



TOOLS FOR NAVIGATING COMPLEX DECISIONS

Leading the IT Workforce in Higher Education

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KEY FINDINGS

- ▶ More than half of respondents (52%) have been with their institution for 10 or more years.
- ▶ Senior-most IT leaders were fairly confident that they have achieved high levels of proficiency with the skills they perceive to be important to their success. A seat on the cabinet had a positive relationship to a respondent's assessment of his or her organization's IT outcomes and personal participation in decision making.
- ▶ If those aged 51 or older at the time of the survey retire according to their expressed plans, at least 48% of all responding senior-most IT leaders (not just those 51 or older) will retire by 2018.
- ▶ Among senior-most IT leaders, 62% agreed or strongly agreed that there will be a shortage of skilled IT workers in the next five years. Only about a fifth of senior-most IT leaders reported that their institutions are actively preparing for a future shortage of skilled IT workers.
- ▶ About a quarter of respondents who are not senior-most IT leaders (23%) aspire to be CIOs. Leadership style, gender, and age are the factors that most differentiate respondents who aspire to be CIOs.

Percentage of Senior-Most IT Leaders Anticipating Retirement by Ages 62 and 65, by Current Age (N = 335)

Current Age	Percentage of SMITL Respondents	Cumulative Percentage Retired by Age 62	Cumulative Percentage Retired by Age 65
25–30	0.6%	0.0%	100.0%
31–35	1.8%	16.7%	83.4%
36–40	7.5%	60.0%	92.0%
41–45	10.4%	48.6%	94.3%
46–50	15.5%	40.4%	67.3%
51–55	24.5%	42.7%	75.6%
56–60	25.7%	24.4%	66.3%
61–65	11.6%	5.1%	38.5%
Over 65	2.4%	0.0%	0.0%

Information technology (IT) consists of a myriad of hardware, applications, and networks, and at its core are the dedicated individuals who transform these elements into the vital resources on which so many institutional activities rely. The collective creativity and diligence of IT professionals enhances IT's relevancy to the institution's core missions, making an innovative and motivated IT organization a key asset to any college or university.

Hence, optimizing an institution's IT organization is imperative but also complicated by a number of factors. One is technology's intrinsic nature of change, which challenges IT organizations constantly to redefine their services, skill sets, and structures in order to adapt to new technologies and the ways in which they are used by their constituents. Second is the evolving role of the IT leader, which, at many institutions, has risen in tandem with technology's escalat-

ing institutional value. Yesterday's director of computing, who was several layers down in the organization, is today's cabinet-level chief information officer, and the role promises to evolve further tomorrow. Third is the shifting nature of

This ECAR Roadmap synthesizes the results from 3,100 responses from an online survey of individuals listed in the EDUCAUSE database who held professional positions in information technology and were employed by higher education institutions. The online survey was administered in October 2007, and responses were supplemented with interviews with 20 IT professionals including senior-most IT leaders, aspiring CIOs and women IT leaders, and 13 participants in two focus groups of midcareer IT leaders and directors. For full analysis, see the 2008 ECAR study, Leading the IT Workforce in Higher Education. To order the full study or to learn about subscribing to ECAR, visit the ECAR website at <http://www.educause.edu/ecar/> or contact us at ecar@educause.edu.

the IT workforce itself. Demographically, many of the baby boomer generation are approaching retirement age or may choose to redefine how they balance work with the rest of their lives. Demographic projections suggest the possibility of a shortage of skilled IT workers to fill the jobs vacated through boomer retirements, forcing IT organizations to find innovative ways to extend the productivity of their staffs, to improve their ability to compete for skilled IT workers, and to focus on grooming the next generation of IT leaders.

The desire to better understand how these transitions will impact IT leaders and the IT workforce provided the genesis for the EDUCAUSE Center for Applied Research (ECAR) study *Leading the IT Workforce In Higher Education*. The construct of our analysis does not enable us to project the results onto the entire higher education IT community. However, with 3,100 responses to our web-based survey, we believe we have input from enough individuals to frame some interesting and challenging findings.

Our research findings depict a mixed state of affairs. The senior-most IT leaders and the managers and directors who participated in this study reported leadership profiles that are associated with successful organizations and a strong commitment to remain in higher education. While we face the loss of many of our most experienced leaders to retirement, there appears to be among respondents a next generation of leaders motivated to take their place who possess many of the same characteristics of today's IT leaders.

There are some less positive findings that warrant attention as well. The population of leaders and aspirants is not diverse by race, ethnicity, or gender. The majority of aspirants do not believe they are being cultivated as future leaders. A sizeable proportion of respondents across all levels of the organizational hierarchy reported low levels of satisfaction with the quality of interactions with their supervisions. The quality of these interactions appears related to how satisfied respondents were with their jobs, how motivated they were to perform them, and how long they planned to remain at their current institutions. These issues, coupled with the broader changes looming on the horizon for technology, the workforce, and higher education, point to broader staffing challenges ahead for IT organizations.

Today's IT Workforce: Dedicated and Mobile, with Some Elements of Transition

When we reviewed the characteristics and experiences of the survey respondents, although we found a strong commitment to remain in higher education, we also discovered that few respondents perceive barriers to their ability to change organizations. More than half of respondents (52%) have been with their institution for 10 or more years; more than a third (35%) have been at the same institution for 15 or more years. For many, the commitment carries into the future; 41% of respondents intend to remain in higher education for more than 10 years. This commitment to higher education transcended a respondent's role in the organization.

Conversely, respondents perceive relatively few barriers to their ability to take a job with another organization. Only 19% agreed with the statement that their ability to take a position at another organization was limited.

Yet a significant percentage of survey respondents (30%) indicated that they plan to leave higher education in five years or less. As expected, a higher proportion of respondents 51 or older said they plan to leave higher education within five years or less, presumably due to retirements. Respondents in their midcareer showed a strong intention to remain in higher education for at least five years. The percentage of respondents who plan to remain in higher education for at least this long was almost 85% for those aged 41 to 50 and nearly 79% for those aged 31 to 40. Among the youngest respondents, we observed somewhat less conviction in their plans to remain in higher education. As with the other age ranges, the majority (59%) plan to remain in higher education for five years or more. However, we saw a large proportion of respondents with an intention to leave higher education within five years. In fact, 22% of respondents under the age of 30 plan to leave higher education in three years or less.

Today's Senior IT Leader: Growing Influence and Pending Retirements

It has really only been in the past two decades that we have seen the director of data processing position evolve into today's cabinet-level technology officer. To understand this transition, we explored the role of senior-most IT leader as it exists today. We asked respondents to evaluate a list of skills in terms both of their importance to the success of a senior-most IT leader and of the respondent's own proficiency. Senior-most IT leaders were fairly confident that they have achieved high levels of proficiency with the skills that they reported were important to their success. Respondents gave their highest rankings to their proficiency with communications, followed closely by strategic thinking and planning. Senior-most IT leaders gave themselves relatively lower marks for proficiency at managing external relationships. Interestingly, this was also a skill area that they saw as relatively less important to the performance of their jobs.

A seat on the cabinet also had a significant relationship to a respondent's assessment of his or her organization's IT outcomes and personal participation in decision making. As one would expect, respondents who are members of the cabinet reported greater frequency of participation in all three facets of direction setting—administrative, academic, and IT. Respondents who are cabinet members also expressed significantly more agreement that the IT organization was producing good outcomes for the institutions. They were more confident in the quality of IT services, the inclusiveness of IT planning processes, the adaptability of the infrastructure, and the institutional reputation for being forward-thinking in the use of technology.

METHODOLOGY

Leading the IT Workforce in Higher Education used the following research approach:

- ▶ A literature review to inform our understanding of leadership and effective leadership practices, workforce demographic projections, and generational and gender-based differences in the workforce.
- ▶ An invitation to participate in a web-based survey was sent to 19,787 individuals in the EDUCAUSE database at the time of the survey's administration in 2007. The survey used a screening question to confirm that respondents did in fact hold professional positions in IT and were employed by higher education institutions. Respondents totaled 3,100.
- ▶ Qualitative research included individual interviews with 20 IT professionals including many senior-most IT leaders, aspiring CIOs, and women IT leaders; two phone-based focus groups with 13 midcareer IT managers and directors; and an analysis of written comments in the survey and case studies.
- ▶ Two case studies: one discusses the focus group participants' views about the CIO role and their career aspirations; the other details the University of South Australia's efforts to foster a high-performing IT team.

Respondents' educational attainment and faculty status also seem to influence how frequently they participated in academic direction setting. Respondents with a PhD or other terminal degree reported a significantly higher frequency of participation in academic direction setting than did those with bachelor's or master's degrees. A similar relationship was observed for those respondents who have faculty appointments of any kind.

However, much of this experience and effectiveness may be lost to retirements in the next 10 years. If all our senior-most IT leader respondents aged 51 or older at the time of the survey retire according to their expressed plans, at least 48% of all respondent senior-most IT leaders (not just those 51 or older) will retire by 2018. Uncertainties caused by the survey construct (which captured age in 5-year ranges) put this at the low end of the possible 10-year retirement rate suggested by our data. On the other hand, of course, economic conditions in the next decade could cause respondents to adjust their plans and either delay or accelerate retirement.

Tomorrow's Senior IT Leader: Career Preparation Desired Beyond IT

Arguably the legacy of a leader is that person's ability to prepare others to assume positions of leadership. In turn, the sustained success of a professional community is a direct result of the collective actions of existing leaders to create a pipeline of future leaders. To gain insight as to how well our community is doing as a whole at grooming future leaders, we looked at respondents to our survey who said they aspire to become CIOs in higher education.

Among the non-senior-most IT leaders who responded to the survey, 23% said they aspire to become CIOs. There were significant differences in aspirations by gender: 29% of male respondents aspire to be CIOs, while only 14% of female respondents hold the same aspirations. More than 53% of respondents who said they aspire to become CIOs were between

the ages of 31 and 45. Aspirants have already begun to climb the leadership ladder. Among those aspirants aged 31 to 45, nearly 80% were directors or managers. All of this suggests that there is interest in the CIO job among respondents who are still young enough to hold leadership roles for 15 or more years. In terms of the breadth of prior work experience, 28% of aspirants have held IT professional positions in a college unit or academic department. This growth may provide a new dimension to the career path of future CIOs that enables them to diversify their experience beyond the central IT organization. This broadening of experience may better prepare them to be contributors to all aspects of institutional decision making. The age distribution of CIO aspirants also presented a cautionary note. The proportion of respondents who aspire to become CIO dropped among older respondents. It is possible that some aspirants may lose interest and conviction to become a CIO as they get older and presumably closer to the CIO role.

Aspirants held mixed outlooks about their progression to the CIO role. Among aspirants, 43% disagreed that they are prepared to assume the role of CIO today. Many of these respondents are younger and presumably less experienced. Only a quarter of respondents (26%) agreed with the statement that they are being groomed by their manager or supervisor to become CIOs, but nearly half of respondents (49%) agreed that they have sufficient opportunities to develop the skills they would need to become a CIO. Those who agreed were more confident that they are ready to become CIOs than those who disagreed and were more optimistic that there would be sufficient opportunities for them to be CIOs within their desired timeframe. Finally, respondents' perceptions of their relationships with their supervisors also shaped their assessments of their skill-building opportunities. Across all categories of supervisor interaction, the more positive the aspirants' assessments of their interactions with their supervisors, the greater their level of agreement that they have the opportunity to build the skills they require to be a CIO.

RECOMMENDATIONS

Leading the IT Workforce in Higher Education offers the following recommendations to optimize an IT organization for the future:

1. Implement an aggressive talent-management strategy.

To better position institutions to succeed in a more competitive labor market and improve the productivity of the existing workforce, higher education IT needs to improve its talent sourcing and management practices.

More efficient recruiting practices, better training, and more structured professional development paths are just a starting point. Organizations must place greater emphasis on succession planning and performance management. If labor markets tighten as expected, higher education IT organizations should prepare to create compelling propositions for potential recruits. Competitive compensation is necessary but not sufficient. Organizations are likely to be pressed to compete for talent based on their values, the skill-building opportunities they provide to their staffs, and their ability to welcome a diverse workforce. Concurrently, institutions should consider strategies such as outsourcing a service or renegotiating service levels in order to lessen their dependency on attracting large numbers of skilled workers in order to sustain services.

2. Develop the leadership skills of the future.

The skills of current and future IT leaders must continue to evolve as the role of IT leader changes and adapts. The IT leadership position is increasingly one of influence, coordination, and consultation and less one of authority borne out of control of large-scale services, budgets, and organizations. Thus, successful leadership will focus more on creating extensive governance processes; becoming more engaged in setting policy and direction; discussing the opportunities and challenges that technology creates for institutional strategy; and discussing the role of technology in learning, research, and operations. This requires strong communication and collaboration skills and a willingness to foster a deeper understanding of the institution beyond the IT organization—meeting with deans or department chairs to better understand their priorities, participating on institutional planning committees.

Accordingly, aspirants require a formal career-development path that extends outside the realm of central IT. This occurs now to some degree—over a quarter of aspirants have worked in a college unit or academic department. But our qualitative research suggests that aspirants would like more opportunities to develop as leaders by taking responsibility for major initiatives at their institutions and developing relationships and influence by working more directly with leaders outside of central IT. They appreciate the skill development opportunities they receive but are seeking more direct advice on how to develop the political skills they will need as future CIOs. Such programs might both enrich the diversity of the pipeline of future leaders and identify candidates who are better prepared to meet the communication and relationship-management demands placed on today's CIO.

Tomorrow's IT Workforce: Anticipating a Potential Worker Shortfall

Among the participants in the study, there was an expectation that higher education IT would experience more competitive labor markets in the coming years. Among senior-most IT leaders, 62% agreed or strongly agreed that there will be a shortage of skilled IT workers in the next five years. A similar percentage (68%) anticipated that their institutions would have difficulty recruiting sufficient numbers of skilled IT workers over that same period. The majority of respondents (79%) agreed or strongly agreed that a shortage of skilled workers would put their institution's strategic technology objectives at significant risk.

Despite the risks respondents anticipated, few feel their institutions are taking actions to prepare for a possible worker shortage. In fact, only about a fifth of senior-most IT leaders reported that their institutions are actively preparing for a future shortage of skilled IT workers, while a

slight majority of senior-most IT leaders (52%) disagreed or strongly disagreed that their institutions are preparing for such a shortfall. But we found that greater agreement among senior-most IT leaders that there would be a future shortage of skilled workers was associated with greater agreement that the institution was actively preparing for a shortage.

Competitive compensation was the most frequently selected item from a list of potential strategies that respondents thought would be important to their ability to maintain a sufficient IT workforce. More than three-quarters of all senior-most IT leaders (84%) selected this as one of their top-three strategies. Other strategies that were frequently identified included expanding professional development opportunities and outsourcing services. More than a fifth of institutions also said that they thought constructing more flexible jobs using telecommuting or flextime would also be important.