4
The State of IT Funding

Money can move the gods.
—Chinese proverb

The past three years have been among the most financially challenging higher education has ever faced. The litany of factors is familiar: declining endowment returns, cuts in state funding combined with increased enrollments, rising health-care costs, and so on. Most institutions have responded with repeated rounds of budget cuts, layoffs, and other forms of restructuring.

As one of the most significant budgets on campus, IT has been on the firing line for many of these cuts. This chapter looks at how technology funding has fared over the last three years. Specifically, we asked:

- How have IT funding levels changed?
- What have been and what are expected to be the largest areas of IT investment?
- Are IT funding levels adequate for today and for the future?

Throughout the chapter, we look at the impact on funding of such attributes as Carnegie class, institutional control, and the implementation of a major new technology such as ERP.

Key Findings

- Although many IT budgets have been cut, IT's share of total institutional budgets is holding constant.
- Public institutions are experiencing far deeper IT spending cuts than private institutions.
- Investment dollars have been most frequently focused on the network.
- Institutions are concerned that there is insufficient funding to maintain existing technologies and to meet future demand for additional instructional and research technologies.
- Public institutions are significantly more concerned than private institutions that they will not have sufficient funding to meet future technology needs.

IT Funding Trends

On average, survey respondents reported that their IT budgets had grown by 5 percent from FY 2001 to FY 2003 (see Figure 4-1). Note, however, that while about 25 percent of respondents saw their budgets increase by more than 10 percent, nearly half (44.3 percent) reported that their budgets were flat or declining.

As expected, we found a significant correlation between private and public institutions and IT budget change. Public institutions saw smaller growth in their IT budgets than did private colleges and universities (see Figure 4-2). From 2001 to 2003, respondents from public institutions saw an average budget increase of just below 2 percent, compared with 5.25 percent for private institutions.

Figure 4-1. Change in Central IT Budget, FY 2001 to FY 2003 (N = 472)

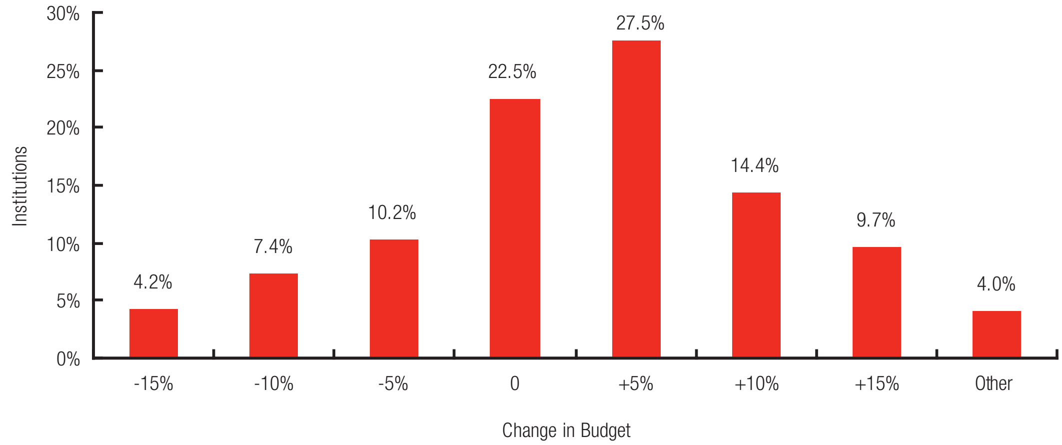
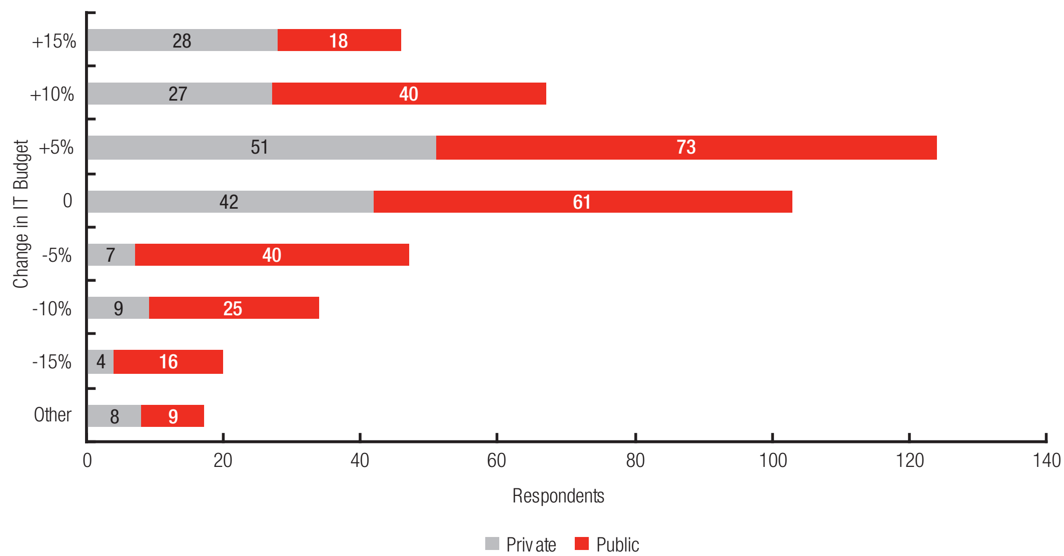


Figure 4-2. Change in IT Budget, FY 2001 to FY 2003, by Institutional Control

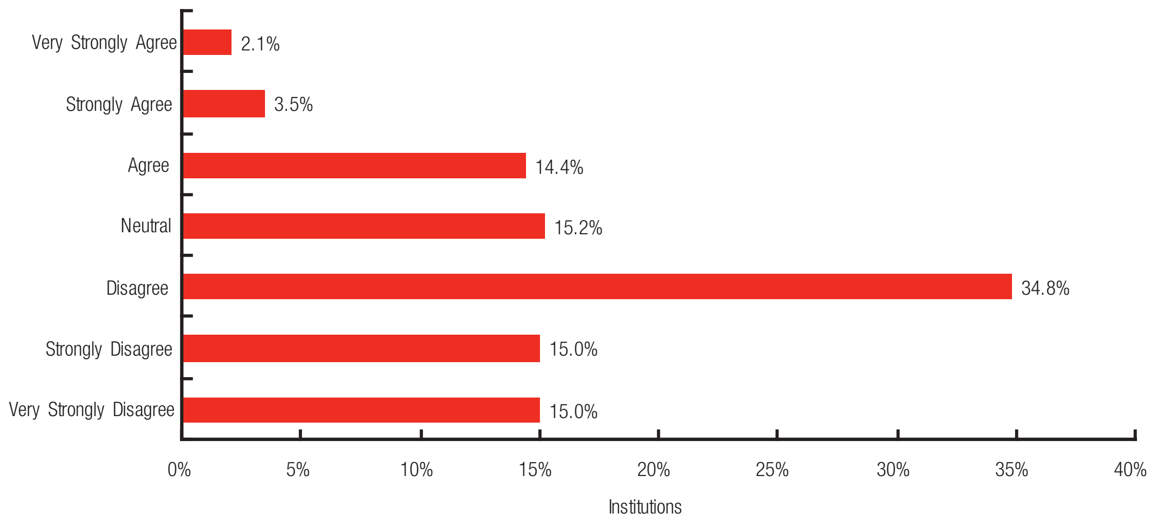


We found no significant difference in funding changes by Carnegie class. On average, bachelor's institutions had the largest percentage increase in IT budget size and master's institutions had the smallest. However, the differences among the averages were minor. Whether an institution is public or private is much more significant.

We also asked respondents to comment on how they felt the IT budgets' share of the institutional budgets has changed since FY 2001 (see Figure 4-3). The majority (64.8 percent) of respondents reported that their IT budgets had maintained their share of the institutional budget. But one-fifth (20 percent) of responding institutions believe IT budgets have lost ground relative to others at the institution.

There were no significant differences by Carnegie class. However, public institutions surveyed agreed to a greater extent than did those from private institutions that their budgets had declined in proportion to the institutional budgets.

Interestingly, we saw no significant differences in IT budget change attributable to the CIO's presence on either the cabinet or



Q: *The central IT budget share of the total institutional budget has declined significantly since FY 2001.*

Figure 4-3. Decline in IT Budget Share of Total Institutional Budget (N = 480)

the institution's budget committee. Although these structural attributes provide incomplete measures of CIO power, they are good indicators. A recent ECAR study of IT leadership found a seat on the cabinet to be a significant factor in CIO influence and authority.[1] We can't, however, attribute IT funding changes simply to the CIO's internal political power.

We also can't significantly attribute IT funding changes to institutional budget philosophy. We asked respondents to characterize their institutional budget philosophy as "tubs on their own bottom," responsibility center management, or centrally allocated.[2] We hypothesized that institutions with decentralized budget approaches (that is, responsibility center management or "tubs on their own bottom") would find it more difficult to maintain their central IT funding, but we observed no significant differences in IT budget changes attributable to these different philosophies. Respondents from institutions following a "tubs on their own bottom" approach reported smaller growth in their IT budget, but the small number of institutions in this category makes it impossible to conclude that this difference is significant.

Impact of Major Technology Projects

We also looked at what impact major technology projects have had on IT budget growth. Institutions that implemented a campus-wide high-speed network saw their IT operating budget grow slightly more than the budgets of those that didn't. Similarly, respondents that had implemented a commercial ERP package had on average a slightly greater percentage increase in their budgets than those that hadn't. However, the differences aren't statistically significant in either case.

It might just be too early to see any impact on ongoing operating costs from the implementation of either networking or ERP technology. Most institutions could still be bearing the costs of these technologies in project budgets as opposed to operating budgets. Or, they could have already incremented their budgets to reflect any anticipated changes in ongoing operating costs from these technologies. A third possibility is that institutions were able to get one-time funding to implement the technology but haven't secured additional funding for ongoing operations and maintenance. This is the most alarming possibility, as it suggests that these institutions will struggle to maintain their network infrastructure and ERP systems.

Impact of Y2K

Most respondents reported that they have invested more in technology since the year 2000 than they did in the years leading up to it. As Figure 4-4 shows, 51 percent of respondents reported that their IT investments over the last three years were greater than for the three-year period prior to 2000. Another 16 percent reported that investment levels were about the same, and the remaining 33 percent reported that their institutions made larger IT investments in the three years prior to 2000.

This suggests that Y2K caused no significant "blip" in higher education's one-time technology investments. Higher education's work to make its systems compliant didn't significantly affect IT investment, and as ECAR's ERP research confirmed, Y2K wasn't a big driver of ERP investment, either. In fact, many started their projects in 2000 or later.[3] These survey responses confirm that higher education's technology investments haven't slowed significantly since the year 2000. However, current economic conditions could reduce future levels of one-time investment or at least slow growth rates.

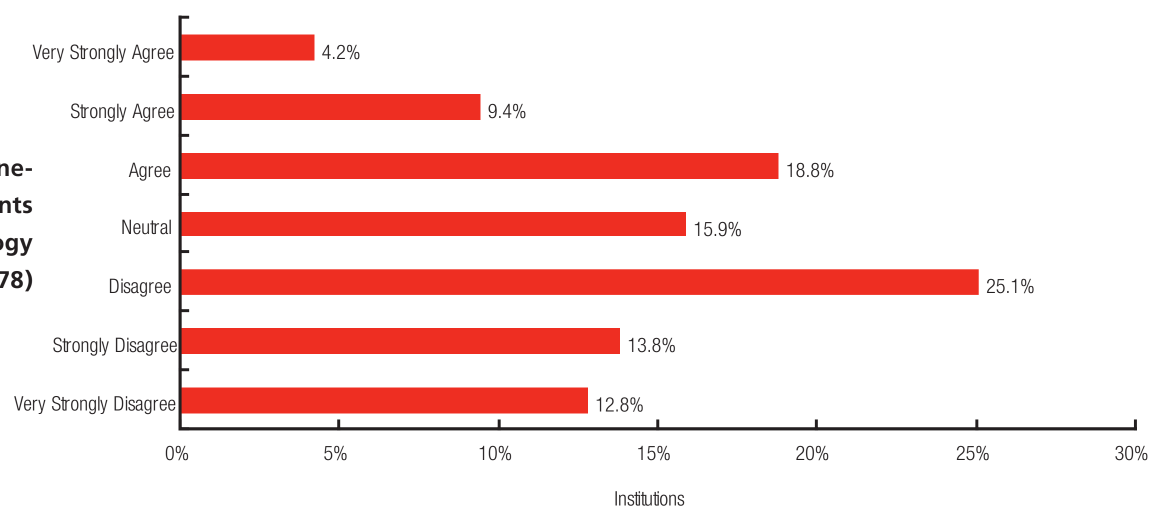
Anticipated Funding Levels

Respondents apparently don't expect the level of investment to decline significantly over the next three years, either. We asked respondents whether their institution's one-time investments in IT would decline over the next three years. Figure 4-5 shows that the majority (52.2 percent) felt that their level of one-time investment would not decline. Approximately 20 percent expect it to be neither up nor down, and only about 28 percent agreed that there would be a decline in the level of one-time investment.

Feelings about the future differ between private and public institutions. Respondents from public institutions were more inclined to agree that the level of one-time investment would decline over the next three years than were respondents from private institutions.

Institutions that have completed their major ERP implementations or have fully or partially implemented a high-speed campus network were also more inclined to agree that

Figure 4-4. One-Time Investments in Technology (N = 478)



Q: *My institution made significantly higher levels of one-time investments in technology in the three fiscal years prior to the year 2000 than in the last three fiscal years.*

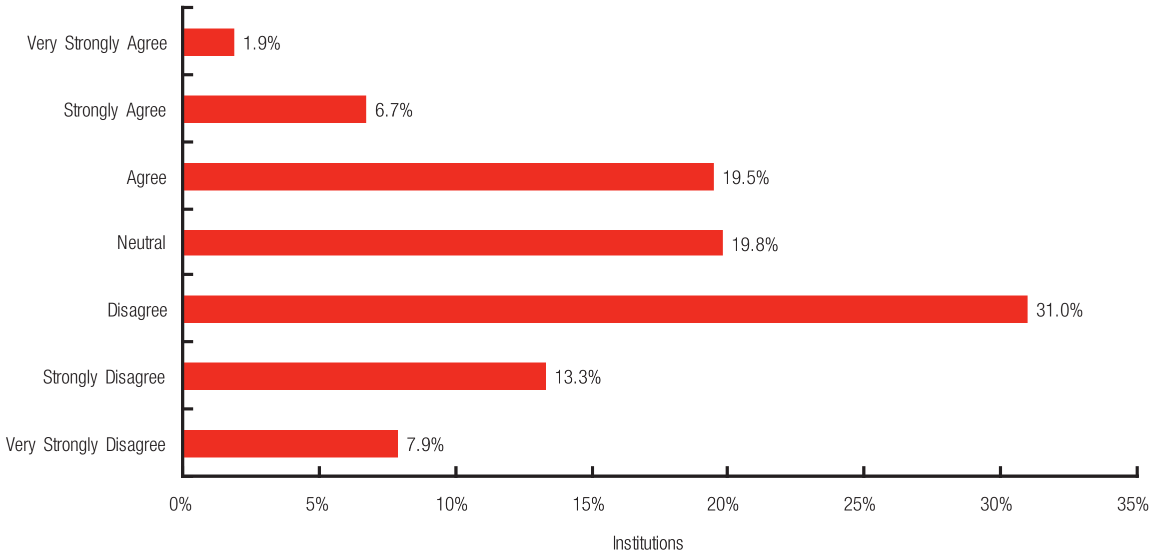


Figure 4-5. Three-Year Projection of One-Time Investment in Technology (N = 481)

Q: *My institution's level of one-time investment in technololgy will be in decline for the next three years*

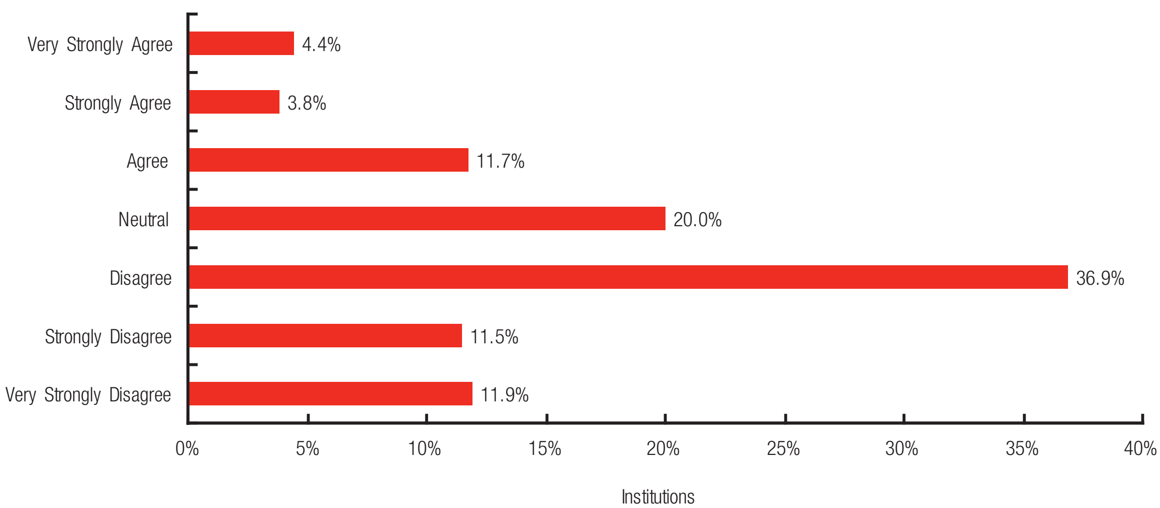


Figure 4-6. Relationship between FY 2005 and FY 2004 Central IT Budget (N = 480)

Q: *My institution's FY 2005 central IT budget will be less than the FY 2004 budget.*

their level of one-time technology investments would decline for the next three years. This is understandable, given the magnitude of investment an ERP or network build-out requires. It also suggests these institutions see no commensurate investment on the immediate horizon.

Finally, we asked respondents to opine about the future of their operating budgets—specifically, whether they anticipate that their central IT budgets will decline from FY 2004 to FY 2005. As Figure 4-6 indicates, most respondents don't expect their operating budgets to decline. However, nearly 20 percent of respondents agreed or strongly agreed that their budgets would decline over the next year.

As before, we saw no significant difference in expectations by Carnegie class, but we did see differences depending on whether an institution was public or private (see Table 4-1). Respondents from public institutions agreed to a greater extent than did those from private institutions that their budgets would continue to decline.

We note substantial variance in the public institutions' responses. Clearly, some do believe their budgets will increase.

Areas of IT Investment

To get an indication of favored IT investment targets, we asked respondents to indicate the three largest areas of investment during FY 2001 to FY 2003. The network was most frequently mentioned, with about 70 percent of respondents (see Figure 4-7) putting it in the top three. Administrative systems were in the top three investments of 55.4 percent of surveyed institutions. After that, we noted a significant drop-off: one-third of respondents selected instructional technologies, and 27 percent selected desktop/user support. Academic/research computing, IT security, and telephone services each garnered about 15 percent of responses.

It comes as no surprise that administrative systems and network services were reported most frequently as two of the top three areas of investment. Anecdotally, these areas seem to have consumed the majority of most IT organizations' attention and resources. They are by their nature fueled by a one-time investment. After these two big investment areas, institutions begin to vary more in terms of what else they have invested in. Clearly, the introduction of course management systems on a broader scale has driven many institutions to invest significantly in instructional technology. Similarly, for most institutions the last three years have seen broader distribution and use of computers. This change, coupled with a broader decentralization of technology-infused business processes, has left IT organizations with greater numbers of increasingly more active users to support. This appears to have driven greater levels of investment in desktop support capabilities. In fact, more than a quarter of respondents placed desktop support among their top three investments.

We also asked respondents to look ahead and project the three areas in which they planned the greatest investment during the period of FY 2004 to FY 2007. As Figure 4-8 indicates, respondents do not anticipate much change in their IT investment dollars' focus. Network services (53.5 percent), administrative systems (58.3 percent), and instructional technologies (40.2 percent) remain the top three choices.

One change we do see is the rise in IT security's importance. For the period FY 2001 to FY 2003, 15.1 percent of respondents included security in their top three areas of investment, but for the FY 2004 to FY 2007 period, the percentage of respondents who

Table 4-1. Relationship Between FY 2005 and FY 2004 Central IT Budget, by Control

Control	Mean	Number	Standard Deviation
Private	2.90	181	1.309
Public	3.66	285	1.489
Total	3.37	466	1.468

Q: *My institution's FY 2005 central IT budget will be less than the FY 2004 budget. (1=very strongly disagree, 4=neutral, 7=very strongly agree)*

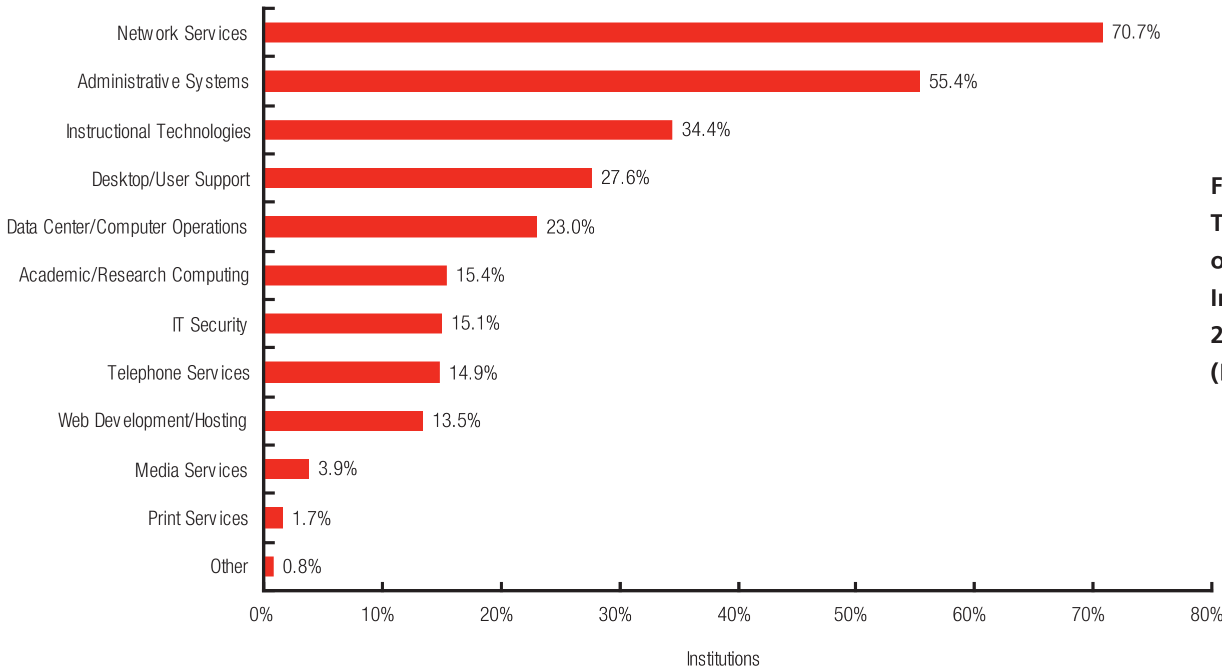


Figure 4-7. Top Three Areas of One-Time Investment, FY 2001 to FY 2003 (N = 482)

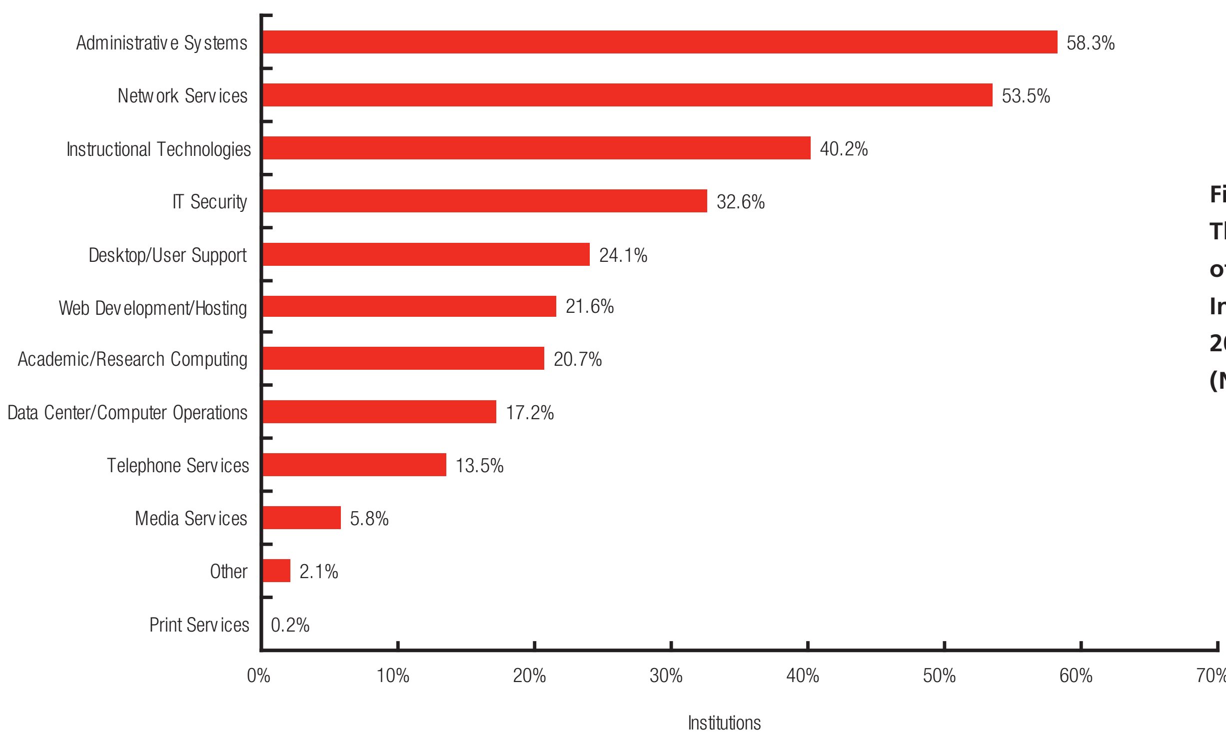


Figure 4-8. Top Three Areas of Planned Investment, FY 2004 to FY 2007 (N = 482)

plan to make security one of their three largest areas of investment increased to about 33 percent. Clearly, the increased incidence of viruses and other attacks has ratcheted up the urgency to invest in IT security tools and personnel.

Finally, we also see an increase in the number of respondents who anticipate that their top three investments will include academic/research computing. About one-fifth of respondents (20.7 percent) indicated that academic/research computing would be one of their top three investments. Importantly, one-third of respondents from doctoral institutions identified academic/research computing in their top three investment areas for FY 2004 to FY 2007, compared with 24.5 percent for FY 2001 to FY 2003. This change may indicate that doctoral institutions are shifting their focus and investment from administrative systems to their research infrastructure.

The institutions we surveyed clearly have and plan to continue to invest significantly in their network infrastructure and administrative systems. Some may be making these investments to modernize their technology. Others may be continuously investing to remain on the leading edge or just to maintain the level of performance they have already implemented. All of this is understandable, given the complexity and importance of both the administrative systems and the network. However, it also creates a challenge for the IT organization in communicating the value these ongoing investments create for their institutions. The network is clearly an indispensable part of the campus infrastructure, but its value is hard to measure, and few outside the IT organization understand the ongoing investment required to maintain its performance. Enterprise systems, while also indispensable, are perceived as back-office support tools. This is changing, of course, as enterprise systems emerge that manage courses, portfolios, and other academic endeavors and outputs. But with the exception of the course management system and, to a lesser extent, the student information system, few people see the enterprise system as directly contributing to the institution's core mission. Further, the IT organization depends on the institution's business leadership to unlock the value. The same can be said of decision-support systems: although many institutions have invested in data warehouses and other reporting and decision-support engines, few institutions report making fundamental changes to core institutional decision-making processes and outcomes.

This all means IT organizations will need to redouble their efforts to communicate the importance of these technologies and explain the investments required to maintain them. The pressure to communicate increases as the ability to invest in instructional and academic technology is crowded out by the need to continue to invest in the network or administrative systems.

Adequacy of IT Funding

We also asked survey respondents to assess the adequacy of their funding for both today and the future. Specifically, was funding sufficient to meet current strategic objectives, and did they project having sufficient funding to keep pace with technology advancements? Respondents made this assessment for four technologies:

- administrative computing,
- academic/research computing,
- data communications, and
- instructional technology.

Figure 4-9 presents the mean response for all the institutions surveyed. Responses are based on a seven-point Likert scale, where 1 is very strongly disagree, 4 is neutral, and 7 is very strongly agree.

Overall, respondents were fairly neutral about the adequacy of current funding for administrative computing (mean 4.1) and data communications (mean of 4.38). Respondents were less confident that their institutions' current funding was sufficient to meet strategic objectives in academic/research computing (mean 3.85) and instructional technology (3.86). However, we noted a large variation among the responses. With the mean response hovering around neutral, this suggests that many institutions are confident about their funding and an equally significant number aren't.

One possible explanation of the differences relates to whether the institution is public or private. Table 4-2 arrays the mean response by public and private institutions. We see from these results that respondents from public institutions were less confident about the adequacy of funding for all technology types, and we observed statistically significant differences in their feelings about the adequacy of funding for administrative computing and academic/research comput-

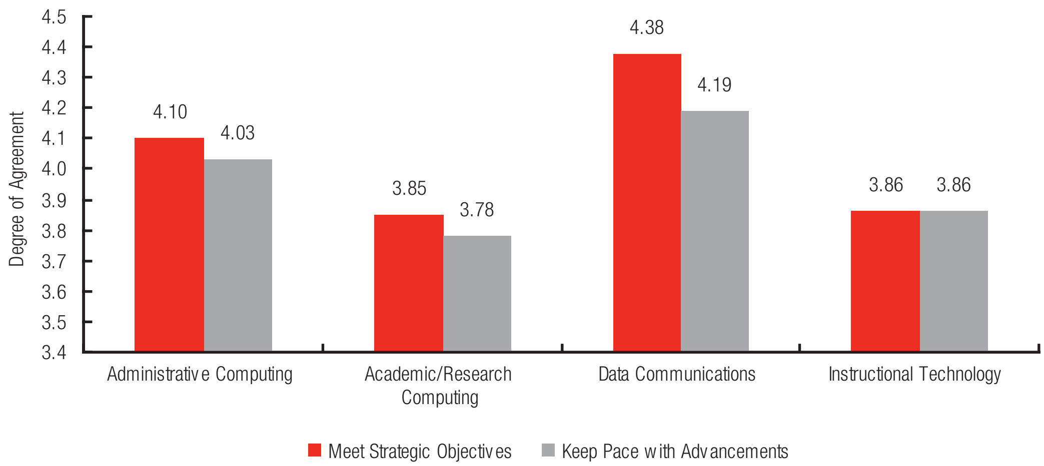


Figure 4-9. Projections for Sufficient Funding

Q: *The institution currently and is projected to provide sufficient funding.*

Table 4-2. Funding Levels for Strategic Technology Objectives

	Private (N = 179)		Public (N = 286)		Total (N = 465)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Administrative computing	4.31	1.462	3.99	1.498	4.11	1.491
Academic/research computing	3.98	1.229	3.76	1.254	3.84	1.248
Data communications	4.43	1.260	4.35	1.378	4.38	1.333
Instructional technology	3.96	1.271	3.82	1.372	3.87	1.334

Q: *Are funding levels sufficient to meet strategic technology objectives? (1=very strongly disagree, 4=neutral, 7=very strongly agree)* ing. The mean responses were lower for data communications and instructional technology, but not significantly.

Respondents were somewhat less confident about the future. They continued to agree that funding for administrative computing (mean 4.03) and data communications (mean 4.38) would help them keep pace with technology changes. Respondents agreed less that funding would suffice to keep pace with technological change in academic/research computing (mean 3.78) and instructional technology (mean 3.86).

Once again, the mean responses don't tell the whole story. The large standard deviation for each question suggests significant variability among respondents. Means hovering around 4 (or neutral) and deviations in excess of 1 suggest that many respondents agreed and many disagreed with the statement.

The private/public dimension also proved significant. Table 4-3 shows the mean responses for public and private institutions, and as with earlier questions, we see less confidence among respondents from public institutions. Although the mean response of private institutions is neutral toward adequate future funding, the mean response of public institutions indicated that their funding would not be adequate to keep pace.

We found a statistically significant difference in the mean responses between public and private institutions for all technology areas. Public institutions reported less confidence in their ability to keep pace with advancements in instructional technology and academic/research computing, but they reported more confidence that they could secure sufficient future funding to keep pace with data communications needs.

Historically, state funding for higher education often follows broader, macroeconomic trends and is therefore quite cyclical. The past few years could just be another trough in an economic cycle, and past funding levels might be restored. However, if this is part of a permanent decline in state support for public higher education, the implications for technology are substantial. If respondents' perceptions of the future of IT funding hold true, they suggest a growing technology divide between public and private higher education. If public institutions do not find ways to replace lost revenue from state budgets or see their state funding restored, the divide will widen. This could lead to a future state in which public institutions can no longer match the technology capabilities of private institutions in critical areas such as instructional technology.

Table 4-3. Projected IT Funding for Technological Advancements

	Private (N = 181)		Public (N = 286)		Total (N = 467)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Administrative computing	4.30	1.334	3.86	1.397	4.03	1.389
Academic/research computing	4.03	1.176	3.63	1.280	3.78	1.255
Data communications	4.33	1.220	4.11	1.337	4.19	1.296
Instructional technology	4.03	1.233	3.77	1.359	3.87	1.316

Q: *Projected IT funding is sufficient to keep pace with technological advancements. (1=very strongly disagree, 4=neutral, 7=very strongly agree)*

Endnotes

1. R. Katz et al., *Information Technology Leadership in Higher Education: The Condition of the Community* (Boulder, Colo.: EDUCASE Center for Applied Research, Research Study, Vol. 1, 2004), pp. 14–15.
2. Responsibility center management and "tubs on their own bottoms" refer to institutions with budget systems in which academic units (typically colleges) retain their own revenue and pay their own costs. Administrative infrastructure is paid for through a central "tax" on revenue. These tend to be highly decentralized institutions with much authority and discretion at the collegiate, school, division, or department level.
3. R. Kvavik and R. Katz, *The Promise and Performance of Enterprise Systems for Higher Education* (Boulder, Colo.: EDUCASE Center for Applied Research, Research Study, Vol. 4, 2003.