As Figure 3-37 shows, research institutions reported the highest use of competitive bidding, while BA institutions expressed a strong preference for sole-sourcing.

**Selection Criteria**

Survey respondents rated the importance of various characteristics for selecting outsourcing vendors. Rankings by type of institution (public or private) revealed that vendor capability was considered the most important criterion. (See Figure 3-38.) Outsourcing experience also ranked rela-

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**Figure 3-37.** Outsourcing Vendor Selection Practices, by Institution Type

**Figure 3-38.** Ranking of Vendor Selection Criteria, Public versus Private
tively high, while attitudes toward price and experience in higher education varied, with price often gravitating toward the bottom of the list. Research institutions ranked vendor capabilities the highest (at 4.76 on a 5-point scale), while MA institutions ranked it the lowest (at 4.18). Rankings of selection criteria by institution type appear in Figure 3-39.

Regardless of institution type, a vendor’s outsourcing experience and prior experience in higher education were both considered very important. All institutions rank cost above 3.0 in importance, but public institutions are slightly more concerned with cost. MA institutions exhibited the highest sensitivity to cost, followed by research institutions. Interestingly, AA institutions showed the least sensitivity to price.

Some of the major suppliers of IT services to higher education appear in Table 3-5. Note, the list is not comprehensive.
<table>
<thead>
<tr>
<th>Function</th>
<th>ASP</th>
<th>Outsourcer</th>
<th>Software Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-learning/Distance Learning</td>
<td>CollegisEduprise</td>
<td>eCollege, Embanet, CollegisEduprise, Blackboard, Timecruiser, WebCT</td>
<td>eCollege, Embanet, CollegisEduprise, Timecruiser, Jenzabar, WebCT</td>
</tr>
<tr>
<td>Processing Services</td>
<td>UNISYS, IBM Global Services</td>
<td>UNISYS, IBM Global Services</td>
<td>CollegisEduprise, ADP</td>
</tr>
<tr>
<td>BPO</td>
<td></td>
<td>KPMG Consulting, PWC, SCT</td>
<td>KPMG Consulting, PWC, SCT, SAP</td>
</tr>
<tr>
<td>Network Services</td>
<td>UNISYS, IBM Global Services, CollegisEduprise</td>
<td>UNISYS, IBM Global Services, CollegisEduprise, SCT, Blackboard, Embanet, Qwest</td>
<td>CollegisEduprise, SCT, Genuity, Qwest</td>
</tr>
<tr>
<td>Distributed Systems</td>
<td>UNISYS, IBM Global Services</td>
<td>UNISYS, IBM Global Services, CollegisEduprise</td>
<td>CollegisEduprise</td>
</tr>
<tr>
<td>Application Services</td>
<td>UNISYS, IBM Global Services, CollegisEduprise, Datatel, inﬁNet Solutions</td>
<td>UNISYS, IBM Global Services, SCT, CollegisEduprise, Blackboard, Timecruiser, PeopleSoft, WebCT, eCollege</td>
<td>SCT, Campus Pipeline, CollegisEduprise, Timecruiser, Jenzabar, Microsoft, Datatel, PeopleSoft, WebCT, inﬁNet Solutions, Brio, eCollege</td>
</tr>
<tr>
<td>Application Management</td>
<td>UNISYS, IBM Global Services, CollegisEduprise, Corio</td>
<td>UNISYS, IBM Global Services, CollegisEduprise, Blackboard, SCT, KPMG, PeopleSoft, WebCT, eCollege</td>
<td>SCT, Campus Pipeline, CollegisEduprise, Datatel, Jenzabar, Microsoft, Datatel, PeopleSoft, WebCT, Brio, eCollege</td>
</tr>
<tr>
<td>IT Infrastructure</td>
<td>CollegisEduprise, UNISYS, IBM Global Services eCollege</td>
<td>CollegisEduprise, UNISYS, IBM Global Services, Hewlett-Packard, eCollege</td>
<td>CollegisEduprise, UNISYS, IBM Global Services,</td>
</tr>
</tbody>
</table>
This chapter analyzes application service provider (ASP) and IT outsourcing services within the context of operational services. It contrasts their use in higher education with that in commerce and government.

Outsourcing is one of the operational services segments of the IT software and services industry. This segment includes IT outsourcing, business process outsourcing (BPO), and processing services. More precisely, IT outsourcing consists of services that provide operation and management of all or a significant part of a user’s information systems or telecommunications functions under a long-term (more than one year) contract. BPO covers services that provide operation and management of all or a significant part of a user’s business. Processing services use vendor-provided computers and communications to

- run applications (using applications software from the customer, the vendor, or a third party);
- provide infrastructure services such as Internet data centers (IDCs) or data entry; and
- support the development of applications.

Over the past several years, vendors, financial institutions, and the media, as well as many analyst firms, have advanced ASP services as something “new.” All services delivered by these companies can be categorized in the three segments of operational services just defined or in the applications software products category. Services are further allocated to specific subsegments on the basis of what buyers are purchasing.

**Operational Services**

This section discusses the purpose and scope of ASP and IT outsourcing services in general and their application to higher education. The first subsection covers ASP offerings, which are largely processing services; a separate subsection deals with IT outsourcing services.

**Processing and ASP Services**

Processing services vendors provide computer/communications infrastructure or applications services to customers on a usage basis, as contrasted with outsourcing, which entails a long-term commitment. This product/service category includes three subcategories: applications services (usually transaction processing), infrastructure or platform (computers/operating environment/network) services (utility processing), and “other” processing services.
If the service includes application processing, the applications software used may come from one of three sources:

- **Customer**—The vendor provides the platform and the customer provides the software. The software may be either custom made by the customer or purchased. Expenditures are classified as infrastructure services. IDC and Web-hosting services fall into this category.

- **Vendor**—The vendor provides the platform and the proprietary applications software through a bundled service. The software may or may not be available as, for example, an application software product or a turnkey system. Such services are classified as applications services.

- **Third party**—The vendor provides the platform, and a third party, such as an applications software product vendor, provides the applications software.

With the third-party source, there are two alternatives in terms of category of service. In the first category, the processing services vendor bundles the applications software price into the service bill, in which case the customer is buying an applications service, and its expenditures are categorized accordingly. In the second category, the customer receives either two bills or two components in a single bill for service. In the latter case, one component is for the infrastructure service and the other is for the applications software used. This applications software may be from the applications software product company. In this case, the customer is buying an infrastructure service from the processing service vendor and a software product from either the third-party vendor (ASP) or the applications software product company.

**Applications Services**

These are primarily transaction processing services (payroll, accounting records, and so on). Increasingly they include other activities, such as analysis, aggregation, reporting, distribution, and interfacing.

The customer uses a vendor-provided information systems platform—including equipment, systems software, and data networks—at the vendor’s site to process specific applications and update customer databases. The vendor provides the application software (as described earlier). These services usually run on a proprietary software platform that processes transactions for multiple customers through the same core software, that is, shared software. This delivers economies of scale in software usage. Single-image processing (where each customer has its own version of the software) almost never succeeds.

Transaction processing (TP) systems have been a mainstay of businesses for more than 30 years, with vendors such as Automatic Data Processing (ADP) offering transaction processing services. In some areas, such as credit card processing, services vendors execute more transactions than in-house systems.

As business challenges become more complex and the volume of transactions grows, TP systems will play an even larger role in business operations. However, TP services are in for some profound changes. The most dramatic change is one of scale. As organizations collect more information on customers and their buying habits, TP systems balloon in size. A single transaction now captures 10 to 15 times as much information as a transaction 5 years ago.
Another trend is the increasing access to transactional systems by the people who generate transactions. Organizations are eliminating data entry clerks and connecting staff and even customers directly to TP systems. Applications using the World Wide Web are the latest manifestation of this trend, with consumers and businesses now able to access order-entry systems directly to place orders.

Not only is the number of transactions increasing dramatically, but the quality of transactions is changing too. Advanced TP systems will need to support complex data types and the complex queries that result from them.

With market success contingent on information systems, availability also becomes an increasingly critical issue. More TP system providers will be forced to maintain levels of availability approaching 100 percent. Moreover, with access to TP systems no longer limited to order-entry employees, strong security measures are paramount.

Internet/Web applications services, although similar, often have a different focus. Many of the new ASPs provide these types of service. However, where IT applications services tend to focus on the transaction itself (cost of processing, reliability, and so on), Internet/Web services focus on flexibility, scalability, ease of use, timeliness, overall cost, and so on. This category includes single and multiple applications hosting services. Applications may not be transaction oriented. They may be aligned with any industry-specific or cross-industry function—for example, messaging services that focus on office communications or employee application services that support hiring.

In electronic business applications services, the vendor provides a set of services to enable an electronic business to operate, but this does not constitute an outsourcing contract.

The challenges ahead for TP systems are clearly immense. For firms to prosper, they will need systems that can handle the growth in size, volume, and complexity of transactions, with increasing levels of availability and security. These challenges will drive organizations to increase their use of processing services companies.

**IT Infrastructure Services**

Infrastructure or platform services are sometimes called utility services. The customer uses a vendor-provided information systems platform to develop and/or operate its own applications software. The customer’s software may have been obtained from any of a variety of sources, including third parties such as enterprise resource planning (ERP) vendors. Many ASPs provide such services. The platform is a combination of equipment, communications networks, and systems software (server systems, applications development tools, database management systems, graphics packages, security systems, mathematical models, communications software, and so on).

These services include data center services. This market encompasses the purchase of computer/communications resources for project-based activities, such as running advanced models on a supercomputer, and process-oriented activities, such as weather forecasting. Much of the expenditure is for research.

Internet/Web infrastructure services are very much like what used to be called “timesharing,” an industry that collapsed in the early 1980s with the advent of the PC. The services have four levels:

- The lowest level of service above access services is Web hosting, whereby the vendor operates the customer’s Web site. The vendor provides access services to the site; monitors performance; maintains processing, software, storage, and
communications facilities; provides security; and so on. In simple Web site hosting, the vendor provides access to the information in the Web page.

- The next level up is applications hosting. The vendor hosts applications related to the Web site, such as transaction handling.
- At the next level, the vendor provides a full electronic business applications service environment. These services are built around called commerce servers, letting a customer transact business.
- At the highest level, the vendor actually operates the electronic business for the customer. This is outside the IT processing service industry category and is considered electronic business process operations (eBPO).

At none of these levels does the vendor provide the applications; the customer or a third party always provides them. If the vendor provided the applications, the service would be categorized as applications services.

Other Processing Services

The vendor provides a service—usually at the vendor site—such as scanning and other data entry services, laser printing, computer output microfilm, CD preparation, and other data output services.

Storage services are a small but potentially very important part of this category. The explosion in demand for digital storage is driven by the need for multimedia storage and for storage of the vast quantities of information being generated from online activities. Storage services provide scalability, rapid response, security, and technology refreshment.

IT Outsourcing Services

IT outsourcing developed from systems operations in the 1980s and 1990s and facilities management in the 1960s and 1970s. It entails a long-term (greater than one year) contract between a customer and a vendor whereby the customer contracts for the vendor to perform all, or a major portion, of the IT function.

IT outsourcing vendors provide a variety of services in support of customers’ information systems and electronic business requirements. The vendor plans, controls, provides, operates, maintains, and manages any or all components of the customer’s information systems environment (equipment, networks, applications systems) at the customer’s site or the vendor’s site. Various Internet- and Web-related categories of outsourcing service have emerged to include Internet-managed services (categorized under infrastructure operations). Regardless of where they are located, the equipment and software involved may be owned by either the customer or the vendor. The contract may include non–information-systems outsourcing activities, but information systems outsourcing must be an integral part of the contract.

The IT outsourcing product/service subcategories (tasks) appear in Figure 4-1. Network management, applications management, and desktop services are often included in larger contracts. Separate contracts in such subcategories are often referred to as out-tasking contracts.

Outsourcing for Tactical Purposes

Outsourcing IT functions for tactical purposes is often motivated by a desire to save money. Commercial firms as well as institutions of higher education may find they lack capital—financial, human, or both.

Outsourcing reduces the need for future investments by transferring one-time capital expenditures and permanent staffing commitments to variable operational expenses. While total costs may not decline significantly, tax and accounting provisions
generally favor the outsourcing alternative. In essence, an IT outsourcing contract is analogous to a “purchase/lease back” contract in real estate. For this reason, some of IT outsourcing’s potential economic advantages do not accrue to nonprofit sectors like higher education.

Usually, an outsourcing agreement involves transferring a portion of the client’s IT staff to the outsourcer. This restructuring offers the client increased staffing flexibility. It reduces the burden on management, as well as transferring responsibility for solving technical problems, accomplishing software and hardware upgrades, and dealing with other IT suppliers. Many buyers seek to reduce their perceived level of technology risk and streamline their management relationships even if they don’t expect to save money through the contract.

Highly detailed service-level agreements (SLAs) specify client expectations and vendor responsibilities. In a typical agreement, the outsourcing vendor is bound by contractual obligations to perform specific functions within a specified period. SLAs represent a great advance for organizations suffering from diffuse reporting structures that make it difficult to hold any individual or department responsible for delivery (or scheduling). Also, because outsourcing techniques may enhance overall accountability, the contractual outsourcing relationship specifies monetary and legal remedies available to each party should nonperformance become an issue. These benefits may be of particular interest, value, and importance in higher education.

**Outsourcing for Strategic Purposes**

Organizations that embark on strategic outsourcing seek to streamline their operations by shifting noncore activities to service vendors so that they can focus their re-
sources on high-value, proprietary functions that advance the organization's long-term strategic goals. However, distinguishing between core and noncore business functions or competencies is usually difficult and tendentious.

By outsourcing noncore IT functions, clients hope to gain access to world-class IT capabilities and build long-term value into the partnership with the vendor. Strategic outsourcing usually involves a longer term relationship with a vendor and a wider scope of services than tactical outsourcing.

The length of a typical outsourcing contract in the commercial market has fallen—now three to five years instead of seven to ten years—and fixed-term contracts are being treated increasingly as benchmarks to be adjusted at least annually and renewed, as long as both client and vendor perceive mutual benefit and trust in the relationship.

Trends Promoting Outsourcing
Market Development

Certain primary trends are driving development of the IT outsourcing market in the United States, Canada, and elsewhere:

- **Pace of technology change**—Despite the dramatic IT slowdown, the pace of product innovation has not abated. Furthermore, there are now a plethora of IT approaches to problems and opportunities, whereas historically there were only one or two. Consultants advise on the strategies and the tactics, but buyers still take the risk when deciding to do something themselves.

- **High and growing cost of recruiting and retaining in-house IT professionals**—The number of job categories and specialists has increased sharply in the last five years and shows no signs of abating. Meanwhile, availability of qualified personnel has not kept up with demand. Outsourcing provides a way to share skills with others while devoting the most valuable assets to proprietary, core projects.

- **Transition from traditional business to e-business**—Organizations must operate the old and new systems in parallel for a considerable time but do not have the resources in house to do so. Thus, transition outsourcing has become a common way of fundamentally changing an organization.

**Factors Affecting the Outsourcing Decision**

Whether in the commercial, government, or higher education arena, major decisions to outsource (that is, data center or IT infrastructure decisions, as opposed to individual “task” or software application decisions) are institutional rather than IT based. In the commercial world, major outsourcing decisions are usually board approved. In government, the decision to outsource is determined by policy (although an agency CIO or IT department handles vendor selection). Higher education institutions appear to be somewhere in between. Sometimes the institution makes all the decisions (often leading to added risk and lower satisfaction); other times the institution makes a guiding policy decision and leaves implementation to the CIO/IT department or committee.

However, decisions to outsource tasks (such as distributed services or network services) more often fall within the IT organization’s purview, especially when the number of people involved is small. And almost all decisions to outsource processing services and ASP services are within the IT organization’s purview.

**ASP Services**

Many ASPs evolved from Internet service providers (ISPs) who sought to expand from their provision of communications services to hosting of applications and then into ap-
Applications services themselves. Other entrants have come from among Web-based information providers and portals that have added applications to their one-way provision of information on demand. In both cases, stress in their basic business often forced such companies away from their original business models.

At the same time, a new generation of software vendors is bringing its applications to market as Web-based services, accessed directly over the Internet. They offer to run the software themselves or on a hosting service rather than selling their software to run on in-house-operated systems. Established software product vendors such as Oracle have also been exploring this option.

ASPs usually have the following characteristics:
- A reseller delivers software applications (and/or value-added services) to remote end users for a fee.
- A one-to-many delivery channel and a distribution mechanism for software are both provided.
- Vendors earn revenue by charging a fixed-price subscription fee or a variable usage fee based on transaction count or number of users.
- Users have access to the applications, usually under an SLA, without the responsibilities of management or maintenance.
- Either vendor or user may own the software license.
- Vendor supplies minimal customization for integration with customer’s legacy IT infrastructure.
- Vendor assumes responsibility for the underlying delivery networking infrastructure and host hardware, either by providing them directly or through outsourcers.
- User and vendor may be connected by the Internet or a virtual private network.
- Vendor manages, supervises, or monitors the operation of these delivery mechanisms, usually under the SLA.
- Vendor is responsible for application maintenance and upgrades, end-user billing, provisioning, and overall systems management.
- Full-service vendors may also provide end users with integration services, application customization, training, help-desk and technical support, and even business process analysis.

The services and software purchased from ASPs fall into a variety of market categories, depending on what the buyer perceives. Whether a particular service is a processing service or an IT outsourcing service often depends on the length of the contract and the extent of the service bought.

Generally, new vendors have grossly underestimated the full costs of sales, support, and maintenance. Existing software product vendors have been very careful to protect their margins and unit sales when dealing with third parties, and the value-added reseller market is consequently virtually unsustainable.

**ASPs in the Higher Education Market**

Sixty-five percent of those surveyed responded that they were moderately familiar with ASPs, and 53 percent of all respondents who outsource reported that they had signed a contract with an ASP. Forty-nine percent thought that e-learning and distance-learning applications were the most suitable for sourcing from an ASP.

The next few years will see the need for “resource rationalization”—increasing investments in software and content, as well as in IT infrastructure, to support a variety of nontraditional channels for delivering education. In an environment of rising demand and limited resources, the ASP model...
of processing service, IT outsourcing, or applications software delivery services may become more attractive.

However, the ASP market—particularly as it applies to higher education—is poorly defined and full of immature services and providers. Some specialize, while others try to provide services across a broad spectrum. Recent bankruptcies by some ASPs and poor performance by others have given credence to the idea that ASPs are just IT industry hype, like pen computing or artificial intelligence (AI). Executives in higher education are generally more conservative than their peers in the commercial market. They are extremely unlikely to entrust important IT functions to vendors that as a group and individually may not be financially viable.

**ASP E-Learning Services**

ASP services may be particularly useful in e-learning, a relatively new area without established vendors or in-house operations. Many observers view education as no longer bound by time and place. Education providers are moving beyond whole-group instruction within the traditional classroom environs to deliver real-time instruction when and where it is most convenient and needed. Their IT infrastructures also will bend with the new trends in learning. Institutions are increasingly moving from the relatively simple acquisition and adoption of technology to the more complex task of integrating that technology into teaching, learning, and administration, to facilitate innovative learning.

However, it can be difficult to achieve these goals while coping with volatile demographics, which can hinder academic planning, and the ever-rising cost and complexity of the IT infrastructures required to surmount IT challenges. Thus, outsourcing in general—and the ASP model in particular—is attractive because it enables higher education institutions to provide the following options:

- **Personalized learning**—Sophisticated software with rich curriculum and embedded diagnostic assessments enables computer-based education that can be customized to each student’s unique learning style and pace.
- **Instructional management**—Instructors and administrators can use technology to efficiently collect, manage, and analyze data. The result is more informed decision making, improved accountability, and reduced costs.
- **Distributed learning**—The Internet enables real-time, flexible access to instruction and content previously available only from a distance. This instruction can be provided synchronously or asynchronously to allow for students’ learning needs and pace.
- **Enhanced communications**—Integrated communication tools ensure critical interaction among students, educators, and communities, thus moving education into the community.

**IT Outsourcing**

It’s important to understand the similarities and differences that affect IT outsourcing in higher education, the commercial sector, and government markets.

**IT Outsourcing in Higher Education**

The following factors will drive substantial growth in IT requirements in higher education over the next few years:

- A transition to ERP software is under way for electronically linking administrative, financial, and student-related records.
- Internet-enabled interactive distance-learning systems will require new IT ca-
pabilities, including enterprise Web portals for course management and student/faculty electronic interaction. At present, only a few faculty members at a typical institution are involved in distance-learning programs. However, evidence suggests this may change rapidly.

- **Individuals, corporations, and government** exhibit a continued interest in and demand for postsecondary education. A strong higher education system is an absolute requirement for the United States and Canada to be able to adapt and use the technological innovations that are necessary for continued growth in productivity and the economy.

- **The pace of technology-related change** continues, bringing innovations such as speech recognition, video processing, collaborative working (already a factor in research), advanced simulation, electronic books, and Internet-enabled handheld devices.

Higher education institutions can consider one or more forms of operational service such as IT outsourcing to help them deal with these increasingly complex and time-sensitive demands.

**Drivers to IT Outsourcing in Higher Education**

Following are some of the drivers likely to fuel the trend toward resource rationalization and IT outsourcing:

- **Effective use of assets**—The selective application of certain commercial management practices encourages colleges and universities to adopt outsourcing for activities that have traditionally been carried out internally.

- **Maximization of staff effectiveness**—Outsourcing may enable colleges and universities to focus their leadership on activities that produce the greatest benefit to the institution: teaching, research, and services. Secondary or ancillary functions such as publications and facilities management may also benefit. Outsourcing also stimulates new thinking about the centralization/decentralization debate for IT organization on campuses. Effective use of external consultants and expert suppliers for technical developments lets the university maximize faculty and staff effectiveness.

- **Competition for funding and demand for financial accountability**—Public and private institutions struggle to finance themselves in an environment that is becoming increasingly commercial. Competition for state funding for higher education in the face of rising demands by health care, law enforcement, and security is motivating the search for cost savings, efficiency, and better financial accountability.

- **Access to external resources**—Outsourcing offers colleges and universities access to new equipment and to highly trained IT and business professionals without investing in hiring, training, and retaining IT workers.

- **Changing student demographics**—With less than 20 percent of college enrollments fitting the traditional undergraduate residential student profile (age 18–22, full-time), higher education institutions are seeking innovative course delivery and communications systems to meet their students’ needs for flexibility. Necessary twenty-first-century skills include traditional core critical thinking; computational skills and technology literacy; inventive thinking; communication and collaboration; and the ability for self-directed, life-long learning. Outsourcing helps institutions and faculty transition to new methods of distance learning without draining resources or buying expertise directly.

- **Effective instruction delivery**—Institutions of higher education are seeking
more effective means to deliver instruction to an increasingly diverse student population while also efficiently managing an ever more complex enterprise. Individual courses and entire college degree programs online increasingly may come to be viewed as indispensable, cost-effective alternatives to labor-intensive, traditional residential education.

- **Potential to reach a wider market**—Colleges and universities may be able to collaborate with service providers to have their courses offered online, thereby tapping into a previously untouched market. Some of the larger service providers offer Internet courses that are validated by colleges and universities or professional institutions.

- **Instructor support**—Academic technology professionals on higher education campuses are being challenged to better address the needs of faculty by integrating technology into instruction.

- **Globalization of the economy**—As professionals develop their careers, they seek qualifications that carry international recognition, and brand names become significant to both graduates and employers. Therefore, strategic alliances with global organizations that share a vision of quality education may become necessary to enable colleges and universities to participate fully in a global learning economy.

**Barriers to IT Outsourcing in Higher Education**

Generally, outsourcing has been slower to catch on in higher education than in other areas of the economy. Colleges and universities have traditionally resolved intellectual problems from within. Many higher education institutions have been and still are reluctant to use outsourcing because they fear losing control over a vital resource. This fear is even more acute when IT is no longer a backroom support activity but an integral part of delivering the product or service that constitutes the organization’s mission.

Many higher education institutions go to great lengths to differentiate themselves from the commercial world by placing special emphasis on job security and workplace quality. Outsourcing solutions that imply layoffs can look like commercial attacks on these principles.

**IT Outsourcing in the Commercial Sector**

IT outsourcing initiatives often stem from a wrenching experience in an organization, for example,

- a major financial reorganization,
- a large acquisition or divestiture,
- a major board or executive change,
- basic difficulties in the organization’s industry,
- major competitive or market share changes,
- dramatic growth or shrinkage in an organization’s business, or
- major legal or regulatory change.

Experienced vendors look for changes like these when they prospect.

The commercial outsourcing market is moving toward more comprehensive, bundled solutions because customers want to streamline their operations by offloading as many IT-related activities as possible. This has resulted in the dramatic growth of leading vendors such as IBM, Compaq, HP, EDS, AFS, and CSC. They have the size to bid for and to absorb the large contracts that result.

IT outsourcing clients have often felt that after a contract has been signed they received poor value for their money when operational service volumes or the environment changed. They believed, for example, that they were expected to pay additional
charges when volumes increased but did not receive a proportionate decrease in charges when transaction volumes decreased.

Rapid fluctuations in business itself exacerbate this problem. As a result, commercial contracts have changed extensively. For example, contracts are shorter and in many cases do not detail future expectations as much as in the past. Everyone recognizes that commercial contracts must be flexible to allow for rapid economic, technological, and societal changes. An increasing amount of risk related to accurate forecasting is being transferred to the vendor.

Contractors encourage greater vendor creativity, but here the vendor and contractor share the risk. Clients demand greater cost and service flexibility so that they can adjust the volume of services according to their fluctuating business requirements and circumstances. In extreme cases, this could entail turning services on and off at short notice, with the vendor taking the commercial risk of whether the services are used or not.

Overall, the increasing tendency is for clients to insist on value for money throughout the life of outsourcing contracts. Some clients seek to ensure this by developing contracts that let them benchmark vendor pricing throughout the contract. This will place greater margin pressure on vendors by making it harder for them to significantly increase their profitability in the later stages of the contract.

Ideally, clients would like vendors to behave as though they owned the client IT budget and to seek ways to deliver IT services within a set budget and at increased value for money. Clients tend to disapprove of vendors who continually try to increase the clients’ IT expenditure, regardless of the worthiness of the projects and services themselves.

### IT Outsourcing in the Government Market

The Bush administration has mandated that federal agencies pursue outsourcing to increase their effectiveness and reduce cost. In particular, the administration has committed to opening up 50 percent of the commercial workload (as defined by the Federal Activities Inventory Reporting [FAIR] Act) to competition. Subsequently, the Office of Management and Budget (OMB) ordered federal agencies to compete at least 5 percent of their FAIR Act positions by October 2002. This is equivalent to more than 40,000 jobs.

Most agencies compete for less than 1 percent of the positions identified under the FAIR Act. Only the Defense Logistics Agency has currently met the 5-percent OMB goal. In the meantime, the General Accounting Office (GAO) has been closely following the issue and has identified the factors necessary for a successful competitive outsourcing arrangement: executive leadership, partnership alignment, and relationship management.

In the federal government, significant political and regulatory issues, such as legislative initiatives, administration objectives, and federal budget cycles, affect the decision to outsource. Outsourcers wrangle with unions, politicians, and agency civil servants over the issue of equivalent cost comparisons. Vendors must demonstrate that outsourcing produces cost savings, yet there are significant obstacles to an accurate determination of the true cost to the government of performing specific work. Private sector and public sector work environments are subject to very different methods of cost accounting. This dilemma underlies a great deal of the friction among agencies, administrators, and outsourcing vendors.

Some agencies can perform the same work as a vendor and compete for contracts with other government agencies. Critics ar-
gue that agencies with excess capacity should be downsized and shouldn’t compete for such contracts. Vendors believe this practice by government agencies is unfair because the government is not subject to the same rules of competition and may also offer a lower, subsidized price.

The events of September 11, 2001, have created tremendous uncertainty in the federal government about where funding will come from and how much will be available over the next two years. On top of that, federal agencies are in the midst of reprioritizing IT acquisition plans to focus on security and critical infrastructure protection. In general, INPUT expects a net increase for the IT outsourcing market. While many IT programs may have been postponed or eliminated to address security concerns, the crisis has created a sense of urgency among federal agencies for satisfying critical IT requirements. Outsourcing arrangements may prove, in many cases, to be the quickest and most effective solution. The prevalence of relaxed contracting regulations for the purposes of preserving national security further motivates agencies to pursue outsourcing in the near term.

Comparative Use of IT Outsourcing by Industry

Adoption and use of IT outsourcing varies considerably from industry to industry, as shown in Table 4-1. Within commercial industries, for example, financial services organizations have been major users of operational services, including IT outsourcing, manufacturers, until the last few years, have not.

One perceived difference between the higher education and commercial markets is the level of concern for the human factor. Many higher education outsourcing opportunities, particularly in public institutions, are shaped by labor considerations that might give commercial employers little concern. In both the public and private segments of higher education, institutions appear to attach a much higher priority to job security, employee benefits, and wage levels than their commercial counterparts.

This is a false contention. In the commercial sector, there is a very real concern for employees affected by outsourcing. There are two main reasons for this. First, the contracting company wants to make sure that the people who stay with the company don’t start to look elsewhere for employment. If they perceive that former co-workers were badly treated, they will wonder how they will fare if another round of outsourcing takes place. Second, the contractor wants to retain the expertise needed to support legacy systems or operations. The quality of operation will suffer greatly if the transferred people simply leave. Neither the contractor nor the contracting company wishes that.

Business Process Outsourcing

In a BPO relationship, a vendor is responsible for performing an entire business/operations function, including the information systems outsourcing that supports it. The average BPO contract is large, with a value of $200 million to $700 million and a shelf life of about seven years. (Exult, a vendor of HR services in the BPO market, estimates that Global 500 firms spend between $50 million and $100 million per year in a typical BPO contract.) Transition time from internal operations to an outsourced service provider is typically 12 to 18 months, reflecting the time required to assimilate employees, applications, and data. Generally, clients hope to save at least 15 percent of the cost of doing the work internally.

The BPO market comprises such distinct service offerings as accounting services, procurement services, back-office services, front-office customer relationship management services, and human resources (includ-
ing payroll) services. In addition, a number of vendors have developed services for facilities (real estate) management, with and without an IT component. In particular, the federal government has been turning increasingly to commercial outsourcing vendors to take over the nonmilitary management of Department of Defense bases. Several trends make the BPO market attractive: growing customer acceptance of outsourcing in general, growing acceptance of outsourcing covering a wider range of business processes and functions, and increasing stability that is a natural extension of a proven technology outsourcing market.

Data from the survey of EDUCAUSE members indicate that spending for BPO in higher education exceeds that of any type of IT outsourcing. This fact reflects their comfort and experience with specific types of outsourcing: health care, facilities management, bookstore operations, day care centers, food services, logistics, and other noncore functions. As financial and operational aspects of institutions are increasingly interlinked to ERP systems, BPO contracts reflect the natural evolution of IT outsourcing to include the people and non-IT systems associated with them.

However, there is a huge difference between BPO involving IT and the routine, low-technology services just mentioned. More important is the growing presence of companies like Accenture and PricewaterhouseCoopers (PwC) in the BPO market and their developing base of solid contracts in the areas of accounting, logistics, and HR services. Accounting is probably the application area most applicable to higher education.

Table 4-1. Comparison of IT Outsourcing and ASP Services by Industry Sector

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<th>Higher Education</th>
<th>Commercial</th>
<th>U.S. Federal Government</th>
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<tr>
<td><strong>Estimated Market Size, 2001</strong></td>
<td>$782 million, U.S.; $63(Million), Canada</td>
<td>$57 billion</td>
<td>$6.4 billion</td>
</tr>
<tr>
<td><strong>Intensity of Outsourcing</strong></td>
<td>42 percent of institutions surveyed report that they are currently outsourcing IT functions.</td>
<td>Media surveys report that 75 percent of companies are outsourcing some activity.</td>
<td>Outsourcing represents 14 percent of total federal spending on IT. Civilian agencies account for 60 percent of outsourcing expenditures.</td>
</tr>
<tr>
<td><strong>Bidding Process</strong></td>
<td>A mix of sole-sourcing and competitive bidding. Private institutions have the greatest flexibility.</td>
<td>A mix of sole-sourcing and competitive bidding. Increasingly involves consultants and mediators.</td>
<td>Regulated competitive bidding with opportunities for sole-sourcing based on special circumstances.</td>
</tr>
<tr>
<td><strong>Vendor Selection Process</strong></td>
<td>Evaluation by formal committee, often using consultants. Also, CIOs or top academic officers have evaluation responsibilities.</td>
<td>Decision by non-IT management. Evaluation by the CFO. Usually involves the CIO. Increasingly, use consultants in vendor selection and evaluation.</td>
<td>Evaluation by program manager and evaluation team. Formal and regulated evaluation process.</td>
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</table>
Commercial vendors find the market unattractive because of its small size, their lack of familiarity with the specialized needs of higher education, and their lack of seasoned products to offer. Vendors continue to be attracted to the commercial outsourcing market. Services are more profitable than hardware sales, and outsourcing often leads to very profitable consulting engagements. Specialized vendors are very attracted to the large size of federal contracts. Nongovernment vendors are repelled by the relatively lower profit margins available and by the scrutiny those margins attract. This market is perceived to be less profitable, more contentious, and more competitive than the commercial market. It is also perceived as a specialized contracting market with high bid costs. Large, well-connected vendors dominate the market.

Vendor Perception of this Market
It is perceived as smaller and less profitable than the commercial market. It has specialized needs and less standard software is available. Many vendors see their efforts in this market as in the “pioneer” stage. There is no dominant vendor or group of vendors. Vendors see commercial outsourcing market potential as very large and growing more rapidly than other segments. Contracts can be very profitable, particularly insofar as vendors are able to leverage their investments over multiple clients. With so many opportunities, no one vendor or group is dominant. This market is perceived to be less profitable, more contentious, and more competitive than the commercial market. It is also perceived as a specialized contracting market with high bid costs. Large, well-connected vendors dominate the market.
Table 4-1. Comparison of IT Outsourcing and ASP Services by Industry Sector (continued)

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<tr>
<td><strong>Potential for Market Crossover</strong></td>
<td>Buyers favor vendors with proven success in commercial sectors but require expertise in higher education as well. Skills in the student administration area are critical—and vary between the United States and Canada. Colleges and universities are themselves competing increasingly with commercial vendors.</td>
<td>Buyers prefer vendors with demonstrated experience in their own industry. Vendors with experience in the federal market are respected because federal buyers have a reputation for good program management skills—and high expectations for performance.</td>
<td>Federal government vendors believe their skills are transferable between the federal and commercial sectors. These skills include program management, ability to deal in complex issues, and application of externally documented technical expertise. Commercial vendors consider the government a unique market and usually enter by acquisition.</td>
</tr>
<tr>
<td><strong>Sales Cycle and Marketing Costs</strong></td>
<td>The small size of potential contracts inhibits large investment in sales and marketing directed exclusively at higher education. Sales cycles are long and difficult. This situation perpetuates a higher level of market inefficiency.</td>
<td>The length of the sales cycle and magnitude of marketing costs incurred vary widely. Sales cycles are shorter and vendors’ marketing costs are lower than in the federal market.</td>
<td>Contracts are generally larger, sometimes by an order of magnitude. Sales and marketing activities are very structured and regulated. Bid costs can be very large and the effort time-consuming. Separate financial processes required.</td>
</tr>
<tr>
<td><strong>Regulatory Issues</strong></td>
<td>Public institutions in particular are subject to a variety of state and legislative requirements. Vendor bidding processes are often determined in advance by state or other regulatory authorities.</td>
<td>Buyers are subject to few constraints, except for accounting and legal issues. Tax issues can be important: operational expenses are deductible, while capital investments are not, even if depreciable on an accelerated schedule.</td>
<td>Buyers are subject to a wide range of regulations governing the decision to outsource. They are obligated to show cost savings over in-house operations, despite the difficulties of doing so.</td>
</tr>
<tr>
<td><strong>Employment Issues</strong></td>
<td>Labor agreements or state law or regulation can restrict public institutions’ freedom to outsource. Higher education in general strives to create a desirable employment environment that may be perceived as incompatible with widespread outsourcing. Labor transfer is more of an issue than in commercial contracts.</td>
<td>Few restrictions apply to IT outsourcing, but outsourcing is often seen as a solution to escalating costs of IT staff recruitment and retention. Transfer of IT labor to vendors is relatively easy. They are governed by similar human resources practices.</td>
<td>Union opposition to outsourcing is a serious problem, one that has become highly politicized. Labor transfer is difficult. Legislation hostile to outsourcing remains a clear possibility despite efforts by administrations to promote outsourcing as a way to supplement a shrinking federal workforce and improve agency effectiveness.</td>
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Table 4-1. Comparison of IT Outsourcing and ASP Services by Industry Sector (continued)

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<tr>
<td><strong>Decision Making</strong></td>
<td>Perceived diffuse decision-making processes lead to long sales cycles and diffuse accountability.</td>
<td>As IT outsourcing is funded outside of the traditional IT budgets, the range of potential decision makers grows. CEOs and CFOs often bypass IT directors on outsourcing decisions.</td>
</tr>
<tr>
<td><strong>IT Organizational Structure</strong></td>
<td>May be centralized or decentralized. In large institutions, the “center” doesn’t know entirely what the “periphery” is doing (or outsourcing).</td>
<td>The traditional IT departmental structure is giving way as companies make the transition to e-business, whereby IT is embedded in all business processes.</td>
</tr>
<tr>
<td><strong>Rationale for Outsourcing</strong></td>
<td>Access to IT skills, operational efficiencies, and cost savings.</td>
<td>To reduce costs, avoid capital expenditures, “sell” assets, redeploy in-house resources, and increase productivity.</td>
</tr>
<tr>
<td><strong>Obstacles to Outsourcing</strong></td>
<td>Fear of loss of control. Concern with regard to privacy of student records and compliance with FERPA, HIPPA, and other laws and regulations designed to safeguard privacy. Concern that vendors may abandon higher education in favor of more attractive alternatives. Desire to make the campus a local, regional, or national employer of choice.</td>
<td>Companies often have difficulty distinguishing between core and noncore functions, or they fear that outsourcing could lead to a loss of control over valuable proprietary assets. New issue of the integration of IT into business processes.</td>
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(continued)
Table 4-1. Comparison of IT Outsourcing and ASP Services by Industry Sector (continued)

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<tr>
<td><strong>Appeal of ASP Model</strong></td>
<td>Those who understand the model find it superficially appealing, but there are few proven products or vendors among whom to choose. They see ASP as an attractive, but higher risk outsourcing alternative. Obtaining shared services from another college or university appears to many to be a better alternative.</td>
<td>Some companies, particularly those in volatile industries like high technology, find the concept of flexible access to highly specific software applications appealing. However, vendor performance has been disappointing, and buyers are loath to risk core applications in untested and risky vendor situations.</td>
<td>Even more than buyers in higher education, federal buyers are wary of ASPs because of concerns about security and financial viability. Lack of forward visibility is a major concern.</td>
</tr>
<tr>
<td><strong>Familiarity with ASP Model</strong></td>
<td>About half of decision makers are familiar with ASP.</td>
<td>Most have looked at it in one form or another. Disillusioned with the hype. Find ASPs ill-suited for their needs or risky because of deteriorating financial viability.</td>
<td>Only beginning to become familiar with the ASP model and have little experience with it. In addition, few ASPs are targeting this market. Very unlikely to succeed.</td>
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</table>
Higher Education IT Outsourcing: Future Trends and Market Forecast

Survey respondents represent roughly seven percent of the total population of U.S. and Canadian institutions of higher learning. Their characteristics make these institutions a good representation of IT spending in the higher education sector of the economy. INPUT weighted EDUCAUSE survey data on the basis of the current proportion of Carnegie classifications of higher education institutions.

INPUT has developed market forecasts for IT outsourcing in the education industry for more than 20 years. These forecasts and those for associated markets in business process outsourcing (BPO) and processing services—including application service providers (ASPs) and services—served as the baseline in developing the estimates of market size and growth rates presented in this report.

The 2001 market size estimate is based on assumptions that include the following:

- A baseline estimate of the total spending by U.S. higher education is $197 billion. Of this, public institutions spent $126 billion (1996–97) and private institutions spent $71 billion (1995–96).
- The estimated compound annual growth rate (CAGR) is 5 percent for higher education spending from 1997 to 2001.
- Estimated total spending by higher education was approximately $235 billion during 2000–2001.
- IT spending by higher education is estimated at 3.5–4.0 percent ($8.2–$9.4 billion) of total spending in 2001, which is comparable to the ratio applicable to the commercial market.

In developing the forecasts, INPUT used its knowledge of expected developments in the larger IT outsourcing marketplace over the next five years and contrasted these developments and environmental factors in higher education with those in commercial and government markets. INPUT also compared survey data to revenue estimates from IT vendors that outsource to higher education. There was a very good fit between survey respondent data regarding higher education’s IT spending and vendor revenue estimates, suggesting the forecast is reasonably valid. Finally, on the basis of a small survey sample from Canadian colleges and universities and other data, INPUT developed a forecast for the Canadian market for IT outsourcing.
**U.S. Forecast**

The IT outsourcing market in higher education, shown in Figure 5-1, is about 6 percent of total IT spending. This ratio is about two thirds of the overall ratio in the commercial market and about one third of the ratio in the U.S. federal government. INPUT estimates the size of the U.S. commercial IT outsourcing market in 2002 at more than $50 billion and the U.S. federal market at $6.4 billion ($3.8 billion for the civilian segment).

Estimated spending by higher education on all operational services, including BPO and processing services, represented about 9 percent of total IT spending. Again, this is lower than in commercial and government markets. The growth rates forecast for higher education and commercial IT outsourcing are roughly in line. In general, attempts to control and/or reduce IT investment and costs and the trend toward e-business have created a jump in the proportion of money allocated to IT outsourcing compared with total IT budgets. These factors apply to higher education as well as to the commercial market.

The market for operational services is splitting along two tracks: traditional legacy services and Internet-centric services. The growth of Internet-centric segments will be high, while legacy services growth rates will be low and will turn negative over the next few years. Before the end of the forecast period, the convergence of these service streams will signal that the non-Internet-enabled legacy IT infrastructure is beginning to disappear. But, as with other IT changes, we can expect to see remnants even after 20 more years. By 2006, the Internet will be so thoroughly integrated into business processes and operations that it will be the delivery mechanism for most operational services.

**Higher Education IT Outsourcing Drivers**

At the beginning of the forecast period, it is possible to separate spending for e-learning and distance learning from monies spent for Web portals, student administration, course management, financial records, and so on. By the end of the forecast period, in 2006, such distinctions will be difficult. All administrative and instructional data processing, including requirements to support the expected robust growth of e-learning, will need to be integrated. The size, cost, and complexity of this integration will outpace the capabilities of an increasing number of institutions to perform in house. This, combined with factors such as IT staff shortages, will foster the growth of IT outsourcing.

![Figure 5-1. U.S. Higher Education IT Outsourcing Market, 2001–2006](image-url)
In addition, by the end of the forecast period, it will no longer be feasible to separate spending on IT infrastructure from spending on the network, which in itself requires huge new investments. For example, California State University estimates that in addition to the $350 million to $400 million that it anticipates spending to implement fully its PeopleSoft enterprise resource planning (ERP) application from 2000 to 2006, it will need to spend a similar amount to build the broadband, fiber-optic network required to realize the benefit of its ERP investment.

The very high growth rate forecast for the IT infrastructure segment of the IT outsourcing market, shown in Table 5-1, is due to

- pressure on budgets for both capital and operating costs;
- a shift to new technologies based on the Internet and the Web, with the consequent shift to variable as opposed to fixed performance and capacity requirements;
- integration of IT technologies into operations functions, as opposed to their traditional IT supporting role;
- scarce IT architectural and engineering staff resources in a time of constant system, software, security, network, and application change; and
- various competitive pressures expressed through administrative, educational, academic, and research demands.

In 1980, INPUT published a report titled “The Death of Timesharing.” Within two years, the industry virtually collapsed as the microcomputer took over its function. It now looks as though it’s time to publish a new report—“Timesharing Resurrected!”—as organizations shift from dedicated in-house hosting systems to external hosting services from Internet data centers. The market for these services will reach $100 billion worldwide in this decade.

The driver for this shift is the basic difference between the Internet world and the traditional IT world: The former is full of

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### Table 5-1. U.S. Higher Education Operational Services Market by Segment, 2001–2006

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<tr>
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<td>58</td>
<td>73</td>
<td>96</td>
<td>134</td>
<td>208</td>
<td>333</td>
<td>36%</td>
</tr>
<tr>
<td>Application Management</td>
<td>90</td>
<td>101</td>
<td>105</td>
<td>124</td>
<td>134</td>
<td>163</td>
<td>10%</td>
</tr>
<tr>
<td>Application Services</td>
<td>115</td>
<td>123</td>
<td>135</td>
<td>152</td>
<td>175</td>
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</tr>
<tr>
<td>Distributed Services</td>
<td>80</td>
<td>86</td>
<td>95</td>
<td>107</td>
<td>125</td>
<td>150</td>
<td>12%</td>
</tr>
<tr>
<td>Network Services</td>
<td>101</td>
<td>108</td>
<td>121</td>
<td>139</td>
<td>167</td>
<td>209</td>
<td>14%</td>
</tr>
<tr>
<td>E-Learning</td>
<td>61</td>
<td>72</td>
<td>90</td>
<td>122</td>
<td>171</td>
<td>256</td>
<td>29%</td>
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<tr>
<td>Total IT Outsourcing</td>
<td>505</td>
<td>563</td>
<td>642</td>
<td>778</td>
<td>980</td>
<td>1,318</td>
<td>19%</td>
</tr>
<tr>
<td>Business Process Outsourcing</td>
<td>158</td>
<td>174</td>
<td>196</td>
<td>230</td>
<td>276</td>
<td>336</td>
<td>14%</td>
</tr>
<tr>
<td>Processing Services</td>
<td>119</td>
<td>133</td>
<td>153</td>
<td>181</td>
<td>220</td>
<td>276</td>
<td>16%</td>
</tr>
<tr>
<td>Total Operational Services</td>
<td>782</td>
<td>870</td>
<td>991</td>
<td>1,189</td>
<td>1,476</td>
<td>1,930</td>
<td>17%</td>
</tr>
</tbody>
</table>
unpredictable factors compared with the latter, particularly regarding the use of features and capacity. The costs of establishing in-house services that can accommodate the variability and frequent changes may well become prohibitive for many organizations. Like their counterparts in the commercial market, IT executives in higher education will find the trend toward variable pricing for outsourcing services attractive. They want to pay for the features, functions, and capacity they use when they use them.

These two changes—to hosting services versus in-house systems and to variable pricing rather than fixed pricing—will dramatically accelerate the IT infrastructure services segments for both outsourcing and processing services. For example, in November 2001, Dow Chemical announced that it would drive down the hosting costs for its public Web site and customer service portal by moving from fixed monthly fees to paying only for capacity used. Accordingly, the company’s new five-year hosting agreement with IBM made Dow arguably the largest company to shift all of its Web-hosting business from the typical facilities-based pricing model, in which customers lease dedicated servers at their own sites, to a utility-based, capacity-on-demand model whereby servers are housed at the hosting provider’s facility. Dow expects to save more than 10 percent annually on operations and maintenance costs associated with its IT development platform. Compaq, Sun, EDS, and other vendors are offering similar new pricing strategies.

As with timesharing, dedicated servers will eventually be replaced by shared servers, so that server farms will be consolidated. IT infrastructure services will therefore replace application services as the largest IT outsourcing segment in the higher education market by 2005. Application management and application services will grow more slowly than IT infrastructure services because they are already mature markets and because there will be a significant amount of application replacement by software product and other vendors, including Internet-based suppliers.

Higher Education IT Outsourcing Inhibitors

Inhibitors are often emotional as well as logical. For IT outsourcing to succeed, it must be culturally as well as logically acceptable. This requires comfort factors with vendors and their motives that have not been historically present in higher education. Other inhibitors include

✦ reluctance to incur risk, particularly related to developing a strong dependence on commercial vendors in a volatile industry;
✦ the risk of expensive litigation should an outsourcing relationship sour;
✦ insufficient internal leadership to overcome internal opposition to outsourcing motivated by concerns for distinctive educational procedures or by unwillingness to abandon familiar business processes;
✦ inability to undertake large, multiyear outsourcing commitments because of fiscal uncertainties or restrictions;
✦ immature IT solutions from outsourcing vendors without experience in higher education, or without sufficient financial resources to develop tailored solutions;
✦ fewer role models than are present in either the commercial or government market; and
✦ resistance to outsourcing by organized labor, as in the government market.

While demand for IT outsourcing and processing will continue to grow, competition is becoming more intense (and exacerbated by active merger and acquisition activity). With fierce competition, buyers are increasingly skeptical of ambitious vendor claims. One casualty of the war on terror-
ism may be interest in offshore outsourcing from services vendors in India, Israel, the Philippines, Indonesia, or elsewhere.

Typically, offshore vendors provide support for data processing, call center operations, and software application development on the basis of large differences in labor costs. Wage scale differentials (as much as 60 percent) have resulted in U.S. firms’ receiving services at substantially lower prices. In addition, time zone differences are advantageous because they facilitate 24-hour operations and customer service. However, this potential depends on the offshore companies’ operating in stable political, social, and economic environments. As a result of the events of September 11, several of these areas are viewed as increasingly risky. Because risk management has gained new importance, INPUT projects that offshore outsourcing and services in general will be cut back substantially in the near term.

**BPO in Higher Education and Elsewhere**

INPUT believes that BPO will grow steadily as institutions contract not just the IT but also a whole function, including staff. This will be primarily in administrative areas. Higher education institutions are becoming comfortable with BPO as a form of outsourcing, particularly where there is a growing IT component. For some, the first steps were to outsource bookstore, dormitory, and food preparation facilities, all with low IT components. The next steps are likely to involve more comprehensive contracts in which the distinctions between back office and front office fade as a result of their mutual dependence on robust IT infrastructures.

The BPO market in the United States is poised to expand sharply over the next few years, from $12.5 billion to $45 billion, at a growth rate of 29 percent. Both the level of penetration and the rate of growth for BPO in the higher education market are likely to be lower than in the commercial market. The reasons relate to supply and demand. Higher education lags commercial firms and certain government agencies in acceptance of IT outsourcing. Consequently, higher education is likely to be even further behind those sectors in seeking the benefits of combining IT and business process outsourcing. In addition, BPO vendors focus less on higher education because of a perceived lack of opportunity and, indeed, market resistance.

Table 5-2 breaks down estimated 2001 spending by institution type on the basis of the estimated proportion of total spending that each type of institution represents in the Carnegie classification scheme.

**ASP Forecast in U.S. Higher Education**

As with the outsourcing market, the fastest-growing segments of the processing services market will be Internet-centric ones, including certain ASP services. (See Table 5-3.) Internet-centric services are likely to converge with the legacy or traditional segments of the market before the end of the forecast period, as the Internet is used more widely and the transformation of enterprises to e-business (and e-learning) continues. Eventually, the distinction between the two streams (Internet-centric and legacy) will lose relevance.

An innovative ASP model is the provision of standard applications software over the Internet on a single-image, per-client basis. The client buys a hosting service plus applications software management in a bundled form. Adoption of this type of ASP solution will increase because it makes sense to deliver the use of software as opposed to just the software itself. Most of these services will be classified as applications services in either the IT outsourcing services or processing services segments. Other forms of ASP services include the replacement of traditional operations services by Web-based
services that use modern, Internet-centric software rather than client-server or mainframe software.

Over the past two years, the ASP form of processing services has been in the early adopter stage. Characteristics of this stage are initial growth, continuous refinements to business models, many failed companies and initiatives, missionary sales activities, and material swings in industry sentiment. ASP options are now becoming part of the application selection landscape. Buyers are becoming increasingly aware of the ASP model, although adoption rates remain low overall. Some analysts estimate that as many as 74 percent of companies are aware of the ASP business model and have a good understanding of the elements involved.

While this level of awareness may be true (in fact, 77 percent of the EDUCAUSE mem-

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>Research</th>
<th>MA</th>
<th>BA</th>
<th>AA</th>
<th>Spec</th>
<th>Total</th>
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<td>IT Infrastructure Services</td>
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<td>12</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>58</td>
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<tr>
<td>Application Management</td>
<td>54</td>
<td>18</td>
<td>9</td>
<td>5</td>
<td>4</td>
<td>90</td>
</tr>
<tr>
<td>Application Services</td>
<td>69</td>
<td>23</td>
<td>11</td>
<td>7</td>
<td>5</td>
<td>115</td>
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<tr>
<td>Distributed Systems</td>
<td>48</td>
<td>16</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>80</td>
</tr>
<tr>
<td>Network Services</td>
<td>61</td>
<td>20</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>101</td>
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<tr>
<td>E-Learning</td>
<td>37</td>
<td>12</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>61</td>
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</tr>
<tr>
<td>Total IT Outsourcing</td>
<td>304</td>
<td>101</td>
<td>50</td>
<td>30</td>
<td>20</td>
<td>505</td>
</tr>
<tr>
<td>Business Process Outsourcing</td>
<td>95</td>
<td>32</td>
<td>16</td>
<td>9</td>
<td>6</td>
<td>158</td>
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<tr>
<td>Processing Services</td>
<td>71</td>
<td>24</td>
<td>12</td>
<td>7</td>
<td>5</td>
<td>119</td>
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<td></td>
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<tr>
<td>Total Operational Services</td>
<td>470</td>
<td>157</td>
<td>78</td>
<td>46</td>
<td>31</td>
<td>782</td>
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</table>

Table 5-2. 2001 U.S. Higher Education IT Outsourcing Market by Type of Institution

<table>
<thead>
<tr>
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<td></td>
</tr>
<tr>
<td>Application Management</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>13</td>
<td>20</td>
<td>∞</td>
</tr>
<tr>
<td>Application Services</td>
<td>5</td>
<td>8</td>
<td>13</td>
<td>21</td>
<td>30</td>
<td>40</td>
<td>62%</td>
</tr>
<tr>
<td>Total ASP IT Outsourcing</td>
<td>5</td>
<td>10</td>
<td>17</td>
<td>29</td>
<td>43</td>
<td>60</td>
<td>64%</td>
</tr>
<tr>
<td>ASP Processing Services</td>
<td>12</td>
<td>20</td>
<td>30</td>
<td>45</td>
<td>65</td>
<td>100</td>
<td>53%</td>
</tr>
<tr>
<td>Total ASP Services</td>
<td>17</td>
<td>30</td>
<td>47</td>
<td>74</td>
<td>108</td>
<td>160</td>
<td>57%</td>
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</table>
The EDUCAUSE membership survey suggests that these usage estimates might be supported in higher education if isolated. Overall, however, these usage estimates are questionable. Vendor revenues don't support anything like that level of penetration or rate of growth. As with much of the dot-com market hype, the majority of overall ASP revenue has come from other venture-capital-sponsored companies in the same sector (as opposed to traditional organizations). Nevertheless, signs do point toward accelerated growth and higher mainstream acceptance and adoption resulting from improvements in software technology, rapid growth in bandwidth, shorter sales cycles, and penetration in traditional industries.

There is reportedly a higher adoption of ASPs among small companies (fewer than 250 employees) and among large companies (1,000-plus employees) than in the midmarket. Small companies reportedly account for almost 50 percent of all ASP customers, while large companies account for 30 percent. This reflects the dichotomy in the use of ASP services: Small companies use accounting (Peachtree), sales management (salesforce.com), and similar basic applications; large companies use e-mail and software delivery processes.

The EDUCAUSE membership survey aptly notes the e-learning function as the ASP-procured application. The top applications considered for implementation in higher education through the ASP model include office productivity suites, e-commerce, accounting, customer relationship management, and e-mail.

Using the Internet to manage software and deliver it to the customer's point of work is a software product delivery channel rather than an operational service. It replaces the current software distribution system. Companies such as Intuit already are firmly established in this segment and are using their software and customer base to move into ASP services. Microsoft is moving to provide its office productivity tools through .NET. This will make it virtually impossible for third parties to participate in the office productivity area.

**Canadian Forecast**

The small total size of the forecasted Canadian higher education IT outsourcing market (see Table 5-4) somewhat belies the enthusiasm shown by some of the country's largest institutions for outsourcing (see the University of Alberta case study). IT outsourcing growth has been inhibited by the limited availability of software products tailored to Canadian requirements and a lack of concentrated vendor attention to this region.

**Commercial and Government IT Outsourcing**

Higher education institutions share with commercial and government organizations a keen interest in Internet-enabling administrative and operational functions. They also share—with government—fiscal and demographic constraints that lead to an IT skills shortage and a range of organizational issues.

Like government agencies and many commercial companies, higher education institutions bear a significant responsibility to protect the privacy of their constituents, which, of course, means student records. They are subject to important regulations like FERPA and HIPAA and have been reluctant to adopt IT strategies that relinquish direct control of sensitive student data.
Also, like government organizations, higher education institutions face challenges in preparing cost/benefit or return-on-investment (ROI) models to justify outsourcing IT solutions. The primary difficulty is determining costs accurately. Secondary obstacles include the difficulty in identifying the associated educational “product” and benefit as precisely as commercial enterprises. In addition, higher education often diffuses investment in terms of improved service levels that are also difficult to define. This makes a strictly financial ROI assessment unusually difficult, except in administrative areas such as facilities management.

All organizations confront similar challenges in the transition to electronic business and the move to mobile or pervasive computing from the traditional, fixed-line computer. Interest in distance education in the professional education and corporate training markets will likely outpace undergraduate-level interest in Internet-enabled higher education because the traditional, residential experience remains attractive. Even so, price sensitivity, competitive pressure, and advances in broadband technology are likely to induce some higher education institutions to spend substantial amounts of money to build the IT infrastructure that these e-learning initiatives require.

As in the commercial world, competition in education is broadening and will increasingly cut across geographic boundaries. Already some U.K. universities are establishing electronic campuses targeted at the U.S. market, which is very attractive to other countries. To meet this new competition, U.S. higher education institutions will have to spend more on IT than they would otherwise. Higher education’s competitive pressures, as well as funding pressures and a mounting pressure to serve new learners in new ways, will encourage institutions to explore new technologies and techniques.3

Higher education institutions are likely to allocate an increasing proportion of new money to IT outsourcing because of capital cost, time, and efficiency considerations. Institutions with inadequate IT capacity will increasingly abandon the do-it-yourself approach as risky and dilutive to their core competencies. In these ways, higher education is likely to resemble the commercial market more closely than the public sector.

Table 5-4. Canadian Higher Education Operational Services Market, 2001–2006

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<td></td>
</tr>
<tr>
<td>IT Infrastructure Services</td>
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<td>23</td>
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<td>23</td>
<td>32%</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>19</td>
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</tr>
<tr>
<td>Application Services</td>
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<td>20</td>
<td>20</td>
<td>24%</td>
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<td></td>
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<tr>
<td>Distributed Services</td>
<td>6</td>
<td>17</td>
<td>14%</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Network Services</td>
<td>8</td>
<td>17</td>
<td>14%</td>
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</tr>
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<td>E-learning</td>
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<tr>
<td>Total IT Outsourcing</td>
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<td>58</td>
<td>69</td>
<td>86</td>
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<tr>
<td>Business Process Outsourcing</td>
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<tr>
<td>Processing Services</td>
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<td>16%</td>
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<tr>
<td>Total Operational Services</td>
<td>63</td>
<td>70</td>
<td>86</td>
<td>102</td>
<td>125</td>
<td>162</td>
<td>18%</td>
</tr>
</tbody>
</table>
IT Outsourcing in Commercial Markets

The decline in overall commercial IT spending in 2001 reflected a recessionary economy and uncertainties after September 11 caused by terrorism, as well as the effect of poor corporate earnings across many industrial sectors. However, financial reports by almost all IT vendors show a pattern of declining revenues from equipment, software, and development services but growing revenues from operational services, particularly from outsourcing. While total IT budgets are not declining, customer spending patterns show clear signs of new priorities taking effect. There is an irreversible trend toward buying operational services as opposed to constructing in-house “power stations.” This current phenomenon is a continuation of a 20-year trend.

Although overall market growth has slowed, INPUT continues to forecast that growth of spending for IT outsourcing will outpace general IT spending by 5 to 10 percent over the next 5 years. This is comparable to the projected 19-percent growth in IT outsourcing in higher education.

The impact of the events of September 11 on IT spending in the commercial sector has been significant but not devastating. A Merrill Lynch survey conducted in October 2001 reported that corporate CIOs expected their IT budgets to grow only 2 percent in 2002 because of the terrorist attacks instead of the already depressed 5 percent they had planned. The prediction by these CIOs of continued growth overall is significant—and highly unusual. In INPUT surveys going back 20 years, recessions have always resulted in projected expenditure reductions. The buoyancy of the overall IT market in the face of dramatic reductions in capital spending and inventory levels is surprising. This likely reflects the fact that IT is no longer a discretionary expense that can be turned off and on, like advertising.

While public colleges and universities in particular have been widely affected by the current recession, higher education in general has been somewhat insulated from the direct economic impact of September 11, especially in the IT area. Increases in security spending plans have in many cases offset reductions directly due to those attacks.

According to the Merrill Lynch survey, all corporate CIOs polled said, without exception, “Companies must continue to invest in e-business initiatives that involve adding Web-based front ends to key business processes. ‘Webification’ is one of our long-term technology trends in part because CIOs keep listing it as strategic despite current budget woes.” This parallels expectations in higher education for spending on Web-based e-learning and administrative processes that result in the rapid growth in IT infrastructure and e-learning noted earlier.

Government IT Outsourcing

During the 1990s, the federal government transformed the way it met its IT requirements. It moved from a supplies- and equipment-oriented strategy to a services-oriented strategy. From 1996 to 2001, IT contract obligations reported to the Federal Procurement Data Center went from less than 60-percent services to nearly 75-percent services. At the same time, federal government employment dropped sharply. From September 1999 to September 2000, the federal workforce dropped more than 20 percent, from 2.25 million to 1.78 million (excluding the U.S. Postal Service).

For the government, shifting noncore functions to third parties has allowed agencies to concentrate on their core missions and to reduce costs (in some cases), capital requirements, and the number of employees. Federal agencies have increasingly been using commercial off-the-shelf (COTS) products and services. This has substantially upgraded their level of innovation and the
currency of their systems. There is still a long way to go, but improvements are noticeable. In higher education as with the federal government, COTS products and services such as ERP are being increasingly accepted.

IT outsourcing represents a much larger proportion of IT spending in the U.S. federal government than in the higher education market. This is due to several factors, including government regulation and the federal government’s very early adoption of IT facilities management, which was the precursor to IT outsourcing. From fiscal year (FY) 2001 to FY 2006, IT outsourcing in the U.S. federal government will be one of the fastest growing segments in the overall federal IT market. Its growth rate, shown in Figure 5-2, is comparable to that in higher education and in commercial markets. This extraordinarily high level of growth depends largely on the successful implementation of the current administration’s outsourcing goals and the lack of restrictive legislation in Congress.

In the federal government, significant political and regulatory issues such as legislative initiatives, administration objectives, and federal budget cycles influence an agency’s decision and ability to outsource. In today’s political and regulatory climate, these indicators point to outsourcing. Many of these factors are absent in the commercial market and influence public higher education only indirectly.

Impeding factors unique to the federal government, many of which are cost related, result in delays:

- Vendors wrangle with unions, politicians, and agency civil servants over cost comparisons.
- Vendors and agencies are challenged to demonstrate that outsourcing produces cost savings.

---

**Figure 5-2.**


![Bar chart showing IT outsourcing market growth from FY 2001 to FY 2006 for civilian and defense agencies.](chart.png)
Significant obstacles exist to determining the true cost to the government of performing specific work. Private- and public-sector work environments are subject to different methods of cost accounting.

There are constant challenges from other vendors and government agencies to the awarding of contracts. The situation is dramatically better now than it was 10 years ago, but continues to hinder growth. These inhibitors are less prevalent in both commercial and higher education markets.

The federal financial information in this study reflects amounts that were included in the current fiscal budget. However, the attacks of September 11 are spurring immense uncertainty within the federal government over how to fund outsourcing initiatives not only now but also two years from now. Moreover, priorities have changed: Federal agencies are shifting their focus from IT acquisition to security and critical infrastructure protection. The net impact on government IT outsourcing is still unfolding. Some projects could be delayed as agencies shift limited resources to security initiatives. On the other hand, outsourcing may actually be accelerated to allow agencies to focus on core missions.

Impact of Human Capital on Federal IT Outsourcing

Perhaps the most important factor determining the future of IT outsourcing in the federal government is the problem of human capital in its IT workforce. The huge and growing problem of the federal government’s inability to meet its IT staffing needs has several causes:

- Federal IT employees are retiring. The General Accounting Office has discovered that many computer specialist and telecommunications personnel will retire within the next five years. Fully one third of program managers will retire by 2006.
- Grade-based federal pay scales are no match for salaries in the private sector.
- The work itself is primarily with legacy systems and is less attractive than working in the commercial sector.

Even if the federal government could boost its recruitment efforts to hire replacements for retiring employees, agencies still face a significant loss of intellectual capital—the institutional knowledge that has kept so many mission-critical legacy systems running for the past 30 years. Virtually the only way for the federal government to address this problem is by outsourcing as many of its noncore activities to third-party service providers as possible. As a result, the federal government has little choice but to pursue IT outsourcing to develop and operate the advanced IT services its agencies require.

Higher education faces similar demographic and human capital problems, although perhaps not to the same extent. Higher education institutions in certain geographic areas will be more affected than others by the problem of attrition in the IT workforce and the competitive human capital environment. Regions such as Silicon Valley; Austin, Texas; New York City; and Northern Virginia will be difficult environments in which to develop in-house IT labor and skills.

On the other hand, the life-style and ambiance of university campuses and environments will remain significant factors in attracting and retaining high-quality staff, especially when combined with personal and family learning opportunities. Previous INPUT research has shown that continuing learning opportunities reduce IT employee turnover by a very significant factor.

This situation argues for higher education institutions to adopt a strategy similar to that of government agencies and outsource operational and legacy systems work as much as possible while applying
their limited (and strategically important) human capital to innovative and mission-critical development activities.

**Legislative and Regulatory Trends**

Political battles continue on a variety of fronts over the issue of outsourcing in government. This is a major battleground for unions such as the American Federation of Government Employees. Higher education is somewhat less exposed than the government to this issue, but more exposed than most commercial markets.

On one hand, proposed legislation (the Truthfulness, Responsibility, and Accountability in Contracting Act) would dramatically inhibit the growth of the IT outsourcing market in government. On the other hand, the 1998–99 Federal Activities Inventory Reform (FAIR) Act will likely be a major boost to the IT outsourcing industry in government. It requires agencies to determine what jobs in government are core and what could be performed in the private sector.

The first government-wide tally of jobs that could be outsourced, released under the FAIR Act, revealed that fewer federal jobs were "inherently governmental" than were candidates to be contracted out. Among 115 agencies that employ a total of 1.7 million federal workers, job evaluation inventories identified about 850,000 federal jobs that were inherently governmental. According to the study, about 900,000 federal employees—more than half of the civilian workforce—do work that could be performed in the private sector or outsourced.

If higher education adopted a similar standard and used it to develop outsourcing plans, the market forecast developed for this project would be substantially exceeded, particularly in BPO and IT outsourcing. The highly decentralized nature of higher education makes such a possibility remote, even among public institutions that operate in states that might contemplate such legislative initiatives.

**Conclusion**

Over the next five years, IT outsourcing in higher education is likely to look more like the commercial market than the government market. The major exception will be the issue of human capital, where higher education will more nearly resemble the government market. Overall, higher education’s movement along this path is likely to result in more rapid growth of IT outsourcing and ASP services over the next five years than in the past.

**Endnotes**

1. INPUT recognizes that the forecasted numbers for IT outsourcing in the BA and AA segments specifically may appear conservative when compared with other industry forecasts (for example, those of the Campus Computing Project). While INPUT considered other forecast findings, the forecasted numbers provided herein are direct results of a bottom-up estimate based on the EDUCAUSE membership survey and a top-down breakout based on a separate investigation of applicable vendor revenue. Estimated expenditures in the AA sector in particular are likely to be understated.

2. Hosting services offered by Internet data centers are IT infrastructure services and are not classified as ASP services.

Lessons Learned

IT outsourcing activity in higher education in 2001 is estimated to be $782 million, compared with $57 billion for the U.S. commercial market and $6.4 billion for the U.S. federal government market. These estimates include business process outsourcing (BPO) and processing services outsourcing activities. While higher education IT outsourcing activity is forecast to grow at a compound average growth rate (CAGR) of 17 percent for the period 2001–2006, commercial outsourcing activity is expected to grow at a CAGR of 19 percent, reaching $117 billion by 2005. Federal expenditures will grow by 16 percent, to $13.2 billion.

Like the government, higher education bears special burdens to assure the security and confidentiality of constituent and stakeholder records. Banks and other security-sensitive commercial organizations have succeeded in overcoming their reluctance to use outsourcing vendors, so higher education will likely become increasingly experienced and comfortable with using external service vendors as well.

Importantly, higher education will need to balance the rising cost and risk of attempting to operate complex IT infrastructures internally against opposition from faculty and staff stemming from ideological differences regarding an institution’s responsibility to its employees and its noncommercial identity. These pressures may become acute in collegiate markets, particularly among associate’s and baccalaureate institutions, where IT labor shortages are already pronounced. Research universities will likely continue to enjoy a broad range of choices relating to self-operation or outsourcing. Nevertheless, they will likely continue to experiment with IT outsourcing in commodity service areas so that they can focus highly skilled internal resources on innovative—and difficult to replicate—application development activities.

The challenge to IT vendors will be to learn how to meet the needs of this exacting customer in the same way that they have learned to meet the special needs of other vertical industries. Because it is relatively small, higher education’s market for IT outsourcing will remain unattractive to many of the largest and most capable commercial outsourcing vendors; so the cycle continues. The extent to which the IT vendor community assigns a priority to addressing higher education’s unique mandates will largely determine higher education’s acceptance of IT outsourcing on a broader scale. Shared IT services among colleges and universities—with or without vendor support—may be a promising strategy for addressing some of
the cultural inhibitors of IT outsourcing as a preferred management practice in higher education.

Overall, higher education is subject to a series of offsetting (and at times contradictory) pressures. Those fostering interest in IT outsourcing in higher education include:

- a continuing transition from traditional business to e-business;
- the proliferation of pervasive (mobile) computing;
- the high cost of recruiting and maintaining critical in-house IT capabilities;
- mandates to wire all classrooms and to provide 24×7 support for learners and scholars on and off campus;
- continued updating and streamlining of IT infrastructures for the transition to enterprise resource planning (ERP) administrative systems;
- interactive distance-learning ventures that will require new IT capabilities;
- demographic trends such as lifelong learning, the Echo Boom, and the continued demographic shift from the Rust Belt to the Sun Belt; and
- increasing calls for public accountability (even in private education) and, in particular, for an accounting of return on investment (ROI) in information technologies.

On the other hand, some clear counterrtrends are delaying higher education’s adoption of IT outsourcing. They include:

- a perception of higher risk resulting from handing over responsibility for critical IT functions to commercial vendors that may prove unreliable because of financial weakness;
- real performance issues and concerns in the IT outsourcing vendor community, such as numerous high-profile business failures;
- concerns about the possible effects of IT outsourcing on employee welfare and institutional community;
- resistance by organized labor in some sectors (particularly community colleges), supported at times by faculty and students;
- planning, vendor selection, and negotiation deficiencies resulting from either inexperience or organizational issues;
- complex decision-making processes and structures, with authority for IT outsourcing decisions frequently vested outside the IT organization; and
- a lack of industry-specific expertise among vendors, owing in part to the relatively small size and fragmented nature of higher education as a market.

Many of these observations, culled from broad survey data, are corroborated and elaborated on in the case studies. In essence, the unique organizational structures of colleges and universities, along with their unique and highly complex purposes, create concerns and reasons for caution that have few counterparts in the commercial market. These concerns are also less important in the government sector. Higher education’s position is that cost savings is not the most important benefit of IT outsourcing. In fact, evidence related to the cost-effectiveness of IT outsourcing in some higher education environments is equivocal and suggests a need for deeper research. The majority of survey respondents agreed that the primary reasons to outsource are operating inefficiencies and the lack of critical in-house IT skills.

The application service provider (ASP) model, while likely to become increasingly attractive to higher education, will not fulfill its overall potential until the market matures. This will happen when ASP vendors consolidate, resulting in greater financial viability, better business models, and more reliable fulfillment experience, and when institutions feel more comfortable with the ASP concept.
Attitudes of IT leaders in higher education and in the commercial sector are not dissimilar. For example, the term of a typical outsourcing contract in the commercial market has fallen from 7–10 years to 3–5 years. Fixed-term contracts are being treated increasingly as benchmarks that will be adjusted at least annually and renewed as long as both client and outsourcer perceive mutual benefit and trust in the relationship.

Overall, commercial outsourcing clients dislike pricing mechanisms such as time and materials that allocate the major elements of risk to the client rather than the vendor. This particularly applies to systems development contracts, whereby clients perceive themselves as carrying the larger burden of commercial risk. Clients would like to encourage greater vendor creativity, with the vendor taking a major share of the risk.

In particular, commercial clients would like greater flexibility in service usage, especially the flexibility to adjust the volume of services used to meet their business requirements and circumstances. In extreme cases, this could entail turning services on and off at short notice, with the vendor taking the commercial risk over whether the services are used or not.

Overall, there is an increasing tendency for commercial clients to insist on value for money throughout the life of outsourcing contracts. Some clients are ensuring that they achieve this by developing contracts that permit them to benchmark vendor pricing throughout the contract. This will place greater margin pressure on vendors by making it harder for them to significantly increase their profitability in the later stages of the contract.

**Evaluating the ASP Model**

If the ASP model evolves and matures, its flexibility and low cost will become increasingly attractive to higher education.

Currently, about half of all institutions report experience with ASPs, and most, apart from BA institutions, have had relatively positive experiences. Some ASPs are struggling with intense financial and competitive pressures. In general, they are not well understood, they lack the critical mass necessary to fulfill their promises, and a few high-profile bankruptcies have put their viability in doubt. Many believe this IT vendor category will not survive.

Better funded and more nimble ASPs may replace those that fail. Widespread acceptance of the ASP model in higher education is probably at least five years away. Until then, the vendor marketplace is likely to be divided among specialized vendors such as Collegis and SCT; relative newcomers like Blackboard and WebCT, which will seek to expand and extend the range of their product and service offerings; and large full-service, top-tier outsourcing vendors like IBM. What emerges may look a lot like yesterday’s systems integrator or transaction processor, but it will have the added advantage of being able to offer easily portable and replicable low-cost solutions tailored to the special needs of higher education.

The ASP market is undergoing a shake-out wherein the most successful ASPs are horizontal aggregators offering a host of solutions to the entire market. These integrated suites of applications have begun to focus on complex internal processes that a majority of today’s businesses face regularly. INPUT expects the ASP market to undergo a second shake-out. Eventual winners will be those aggregators who do only those things required to meet the specific needs of vertical sectors and horizontal functions. Providers must continually pursue a focused approach for the niches they choose to target. The resulting solutions will let small companies scale their operations more quickly and efficiently, and large companies
will be able to make their resources more accessible to employees, customers, and partners.

Higher education’s experience with the ASP model has been problematic. While 66 percent of public institutions reported that their ASP experience was as good as or better than expected, only 31 percent of private institutions reported that their experience met expectations. No private institutions reported that their ASP experience was better than expected, and 17 percent actually reported that it was worse.

The Survey Data

While most (58 percent) of U.S. and Canadian institutions of higher education do not outsource their IT functions, a substantial portion (42 percent) does. On the basis of reported plans for the next five years, the number of outsourcers is likely to grow.

Cautious Optimism

The most commonly cited reason for using the IT outsourcing option was a lack of adequate in-house skills, followed by the desire to achieve operating efficiencies. The greatest reported benefit was access to superior technical solutions, followed by lower risk.

The most frequently encountered problems associated with outsourcing were “vendors didn’t fulfill their promises” and “project implementations took longer than expected.” Customers in commercial and government markets typically express similar complaints, though with less frequency. This suggests that systematic training in contracting methods, negotiating techniques, and contract management might enhance higher education’s readiness in this area of activity.

The IT functions most frequently outsourced are IT infrastructure, application services, and e-learning (each at approximately 17 percent of total outsourced IT functions). The segments least likely to be outsourced appear to be business process operations (10 percent) and distributed services (11 percent). Yet, the forecast size and growth of the BPO segment in higher education is relatively large, which suggests a small number of contracts with high dollar values. Among non-outsourcers in the higher education segment, IT functions considered most suitable for outsourcing are application development (19 percent) and network services (12 percent). The majority of higher education institutions outsource on the enterprise level only, although this seems to be related to institution size and academic program complexity.

Institutions that outsource have a more diffused decision-making structure compared with those that do not. Specifically, 59 percent of institutions that outsource give individual programs and other units within the institutions some ability to make their own decisions regarding outsourcing, while 45 percent of institutions that do not outsource distribute that decision.

Most institutions award contracts through a competitive bidding process (58 percent). The most heavily weighted criterion in vendor selection is vendor capabilities. Thirty-seven percent of all institutions reported that their outsourcing implementations lasted less than six months; 49 percent of private institutions fell in this category, but only 28 percent of public institutions. While 34 percent of all institutions reported that they may bring the already outsourced IT function back in house, 54 percent reported that they intend to outsource additional IT functions to new vendors.

Seventy-seven percent of survey respondents reported familiarity with the ASP model, and 53 percent of all institutions that outsource reported having signed a contract.
with an ASP. Overall, institutions are most likely to use an ASP for e-learning or processing services. Systems integrators are preferred for IT infrastructure work. Higher education’s satisfaction with the ASP model is mixed. While half reported that services were delivered “as expected,” 16 percent either regretted the ASP decision or reported that such service was worse than expected. Eight percent of higher education ASP users were more satisfied than they expected to be.

While membership in a consortium doesn’t appear to necessarily presage outsourcing activity, it does appear to promote the kind of cooperation and sharing that outsourcing can advance.

**Public versus Private: Similar Goals, Different Approaches**

Public and private institutions outsource roughly in the same proportion (41 percent versus 44 percent), but public institutions are more likely to outsource business-driven IT functions, such as e-learning and business process operations. Private institutions are more likely to outsource technology-driven IT functions, such as distributed services, processing services, application management, and IT infrastructure.

When asked about the benefits of IT outsourcing, public institutions ranked “access to superior technical solutions” most highly, while private institutions ranked “better functionally” as more important. However, both public and private institutions encountered similar problems with outsourcing, mainly “project implementation took longer than expected” and “vendors did not fulfill their promises.” A larger percentage of public institutions reported a flawed internal process (9 percent) than private institutions (2 percent). Individual programs or other units are more likely to be involved in the decision to outsource IT in public institutions than in private institutions.

State governments and collective bargaining units have more influence on the outsourcing decisions of public institutions than of private ones. Fifty-three percent of public institutions reported that state authorities wield a moderate influence over their decision whether or not to outsource IT functions. Sixty-six percent of public institutions reported a strong influence from collective bargaining units.

Of all public institutions, 61 percent award outsourcing contracts on a competitive bidding basis, compared with 54 percent of private institutions. Also, public institutions are more likely to use consultants as part of their outsourcing process (78 percent versus 66 percent for private institutions).

Public institutions assign more importance than private institutions to prior outsourcing experience as a vendor selection criterion. Although both public and private institutions report the same level of satisfaction with their outsourcing vendors, private institutions are more likely than public institutions to switch incumbent outsourcing vendors. Public institutions also appear to be more pleased with their ASP experience than private institutions. Although public and private institutions use ASPs in approximately equal proportions, their levels of satisfaction are quite different. While 54 percent of public institutions found their experience “as expected,” only 31 percent of private institutions did so. And while 12 percent of public institutions reported their experience as better than expected, only 2 percent of private institutions reported positive unexpected outcomes. In fact, 17 percent of private institutions described their experience as “worse than expected,” compared with no such reports from the public institutions. The research is not conclusive as to how much of the ex-
pectations performance gap relates to differences in expectations versus differences in performance and management practice.

Research Institutions and IT Outsourcing

Research institutions outsource less than MA-granting institutions (36 percent versus 45 percent) and less than BA-granting institutions (36 percent versus 40 percent). They do, however, outsource more than community colleges (36 percent versus 33 percent). The application that research institution respondents report outsourcing the most is e-learning. The function that research institutions outsource the least is distributed services.

Research university respondents who outsource IT are motivated by securing “access to superior technical solutions” and to the potential benefit of “streamlined operations.” The most important issue that research institutions encountered with IT outsourcing was the inability of vendors to fulfill their promises. Unlike their counterparts elsewhere in higher education, research institutions are more likely to outsource on the institution or program level than on the enterprise level. Also, among all institutions, the outsourcing decision of public research institutions is the most likely to be influenced by state governments.

Among all institution types, research institutions are the most likely to use competitive bidding in the vendor selection process. They are also the most likely to spend additional money on projects related to IT. For vendor selection criteria, research institutions ranked capabilities and prior outsourcing experience as most important. Reputation was the lowest ranking selection criterion.

Research institutions are the least likely to change outsourcing vendors once an award has been made. However, they are the most likely to in-source the currently outsourced function after the contract expires. It’s probable that much research institution outsourcing is situational or opportunistic, allowing such institutions to gain rapid access to scarce skills that over time are developed within the IT workforce. This interpretation of research university IT outsourcing as IT skill augmentation might also explain why these institutions reported that they are likely to outsource additional functions to new vendors. In other words, IT outsourcing churn and growth in this segment of higher education appear to be motivated less by satisfaction or dissatisfaction than by the ebbs and flows of IT skills at the institution.

Respondents from research institutions are the most familiar with the ASP model, but they also reported the highest percentage of respondents who did not select an ASP as a vendor. There is insufficient data to suggest that familiarity breeds contempt, but this higher education sector resembles the informed skeptics of the commercial marketplace.

MA Institutions and Financial Concerns

Master’s institutions outsource the most among all types of institutions, excluding specialized, tribal, and Canadian colleges and universities. Reasons cited for outsourcing IT functions in this community are the lack of in-house skills and the desire to achieve operational efficiencies. MA institutions may be the most cost-conscious respondents among those participating in the 2001 survey. Price was more often the dominant vendor selection criterion for respondents from MA institutions than for respondents from any other segment of higher education.

MA institutions reported that their most frequently encountered problem is that their outsourcing projects take longer than ex-
expected to implement. Even so, these institutions tend to be relatively more bullish than research institutions in their attitude toward outsourcing IT functions, and they express a strong preference for outsourcing application services. As a group, MA institutions are the least likely to outsource distributed services and processing services.

Not surprisingly, MA institutions reported less participation by units in the outsourcing decision-making process than research institutions but the same level of involvement as BA institutions. Outsourcing decisions in this sector were influenced to a greater extent by state government and by collective bargaining agreements or concerns. Among all institution types, MA institutions are the least likely to spend money on additional outsourcing-related services. This may reflect their concern with vendor flexibility, a concern exacerbated perhaps by the focus on costs and cost controls. MA institutions reported generally positive experiences with the ASP model. Among outsourcers, MA institutions reported the highest rates of participation in consortia.

A Different Drummer for BA Institutions

The survey data show a profile of attitudes and experiences for baccalaureate institutions that differ significantly from those of other types of institutions in interesting ways. After MA institutions, BA institutions tend to outsource the most, owing primarily to a reported lack of adequate in-house skills and a desire to achieve operational efficiencies. A significant portion (20 percent) of BA respondents also report wishing to achieve cost savings through IT outsourcing.

BA institutions reported the highest percentage of IT infrastructure outsourcing among all institutions. Respondents do not engage in BPO at all. BA institutions, not surprisingly, aren’t influenced by either state government or organized labor. Respondents from these institutions are, however, strongly influenced by broad employee concerns. The major benefits that BA institutions seek in IT outsourcing are reduced risk, better IT functionality, and IT staff reduction. Among all institution types, BA respondents most often selected IT staff reduction as a desired benefit of IT outsourcing.

Seventy percent of respondents from BA institutions included in the survey reported that they typically select IT outsourcing vendors through a sole-sourcing process, compared with 42 percent of all institutions engaged in IT outsourcing. Of all institutions, BA institutions assigned least importance to the vendor selection criterion of “prior experience with outsourcing.” At the same time, these respondents assigned only moderate importance to “experience in higher education” as a criterion for vendor selection.

When asked about obstacles to IT outsourcing, BA institutions cited budget overruns almost three times as often as other types of institutions. This was also the major issue that BA institutions encountered in their specific IT outsourcing initiatives—again, more often than other institutions. Significantly, these respondents reported no problems with insufficient planning or a flawed internal process. Of all institution types, BA institutions reported the highest vendor satisfaction, and they gave “vendor flexibility” the highest satisfaction rating among all institutions. These findings strongly suggest the existence of an effective set of business practices as an alternative to the conventional wisdom of competitive bidding in this segment of higher education. Among all institutions, BA institutions were least likely to in-source the already outsourced function, but they were also least likely to outsource additional IT functions to new vendors.

BA institutions were least familiar with
the ASP model, and a substantial 41 percent of them did not sign with an ASP because of this lack of familiarity. Those who reported using an ASP generally reported a poor experience. Only 20 percent reported that their experience was “as expected,” compared with 50 percent for all institutions. A relatively high 20 percent of BA institutions reported that their experience was “worse than expected,” while 7 percent regretted using an ASP, compared with 6 percent of all institutions. This subsegment was quite small, so these specific findings cannot be generalized with any confidence.

Ambivalence Among AA Institutions

Public associate’s institutions outsource the least among all types of institutions, but when they do outsource IT, they are likely to be motivated by the desire to access innovative services. Interestingly, AA institutions were the least likely to consider cost savings as a benefit of outsourcing. Community colleges cited “lack of cooperation among internal units” as their most important outsourcing issue.

The IT functions that AA institutions most often outsource are application services and e-learning. The least outsourced function is processing services. These respondents outsource almost exclusively on the enterprise level, reflecting perhaps the relative centralization of operations in this segment. AA institutions also reported the least involvement of institutional units in the IT outsourcing decision.

Interestingly, community colleges that did not report engaging in IT outsourcing reported the highest influence by state governments on the decision. Conversely, those AA institutions that did outsource reported relatively low influence by state governments. Again, sample sizes in this segment of higher education are not sufficient to draw confident generalizations. Further research is suggested on the specific role government plays in the IT outsourcing decision.

Unlike other institutions, community colleges reported being highly influenced by collective bargaining units in their outsourcing decisions; 65 percent of outsourcing AA institutions reported influence by collective bargaining units, compared with 21 percent of all institutions. These institutions more often than any other type cited insufficient planning and resistance from collective bargaining units as obstacles to their IT outsourcing process. However, they encountered budget overruns as an obstacle to a lesser extent than other institutions. Superior cost controls may in fact be an artifact of competitive bidding. After research institutions, AA institutions are most likely to use competitive bidding for vendor selection. Of all institutions, AA institutions gave the greatest importance to “prior experience in higher education” as a vendor selection criterion.

IT outsourcing in the community college segment seems problematic. Surprisingly, AA institutions gave price the lowest ranking as a vendor selection criterion, yet these respondents ranked the lowest in IT outsourcing overall vendor satisfaction. While these respondents did express relatively high satisfaction with vendor reliability, customer service, and project management skills, they are most likely to switch from current IT outsourcing vendors, highly likely to in-source currently outsourced IT functions, and least likely to outsource additional functions to new vendors.

After research institutions, AA institutions reported the highest level of familiarity with the ASP model and the highest level of active participation with ASP vendors. ASP adopters in this sample were more satisfied overall with their ASP experience than others in higher education. Again, small sample
sizes diminish the value of this finding. Despite higher than typical reported satisfaction levels, 15 percent of community college respondents using an ASP believe they selected the wrong vendor.

Conclusions and Recommendations

As higher education finds itself under increasingly intense competitive and financial pressures, outsourcing in general and the ASP model in particular may become increasingly attractive ways to obtain scarce IT resources, streamline operations, and make the university or institution as a whole more flexible and efficient. The survey data document the extent to which this process is causing both satisfaction and anguish. A significant minority admits to projects that went seriously wrong. In higher education as well as in the broader commercial and government markets, outsourcing is now perceived less as an option and more as the way modern business is done—especially e-business. Already, myriad administrative, course management, and communications functions are being interconnected electronically.

The Human Factor

A preponderance of evidence, supported especially by the case studies, suggests that higher education will be slower than either commercial firms or government organizations to adopt IT outsourcing. The sector lags because of various human factors unique to its organizational structure as well as its special sense of purpose.

Unlike most commercial firms, many institutions of higher education can boast of continuous operation over more than a century, and they expect to remain in operation far into the future. From their perspective, levels of business risk that commercial firms accept as normal may be too high. Also, competitive pressures aren’t forcing them to be pioneers in the area of IT operations. The luxury of adopting this long-range perspective may fade as financial and other pressures increase, but higher education’s essentially skeptical stance will not likely change any time soon—nor should it.

Institutions of higher education share a unique sense of mission and purpose. Their sense of uniqueness and the organizational structures that result create employee concerns that have no counterpart in the commercial market and are less important in government. According to survey data, public and private institutions alike report that employee concerns represent their single most important obstacle to outsourcing, even though only 12 percent of respondents from all institutions related these concerns to organized labor.

Apart from this, institutions of higher education—both large and small—have bureaucracies that are easily threatened by change, even small changes. Tradition, simultaneously a strength and a weakness, weighs heavily on faculty, staff, and administration alike. Higher education institutions are justifiably proud of their histories, and, in the quest to build communities around enduring values, eschew academic and business fashion. As a result, institutions that can afford to do so become IT innovators at the margin while remaining skeptical, second-wave adopters at the core. Private institutions, particularly private liberal arts institutions, compete on the basis of personalized services and intensive labor (low faculty-student ratios). Such institutions are necessarily careful about substituting IT capital for people.

Few institutions have the luxury of the new Franklin W. Olin College of Engineering in Needham, Massachusetts. Specializing in engineering education (electrical, computer, and mechanical) on a brand new
70-acre “greenfield” campus, it admitted its first group of 30 pilot student-partners in fall 2001. In fall 2002, the college’s first full freshman class takes up residence in classrooms that are fully wired with state-of-the-art fiber-optic cabling and high-speed Internet connectivity to support totally mobile computing everywhere on campus. Most significantly, Olin doesn’t need to condition its vision of IT by its history or its legacy technologies. Not surprisingly, this institution chose an outsourcing solution for its IT infrastructure.

**Sourcing and Contract Administration**

The survey data suggest that higher education needs to engage in further research and training concerning the procurement and management of IT outsourcing and ASPs. Higher education lags the federal government in competitive bidding, where full and open competition is used in more than 50 percent of all contracting. While these practices appear to be effective in the governmental context, their effects in higher education are more equivocal. Public research universities appear to be effective and satisfied focused outsourcers who make extensive use of competitive bidding. Community colleges appear to be winning the battle of managing costs through competitive bidding, yet at the same time they seem unhappy overall with IT outsourcing outcomes. Baccalaureate institutions in particular demonstrate that sole-sourcing can be highly effective in producing positive long-term outcomes. While respondents from this educational segment report challenges in managing project costs, their IT outsourcing arrangements enjoy high flexibility, sustainability, and institutional satisfaction. In essence, users of sole-source methods may pay more, but ultimately they seem to get what they wanted.

These findings aren’t conclusive, but it seems clear that competitive bidding and sole-source contracting can either succeed or fail as procurement strategies. The keys seem to be uncovering effective practices in these areas and understanding the contexts in which these practices are most likely to achieve traction.

**Planning and Requirements Definition**

Case studies, particularly the California State University case study, demonstrate the importance of planning and careful definition of outsourcing requirements. Critics may complain that the CSU planning process was long and its preparations for outsourcing arduous. However, one fruit of that institution’s patience was a rapid decision-making process for vendor selection. CSU’s agreement with UNISYS, which appears to be operating as expected, seems to have benefited from good requirements definition.1

**Evaluating Vendor Types**

The survey data show a diversity of approaches toward outsourcing, including marked differences in preference regarding which IT function is most appropriate for outsourcing, which type of vendor to use, and whether to organize outsourcing on the enterprise or unit level. Beyond that, the choice of a hosted and managed solution or an in-house one should reflect the institution’s values, its level of executive support, and the use of a well-planned, broad-based approach to vendor selection. In some cases, the highly targeted, best-of-breed approach that outsources only specific applications is appropriate. In others, it’s better to use the comprehensive, bundled approach, whereby a single outsourcing vendor, acting as a general contractor, selects the applications that are most compatible with a package solution.
The Customization Question

Few aspects of software implementation, or outsourcing, can run up costs faster—or cause as much anguish—as battles over the appropriateness of customization. This battle must be fought and resolved before vendors are called in. When they’re involved, they are subject to painful conflicts of interest. Although demands for customization can represent attractive new sources of profitable work, those demands can also put schedules behind, cause budget overruns, and produce severe stress among stakeholders in the project.

The survey data show contradictory responses to questions about customization. The decision of whether (or how much) to customize is often contentious and a source of friction between institutions and vendors, and among faculty, staff, and administrators.

System Performance and Vendor Reliability

Survey respondents corroborated the experience of customers in commercial and government markets by ranking cost savings as less important than experience, performance, and reliability in the vendor selection process. Even the federal government’s complex and detailed procurement requirements permit agencies to select a vendor’s higher priced bid if the decision can be defended with offsetting benefits.

In higher education, as in the commercial market, experience repeatedly has proven the importance of avoiding the lure of deceptive, short-term cost savings that expose the enterprise to long-term risks with a potential for very expensive remedies.²

Endnotes

1. Poor planning, poor project management, and poor communications are widely understood and agreed-upon sources of project failure in this arena.

2. The University of Alberta case study demonstrates how the widespread consequences of disruptions to an ERP system can more than justify paying what may be a premium to an outsourcing vendor with the skill and capability to deliver reliable functionality.