STUDY OF
HIGHER EDUCATION
CHIEF INFORMATION OFFICER
ROLES & EFFECTIVENESS

WAYNE A. BROWN, PH.D.
with Teresa C. Brown
Center for Higher Education CIO Studies, Inc.

Foreword by Paige Francis
2015 Study of Higher Education Chief Information Officer Roles & Effectiveness

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We are deeply grateful to our Sponsors who support our higher education technology leadership research. Our sponsors believe this research is important, and they are as committed as we are to chief information officer enrichment, growth, and education. We are pleased to present our generous sponsors who make this research possible.
We also want to thank the institutions which sponsored CHECS through a site license purchase. Their contribution through this a site license helps support the work CHES does and signals the importance placed on this work by the people in the field. If you would like to become an institution sponsor, please consider purchasing a site license for one or more of the reports. The license grants your institution the right to share the report with all of its employees.
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Many people are involved in the effort to produce this study, and one of the most important is you, the higher education chief information officer (CIO). In its twelfth year collecting data, Center for Higher Education Chief Information Officer Studies, Inc. (CHECS) has had the pleasure to document an evolution of a career field. However, gathering information from as large and varied of a population as every higher education CIO in the United States, as well as those who participated from other countries, can be challenging. I am deeply grateful to everyone who participated in the study. Without those individual responses, we would not have as full and as developed aggregate picture as we do of today’s higher education CIO. As a CIO myself, I know how busy everyone is and time is valuable. That each of you invested your time into this study means you recognize the research’s significance. I do not take your investment lightly, and your commitment motivates me to continue these studies. To each and every one of you, a heartfelt thank you.

CHECS’ studies would be greatly hindered without our sponsors’ generous support. I cannot express my gratitude enough to them. They are as committed to the higher education technology profession as CIOs are and through their steadfast support, CHECS is able to not only continue its annual studies, we have expanded it. In 2014, we launched our first Chief Information Security Officer (CISO) study. We also launched a successful Webinar series (checs.webex.com), bringing study results and respected guest panelists to you for lively, informative discussions. Our Webinar topics ranged from study results to the process of applying and interviewing for the CIO position. Please join us in thanking CHECS sponsors.

Another significant group, the CHECS’ advisory board has been highly active and we could not have accomplished some of our recent efforts without their enthusiastic

“That each of you invested your time into this study means you recognize the research’s significance. I do not take your investment lightly, and your commitment motivates me to continue these studies.’

...
support. The all-volunteer board has devoted countless hours to expand and realize CHECS' mission: Contributing to the education and development of the CIO in higher education. Our esteemed board of CIOs and technology leaders have selflessly shared their thoughts and experiences to benefit the higher education technology leadership field. We would not have achieved our 2014 and 2015 accomplishments without them.

As you may know, CHECS is an all-volunteer, nonprofit organization. We do not have a paid staff. Funds raised through report sales and resume services are reinvested into CHECS in support of its mission to development of higher education technology professionals. To that end, we have endowed perpetual academic scholarships at several universities benefiting technology students at different levels of education. Each year, a $1,000 scholarship is awarded to a technology student in each program. The scholarships were created to recognize influential technology or education leaders who have left a lasting mark on CHECS’ studies. Through these scholarships, CHECS is helping future technology leaders who may, someday, take over the CIO-reins within higher education. The scholarships are:

- **The Dr. Trudy Abramson Scholarship**, Nova Southeastern University, Fort Lauderdale, Florida - $1,000 scholarship to a doctoral student
- **The Dr. Polley Ann McClure Scholarship**, University of Texas, Austin - $1,000 scholarship benefiting women and minorities to an undergraduate student
- **The Dr. Detlev H. Smaltz Scholarship**, Florida State University, Tallahassee, Florida - $1,000 scholarship to a graduate student
- **The Stephen Pribyl Scholarship Fund**, Excelsior College, Albany, New York (has not reached distribution threshold yet), need-based scholarship for women and minorities

We also want to thank Dr. Herb Smaltz; our chief information officer and institution management team surveys are based on his 1999 doctoral healthcare research. We are ever grateful to Dr. Smaltz.

The research, the scholarships, the Webinars—these are all efforts in line with CHECS’ mission. Our dedication to this mission would could not be achieved without your continued support. Thank you again.

Best regards,

Wayne A. Brown, Ph.D.
WBrown@CHECS.org
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FOREWORD

It is with genuine pleasure that I introduce the latest edition of the CHECS 2015 CIO Report. Not only does this publication provide valuable statistics into the DNA of today’s higher education chief information officer, it sparks thought via data on how the role’s transformation over time drives the efficacy of innovative IT within any institution.

As a current chief information officer in higher education, it is clear that gaining consensus and hesitancy to execute during times of fast-paced growth may lead to decades of legacy cleanup. Many of us are living that dream currently and know that cutting losses to progress is often a tough battle that simply must be fought. It’s crucial for top leadership moving forward to facilitate as opposed to stifle or even humor the stifling of panoptic integration. The trend of communication and effective social interaction skills trumping technical knowledge warns, with a business-critical focus on strategy and marketing smart change, there is no current metaphorical curtain for IT leadership to hide behind. We are no longer considered wizards and magicians; we are expected to be executive leaders poised to impact every facet of the business from bottom-line to big picture. We are no longer simply required to “make things work”; we are sought after to conceptualize, implement, and deliver dynamic and measurable improvement to a whole environment, bridging all gaps resulting in a targeted delivery to a highly competitive public.

Of course we still need money and project plans, but look around your higher education environment. Focus has switched gears to strategy, integration, collaboration, and marketing technology innovation to develop unfettered consensus. With nearly 50 percent of current IT leadership self-reporting retirement within a decade or less, it’s no accident that we are hitting that retirement wall in tandem with such a marked role metamorphosis.

As a female chief information officer, it’s comforting to learn that, aside from the gender statistics, I’m not quite as unique as I tend to think I am. There’s a certain strength in uniformity. As someone who entered higher education from several years in the corporate world, the transition was as simple as a pace-shift. While higher education environment is not as dramatically unique as it sometimes thinks it is, our world of technology is even less unique. Across all industries the buzzwords have united—agile, responsive, nimble. We are tearing down all that is clunky and steering towards environments that are more adaptive to change. However in many ways this preparation for fluidity is realistically only
preparing our environments for what we assume is to come, what we assume is within the realm of possibility, what we envision is the future based on what is doable now.

Not surprisingly, when you peruse past CHECS reports, the transformation of the CIO role in response to the pace of technology change is evident. As leaders, our charge today is less rallying for funds, less working tirelessly to force adoption, less management of nose-to-the-grindstone developers, and architects physically building the implausible. Everything that was certain about the CIO role a decade ago oftentimes sounds preposterous today. CHECS data dropped the breadcrumbs that led us to where we are today. As the pace of change continues to grow exponentially, it is imperative to stay abreast of tech trends that are shaping our most certainly transformative future. At the same time, it would be illogical to not shine a spotlight on the morphing composition of its leadership as well, at its most executive level.

Whether the stage is formulating career path, today’s CIO or tomorrow’s retired CIO, the data compiled so thoughtfully within the 2015 CHECS Report is vital to ensuring tomorrow’s CIO leadership—whether that be you or talent you are grooming for succession planning—is prepared for an excitingly uncertain tomorrow.

Thank you to Wayne Brown and all who provide support to sustain CHECS—from the annual Survey of the Higher Education Chief Information Officer Roles and Effectiveness through the release and consumption of the resulting report. I encourage all to refer to each year’s copy thoughtfully and often.

Paige Francis
Chief Information Officer
Fairfield University
INTRODUCTION
Past CHECS CIO Study

The higher education CIO position has evolved into an accepted and traditional role in an organization. Although there may be some institutions that do not have a CIO, those establishments likely have a person who functions as the lead technology person. He or she may not have the depth and breadth of responsibilities and experiences as others, but, nonetheless, technology has become a permanent fixture in, very likely, every higher education organization in the United States. The Center for Higher Education Chief Information Officer Studies, Inc. (CHECS), through its founder and chief executive officer Dr. Wayne A. Brown, has examined higher education CIOs since 2003 (Brown, 2004, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014). Throughout the years, a CIO evolution can be tracked. In those early years, it was often noted a CIO may have a degree in English with as much frequency as an engineering degree. However, those degree majors have gradually been replaced by fields of study one would expect to find in a higher education technology department as the degree majors become more relevant to the industry and business.

Moreover, the expectation for an advanced degree has increased from those early pioneering years. While there is still a segment of CIOs who have an undergraduate degree, or less, their numbers are dwindling as they change positions or leave the work force and new leaders are hired in their place. Indeed, a significant majority of today’s CIOs and their non-technology peers alike believe a CIO should have an advanced degree. Those expectations have likely, and will likely, influence future hiring-committee opinions about what they expect in their CIO.

This study has tracked the higher education CIO progression and monitored its roles and effectiveness for a dozen years. The results reveal the career field’s growth and maturation in the higher education industry. As technology has become infused in the daily operations in an institution, it has also become part and parcel for the future. It is no longer solely a means for brilliant innovation and cutting edge advantages; it is an indispensable element to conduct business in much the same way as electricity or running water has become crucial to a building. The CIOs who lead departments in the largest and smallest of institutions all have a fundamental shared goal: to utilize technology for the institution’s benefit. Having this shared objective across institutions means learning more about CIOs as a group will benefit CIOs as individuals.
About the survey

This year’s research began in February 2015 with an invitation to participate sent to more than 2,400 higher education CIOs in the United States and other countries. Participation could be realized through a paper survey or electronically. Three hundred and twelve CIOs responded to the invitation. CHECS contacted institution management team (IMT) members from the participating CIOs’ organizations and invited the presidents and vice presidents from those institutions to participate in the second survey. Seventy-nine IMT members responded to that subsequent survey. This second survey augments the first by including an aggregate response representing institutional perspective. The purpose of collecting this data is to provide another point of view regarding CIO effectiveness. While self-examination is revealing, it lacks a depth which may be achieved through the IMT’s institution perspective. The CIO and IMT surveys are based on Dr. Herb Smaltz’ 1999 doctoral healthcare CIO research.

Simultaneous to the CIO study, CHECS conducted a technology leader (TL) survey. Tls represent non-CIOs who populate the next organizational layer down from the CIO. In 2015, 190 TLs responded to the CHECS survey. Information collected in the TL survey was also used in the CIO report. However, the TL survey results were published separately in its entirety in CHECS’ 2015 Technology Leadership Study: Future Chief Information Officers.

The CHECS CIO, IMT and TL research is unique in that the three groups are asked similar questions and the results are compared and contrasted. The responses provide a great deal of information about the higher education CIO roles, effectiveness, attributes, and background. The information collected also created a history for the higher education CIO—a history that established a career path for others who aspire to become the department leader in the future. Indeed, as knowledge increased, more is learned about the TL group who will, most likely, succeed current CIOs. Moreover, these studies not only document the past, it projects the future for higher education’s technology executives.
CIO ROLES AND EFFECTIVENESS

Roles and Effectiveness

One of the main components of the higher education CIO roles and effectiveness study is to examine efficacy in traditional roles held at these institutions. Roles may disclose the influence CIOs have within an organization, or, viewed through a longitudinal lens, they may reflect the continued evolution of the higher education CIO’s responsibility within the institution.

Throughout this longitudinal research, CIO responsibilities have been categorized into seven general roles. These roles represent the typical tasks CIOs undertake within an organization. The roles are

- Business Partner,
- Classic IT (Information Technology) Support Provider,
- Contract Oversight,
- Informaticist and IT Strategist,
- Integrator,
- IT Educator, and
- Professional Advocate.

The roles and descriptions are noted below in Figure 1.
SEVEN CHIEF INFORMATION OFFICER ROLES, FIGURE 1

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Partner</td>
<td>Organizational strategic planning and revising business processes</td>
</tr>
<tr>
<td>Classic IT Support Provider</td>
<td>Foundations of IT support and responsive department</td>
</tr>
<tr>
<td>Contract Oversight</td>
<td>Relationships with IT vendors, contract negotiation, and contract supervision</td>
</tr>
<tr>
<td>Informaticist and IT Strategist</td>
<td>Ensure security and accuracy of institutional data and alignment of IT department with the institution</td>
</tr>
<tr>
<td>Integrator</td>
<td>Integration of all internal and external systems</td>
</tr>
<tr>
<td>IT Educator</td>
<td>Evangelist for computer use and understanding; educator of employees regarding IT innovations bringing value to the organization</td>
</tr>
<tr>
<td>Profession Advocate</td>
<td>Supports professional organizations; actively involved in professional organizations; participates in national higher education IT initiatives</td>
</tr>
</tbody>
</table>

Figure 1 Seven primary roles have been identified for the chief information officer position.

These seven roles can further be categorized into a hierarchy with the base roles considered to be foundational. Foundation roles are those functions the CIO is expected to operate in, providing services which likely remain unnoticed as long as the CIO is effective such as **Contract Oversight** and **Classic IT support provider**. The center section holds tactical functions and represent the roles like **Informaticist** and **Integrator**. The top or crest of the hierarchy are strategic roles to which the CIO aspires, such **Business Partner** and **IT Educator**.

HIERARCHY OF CHIEF INFORMATION OFFICER ROLES, FIGURE 2

Figure 2 The seven roles can be organized into a hierarchy, illustrating the foundational, tactical, and strategic roles of the chief information officer.
Examining the seven CIO roles required gathering information regarding how CIOs viewed both the importance of the role and their effectiveness performing that particular responsibility. CIOs responded to a series of questions, ranking both importance and effectiveness using a 1 to 5 scale with 1 representing *No importance* or *Expectations not met* and 5 representing *Critically important* or *Outstanding*. The responses were aggregated into an average importance and effectiveness rating for each of the seven roles.

The averages for CIO perception of *Role Importance* and *Role Effectiveness* are depicted below in Table 1. The roles are also arranged by *Role Importance* average in Table 2. While CIOs ranked **Classic IT Support** as the most important, they ranked themselves highest in effectiveness on **Contract Oversight** with **Classic IT Support** immediately following.

### CHIEF INFORMATION OFFICERS ROLE RANKING, TABLE 1

<table>
<thead>
<tr>
<th>ROLE</th>
<th>IMPORTANCE AVERAGE</th>
<th>EFFECTIVENESS AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classic IT support</td>
<td>4.02</td>
<td>3.67</td>
</tr>
<tr>
<td>Informaticist</td>
<td>3.99</td>
<td>3.24</td>
</tr>
<tr>
<td>Contract oversight</td>
<td>3.82</td>
<td>3.80</td>
</tr>
<tr>
<td>Integrator</td>
<td>3.67</td>
<td>3.51</td>
</tr>
<tr>
<td>Business partner</td>
<td>3.67</td>
<td>3.36</td>
</tr>
<tr>
<td>IT educator</td>
<td>3.21</td>
<td>3.12</td>
</tr>
<tr>
<td>Profession advocate</td>
<td>3.02</td>
<td>3.31</td>
</tr>
</tbody>
</table>

Table 1 CIOs ranked both the seven roles by importance and by their own effectiveness in those roles. The self-examination gains insight into CIO perception.

By examining a role-by-role comparison of how CIOs ranked *Importance* and *Effectiveness*, one can see how, while, CIOs believe being an **Informaticist** is important, relatively speaking, they do not believe they have been as effective as they are as a **Profession Advocate**.
COMPARISON OF CHIEF INFORMATION OFFICER ROLE IMPORTANCE AND EFFECTIVENESS, FIGURE 3

Comparison CIO role importance and effectiveness

This data is also examined through the IMT point of view regarding the importance and perceived CIO effectiveness in the same seven roles (this data is reflected below in Table 2). This separate survey, unique in higher education CIO research, revealed IMT perceptions, providing the institution perspective independent from the CIO. The IMT responses were also compiled in aggregate. IMTs believed CIOs were most effective in **Contract Oversight**, a foundational role, and the least **Effective** as the **IT Educator**, a strategic role. The group ranked another foundation role, **Classic IT Support**, as the most **Important** and ranked CIOs second highest in **Effectiveness** for this role. As a **Business Partner**, a strategic role, IMTs did not rank CIOs as **Effectiveness**; that role was ranked as second to the lowest average.

INSTITUTION MANAGEMENT TEAM RANKING OF ROLE IMPORTANCE AND CIO EFFECTIVENESS, TABLE 2

<table>
<thead>
<tr>
<th>ROLE</th>
<th>HIERARCHY POSITION</th>
<th>IMPORTANCE AVERAGE</th>
<th>EFFECTIVENESS AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classic IT support</td>
<td>Foundation</td>
<td>4.22</td>
<td>3.99</td>
</tr>
<tr>
<td>Informaticist</td>
<td>Center</td>
<td>4.11</td>
<td>3.85</td>
</tr>
<tr>
<td>Integrator</td>
<td>Center</td>
<td>3.99</td>
<td>3.81</td>
</tr>
<tr>
<td>Contract oversight</td>
<td>Foundation</td>
<td>3.92</td>
<td>4.07</td>
</tr>
<tr>
<td>Business partner</td>
<td>Strategic</td>
<td>3.73</td>
<td>3.72</td>
</tr>
<tr>
<td>IT educator</td>
<td>Strategic</td>
<td>3.66</td>
<td>3.67</td>
</tr>
<tr>
<td>Profession advocate</td>
<td>Foundation</td>
<td>3.34</td>
<td>3.94</td>
</tr>
</tbody>
</table>

Table 2 IMTs responded with their perception about CIO effectiveness regarding seven technology roles in the institution.
Those IMT findings were compared with the CIOs role by role and are shown in Figure 4. CIOs consistently ranked themselves less effectiveness than their IMTs did, except in the Integrator role. In the Contract Oversight and Profession Advocate roles, IMTs perceive CIOs as highly effective.

**INSTITUTION MANAGEMENT TEAM/CIO ROLE COMPARISON: IMPORTANCE AND EFFECTIVENESS, FIGURE 4**

![Figure 4: The study examined both CIO and IMT perception regarding CIO effectiveness in seven primary roles.](image)

**Attributes and effectiveness**

There have always been debates regarding which variables may have an impact on CIO effectiveness. For example, one argument centers on to whom the CIO should report; some believe the CIO must report to the president or Chief Executive Officer to be effective while others do not believe reporting structure makes a difference. Additionally, there are questions and speculation regarding to what extent, if any, that gender and institution type may influence CIO effectiveness.

While there may be debate about the influence of gender, reporting structure, or institution type, this research has defined four main attributes which have consistently had an impact on CIO-perceived effectiveness. The attributes are:
Communication Skills
IT Knowledge
Political Savvy
Strategic Business Knowledge

These attributes are described in Table 3.

CIO ATTRIBUTES, TABLE 3

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Skills</td>
<td>Fluent in business language</td>
</tr>
<tr>
<td></td>
<td>Fluent in higher education language</td>
</tr>
<tr>
<td></td>
<td>Able to communicate and present information without technical terms to</td>
</tr>
<tr>
<td></td>
<td>non-technical people</td>
</tr>
<tr>
<td>IT Knowledge</td>
<td>Understands how IT is applied in the organization</td>
</tr>
<tr>
<td></td>
<td>Able to use current IT resources to fill institutional requirements</td>
</tr>
<tr>
<td></td>
<td>Uses new technology for the institution</td>
</tr>
<tr>
<td></td>
<td>Familiar with the acquisition of IT</td>
</tr>
<tr>
<td>Political savvy</td>
<td>Able to assess situations that might be confrontational and act</td>
</tr>
<tr>
<td></td>
<td>tactfully</td>
</tr>
<tr>
<td></td>
<td>Able to work well with a majority of people</td>
</tr>
<tr>
<td>Strategic Business</td>
<td>Knowledge of institutional offerings</td>
</tr>
<tr>
<td>Knowledge</td>
<td>Understanding of market and business processes</td>
</tr>
<tr>
<td></td>
<td>Familiar with the competition</td>
</tr>
</tbody>
</table>

Table 3 CIO Attributes - Four primary attributes have been identified to examine CIO and effectiveness, based on CIO and management team perceptions.

IMT opinions about these four CIO attributes were collected. IMTs evaluated CIO attributes using a one-to-five scale with one representing Was not informed or Not effective and five representing Well informed or Extremely effective.

The responses were aggregated to create an average for each attribute. Those averages were analyzed to determine if there was any correlation between the attributes and the IMTs’ perception of CIO effectiveness. Year after year based on the IMT responses, this study has consistently found there was a correlation between the CIO attributes and perceived effectiveness.
In 2015, there was a correlation between the IMT perception of the four attributes and IMT perception of CIO effectiveness operating in the seven CIO roles. In another consistent finding, the CIOs were perceived to be more effective with the knowledge attributes, strategic business knowledge and IT knowledge, than they were with the soft skills, political savvy and communication skills

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Business Knowledge</td>
<td>3.97</td>
</tr>
<tr>
<td>IT Knowledge</td>
<td>3.96</td>
</tr>
<tr>
<td>Political Savvy</td>
<td>3.89</td>
</tr>
<tr>
<td>Communication Skills</td>
<td>3.79</td>
</tr>
</tbody>
</table>

Gender, Reporting Structure and Effectiveness

Anecdotally, there has been conflicting discourse regarding gender impact on Effectiveness. This 2015 study found that effectiveness by gender was not statistically significant. Overall, there was little difference in comparing effectiveness by gender. The female rating was 3.44 to 3.46 for men.

**EFFECTIVENESS BY GENDER, TABLE 4**

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>3.46</td>
<td>3.44</td>
</tr>
</tbody>
</table>

Table 4 CIO effectiveness by gender was not statistically significant in 2015.

The data was also examined to see if there was a significant difference if CIO reporting structure had an impact on Effectiveness. Again, based on IMT responses, there is little difference and it was not statistically significant. See Table 5 below.

**EFFECTIVENESS BY REPORTING STRUCTURE, TABLE 5**

<table>
<thead>
<tr>
<th>Year</th>
<th>Reports to CEO</th>
<th>Does not report to CEO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>3.93</td>
<td>3.85</td>
</tr>
</tbody>
</table>

Table 5 There was no statistically significant difference between female CIOs who reported to CEO/president than those who did not report to the institution president.
IMT responses were also examined to see if there was a difference between CIOs who were a member of the organization management team (IMT) and those who were not members (see Table 6 below). Based on IMT responses, there was no statistical significance for Effectiveness that could be attributed to management team membership.

**EFFECTIVENESS BY INSTITUTION MANAGEMENT TEAM MEMBERSHIP, TABLE 6**

<table>
<thead>
<tr>
<th>Year</th>
<th>IMT member</th>
<th>Non-member</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>3.93</td>
<td>3.83</td>
</tr>
</tbody>
</table>

Table 6 Based on IMT responses, there was little difference in CIO effectiveness between those who were management team members and those who were not members.

**Institution Management Team Impact on Effectiveness**

In 2015, 57 percent of CIOs were members of the IMT. This percentage has held relatively steady for more than a decade. In fact, the greatest change occurred between 2003 and 2007, when the percentage hit a high of 59 percent in 2003 and dropped to its lowest point at 53 percent four years later. The chart below depicts the percentage through the years. In 2005, this study examined CIOs from community colleges only and, therefore, that percentage (66 percent) has been omitted from this year-to-year comparison.

**INSTITUTION MANAGEMENT TEAM MEMBERSHIP, FIGURE 5**

![Figure 5: This chart depicts the year-to-year percentage of CIOs serving as a member on the institution management team.](image-url)
Although the IMT did not view CIOs as significantly more or less effective based on IMT membership, there are claims it does have an influence. IMT membership’s impact on effectiveness has been debated for years. One side of the argument asserts that whether or not the CIO is an IMT member is a direct reflection on the institution’s commitment to technology; an institution that values technology will have its technology leader on the management team. By the same logic, it can be said it may reflect the CIO’s influence on executive decisions about technology for the entire organization. Challengers dispute this argument, maintaining that IMT membership has no bearing on how an institution feels about technology, and such membership would carry no more or no less weight in influence.

This study has attempted to settle this debate; however, it has not been conclusively resolved during the past decade of research. In the last 12 years, the responses have vacillated in favor of both arguments. In 2015, this study found that CIOs who served on the IMT viewed themselves as more effective than their non-IMT-member CIO colleagues and the difference was statistically significant (Table 7).

### CHIEF INFORMATION OFFICERS: MANAGEMENT TEAM INFLUENCE ON EFFECTIVENESS, TABLE 7

<table>
<thead>
<tr>
<th>Year</th>
<th>IMT Member</th>
<th>Nonmember</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>3.53</td>
<td>3.35</td>
</tr>
</tbody>
</table>

Table 7 2015 CIOs indicated that being a member of the institution's management team had an impact on effectiveness.

While this result mirrored the 2014 result, as depicted in the Figure 6 below, overall through this study’s lifetime, CIOs have wavered on whether or not IMT membership had an impact on effectiveness. In six of the 12 years this issue has been examined, CIOs have indicated membership did not have an influence. Moreover, there does not appear to be a trend toward any single consensus.
CHIEF INFORMATION OFFICER PERSPECTIVE: EFFECTIVENESS BASED ON INSTITUTION MANAGEMENT TEAM MEMBERSHIP, FIGURE 6

Figure 6: CIO effectiveness average based on whether or not respondents were on the institution management team.

2003 TO 2015 CHIEF INFORMATION OFFICER RESPONSES: MANAGEMENT TEAM MEMBERSHIP’S IMPACT ON EFFECTIVENESS, TABLE 8

<table>
<thead>
<tr>
<th>Year</th>
<th>Serves on IMT</th>
<th>Not on IMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>3.6</td>
<td>3.38</td>
</tr>
<tr>
<td>2015</td>
<td>3.53</td>
<td>3.35</td>
</tr>
</tbody>
</table>

Table 8: Through the years, chief information officers serving on the institution management team indicated whether or not they believed that IMT membership had an impact on their effectiveness; however, no clear, consistent response has emerged.
While there has not been a general consensus about IMT membership impacting CIOs’ effectiveness, education may have an influence on IMT membership. Overall, this research has found that a greater percentage of doctorate-holding CIOs served on the IMT than those with a bachelor’s or master’s degrees. In fact, among CIOs holding the three degree levels, only those with a bachelor’s degree reported a majority not serving on the IMT. This comparison appeared to show that possessing an advanced degree may have had an impact on the CIO’s IMT membership. However, there may be other factors involved. For example, those with terminal degrees may more likely be employed at a different institution type than those with bachelor’s degrees, and those institution types influence whether or not the CIO is an IMT member. CIOs on the IMT compared by degree level are illustrated in the chart below.

**CHIEF INFORMATION OFFICERS’ MANAGEMENT TEAM MEMBERSHIP BY DEGREE LEVEL, FIGURE 7**

![Bar chart showing IMT membership by degree level.](chart)

*Figure 7* While other factors may be influencing IMT membership, the illustration reflected that those with advanced degrees tend to serve on management teams at greater percentages than those with a bachelor's degree.

**Reporting Structure and Effectiveness**

The CIOs’ reporting structure was examined to determine if it had any impact or influence regarding *Effectiveness*. The question is often asked: does the CIO need to report directly
to the chief executive officer to be effective? If not, how many layers away from the CEO can the CIO be and still be effective? There are some who believe that IT and its expenses should fall under the guardianship of the chief financial officer (CFO) or another executive within the institution. On the other hand, some hold the CIO should report to the CEO or institution president because that structure symbolizes and reflects IT’s importance to the organization, and it also increases the CIO’s and IT’s influence (Banker, Hu, Pavlou, & Luftman, 2011). Since 2009, CHECS has found the reporting structure of CIOs falling under CEO oversight has been steady, remaining between 32 and 35 percent.

EFFECTIVENESS AND REPORTING TO THE CHIEF EXECUTIVE OFFICER

From the CIO perspective, reporting structure made a difference. The 2015 results found that those who reported to CEOs viewed themselves as more effective than those who did not and the results were statistically significant. This result was similar in 2014 as shown in the chart below.

2014 AND 2015 CIO PERSPECTIVE: EFFECTIVENESS BASED ON REPORTING STRUCTURE, FIGURE 8

Figure 8: The 2014 and 2015 depiction of an effectiveness average based on the chief information officers’ perspective on the impact that reporting structure has on a CIO’s effectiveness.
In spite of the CIOs’ opinion about the reporting structure and *Effectiveness*, as a group, CIOs operate under many different reporting configurations. This study has found that only 34 percent of higher education CIOs report directly to the CEO with the majority reporting to another person in the organization.

**CHIEF INFORMATION OFFICER REPORTING STRUCTURE: ORGANIZATIONAL LAYERS FROM THE PRESIDENT OR CHIEF EXECUTIVE OFFICER, FIGURE 9**

Historically speaking since 2003, between 32 and 41 percent of higher education CIOs reported to the institution president. In fact, since 2009, the percentage has not fluctuated more than 2 percentage points from 34 percent, where it has been stable the last two years.
Figure 10: The percentage of CIOs reporting to CEOs has remained relatively consistent since 2009.

The longitudinal data has found nearly all CIOs are within one reporting level from or report directly to the CEO. The percentage has remained a constant 97 percent since 2012.

Figure 11: Nearly all higher education chief information officers report within one organization level or less from the institution leader. This percentage has been consistent through the years.
COMMUNITY COLLEGE REPORTING STRUCTURE

Conversely, the CIO in the community college environment was more likely to report to the CEO; in 2015, 44 percent of CIOs working at community colleges reported directly to the CEO. Through the course of this study, the percentage of CIOs in the community college who reported to the CEO has remained between 40 and 51 percent. This reporting structure difference for community college CIOs may be due to a simpler organizational structure than what is found in large universities.

TWO-YEAR COLLEGE: CHIEF INFORMATION OFFICERS REPORTING TO CHIEF EXECUTIVE OFFICERS, FIGURE 12

Figure 12: Except for the 2011 peak, the reporting structure with the CIO reporting to the CEO has remained consistent at two-year institutions.

In 2015, CIO Magazine reported that 44 percent of CIOs in a cross-industry survey reported to the CEO ("2015 State of the CIO," 2015). In contrast, CHECS found in its 2015 study that 44 percent of higher education CIOs reported to the CFO or Provost. The following chart depicts the 2015 reporting structures for CIOs.
REPORTING STRUCTURE AND THE CHIEF INFORMATION OFFICER DEGREE, FIGURE 13

Figure 13: The chart reflects the many reporting structures for CIOs. The majority, 35 percent, reported directly to the chief executive officer.

The reporting structure was also examined by looking at CIO degree levels. Among those reporting directly to the CEO, 29 percent had a doctorate degree and 53 percent possessed a master’s degree, while 18 percent had a bachelor’s, associate’s or other degree. As the reporting layers increased, those with doctorate degree decreased and conversely, those with bachelor’s degrees increased. Interestingly, the percentages of those with master’s degrees remained somewhat steady.

CIOS’ DEGREE BY REPORTING LAYERS, FIGURE 14

Figure 14 CIOs with a master’s degree were represented across the reporting structures, but those with a terminal degree reported to the institution leader at a greater percent than not; the opposite was true for those with a four-year or less degree.
Figure 15 While most IMTs reported to the institution leader, some reported to other higher education executives, such as the financial officer, the provost, or academic officer.
CHIEF INFORMATION OFFICER CHARACTERISTICS

Area of responsibility

There have been two frequent areas of speculation surrounding the CIO’s responsibility scope. The first school of thought is the CIO’s influence is withering and eventually the position will be consigned to a lonely corner with no strategic responsibilities. On the other hand, another speculation envisioned the CIO will become a leader with broad oversight and responsibilities for non-technology departments.

The first assertion of diminishing influence was examined by analyzing what working areas the CIOs were focused on during the past three years. CIOs selected from three categories:

- More time on day-to-day tasks,
- More time on IT and institution strategy,
- No change.

In 2015, 75 percent of respondents stated they spent More time on IT and institution strategy—a 7 percent growth from 2014 when 68 percent responded correspondingly. Only 9 percent believed they spent More time on day-to-day tasks and 16 percent reported No change. Since 2011, the majority of CIOs have consistently focused on the IT department and institution strategy. In fact, the percentage has risen from 60 percent in 2011 to 75 percent in 2015.

CHIEF INFORMATION OFFICER AREAS OF FOCUS, FIGURE 16

Figure 16 Only 16% of CIOs reported they were spending more time on day-to-day tasks and 16% reported no change; however, 75% stated they were devoting more time to department and institution strategy.
CHIEF INFORMATION OFFICER WORK FOCUS 2011 TO 2015, FIGURE 17

Since 2011, the majority of Chief Information Officers have increasingly focused on the technology department and institution strategy. Indeed, IMTs corroborated the CIOs’ assertion that CIOs were spending more time on IT department and institution strategy. Sixty-five percent of IMTs indicated CIOs spent more time on institution and technology department strategy.
More evidence to determine if CIO influence was waning or not was gathered by comparing institution management team membership as well as reflecting on to whom the CIO reports, the reporting structure. More than half of responding CIOs, 57 percent, reported in the 2015 study they were IMT members. Moreover, 78 percent reported they had formal interaction with IMT members on a daily or weekly basis, and nearly 50 percent formally interacted daily or weekly with the CEO. However, while the percentages dropped regarding formal interaction with the governing board, these CIOs still represented a meaningful number. More than a quarter of CIOs formally interact with the governing board monthly and 34 percent had formal interaction a few times throughout the year; 17 percent have daily or weekly interaction and 23 percent reported interaction only once a year.
From 2003 to 2011, CIO-IMT membership has been relatively stable. Likewise, a reporting structure with CEOs supervising CIOs has mirrored IMT-membership and has also been steady, fluctuating between 30 and 35 percent reporting to the CEO. However, these percentages appeared to be influenced by institution type. Assessing IMT membership by the institution type found that IMT-member percentages steadily rose and overtook the nonmember percentage at the master’s degree institutions. This increase may reflect that among master’s and doctorate level institutions, CIOs are more likely to be involved with institution strategy than they are at institutions offering only bachelor’s or associate’s degrees.

“This increase may reflect that among master’s and doctorate level institutions, CIOs are more likely to be involved with institution strategy than they are at institutions offering only bachelor’s or associate’s degrees.”

The second assertion about CIOs gaining broad oversight outside of technology was also examined. In 2015, data regarding areas of responsibility in the institution was gathered. A full 66 percent of CIOs reported they had no other responsibility areas other than technology; however, 10 percent said they had library oversight and 9 percent reported managing research. Other supervision areas included distance learning, facilities, security, business office, academics, human resources, and continuing education. With the majority confined to the IT department, there is no supporting evidence that substantial numbers of CIOs were branching out into non-technology areas.

The following illustration reflects the three major responsibility areas for 2010, 2011, 2012, 2013, and 2015 (this data was not collected in 2014).
TOP THREE AREAS THE CHIEF INFORMATION OFFICER LEADS, FIGURE 19

Figure 19 Sixty six percent of CIOs oversee the technology department exclusively. The CIOs’ territory remains primarily in the technology realm.

Chief Information Officer Experience

PRIOR EXPERIENCE SECTOR

Since 2003, this study has collected data about higher education CIOs’ work experience, what sector they have worked in recently and whether or not they were internal or external candidates for their current position. This information may provide general insight into institution hiring practices, which could help guide those preparing to become a higher education CIO in the future.

CIOs in higher education were categorized into five broad areas based on the work sector they came from prior to their current position. The areas were Higher Education; Public Sector (local, state, or federal government); Healthcare; Commercial or a for-profit; and a Nonprofit Outside of Higher Education. By collecting this information, CHECS has debunked the myth that a large percentage of CIOs recently came into higher education
from outside the industry. In fact, more than 75 percent of CIOs worked in higher education prior to their current post, and only 23 percent came from one of the other four sectors.

FOUR SECTORS: WHERE CHIEF INFORMATION OFFICERS WORKED, FIGURE 20

![Diagram showing distribution of CIOs across sectors: 76% Higher Education, 15% Nonprofit, 5% Public, 2% Healthcare, 1% Commercial.]

*Figure 20 Only 8 percent of higher education CIOs came from the Public, Nonprofit, or Healthcare sectors, while 91 percent came from the Higher Education and Commercial sectors combined.*

INTERNAL OR EXTERNAL CANDIDATES

While the vast majority of CIOs worked in higher education, more than half worked in a different institution in their last position. Only 42 percent of CIOs reported they had worked in the same institution before moving into the CIO position, while 58 percent came to the role from outside the organization. This result may be good news for TIs who aspire to become a CIO in the future. These results indicate that internal candidates are competitive against those applying for the position from outside the organization.
CHIEF INFORMATION OFFICERS WORKED IN THE SAME INSTITUTION PRIOR TO CURRENT POSITION, FIGURE 21

Figure 21 More than half of today's higher education CIOs transferred from a different institution than the one where they are currently employed.

The following two charts depict the internal and external candidates categorized by different variables. The first chart reflects internal/external candidates by institution type. The second chart depicts the following variables: gender, 51 years and older for age, those retiring in the next 10 years, those with advanced degrees, those who report to the CEO and those serving on the IMT.
CHIEF INFORMATION OFFICERS: INTERNAL OR EXTERNAL CANDIDATE BY INSTITUTION TYPE, FIGURE 22

Figure 22 “Yes” responses indicate the CIOs were internal candidates. The greatest differences in percentage occurred at doctorate and baccalaureate institutions. Baccalaureate institutions tended to hire chief information officers from outside the organization while doctorate institutions tapped internal candidates for the role.

CHIEF INFORMATION OFFICERS: INTERNAL OR EXTERNAL CANDIDATE, FIGURE 23

Figure 23 While there was little difference in most of the variables for internal and external candidates, two variable stood out: those with advanced degrees and those who report to the Chief Executive Officer.
WORK ENVIRONMENT AREAS
Knowing what work sectors CIOs were in prior to their current higher education position provides greater understanding of where technology leaders are developing their skills and experience. The CIOs in this research were asked which sectors they worked in over the course of their careers. The sectors were divided into four general working environment areas and are depicted below.

- Higher Education Technology
- Technology Not in Higher Education
- Higher Education Not in Technology
- Outside of Higher Education and Technology

This information about CIO career paths may be also helpful for TLs who aspire to become a CIO as well as to the IMT who may be seeking certain skills or proficiencies in their next CIO.

CIO WORK EXPERIENCE GENERAL AREAS, FIGURE 24

Figure 24 Chief Information Officers were categorized into four broad areas based on the last sector where they worked before their current position as a higher education CIO.
TIME IN AREA

On average, CIOs spent the majority of their career—17.09 years—working within higher education IT. Aside from higher education IT, CIOs spent the most time working in IT Outside of Higher Education at 7.12 years (Figure 3). This result clearly demonstrated the average higher education CIO has not newly arrived from another industry. Indeed, they have spent a majority of their career working in higher education technology.

AVERAGE CIO WORK EXPERIENCE IN FOUR GENERAL AREAS, FIGURE 25

One anecdotal claim often discussed about the background of higher education CIOs is that they were appointed to their lead post having come from outside of the IT department. Information from this research has disproven this claim conclusively. As depicted in the figure below, CIOs have spent the majority of their careers in the technology field in general.
AVERAGE CIO WORK EXPERIENCE INSIDE AND OUT OF INFORMATION TECHNOLOGY, FIGURE 26

![Figure 26](image)

Through the course of their careers, CIOs in this research have spent, on average, more than 24 years working in technology and majority of it in higher education technology.

Figure 26 Chief Information Officers have spent, on average, more than 24 years working in technology and majority of it in higher education technology.

Through the course of their careers, CIOs in this research have spent on average, during the last eight years, between a low of 13.45 years and a high of 17.09 years in higher education IT (Graph 11). When compared to the other three areas, the amount of time the CIO has been in higher education IT has always been significantly higher. This fact may be due to more CIOs developing their careers within higher education technology departments rather than coming from outside sectors or industries.
In 2015, CIOs have spent more time in higher education technology than they have in the last eight years this data was collected. It is likely higher education technology departments are becoming the preparation area for future technology executives.

Chief Information Officer Education

DEGREE LEVEL

The higher education CIO career field has steadily been filled by those with advanced degrees, although in 2015 the percentage of those holding an advanced degree dipped slightly from 81 percent in 2014 to 79 percent. Bachelor degree holders increased in 2015 to 19 percent, up from 16 percent in 2014. Nevertheless, it has been well documented in this study that almost 100 percent of IMTs expect CIOs to have an advanced degree, and as a result, percentages of master's and doctorate degree holders are expected to climb in the future.
In 2015, 20 percent of respondents possessed a doctorate and another 59 percent held a master’s degree, leaving 21 percent with a bachelor’s, associate’s, or high school/equivalent degree.

CHIEF INFORMATION OFFICERS: DEGREE LEVELS, FIGURE 28

Figure 28 Seventy-nine percent of higher education CIOs possess either a master's or doctorate degree. An advanced degree for CIOs is becoming more common in cross industries.
By and large, CIOs with a master’s degree worked at every institution type and at a greater percentage than those possessing other degree types, except at tribal colleges, where all of their responding CIOs held a bachelor’s degree. With more than half of all CIO respondents having a master’s degree, it is not a surprise they are well represented at almost every institution type.

The following chart depicts CIOs by their degrees and the percentage of them by degrees who work in the different institution types. CIOs’ degrees may have an impact on the institution type where they work. For example, the greatest percentage of those holding a doctorate work in doctorate institutions; the same can be seen among those with a master’s degree and bachelor’s degree.
CHIEF INFORMATION OFFICER DEGREE BY INSTITUTION TYPE, FIGURE 30

Figure 30 This chart reflects the institution type where CIOs work based on CIOs’ degree level. CIOs primarily worked in institutions similar to their degree level.

To contrast the percentage of degree-holding CIOs by institution type, the following chart reflects higher education institution types and the percentage of them with CIOs holding various degrees. By examining the data in this manner, it is easy to see that more than half of each institutions type, except tribal colleges, employ CIOs with master’s degrees, and nearly 75 percent of each type, except tribal colleges, employ CIOs with an advanced degree. This data may be the strongest evidence yet that advanced degrees are becoming a standard expectation for higher education CIOs.
While industry literature has debated the necessity of an advanced degree for the CIO role, the higher education industry is not alone in valuing CIOs with advanced degrees. A report published in Health Care IT News stated that 73 percent of that industry’s CIOs had a master’s degree; moreover, that percentage is an increase by more than 10 percent from the previous year (Dixon, 2014). A 2011 ComputerWorld article argued that while an advanced degree was not a requirement, it was pragmatic, because “No one is exclusively a technology chief anymore. Everybody’s a business executive, whether they call themselves that or not” (King, 2011). The author’s assertion about being a “business executive” may be supported by this study’s area of responsibility examination, discussed earlier in this report. With 75 percent of higher education CIOs spending time on IT and institution strategy, they are business executives.

CIO OPINION ABOUT DEGREE

Most higher education CIOs maintain the belief that the profession requires an advanced degree; in fact, 84 percent believe an advanced degree is a necessary component for a CIO
compared to 15 percent who hold that a bachelor’s degree is sufficient. As in prior years this data was collected, results tended to echo the respondents’ degree level; for example, among those with a bachelor’s degree, the highest percentage of them stated that a bachelor’s degree was necessary, while a majority of those with a master’s degree felt that degree was essential. The exception was those with an associate’s degree; 75 percent of that group believed a bachelor’s degree was necessary with the remaining 25 percent pointing to a master’s. The following chart depicts higher education CIOs grouped by the degree they hold and the percentage of those groups asserting which degree was necessary for the position.

**CIO PERSPECTIVE: DEGREE A CHIEF INFORMATION OFFICER NEEDS, FIGURE 32**

![Chart showing the percentage of CIOs with different degrees who believe a bachelor's degree is necessary](image)

**Figure 32** A majority of CIOs with an associate’s or bachelor’s degree believe a bachelor’s degree is necessary, while a majority of those with a masters or doctorate believe an advanced degree is necessary for the technology executive position.

**TECHNOLOGY LEADER OPINION OF CIO DEGREE**

In a separate 2015 CHECS study, TLs, the non-CIOs comprising the next organizational layer down from the senior technology leader, were surveyed. These technology managers and directors indicated the degree they believed the CIO should have; this data is significant because this group will likely become the CIOs in the future and their opinion
will affect what they do to prepare themselves, in terms of education and experience, to be a viable candidate for the technology executive position. The majority, 72 percent, believed a master’s degree was necessary followed by a bachelor’s, doctorate, and, at 3 percent, an associate’s or high school/equivalent.

TECHNOLOGY LEADER PERSPECTIVE: DEGREE A CHIEF INFORMATION OFFICER NEEDS, FIGURE 33

Figure 33  Non-CIO technology leaders in high education overwhelming believe that a CIO should have a master's degree.

DEGREE MAJOR

Degree major may be an area of concern for some aspiring-CIO TLs who want to pursue an appropriate education course to position themselves for the senior technology role. While past CIOs have had a broad education background before attaining the executive technology role, those disparities are shrinking in favor of two primary fields of study, technology and business, with education a distant third. These top three majors were identical in 2014. Half of all CIO respondents held either a technology or a business degree and 12 percent an education degree.
2015 CHIEF INFORMATION OFFICERS: EDUCATION MAJOR, FIGURE 34

Figure 34 Among today's higher education CIOs, the majority have either a technology-related or business degree. While those two degrees occupy slightly more than half of the CIO majors, the other 49 percent have a wide variety of degree majors.

The data regarding CIO degree majors was first gathered in 2007. In the last eight years, some notable changes have been occurring. The greatest change has been in the Other category, representing degrees other than Business, Technology, and Education. In 2007, 17 percent of CIOs had degrees categorized as Other. By 2015 that percentage had shrunk to 6 percent while those with a technology degree increased. These changes likely represent a trend of future CIOs studying in academic fields that complement the technology executive role in much the same way as a financial officer studying accounting or finance.
CHIEF INFORMATION OFFICER: TOP FOUR DEGREE MAJOR FOR 2007 AND 2015, FIGURE 35

Figure 35 The most noticeable change between 2007 and 2015 is the decline of chief information officers with a degree categorized as Other. As the position matures, aspiring CIOs may be taking the opportunity to earn degrees in fields of study that complement the role.

Given the wide variety of CIO degree majors in the past, it may not be a surprise to some that 36 percent of CIOs stated the field of study was not important to the CIO role. For those who named a major, 26 percent cited technology-related degree and 19 percent listed a business degree as important.
CHIEF INFORMATION OFFICER PERSPECTIVE: MAJOR SHOULD HAVE, FIGURE 36

While 36% of chief information officers believe the degree is not important, more than a quarter hold that a technology-related degree is needed.

There was more consensus among the IMT group about what degree a CIO should possess with 55 percent preferring a technology-related degree.

INSTITUTION MANAGEMENT TEAM PERSPECTIVE: DEGREE MAJOR FOR CHIEF INFORMATION OFFICER, FIGURE 37

Figure 37 More than half of the institution management team respondents stated a technology-related degree was necessary for the chief information officer role.
TLs also weighed in on what degree major they believed a CIO should have; a slightly greater percent of this group compared to CIOs believed the degree major was not important. Only 25 percent thought a technology-related degree was important, slightly more than the 18 percent who believed a business degree was essential.

**TECHNOLOGY LEADERS PERSPECTIVE: DEGREE MAJOR IMPORTANT FOR CIO ROLE, FIGURE 38**

![Pie chart showing the distribution of beliefs about the importance of degree majors for CIO role](image-url)

**Figure 38** Technology leaders overwhelming do not believe the degree major is important for the CIO role. Their opinion is sharply divided from the institution management team.

Given that 55 percent of the IMT group judged a technology-degree was crucial for a CIO, their point of view may affect the hiring qualifications for CIOs in the future. If the TL group continues to believe the major has no importance to the role, they may find themselves falling short of IMT expectations.

On the other hand, current CIOs opinion fell between TLs and IMTs on the *Major not important* response and closest to TLs on the importance of technology-related degrees than to IMTs.
Figure 39: More than half of IMTs believed a technology-related degree was important for the technology executive role, while about a quarter of CIOs and TLs had the same belief.
CIO DEMOGRAPHICS

Demographics for the group provides a foundation to view higher education CIOs. It presents a sketch for higher education CIOs to help define the group by age, gender, race, experience, education, and title.

Technology Executive Titles

CHECS has tracked CIO titles since 2003. One of the evident changes through the years has been a shift toward “chief information officer” as a commonly used title. In 2003, just under a third—32 percent—of respondents held that title; however, in the subsequent 12 years, that percentage has increased to 54 percent. In 2009 31 percent of respondents were called “director,” but by 2015 that percentage dropped to 14 percent. The following two charts reflect respondent titles, the first one exhibiting the 2015 survey respondents and the second an overview of the CIO title through the years.

**SENIOR TECHNOLOGY EXECUTIVE’S TITLE, FIGURE 40**

Figure 40 The most frequently used title for the lead technology executive is Chief Information Officer, exceeding the next most frequently used title by almost 40 percentage points.
TITLE OF CHIEF INFORMATION OFFICER USAGE FROM 2003 TO 2015, FIGURE 41

Figure 41. Since 2003, there has been a clear trend with "Chief Information Officer" used in the title of the technology executive. This chart did not include 2005 because only two-year institutions were surveyed that year.

Age

More than half of higher education CIOs who participated in the 2015 survey were between the age of 51 and 60 years old. The smallest percentages fell in the youngest and oldest age brackets. It may be expected that the largest percentage of CIOs were between 51 and 60 years old because the position is often considered the peak in a technology career. In 2014, 28 percent of CIOs were aged between 51 and 55, and in 2015, this age group increased to 32 percent.
Among the nine age-group brackets, the 51-to-55-year-old bracket had the greatest concentration of CIOs at 32 percent. The two smallest brackets, as might be expected, were those in the youngest and oldest age brackets, representing those entering the career field and those who may be looking toward retirement. An interesting change can be noted when comparing the 2015 age groups to the same groups in 2009, see Figure 43 below. In 2009, the percentages of CIOs were spread fairly evenly through most of the age groups. However, in 2015, the 51-to-55 age group rose by 10 percent. This increase may be a reflection of the aging CIO population.
CHIEF INFORMATION OFFICER AGE COMPARISON: 2009 TO 2015, FIGURE 43

This chart reflects the percentage changes in the different CIO age groups from 2009 to 2015.

The following chart displays the percentage of CIOs in the 51-years-or-older age brackets. In the last five years that group increased by 10 percent.

PERCENTAGE OF CHIEF INFORMATION OFFICERS 51 YEARS AND OLDER FROM 2010 TO 2015, FIGURE 44

With each year, the percentage of chief information officers in the 51 years or older groups has increased.

This aging CIO population may be an indication of a maturing executive position. A cross comparison between the CIO and IMT age groups can be seen with the following chart,
Figure 45. While 58 percent of IMTs were 56 years old and older, 64 percent of CIOs were 55 years old and younger. If older CIOs continue to increase, the future may see a similar age pattern to that of the IMTs.

**AGE COMPARISON: INSTITUTION MANAGEMENT TEAM AND CHIEF INFORMATION OFFICERS, FIGURE 45**

![Age comparison chart]

**Figure 45** It appears that chief information officers may be arriving in their positions at a younger age than the overall institution management team.

**Compensation**

The average salary for responding CIOs increased since last year. In 2015, the average salary was $143,079, compared to last year’s $139,820. However, allowances dipped slightly from $1,440 last year to $1,320 this year. The Chronicle of Higher Education reported that CIOs’ average salary was $134,168 with those at two-year institutions earning on average $112,430 and those at research institutions earning $229,500 ("Median Salaries of Senior College Administrators, 2014-15," 2015). CIO magazine reported the average CIO salary in their annual survey was $234,830 ("2015 State of the CIO," 2015). One notable compensation statistic for higher education CIOs was the difference in salary between genders: overall women were paid a higher salary than men.
This difference was explored more fully in the “The Female Chief Information Officer” section of this report.

**Gender**

While women are more prominently represented in higher education CIO ranks than their cross-industry peers, they are still in the minority, and there are more men in technology than there are women. In 2015, 25 percent of CIOs were female. This percentage is an increase from 2014 and the highest since 2008. Female CIOs are discussed more fully later in this report under “The Female Chief Information Officer” section. The following graph depicts CIOs by gender since 2008.

**HIGHER EDUCATION CHIEF INFORMATION OFFICERS BY GENDER, FIGURE 46**

![Graph depicting CIOs by gender since 2008.](image)

**Figure 46** The 2015 percentage of female CIOs has reached its highest level since 2008.

The IMT group is marginally better represented by women than the CIO group with females making up a third of organization management teams.
INSTITUTION MANAGEMENT TEAM BY GENDER, FIGURE 47

Figure 47 Institution management team has a slightly better gender composition than the chief information officer group.

Race

The higher education CIO career field is not racially diverse and has not been throughout the life of this study. As in prior years, the survey collected racial data as follows: Native Hawaiian or other Pacific Islander, American Indian or Alaskan native, Asian, Black or African American, and White. Data was also collected by CIOs who identified themselves as Hispanic.

In 2015, 95 percent of CIO respondents identified themselves as White; this percentage represents a 4-percent increase from 2014. Minorities represented only 5 percent of higher education CIOs in 2015.
CIOS AND RACE, FIGURE 48

Only two percent of higher education CIOs identify themselves as Hispanic.

HIGHER EDUCATION CHIEF INFORMATION OFFICERS IDENTIFIED AS HISPANIC, FIGURE 49

Figure 49 Higher education chief information officers were asked whether or not they identified themselves as Hispanic; only 2% responded that they did.
IMTs were slightly more diverse with 7 percent identifying themselves as Hispanic.

**INSTITUTION MANAGEMENT TEAM IDENTIFIED AS HISPANIC, FIGURE 50**

![Pie chart showing 7% Hispanic](image)

Figure 50 Institution Management Teams were slightly more diverse than Chief Information Officers with 7% identifying themselves as Hispanic.

As with those identifying themselves as Hispanic, the overall IMT group is marginally more diverse than the CIO group, but is still largely homogeneous with 7 percent Black or African American and 3 percent Asian.

**INSTITUTION MANAGEMENT TEAM: RACE, FIGURE 51**

![Bar chart showing race distribution](image)

Figure 51 Among the Institution Management Team, only 10% identified themselves as either Black/African American or Asian.
CHIEF INFORMATION OFFICER CAREER PLANS

Tenure

When this research was conceptualized in the early 2000s, one of the popular narratives was related to CIOs frequently changing jobs; some speculated that CIOs rarely stayed at one job for more than three years. This study’s research has continuously debunked that myth by finding the average length of CIO tenure was between six and seven years. The average CIO tenure for 2015 was 5.96 years. The IMT average tenure was 5.59 years.

This year’s CIO tenure is the second lowest average since 2003. Perhaps this result is a reflection of the ongoing high percentage of CIOs who project retirement in the next ten years. Those CIOs are in fact retiring, lowering the average tenure in current position for CIOs. In cross industry surveys, the average tenure was 5.8 years ("2015 State of the CIO," 2015).

The following chart illustrates tenure throughout the life of this study, excluding the 2005 results when data for only two-year college CIOs was collected.

CHIEF INFORMATION OFFICER TENURE, FIGURE 52

![Average Chief Information Officer’s tenure reached a high in 2013 at 7 years, 6 months.](image-url)
Retirement

The higher education CIO, like other executive leaders in an institution, is aging and retirement may be on the horizon for many. This survey found that 22 percent of CIOs were planning to retire within the next five years and another 26 percent in six to 10 years. These percentages were similar to 2014, when it was reported at 19 and 28 percent, respectively. With those planning to retire, it left 52 percent not expecting to retire for 11 years or more.

PERCENTAGE OF CHIEF INFORMATION OFFICERS PLANNING TO RETIRE, FIGURE 53

Figure 53 Within the next 10 years, higher education may lose almost half of its Chief Information Officers to retirement.

CHECS has tracked CIO retirement plans since 2008. The following graph depicts the percentage of CIOs who planned to retire between one to 10 years from the respective survey date.
PERCENTAGE OF CHIEF INFORMATION OFFICERS RETIRING IN ONE TO TEN YEARS, FIGURE 54

Figure 54 The year 2009 had the lowest percentage of Chief Information Officers expecting to retire within the coming decade, while in 2012, half of the CIOs, the highest percentage since this data has been collected, expected to retire. However, overall in the last eight years, the percentage has consistently remained between that high and low.

CIOs retirement plans parallel IMT plans. Within the next decade, 54 percent of those executives expect to retire. One notable difference was the percentage of CIOs who planned to retire in 11 to 15 years was greater than IMTs with similar plans: 25 percent of CIOs planned to retire within that period compared to 15 percent of IMTs.
INSTITUTION MANAGEMENT TEAM RETIREMENT PLANS, FIGURE 55

Figure 55 Institution Management Team retirement plans are similar to Chief Information Officers' plan. More than half of the IMT plan to retire within 10 years.

CIO retirement has long been a cause for concern in this study and is one of the primary reasons why CHECS began the TL study. The term TL (or technology leader) was defined as those working in higher education technology who are not CIOs but are in the next organizational layer down from the CIO position. The TL research sought to determine if those upcoming leaders would create a sufficient, qualified CIO pool as current senior executives left the technology career field. According to the 2015 survey, 66 percent of TLs anticipated they would pursue a CIO position.

TECHNOLOGY LEADERS WITH CHIEF INFORMATION OFFICER CAREER PLANS, FIGURE 56

Figure 56 More than half of Technology Leaders plan to pursue becoming a Chief Information Officer in the future.
Future Plans

While many CIOs have retirement on their minds, a large percentage are still planning their careers. CHECS collected data about those future plans. Seven percent of the CIOs aspired to become a higher education president. More than half planned to stay in their current positions, and slightly more than a quarter of them expected to hold a CIO position at another institution. This is a similar result to a CIO Magazine survey in which 45 percent of CIOs planned to continue working in that position ("2015 State of the CIO," 2015). The following chart illustrates the career plans for today's higher education CIOs.

CHIEF INFORMATION OFFICER CAREER PLANS, FIGURE 57

Figure 57 While more than half of Chief Information Officers plan to stay at their current institution, 20 percent have plans that may take them out of the executive technology role.
THE FEMALE CHIEF INFORMATION OFFICER

It is well documented that the higher education CIO group is not diverse. Women made up a quarter of the 2015 responding CIOs in this study. The reason for its lack of gender diversity is not precisely known, but it has been reported, while a greater percentage of women than men are earning degrees, they are choosing other sciences over technology-related studies.

The National Science Foundation reported in the *Science and Engineering Indicators 2012* that women were awarded approximately 57 percent of all bachelor's degrees as well as half of all science and engineering degrees ("Science and Engineering Indicators 2012," 2012). Their fields of study, however, were disparate; women gravitated toward degrees in chemistry, biology, agriculture, social science and psychology while more men than women earned degrees in computer sciences, mathematics, and engineering. The National Center of Education Statistics reported that in 2009-2010, women earned 62.6 percent of all master's degrees and 53.3 percent of all doctorate degrees. Yet, fewer women pursued advanced degrees in computer sciences, physical sciences, economics, and engineering ("Science and Engineering Indicators 2012," 2012).

In higher education professions, women are under-represented in the technology executive role. In this 2015 study, 25 percent of respondents were women compared to 75 percent were men. While there had been a small but steady decline of female higher education CIOs between 2009 and 2013, in the last couple of years, the decline appeared to be reversing. In fact, the 2015 result was the highest since 2008.

HIGHER EDUCATION CHIEF INFORMATION OFFICER BY GENDER FROM 2008 TO 2015, FIGURE 58

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*Figure 58* Men have disproportionately outnumbered women in the technology executive role in higher education. While 2013 saw its greatest disparity, the percentage of female CIOs has climbed slightly each year since then.
Throughout the course of this research, the percentage of female CIOs had been on a slow but steady decline, and the information from the CIO and TL research seemed to indicate the trend might continue. For instance, the female TLs were not expressing interest in the CIO job in comparable percentages to their male counterparts; this lack of interest was compounded by female CIOs retiring sooner than men, leading to speculation that there would be fewer women leading the technology departments in the future.

Figure 59 (below) depicts four trends followed in the last seven years:

- The percentage of female TLs
- The percentage of female CIOs
- The percentage of female CIOs planning to retire in the next decade
- The percentage of female TLs interested in becoming a CIO

Overall from 2014 to 2015, there was an increase in female CIOs, rising from 22 percent to 25 percent. This increase may be due to female CIO retirement plans; in 2014 55 percent planned to retire within the next 10 years, but in 2015, 51 percent had those same plans. A decline was also seen in the other two trends. Not only did the percentage of female TLs drop by 8 percentage points, the percentage of female TLs who aspire to become the CIO also dropped by 8 percentage points, from 39 to 31 percent.

The TL population is the supply line for future higher education CIOs, and with the dip in female TLs as well as those aspiring to become a CIO, increasing gender diversity in the future may have an uphill road to climb.
The Female CIO: Age

Examining the ages of female higher education CIOs found some notable differences compared to men in the same position. Overall, there was a general curve reflecting the greatest percentage CIOs in the 51-to-55-year-old bracket for both men and women. However, for women that curve leading to and from the peak was sharp. The percentages abruptly dropped in the closest younger and older age brackets which surround the 41-
percent peak. The older group, 56-to-60 years, held 20 percent of female CIOs and the younger only 10 percent. The following chart depicts the ages of women holding the CIO position. Sixty-eight percent of female CIOs were 51 years old and older.

**FEMALE CHIEF INFORMATION OFFICERS BY AGE, FIGURE 60**

Among men, the age difference was more evenly distributed in the age brackets with their peak at 30 percent in the same age group as the women’s peak, the 51-to-55-year-old group. However, with men, that peak age bracket was surrounded by 21 percent in the next oldest group and 14 percent in the younger. Figure 61 below reflects the gender comparison by age. The reason for the disparity may be related to a five-year period when fewer women held the senior IT position.

CHECS found that between 2008 and 2013, a slight decline in female CIOs occurred, dropping from 26 percent in 2008 to 21 percent in 2013. The decline may have had an impact on the already fragile female CIO population as fewer women assumed the leader role. This year, however, the female population sprang back to 25 percent. The male/female comparison of age groups older than 56 years appeared to be more similar to one another than the younger-than-51-year-old age groups. Sixty-nine percent of the male CIOs were 51 years old and older compared to 68 percent of the female CIOs.
GENDER COMPARISON BY AGE, FIGURE 61

![Gender Comparison Bar Chart](chart)

Figure 61 Examined by age, a general bell curve can be seen with both men and women; however, the curve is much sharper for female Chief Information Officers.

The Female CIO: Race

As with their male counterparts, when examining race, there was an overwhelmingly greater percentage of White female CIOs. There was little difference between men and women in regard to race.

RACE AND GENDER, FIGURE 62

![Race Composition Bar Chart](chart)

Figure 62 Nearly all female higher education CIOs are White. Only 4 percent are represented in the Black or African American, Asian, or American Indian or Alaska Native groups.
The Female CIO: Education

Examining education degree levels, female CIOs were better educated than their male counterparts. Eighty-three percent of the female CIOs held advanced degrees compared to 77 percent of male CIOs. There were 2 percent more men with bachelor’s degrees than women and 3 percent more with doctorate degrees; however, 9 percent more women held master’s degrees than men. The following chart depicts the degrees levels of male and female CIOs.

**DEGREE LEVEL BY GENDER, FIGURE 63**

![Bar chart showing degree levels by gender](chart)

<table>
<thead>
<tr>
<th>Degree Level</th>
<th>Men (%)</th>
<th>Women (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctorate</td>
<td>21%</td>
<td>18%</td>
</tr>
<tr>
<td>Master's</td>
<td>56%</td>
<td>65%</td>
</tr>
<tr>
<td>Bachelor's</td>
<td>20%</td>
<td>18%</td>
</tr>
<tr>
<td>Associate's</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>High School or Equivalent</td>
<td>2%</td>
<td>0%</td>
</tr>
</tbody>
</table>

*Figure 63 There was a greater percentage of women with master's degrees than men, but less with a doctorate and bachelor's degrees.*

In addition to examining the degree level, CHECS collected data on CIOs’ major field of academic studies. As noted earlier in this report, fewer women studied technology, mathematics, and engineering. A greater percentage of men held degrees in those majors, as well as in administration and leadership. Women, however, exceeded men in business degrees as well as education, library and information science, humanities, and other majors. The following chart reflects the 10 major studies by gender.
Figure 64 While female chief information officers have not typically pursued technology, mathematics, or engineering degrees, they have exceeded men in majors earning business, library and information science, and education degrees.

The Female CIO: Reporting Structure

Reporting structure based on gender was also analyzed. This study found that while 36 percent of men reported directly to the CEO, only 29 percent of female CIOs had the same reporting structure. On the other hand, 17 percent of male CIOs reported to the Chief
Academic Officer or Provost compared to 27 percent of female CIOs. The following chart depicts the reporting structure by gender.

REPORTING STRUCTURE BY GENDER, FIGURE 65

Figure 65 In general, the reporting structure for both genders are similar to each other except for reporting to the institution President/Chief Executive Officer; 7 percent more male Chief Information Officers report directly to the CEO while 10 percent more female CIOs report to a Provost or Chief Academic Officer.

The Female CIO: Institution Management Team Membership

While a greater percentage of male CIOs reported directly to the institution president or CEO, a slightly greater percentage of women served on the IMT than men, 58 percent to 56, respectively.
Figure 66 Two percent more women served on the Institution Management Team than men.
The Female CIO: Career Path

In higher education, a greater percentage of current female CIOs last held the position of the deputy CIO, academic technology director, or administrative technology director, collectively at 34 percent. In comparison, a greater percentage of male CIOs were CIOs in their last position.

**LAST TITLE HELD PRIOR TO CHIEF INFORMATION OFFICER BY GENDER, TABLE 9**

<table>
<thead>
<tr>
<th>Role</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIO or senior IT position</td>
<td>25%</td>
<td>38%</td>
</tr>
<tr>
<td>Deputy CIO</td>
<td>14%</td>
<td>6%</td>
</tr>
<tr>
<td>Academic technology director/manager</td>
<td>11%</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td>10%</td>
<td>4%</td>
</tr>
<tr>
<td>Administrative technology director/manager</td>
<td>9%</td>
<td>5%</td>
</tr>
<tr>
<td>Associate/assistant VP</td>
<td>6%</td>
<td>3%</td>
</tr>
<tr>
<td>Executive director</td>
<td>5%</td>
<td>9%</td>
</tr>
<tr>
<td>Faculty</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Didn't work in the IT department</td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td>Application development director/manager</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>Systems director/manager</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>Help desk director/manager</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>Desktop support director/manager</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Network director/manager</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Telecommunications director/manager</td>
<td>0%</td>
<td>1%</td>
</tr>
</tbody>
</table>

*Table 9 A greater percentage of men held the senior technology position in their last job, while a greater percentage of women held other roles, such as Deputy CIO or Director.*

CHECS also examined the CIO’s last position by sector; sectors were defined into five broad categories: *Higher Education; Public* (local, state, or federal government);
Healthcare; Commercial (for-profit outside of higher education); and Nonprofit Outside of Higher Education. A greater percentage of women worked in Higher Education in their last sector and fewer came to the CIO role from the Public, Commercial, and Nonprofit areas in comparison to men.

LAST SECTOR BY GENDER, FIGURE 67

As part of this gender difference examination, data regarding whether CIOs were internal or external candidates was also collected. CHECS found that overall the majority of men and women CIOs were external candidates. However, there was a greater percentage of men over women who were external candidates and a greater percentage of women over men who were internal candidates.
Overall, a greater percentage of CIOs were external candidates than internal; however a gender comparison found that nearly 60 percent of men were external candidates compared to 55 percent of women.

The Female CIO: Salary

A study of the CIO salary by gender produced unexpected results. On average, female CIOs were paid more than men by almost $11,000 annually. This pay difference, also noted in other surveys, has been reported before (Florentine, 2013). Indeed, CHECS’ 2014 survey found female CIOs were paid almost $11,000 more per year than men. The following two charts depict the 2015 and 2014 results, respectively.
**2015 SALARY BY GENDER, FIGURE 69**

On average, women Chief Information Officers were paid almost $11,000 more annually than their male counterparts.

**2014 SALARY BY GENDER, FIGURE 70**

As in 2015, the 2014 CHECS survey found that on average female Chief Information Officers were paid more than male CIOs.
In 2013, CHECS found women were paid more than men; however, the salary gap was not as great as 2014 and 2015 with men earning $5,500 less than women.

2013 SALARY BY GENDER, FIGURE 71

![Salary Comparison Chart]

Figure 71 In 2013, female Chief Information Officers, on average, were paid $5,329 more than men.

The Female CIO: Tenure

In 2015, the CHECS’ survey found the male CIO’s average tenure was one year longer than the female CIO. This result is probably related to fewer women in the CIO position and the female CIOs’ stated intention to retire earlier than men.
TENURE BY GENDER, FIGURE 72

![Graph comparing tenure by gender](image)

**Figure 72** On average, men were in their Chief Information Officer position a year longer than women.

The Female CIO: Retirement Plans

The retirement plans for men and women have always reflected a dissimilarity in this study. In 2015, CHECS found that 5 percent more women than men planned to retire within the next 10 years. However, when looking at the next one to five years, there were six percent more male CIOs planning to retire than their female colleagues. This retirement planning difference may result in a short-term increase in the percentage of female CIOs.

RETIREMENT PLANS BY GENDER, FIGURE 73

![Graph comparing retirement plans by gender](image)

**Figure 73** Within six to 10 years, a greater percentage of women will retire from the profession than men. Given that there is a greater percentage of women than men Chief Information Officers aged between 51 and 55 years old, this retirement statistic may not be atypical.
POSITION AND INSTITUTION DEMOGRAPHICS
Institution Types and Sizes

Technology is integrated into the higher education institution and as a result, the CIO position is found in every institution type. The following chart illustrates the percentage of CIOs by institution type.

CHIEF INFORMATION OFFICER RESPONDENTS BY INSTITUTION TYPE, FIGURE 74

Figure 74. Respondents to this 2015 study represented almost all higher education institutions types in the United States.

This study drew responses from CIOs working in institutions of varying sizes, from those serving under 3,000 students to those with more than 20,000 students. More than a quarter of the responses were from CIOs at institutions serving more than 10,000 students. The following chart depicts the responses by institution size.
INSTITUTIONS BY SIZE, FIGURE 75

Figure 75 Of the responding Chief Information Officers, 72% worked in institutions with less 9,999 full-time students and 28% were from institutions serving 10,000 or more students.

In order to gain a well-rounded view of higher education CIOs, this study gathered information about the last two positions the CIO held prior to the current role. This information may help define the career path that today’s CIOs followed to become the technology executive. It is also helpful for IMTs, who may be involved in a CIO search. By far, the vast majority of CIOs—34 percent—held the senior technology position or CIO title in their last role. The next two most frequently named positions at 8 percent each were Executive Director and Network Director/Manager. The following table lists all of the responses for 2015 and 2013.
## Title Held One Position Prior Than Current, Table 10

<table>
<thead>
<tr>
<th>Job title held one position ago</th>
<th>2013</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIO or senior IT position</td>
<td>35%</td>
<td>34%</td>
</tr>
<tr>
<td>Executive Director</td>
<td>11%</td>
<td>8%</td>
</tr>
<tr>
<td>Network Director/Manager</td>
<td>7%</td>
<td>8%</td>
</tr>
<tr>
<td>Deputy CIO</td>
<td>3%</td>
<td>8%</td>
</tr>
<tr>
<td>Academic Technology Director/Manager</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>Administrative Technology Director/Manager</td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td>1%</td>
<td>5%</td>
</tr>
<tr>
<td>Didn't work in the IT Department</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>Systems Director/Manager</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Associate/Assistant VP</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Faculty</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Application Development Director/Manager</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Desktop Support Director/Manager</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Library</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Help Desk Director/Manager</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Telecommunications Director/Manager</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Project management</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Consultant</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>IT operations</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Military</td>
<td>1%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 10 This table depicts the title of the last position held prior to the Chief Information Officers’ current job, and, as a comparison, the 2015 responses were contrasted with those gathered in 2013.

This survey also gathered responses for the CIOs’ title two positions prior to the current role. As might be expected, the percentage of those who were CIOs two positions ago, 19 percent, was less than that percentage of those who held the title one position earlier.

However, a path might be developing through traditional technology roles. The percentages are scattered throughout a variety of positions in the department.

The following table reflects the responses gathered in 2015 and, as a comparison, those gathered in 2013.
### TITLE OF POSITION HELD TWO POSITIONS PRIOR TO CURRENT, TABLE 11

<table>
<thead>
<tr>
<th>Title of position held two positions ago</th>
<th>2015</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIO or senior IT position</td>
<td>19%</td>
<td>18%</td>
</tr>
<tr>
<td>Other</td>
<td>9%</td>
<td>8%</td>
</tr>
<tr>
<td>Network Director/Manager</td>
<td>8%</td>
<td>7%</td>
</tr>
<tr>
<td>Application Development Director/Manager</td>
<td>8%</td>
<td>11%</td>
</tr>
<tr>
<td>Didn't work in the IT Department</td>
<td>7%</td>
<td>10%</td>
</tr>
<tr>
<td>Executive Director</td>
<td>7%</td>
<td>6%</td>
</tr>
<tr>
<td>Administrative Technology Director/Manager</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>Systems Director/Manager</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>Faculty</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Academic Technology Director/Manager</td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td>Desktop Support Director/Manager</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Deputy CIO</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>Other Institution Department</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>Programmer</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Help Desk Director/Manager</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Associate/Assistant VP</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Project Manager</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Library</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Telecommunications Director/Manager</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Web Director/Manager</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Consultant</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Security director/manager</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>None</td>
<td>1%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 11 This table reflects the last two job titles current Chief Information Officers held prior to their current role. It also contrasts the responses from 2013.
Budget

Half of the responding CIOs for this 2015 study had a technology budget between $1 and $5 million. While 12 percent had a budget under $1 million, 5 percent of respondents managed budgets exceeding $25 million.

CHIEF INFORMATION OFFICER BUDGET MANAGEMENT, FIGURE 76

Figure 76 Half of all Chief Information Officers who responded manage a budget between $1 and $5 million; 21% manage a budget of $11 million or more.
EXPECTATIONS, SKILLS, AND PREPARATION

The CIO role is often viewed as an executive position and as the role has matured in the higher education institution, so have the expectations for the skills the executive should possess.

CIO job ads were reviewed between August 2014 and November 2014. More than 75 percent of the job advertisements either specified an advanced degree was a requirement or stated it was preferred. More than half of the advertisements stated the candidate should have a technology-related degree and nearly half expected candidates to have a minimum of 10 years of department leadership experience. As also evidenced by the IMTs belief that CIOs should have an advanced degree, these advertisements represent the growing expectations hiring committees have for CIOs.

Expectations

This study collected expectations and opinions about CIOs from two groups: IMTs and CIOs. The cross comparison creates a strong portrait of the expectations for a CIO from not only peers but also those who will work with and supervise the technology executive. For a CIO or aspiring CIO, the information gleaned here can provide education and career guidance.

IMTs were surveyed regarding their opinions about CIO skills and attributes. Overwhelmingly, IMTs expect CIOs to have an advanced degree. Eighty-four percent of IMTs stated CIOs should have a master’s degree and 10 percent believed a doctorate degree was appropriate. Only 10 percent believed a bachelor’s degree was sufficient and none of the IMTs believed an associate’s degree was adequate for the CIO role.

The IMT opinion is crucial for anyone seeking a CIO position. Management team members often serve on hiring committees, especially those that can have a significant influence in their responsibilities. Additionally, they may have a voice when appraising potential candidates. Perhaps most importantly, they may supervise the CIO.
INSTITUTION MANAGEMENT TEAM PERSPECTIVE: CHIEF INFORMATION OFFICER DEGREE, FIGURE 77

Likewise, CIOs had an opinion about what degree level should be required for the position, and the majority of respondents, 74 percent, indicated CIOs should have a master's degree. Moreover, a total of 84 percent of respondents stated an advanced degree was necessary. The chart below depicts the CIO opinion about the necessary degree and degrees of the responding CIOs.

CHIEF INFORMATION OFFICER PERSPECTIVE: CIO DEGREE, FIGURE 78

Figure 77  Institution management teams overwhelmingly believe a Chief Information Officer should have an advanced degree; 90 percent stated the technology executive should have either a master's or doctorate degree.

Figure 78  This chart depicts the Chief Information Officer perspective about what degree a CIO should have as well as contrasting that opinion with respondents' degree level.
Skills

The heart of this study has centered around CIO skills and attributes. Understanding what type of skills CIOs need to perform their responsibilities can help those who want to become the senior technology officer someday. Due to the CIOs role within the institution and need to interact with a variety of people at all levels, CIO skills vary. This survey collected CIO opinions about what skills were important to the role and as with responses from CHECS’ past studies, CIOs named communication the most frequently at 84 percent. Almost as important was leadership at 81 percent. Two of the least named skills were supervision and vendor management. All of the skills named are listed in the following table.

CHIEF INFORMATION OFFICER PERSPECTIVE: SKILLS IMPORTANT FOR CIOS, TABLE 12

<table>
<thead>
<tr>
<th>Skills</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication skills (writing, listening, speaking)</td>
<td>84%</td>
</tr>
<tr>
<td>Leadership</td>
<td>81%</td>
</tr>
<tr>
<td>Higher education knowledge</td>
<td>47%</td>
</tr>
<tr>
<td>Interpersonal skills (effective social interaction)</td>
<td>45%</td>
</tr>
<tr>
<td>Relationship building</td>
<td>39%</td>
</tr>
<tr>
<td>Technical knowledge</td>
<td>39%</td>
</tr>
<tr>
<td>Change management</td>
<td>23%</td>
</tr>
<tr>
<td>Planning</td>
<td>22%</td>
</tr>
<tr>
<td>Budgeting</td>
<td>19%</td>
</tr>
<tr>
<td>Business knowledge</td>
<td>19%</td>
</tr>
<tr>
<td>Governance</td>
<td>19%</td>
</tr>
<tr>
<td>Management</td>
<td>15%</td>
</tr>
<tr>
<td>Enterprise Resource Planning Implementation</td>
<td>7%</td>
</tr>
<tr>
<td>Business process re-engineering</td>
<td>7%</td>
</tr>
<tr>
<td>Administrative computing experience</td>
<td>6%</td>
</tr>
<tr>
<td>IT legal and policy expertise</td>
<td>5%</td>
</tr>
<tr>
<td>Finance</td>
<td>5%</td>
</tr>
<tr>
<td>Academic computing experience</td>
<td>5%</td>
</tr>
<tr>
<td>Vendor management</td>
<td>4%</td>
</tr>
<tr>
<td>Supervision</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
</tr>
</tbody>
</table>

Table 12 The two most important skills for a Chief Information Officer, according to higher education CIOs, are Communication and Leadership.
IMTs were also surveyed to gain insight into their opinion about what skills were critical for CIOs. While they also believed Communication was important at 66 percent, they listed Technical Knowledge, 76 percent, as the top skill, which contrasted sharply with CIOs. Only 39 percent of CIOs believe Technical Knowledge was important for the position. The following Table 13 reflects the IMTs opinion, and a side-by-side comparison for all three groups (CIO, IMT, and TL) is shown below in Table 15.

**INSTITUTION MANAGEMENT TEAM PERSPECTIVE: SKILLS IMPORTANT FOR CHIEF INFORMATION OFFICERS, TABLE 13**

<table>
<thead>
<tr>
<th>Skill</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Knowledge</td>
<td>76%</td>
</tr>
<tr>
<td>Leadership</td>
<td>67%</td>
</tr>
<tr>
<td>Communication Skills (writing, listening, speaking)</td>
<td>66%</td>
</tr>
<tr>
<td>Interpersonal Skills (effective social interaction)</td>
<td>38%</td>
</tr>
<tr>
<td>Higher Education Knowledge</td>
<td>35%</td>
</tr>
<tr>
<td>Academic Computing Experience</td>
<td>29%</td>
</tr>
<tr>
<td>Change Management</td>
<td>25%</td>
</tr>
<tr>
<td>Enterprise Resource Planning (ERP) Implementation</td>
<td>24%</td>
</tr>
<tr>
<td>Planning</td>
<td>23%</td>
</tr>
<tr>
<td>Administrative Computing Experience</td>
<td>18%</td>
</tr>
<tr>
<td>Management</td>
<td>18%</td>
</tr>
<tr>
<td>Budgeting</td>
<td>18%</td>
</tr>
<tr>
<td>Relationship Building</td>
<td>16%</td>
</tr>
<tr>
<td>Business Process Re-engineering</td>
<td>13%</td>
</tr>
<tr>
<td>Business Knowledge</td>
<td>10%</td>
</tr>
<tr>
<td>IT Legal and Policy Expertise</td>
<td>10%</td>
</tr>
<tr>
<td>Supervision</td>
<td>4%</td>
</tr>
<tr>
<td>Governance</td>
<td>4%</td>
</tr>
<tr>
<td>Finance</td>
<td>3%</td>
</tr>
<tr>
<td>Other</td>
<td>1%</td>
</tr>
</tbody>
</table>

Table 13: Institution Management Team believe Technical Knowledge superseded Communication Skills for the Chief Information Officer.
TLs, who will become CIOs in the future, also voiced their opinion about the CIO skills. While TLs listed four of the same skills both CIOs and IMTs listed, they believed Relationship Building held more importance than Technical Knowledge. A side-by-side comparison for all three groups is shown below in Table 15.

**TECHNOLOGY LEADERS PERSPECTIVE: SKILLS IMPORTANT FOR CHIEF INFORMATION OFFICERS,**

**TABLE 14**

<table>
<thead>
<tr>
<th>Skill</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>84%</td>
</tr>
<tr>
<td>Communication Skills (writing, listening, speaking)</td>
<td>83%</td>
</tr>
<tr>
<td>Relationship Building</td>
<td>51%</td>
</tr>
<tr>
<td>Higher Education Knowledge</td>
<td>47%</td>
</tr>
<tr>
<td>Interpersonal Skills (effective social interaction)</td>
<td>36%</td>
</tr>
<tr>
<td>Technical Knowledge</td>
<td>35%</td>
</tr>
<tr>
<td>Budgeting</td>
<td>30%</td>
</tr>
<tr>
<td>Business Knowledge</td>
<td>25%</td>
</tr>
<tr>
<td>Governance</td>
<td>20%</td>
</tr>
<tr>
<td>Planning</td>
<td>20%</td>
</tr>
<tr>
<td>Change Management</td>
<td>15%</td>
</tr>
<tr>
<td>Management</td>
<td>14%</td>
</tr>
<tr>
<td>Finance</td>
<td>8%</td>
</tr>
<tr>
<td>IT Legal and Policy Expertise</td>
<td>8%</td>
</tr>
<tr>
<td>Enterprise Resource Planning (ERP) Implementation</td>
<td>4%</td>
</tr>
<tr>
<td>Business Process Re-engineering</td>
<td>4%</td>
</tr>
<tr>
<td>Academic Computing Experience</td>
<td>4%</td>
</tr>
<tr>
<td>Administrative Computing Experience</td>
<td>3%</td>
</tr>
<tr>
<td>Supervision</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>1%</td>
</tr>
<tr>
<td>Vendor Management</td>
<td>1%</td>
</tr>
</tbody>
</table>
Table 14 Technology Leaders have a good understanding of skills needed for the Chief Information Officer role; however, they believed Relationship Building skill was more important than Technical Knowledge, a skill IMTs favored for the CIOs.

The following table depicts a side-by-side comparison for the skills deemed important for the CIO role based on the opinions of CIOs, IMTs, and TLs.

**COMPARISON: SKILLS IMPORTANT FOR CHIEF INFORMATION OFFICERS, TABLE 15**

<table>
<thead>
<tr>
<th>SKILL</th>
<th>CIO</th>
<th>IMT</th>
<th>TL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication skills (writing, listening, speaking)</td>
<td>84%</td>
<td>66%</td>
<td>83%</td>
</tr>
<tr>
<td>Leadership</td>
<td>81%</td>
<td>67%</td>
<td>84%</td>
</tr>
<tr>
<td>Higher education knowledge</td>
<td>47%</td>
<td>35%</td>
<td>47%</td>
</tr>
<tr>
<td>Interpersonal skills (effective social interaction)</td>
<td>45%</td>
<td>38%</td>
<td>36%</td>
</tr>
<tr>
<td>Relationship building</td>
<td>39%</td>
<td>38%</td>
<td>36%</td>
</tr>
<tr>
<td>Technical knowledge</td>
<td>39%</td>
<td>76%</td>
<td>35%</td>
</tr>
<tr>
<td>Change management</td>
<td>23%</td>
<td>25%</td>
<td>15%</td>
</tr>
<tr>
<td>Planning</td>
<td>22%</td>
<td>23%</td>
<td>20%</td>
</tr>
<tr>
<td>Budgeting</td>
<td>19%</td>
<td>18%</td>
<td>30%</td>
</tr>
<tr>
<td>Business knowledge</td>
<td>19%</td>
<td>10%</td>
<td>25%</td>
</tr>
<tr>
<td>Governance</td>
<td>19%</td>
<td>4%</td>
<td>20%</td>
</tr>
<tr>
<td>Management</td>
<td>15%</td>
<td>18%</td>
<td>14%</td>
</tr>
<tr>
<td>Enterprise Resource Planning Implementation</td>
<td>7%</td>
<td>24%</td>
<td>4%</td>
</tr>
<tr>
<td>Business process re-engineering</td>
<td>7%</td>
<td>13%</td>
<td>4%</td>
</tr>
<tr>
<td>Administrative computing experience</td>
<td>6%</td>
<td>18%</td>
<td>3%</td>
</tr>
<tr>
<td>IT legal and policy expertise</td>
<td>5%</td>
<td>10%</td>
<td>8%</td>
</tr>
<tr>
<td>Finance</td>
<td>5%</td>
<td>3%</td>
<td>8%</td>
</tr>
<tr>
<td>Academic computing experience</td>
<td>5%</td>
<td>29%</td>
<td>4%</td>
</tr>
<tr>
<td>Vendor management</td>
<td>4%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Supervision</td>
<td>4%</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Table 15 This comparison table reflects the opinions of Chief Information Officers, Institution Management Teams, and Technology Leaders regarding which skills are important for the CIO role.
Preparation

Preparing for the CIO role appears to require a combination of efforts, according to higher education CIOs. The top preparation activity, according to 89 percent of CIOs, was being mentored. The second most frequently named preparation activity was gaining experience through on-the-job training while the least named activity was earning certifications. The following chart depicts all of the activities CIOs named as ways to prepare for the executive technology leader role.

**CHIEF INFORMATION OFFICER PERSPECTIVE: PREPARATION ACTIVITIES FOR TECHNOLOGY LEADERS, FIGURE 79**

Figure 79 According to Chief Information Officers, being mentored is one of the most recommended ways for a technology person to prepare to become a CIO in the future.

A majority of CIOs recommend being mentored and on-the-job training as two ways to prepare for the CIO role, and those activities are the top two ways TLs are currently preparing for the senior technology position. Additionally, 11 percent are pursuing another degree.
TECHNOLOGY LEADERS: PREPARING FOR THE CHIEF INFORMATION OFFICER ROLE, FIGURE 80

![Pie chart showing the percentage of Technology Leaders preparing for the Chief Information Officer role through various methods.]

**Figure 80** Sixty-six percent of Technology Leaders are either being mentored or are receiving on-the-job training in preparation for the Chief Information Officer role.

Taking a closer look at the 11 percent of TLs who were pursuing another degree, 75 percent of them were working on a master’s degree and 25 percent a doctorate.

TECHNOLOGY LEADERS PREPARING FOR CHIEF INFORMATION OFFICER ROLE WITH EDUCATION, FIGURE 81

![Pie chart showing the distribution of advanced degrees pursued by Technology Leaders.]

**Figure 81** All of the Technology Leaders who are working on another degree as a means to prepare for the Chief Information Officer role are pursuing an advanced degree.
Mentoring and on-the-job training

A majority of CIOs recognize the importance for budding leaders to be mentored. While the majority of CIOs, 89 percent, believed being mentored was necessary for an aspiring CIO, only 53 percent of responding CIOs were mentoring someone, leaving 47 percent who were not mentoring anyone.

On-the-job training was also named by CIOs as a key activity in preparing for the technology executive position; 55 percent of responding CIOs had identified a person in their departments who acted as the lead technology person in the CIO’s absence. The following chart illustrates these top two activities that CIOs named and compared those percentages to CIOs who are actualizing these efforts by mentoring and naming someone to stand in the leader role in the CIO absence.

**COMPARISON: PREPARATION ACTIVITIES AND MENTORING/INTERIM CHIEF INFORMATION OFFICER, FIGURE 82**

![Figure 82](image)

*Figure 82 A majority of CIOs named mentoring and on-the-job training as the top two activities a person can do to prepare for the CIO role. However, there is a lower percentage of CIOs who are mentoring people or providing on-the-job training.*
## Higher Education CIO Study Results (2003 to 2015), Table 16

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Attributes have an impact on effectiveness?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>NM</td>
<td>Yes</td>
</tr>
<tr>
<td>CEO reporting has an impact on effectiveness (IMT)?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>NM</td>
<td>No</td>
</tr>
<tr>
<td>Percentage reporting to CEO</td>
<td>34</td>
<td>41</td>
<td>39</td>
<td>39</td>
<td>34</td>
<td>35</td>
<td>33</td>
<td>35</td>
<td>32</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>IMT Interaction/membership has an impact on effectiveness (IMT)?</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>NM</td>
<td>No</td>
</tr>
<tr>
<td>Percentage who were members of the IMT</td>
<td>59</td>
<td>66</td>
<td>53</td>
<td>58</td>
<td>56</td>
<td>55</td>
<td>54</td>
<td>57</td>
<td>55</td>
<td>56</td>
<td>57</td>
</tr>
<tr>
<td>CIO Title</td>
<td>32</td>
<td>12</td>
<td>39</td>
<td>38</td>
<td>42</td>
<td>42</td>
<td>47</td>
<td>47</td>
<td>50</td>
<td>51</td>
<td>54</td>
</tr>
<tr>
<td>Percentage of respondents reporting within one level of CEO</td>
<td>96</td>
<td>97</td>
<td>93</td>
<td>97</td>
<td>97</td>
<td>98</td>
<td>96</td>
<td>97</td>
<td>97</td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td>Time in position</td>
<td>5 years 3 mo.</td>
<td>6 years 5 mo.</td>
<td>7 years 5 mo.</td>
<td>6 years 7 mo.</td>
<td>6 years 10 mo.</td>
<td>6 years 8 mo.</td>
<td>7 years 4 mo.</td>
<td>7 years 5 mo.</td>
<td>7 years 6 mo.</td>
<td>6 years 6 mo.</td>
<td>5 years 9 mo.</td>
</tr>
<tr>
<td>Average time in higher-education IT</td>
<td>NM</td>
<td>NM</td>
<td>15.70 years</td>
<td>14.75 years</td>
<td>13.73 years</td>
<td>13.66 years</td>
<td>13.66 years</td>
<td>13.66 years</td>
<td>14.39 years</td>
<td>14.39 years</td>
<td>17.09 years</td>
</tr>
<tr>
<td>Advanced degree</td>
<td>82</td>
<td>68</td>
<td>75</td>
<td>76</td>
<td>77</td>
<td>79</td>
<td>76</td>
<td>76</td>
<td>79</td>
<td>81</td>
<td>78</td>
</tr>
<tr>
<td>Retiring in next 10 years</td>
<td>NM</td>
<td>NM</td>
<td>NM</td>
<td>47</td>
<td>45</td>
<td>47</td>
<td>48</td>
<td>50</td>
<td>49</td>
<td>47</td>
<td>48</td>
</tr>
<tr>
<td>Gender</td>
<td>NM</td>
<td>NM</td>
<td>NM</td>
<td>26% female 74% male</td>
<td>24% female 76% male</td>
<td>23% female 77% male</td>
<td>23% female 77% male</td>
<td>22% female 78% male</td>
<td>21% female 79% male</td>
<td>22% female 78% male</td>
<td>25% female 75% male</td>
</tr>
<tr>
<td>Race</td>
<td>NM</td>
<td>NM</td>
<td>NM</td>
<td>NM</td>
<td>NM</td>
<td>7% minority</td>
<td>6% minority</td>
<td>7% minority</td>
<td>7% minority</td>
<td>9% minority</td>
<td>5% minority</td>
</tr>
</tbody>
</table>

*NM - Not measured
References


Florentine, S. (2013, August 27). IT Gender Salary Gap Not As Dramatic As You Think. CIO.


ABOUT CHECS

CHECS was founded in 2009 by Dr. Wayne A. Brown to enable continued studies focusing on higher education CIOs’ attributes, education, experience and effectiveness. The research is unique from other CIO studies in that it is a two-part survey involving the CIO as well as other members of the institution management team. The annual study invites participation from the CIO (or lead technology person) at every two- and four-year higher education institution in the United States and internationally. Survey responses are analyzed in aggregate and statistical data is extracted and synthesized into an annual report. The CIO study has been conducted since 2003. In 2009, CHECS launched a second study focusing on those in the next organizational layer down from the CIO. This single-part survey is administered to higher education technology leaders to create the Higher Education Technology Leadership Study: The Chief Information Officers of the Future.

CHECS is a nonprofit (501c3) organization dedicated to the education and development of the higher education chief information officer. It is an entirely volunteer organization and all studies are funded through report sales and sponsor donations.

In 2010, CHECS began funding a scholarship endowment to benefit higher education technology management doctoral students at Nova Southeastern University. CHECS funds a second scholarship endowment at University of Texas, Austin, to benefit undergraduate students seeking a higher education technology management degree. In 2014, CHECS began funding a third scholarship at Florida State University to benefit students in the Management Information Systems programs.

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Wayne A. Brown, Ph.D., is the Chief Executive Officer and Founder of CHECS. He has been a chief information officer for more than 18 years and has worked in higher education at colleges in San Francisco, Kansas, and New York for almost 15 years. Prior to his academic career, he was in the U.S. Air Force for more than 20 years, serving in the Medical Service Corps, Education and Training, and Security Forces. Dr. Brown began researching the higher education chief information officer roles and effectiveness as a doctoral dissertation and continued the surveys almost every year since 2003. Dr. Brown’s work has been widely published in higher education and technology publications, such as *Chronicle for Higher Education, Information Week, CIO, Inside Higher Ed, Public CIO, EDUCAUSE Quarterly, League of Innovation in the Community College, EDUCAUSE Review, CIO, and Campus Technology*, and he has presented research findings at technology conferences throughout the United States.