

The Future CIO: Critical Skills and Competencies

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ECAR Research Bulletin 15, 2010

Overview

Higher education is the most exciting place you can find to have this career.
—H. David Lambert, Vice President and CIO, Georgetown University

Disruptive changes are under way in the education landscape as a result of economic, social, and legislative pressures and growth in consumer- and learner-centric technologies.¹ This shift in our environment is likely to be permanent; we will not return to “higher education as usual” once the economy improves. Institutions that recognize the opportunities afforded by information technology (IT) to drive institutional innovation and success in the “new normal” will be more likely to achieve their strategic goals and receive the full benefit from the investment in IT. The challenge to university and college executives is to recognize this opportunity for institutional change and welcome the chief information officer (CIO) into strategic discussions. The CIO of the future must prepare now for this broader strategic institutional role as an innovative partner.

The skills and competencies that served the CIO well in the past are likely to be necessary but insufficient for success going forward. The higher education CIO role promises to see perhaps its most dynamic period of change since its origins nearly four decades ago.² The position is evolving from a focus on technology leadership to a focus on institutional innovation. With these charges, the CIO cannot afford simply to respond to requests but must proactively work to capture opportunities that drive the institution’s success.

In addition to the dynamic role of the CIO, the IT organization itself must adapt to the new environment. Standard organizational designs around technologies or other silos will not serve the institution well. IT organizational structures based on processes will be more agile and better positioned to proactively leverage opportunities for meeting the academic and business needs of the institution.³

This research bulletin takes a forward-looking view of the CIO role, identifying critical skills and competencies required for strategic partnership in 2012 and beyond, based on a review of the literature and conversations and quantitative input from current IT professionals. Top considerations for structuring IT to provide institutional support in the 2020s are also discussed. Finally, some creative roles for the CIO in the “new normal” are identified.

Highlights

The scope and complexity of the CIO role broadened significantly over the past decade. While higher education CIOs entered the role from a variety of disciplines and backgrounds, the primary emphasis in past years was often on technical skills. There is a widespread belief that nontechnical skills and competencies have gained in importance recently.⁴

Groovin’ on Innovation and the Big Picture

For its *Evolution of the CIO: An EDUCAUSE Issues Brief*, EDUCAUSE interviewed 14 CIOs in 2009, reporting that CIOs must be seen as leaders who go beyond technology. The IT organization is “less a provider of IT resources and more an organization that

sources and coordinates resources for the campus stakeholders.”⁵ The CIO’s ability to lead an organization that provides system reliability and stability is a prerequisite to gaining a strategic role at the institution. Failure at the operational level means the CIO won’t have the opportunity to participate at the executive level. Critical competencies mentioned by the 14 CIOs include the development of a strategic institutional perspective, communication and outreach capabilities, the ability to collaborate effectively to leverage shared needs and resources, operational management skills, and a broad understanding of the IT policy, regulatory, and legal issues of the institution.⁶

H. David Lambert addressed “The Changing Role of the CIO” in a presentation at the 2009 EDUCAUSE Annual Conference in Denver, Colorado.⁷ The role of the CIO now encompasses the entire institution. Nothing escapes being touched by technology. This increases the challenge for CIOs, since they must now deal effectively with both ends of the spectrum: operations and strategy. In addition to affirming the critical skills highlighted in the 2009 EDUCAUSE Issues Brief, Lambert set out the following critical competencies for the future CIO:

- Comprehensive understanding of technology concepts and principles
- A broad understanding of the higher education “business” and its supporting processes
- A comprehensive knowledge about higher education industry business applications
- Advanced skills in project management
- Enjoyment of the challenges associated with operations and production management

Lambert emphasized the last CIO characteristic and posited that nothing is more critical than this enjoyment. Without the capacity to enjoy what some view as the more mundane aspects of the CIO role, the CIO may tend to neglect the basics of a well functioning IT organization and services. Lambert advised, “If you can’t get the trains to run on time, you won’t get to operate the controls.” Broadbent and Kitzis echo this concept in stating that the CIO in this position will be relegated to the “chief technology mechanic” role.⁸ Broadbent and Kitzis agree that a new breed of CIO leader is required, and they highlight the roles of strategic leader and risk management officer.⁹ One critical priority of the strategic leader is a thorough knowledge of the organization. In addition, the CIO must recognize that the role includes serving as a driver of institutional change, challenging long-held views of business paradigms, policies, and processes in order to build institutional success. Highlighted competencies that contribute to successful strategic leadership include the ability to communicate the value IT is providing to the institution, to collaborate, to build relationships throughout the institution, to develop a compelling vision for how IT will build the institution’s success, and to drive institutional innovation.

Like Lambert, Broadbent and Kitzis believe in the importance of risk management skills. Risk management will hold an increasingly dominant place among the CIO’s responsibilities in the future, demanding a larger share of the IT budget as well as the CIO’s time. The CIO will need to both guide and educate the other executives regarding

key risk areas given that information technologies contribute to risk or might help mitigate it. "Both information security risk management and overall enterprise risk management are crucial to the credibility of the new CIO leader."¹⁰

Visionary, Agile Pragmatists; Collaborative Strategists

With respect to strategic leadership of the IT organization, the CIO must be able to foster adaptive change among IT staff and promote the principle that optimal solutions will change over time as technology and the organization's needs change. "[L]eaders are those who foster adaptive change...the kind of deep change that requires people to alter their habits and comfortable ways of acting, even the way they think and feel."¹¹ This change effort may result in deep resistance, and overcoming it requires a CIO leader with vision, communication skills, and relationship building skills.

In the future, more conventional IT work will be outsourced or embedded in the business units, with IT serving as the intermediary or broker of services. Principled negotiating skills and emotional intelligence (self-awareness, self-management, social awareness, and social skills) will be increasingly important as these external partnerships become a predominant way of accomplishing the organization's goals. Broadbent and Kitzis highlight five roles the CIO should retain in the IT organization even in the midst of new models of service sourcing: IT leadership, IT architecture development, organizational enhancement, technology enhancement, and vendor management.¹²

As the CIO's role expands to cover all aspects of the organization, CIOs will be increasingly challenged to balance countervailing pressures and roles. A recent IBM study of nearly 2,600 CIOs around the world in a variety of sectors, including education, advises CIOs to prepare for these complementary but conflicting roles:¹³

- An insightful visionary, and an able pragmatist
- A savvy value creator, and a relentless cost cutter
- A collaborative business leader, and an inspiring IT manager

The IBM study points out that several of the same skills and competencies that Lambert and others mention are necessary for success:

- A strong understanding of the organization's most pressing problems
- The ability to communicate the value of innovation
- The development of visionary plans
- The ability to leverage collaboration and partnerships
- The ability to capture organizational opportunities
- Agility
- The ability to handle cultural resistance

For the CIO, this also creates some nontraditional roles: serving as the organization's change agent and as an enabler of organizational flexibility. It is becoming clearer that the CIO's role is "less about technology and more about strategy."¹⁴

Critical CIO Skills and Competencies

To gain insight from current higher education IT professionals on their views of the future CIO, colleagues at the 2010 EDUCAUSE Midwest Regional Conference in Chicago were asked to answer two questions related to 14 skills and competencies listed below. A total of 35 surveys were completed.

Questions

- What will be the three most important skills for the higher education IT leader of 2012 to have?
- Which one will be the most important?

Competencies

1. **Adaptive communication.** Ability to communicate with various constituencies in terms that are most meaningful to them; adjust to crisis, inspirational, and public situations; communicate the value of IT and innovation.
2. **Capture opportunities.** Ability to capture opportunities that drive the institution's success; analyze and act on data; improve competitive advantage in the midst of economic, legislative, demographic, and competitive pressures.
3. **Change agent.** Ability to serve beyond technology as the institution's change agent, fostering adaptive change and flexibility among members of the institution; challenge the established institutional culture and long-held paradigms.
4. **Effective collaboration and partnerships.** Ability to establish productive partnerships with executives, governance committees, and internal and external colleagues; politically savvy.
5. **Emotional intelligence.** Self-awareness, self-management, social awareness, and social skills. Includes the ability to accept and act on feedback from executives, peers, and IT management and staff.
6. **Financial management.** Ability to manage costs while leveraging resources for investment and future success; skilled business analyses involving total cost of ownership, multi-year business plans, and return on investment.
7. **Institutional perspective and understanding.** Ability to develop a strong understanding of the institution's opportunities and problems, internal and external forces, interdependencies, programs, services, and constituencies.
8. **Operational management.** Ability to deliver available and reliable IT services, including prompt resolution of outages and issues; establish operational priorities; deep technical knowledge in at least one IT area.
9. **Organizational innovation.** Ability to build a leaner and more focused IT organization with the ability to proactively adapt to new technologies and new roles; break down organizational silos and implement seamless processes.

10. **Principled negotiation and vendor management.** Ability to evaluate services to be sourced external to the IT organization; successfully negotiate for effective contracts and service level agreements; hold vendors accountable.
11. **Project management.** Ability to communicate the strategic role of project management for institution-wide and departmental projects; anticipate, avert, and learn from project failures; socialize the knowledge gained.
12. **Risk management.** Ability to mitigate the risks faced by the institution with respect to network and application security, information privacy, regulatory compliance, disaster recovery, campus safety, and large-scale projects.
13. **Strategic vision.** Ability to develop a compelling vision for building institutional success through knowledge of the institution’s mission and goals and by leveraging investments in IT and other institutional resources.
14. **Trusted relationships.** Ability to establish trust and collaborative relationships with the governing committee members, executives, deans, faculty, department heads, students, staff, and community members.

Table 1 illustrates the results of this survey. The three skills and competencies of primary importance for the future CIO as rated by the 35 respondents were:

- Strategic vision (51.4%)
- Effective collaboration and partnerships (42.9%)
- Adaptive communication (40.0%)

Table 1. Critical Skills and Competencies for the Future CIO

Skills and Competencies	Top Three	Top One
Adaptive Communication	40.0%	14.3%
Capture Opportunities	11.4%	0.0%
Change Agent	37.1%	11.4%
Effective Collaboration and Partnerships	42.9%	25.7%
Emotional Intelligence	2.9%	2.9%
Financial Management	11.4%	0.0%
Institutional Perspective and Understanding	37.1%	5.7%
Operational Management	8.6%	2.9%
Organizational Innovation	17.1%	5.7%
Principled Negotiation and Vendor Management	8.6%	0.0%
Project Management	5.7%	0.0%
Risk Management	0.0%	0.0%
Strategic Vision	51.4%	17.1%
Trusted Relationships	25.7%	14.3%

Of the 14 listed skills and competencies, the one rated most critical of all is effective collaboration and partnerships (25.7%), with strategic vision ranking second (17.1%). It is interesting to note that none of the respondents identified risk management as one of the primary skills and competencies, yet Lambert, as well as Broadbent and Kitzis, highlight its growing importance. In a postconference conversation, one current CIO theorized about this gap by stating, “Effective risk management in many ways requires legal expertise and is the purview of general counsel. To the extent that a CIO can execute risk management strategies, they would more likely occur as the outcome of having built effective partnerships and comprehensive strategic planning—competencies that are more primary.”

Several verbal and one written comment were received about the difficulty in selecting only three of the 14 skills and competencies. One respondent stated, “[I]n reality, most of these are very important to the CIO of the future.” Yet future CIOs will likely not exhibit strength in all of these skills and competencies, leading some respondents to comment on the importance of knowing one’s own strengths and weaknesses, and attending to development of complementary strengths among members of the CIO’s staff. Another individual explained, “[I]t is critical for the CIO to acknowledge personal strengths and weaknesses [and] hire people to provide complementary skills.” An aspiring CIO at the conference advocated for the ability of the future CIO to develop staff for new roles in the future, highlighting the need to cultivate transformative change agents among the IT staff, capable of working at various levels in the institution.

Several individuals also noted the absence of an emphasis on technical skills among the 14 items listed and pointed out the irony that this is not how current CIO position postings are portraying the position. One IT professional said, “I am pleasantly surprised, and encouraged, to see very little reference to ‘technology’ background [in this list], although that is not what I read in current job announcements.” This may indicate that the institution’s executives are relying on historical expectations for the CIO rather than reformulating expectations for the “new normal.”

The adherence to traditional qualifications for currently advertised senior IT positions may reflect the need for the senior institutional executives to consider more fully the outcomes they need from the CIO. In addition, they may also want to consider how their own skills and competencies line up with the list for the future CIO. A current CIO commented, “CIOs need [transformative] change leadership skills. More importantly, other senior leaders need these skills, too, such as deans and vice presidents.” A second respondent stated, “All the skills and competencies are the same for any higher ed. executive, not just the CIO.” An aspiring CIO explained the common responsibilities of the institutional executives: “It’s about creating and knowing the institution’s mission and vision, being able to act on it, and having the credibility to communicate that vision and mission effectively. Now more than ever, we need to live by the words of Wayne Gretzky, perhaps the greatest ice hockey player of all time: ‘Skate to where the puck is going to be, not where it has been.’”¹⁵

Three respondents mentioned that “trusted relationships” was not chosen as one of the top three skills and competencies, since “if you have the other skills covered, this [trusted relationships] will follow.” In other words, the ability to establish trusted

relationships is seen as directly dependent upon other competencies such as adaptive communication, effective collaboration and partnerships, and operational management (keeping the trains running).

Another viewpoint expressed the critical importance of adaptive communication by explaining, “[You can] do everything else well, but if you can’t communicate well, none of the rest matters.” A current CIO further explained that “adaptive communication [is necessary] to communicate the value of IT. [We need] to help people understand the inputs to the outcomes they are looking for and help them understand the financial costs and tradeoffs regarding resources.” These difficult conversations likely will occur more frequently given budget pressures, and the CIO is likely to find that previously adequate communication skills need to be enhanced to successfully convey appropriate messages.

Critical skills for the CIO in 2012 are applicable regardless of gender, age, experience in the role, and, to some extent, institution. Experienced CIOs, as well as those who aspire to the role, will increasingly find the need to strengthen their skills and competencies in the areas highlighted in this bulletin to succeed in the new normal. Unless the CIO demonstrates the ability to lead and innovate in the larger institutional context, the institution will not gain the full complement of benefits from its investments in IT, and the CIO will be perceived as the “chief technology mechanic.”¹⁶

What It Means to Higher Education

With today’s dramatic shifts in institutional challenges and opportunities, it is important for the institution to think about ways in which the CIO and information technologies can be leveraged to advance the institution. By the nature of the position serving the needs of all institutional areas, the CIO can often see ways to consolidate services or challenge long-established policies and processes. To fully leverage the CIO’s insights, the institution might best be served by inviting the CIO’s input to the president’s or chancellor’s executive staff, regardless of the reporting line.

The EDUCAUSE Core Data Service findings show that while only 29.6% of the responding institutions state that the ranking technology officer reports to the president or chancellor, 48.1% include the ranking technology officer on the president’s or chancellor’s cabinet.¹⁷ Without the CIO’s presence at executive discussions, the institution will likely miss opportunities to collaborate, innovate, and connect information technologies with institutional strategy. As Brian Hawkins, president emeritus of EDUCAUSE, wrote, “The executive team...must understand that the role of CIO is not about technology itself; rather, it is about the ability of a campus to achieve its goals and objectives *through* technology.”¹⁸

Skills and Competency Themes

The literature reflects five themes for skills and competencies needed by the successful CIO going forward:

- Basic competency of excellence in operations and production management
- Ability to focus on the institutional mission and needs and serve as an institutional innovator

- Ability to proactively capture opportunities to advance the institution, rather than merely meeting the requests presented to the IT organization
- Skill in negotiation and contracts as service models provide new opportunities in the “cloud” and inter-institutionally
- Skill in effective collaboration across the institution and with external partners to reduce duplication of services and associated costs, improve efficiencies, and improve service quality

Current higher education CIOs, as well as those aspiring to this role, are advised to seek opportunities to grow their skills in these areas. It is important to view the CIO role as a strategic institutional role rather than simply a technology leadership role.

IT Organization Considerations

Certainly, the CIO cannot achieve a strategic institutional role alone. The members of the IT organization are critical partners in this effort. In order for the IT professionals to be successful, the IT organizational structure must support a dynamic institutional environment. Hierarchical organizational structures with silos that are typically resistant to change will not serve the IT professionals, the CIO, or the institution well. As an IT leader at the EDUCAUSE conference in Chicago advised, “We must...stop living in silos and protective havens.” The CIO must craft a structure that is agile in response to changing institutional needs and technology advancements, promotes broad understanding of the institution’s mission and goals, and provides rich professional development opportunities for the staff in the course of their work.

Rather than organizing the IT professionals around technologies, the CIO should look to organize around the processes supported by the IT organization to provide a more seamless consumer experience.¹⁹ The overlay of process teams on traditional organizational structures may be a first step. In this regard, the IT Services division at Miami University (Ohio) is employing communities of practice (CoP) for bodies of knowledge or processes that overlay the official departmental IT structure. CoP examples include professional development, IT architecture, security, process definition and improvement, and communication and advocacy.²⁰ In addition to promotion of more seamless and successful solutions, these CoPs provide leadership development opportunities for the IT staff members.

An underlying requirement for a highly functioning IT organization is a relentless focus by the CIO and his or her leadership team on a high-performing IT staff. Many of the skills needed by the future CIO are those needed by the IT staff as well.²¹ Collaboration skills and emotional intelligence are required for the IT staff to take a leadership role and build relationships throughout the organization. This means that training, mentoring, attention to career paths, enrichment of institutional knowledge, and a strong performance management process are more critical than ever. It becomes more difficult in these times to justify a lack of attention to either under-performing staff or development of IT staff competencies such as relationship skills.

Creative Roles for the CIO

In conjunction with achieving the skills and competencies outlined in this research bulletin, the CIO may gain the opportunity to serve in new roles at the institution. The CIO should look for opportunities to foster change at the institution to help craft this new institutional leadership role. For example, is there a task force under consideration to identify operational efficiencies in combination with quality of service improvements? Is there a need to identify and pursue avenues for new revenue, or a need to re-skill a significant number of staff to meet current and future challenges? The CIO might also look to uncover opportunities to assist the institution or individual units with their strategic planning efforts. The CIO can be an effective partner in such initiatives.

The CIO can foster adoption of an institution-wide perspective and decisions on the highest priority strategic needs, in addition to highlighting the ability of information technologies to assist in meeting goals. If an effective governance structure and process to establish institution-wide priorities do not currently exist, the CIO can serve as an advocate and partner in establishing the means to identify the institution's top priorities. Given the fiscal constraints within higher education today, it is extremely important that institutions carefully identify those initiatives that can have the most significant impact on the institution.

The CIO who wants to be successful in the years ahead must look to exploit opportunities to work with others throughout the institution and beyond. Such efforts may well lead to serendipitous discoveries for innovation. The CIO might find an opportunity to serve the institution as a “chief innovation officer” by strengthening the stage and supporting the president or chancellor, provost, and other executives in advancing new ways of thinking and operating.

CIOs who work in institutions that do not yet see the strategic value of information technologies may want to concentrate on communicating the value of IT to the executives in terms that will capture their attention. Toward that goal, the CIO will want to concentrate on building relationships with the executives in order to gain a strong understanding of their most critical problems and strategic goals. The CIO is then better positioned to skillfully weave together IT value with academic, administrative, and co-curricular opportunities in advancing the institution.

Given the growing complexity of the CIO role, the future CIO may find that appointing a chief technology officer or deputy chief information officer is necessary. As a strategic institutional innovation partner, the future CIO will trade time spent on internal IT duties for time and attention spent across the entire landscape. Having a key IT leadership team member to focus on the internal aspects of “keeping the trains running” may prove to be a critical success factor in enabling the CIO to capture opportunities that are best able to advance the institution.

When CIOs “skate to where the puck will be,” they have an opportunity to launch a more strategic and innovative role for themselves, their IT organizations, and their institutions. Moving beyond a technology and service provider role into an innovation partner holds much promise for the rewards of a CIO career, for higher education institutions, and for our students, faculty, and staff.

Key Questions to Ask

- What are the external forces being experienced by our institution? How can the CIO help address them?
- Do we view our institution's CIO as a strategic partner? If not, where might our CIO be an asset in addressing our most pressing institutional needs?
- In what specific ways is the CIO properly positioned to contribute to the institution's success?
- Which actions can our institution take to improve the readiness of our professionals for a future CIO position?
- Which IT structures will enable an agile IT organization to address our institution's most pressing needs?

Where to Learn More

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Citation for This Work

Allison, Debra Hust. "The Future CIO: Critical Skills and Competencies" (Research Bulletin 15, 2010), Boulder, CO: EDUCAUSE Center for Applied Research, 2010, available from <http://www.educause.edu/ecar>.

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