Introduction

CoSN’s 2014 K-12 IT Leadership Survey was sponsored by SchoolDude and conducted in partnership with MDR.

**CoSN** is the premier organization representing K-12 technology leaders across the country; its members include public school districts, statewide and regional education service agencies, private, independent, charter, and religious organizations.

**MDR** is the education market’s leading source of data, insight and marketing solutions that help businesses connect to districts, schools, higher-ed and libraries.

**SchoolDude** is the nation's leading education platform of cloud solutions for schools and universities to manage facilities, maintenance and technology.

This partnership demonstrates the commitment of CoSN, MDR, and SchoolDude to provide key information about the state of education technology leadership.

The K-12 IT Leadership Survey tracks information on K-12 Ed tech priorities, IT leadership characteristics, staffing, and budget. The purpose of the survey is to understand how education leaders are leveraging technology to achieve engaging learning environments, how this changes over time, and how the choices we make today will shape tomorrow. CoSN conducts the survey annually as a way of highlighting technology trends, challenges, and priorities and identifying shifts from year to year. Survey results also inform the decisions CoSN makes to provide its members with meaningful and relevant tools and resources.
2014 K-12 IT Leadership Survey

Demographics

The survey was distributed to over 29,000 school system technology leaders throughout the country in early 2014. Over 600 people responded and over 350 completed the survey for 95% reliability and 5% validity rates according to the VGI StatCalculator.\(^1\) Respondents came from 45 states (all but Delaware, Hawaii, Idaho, South Dakota, and West Virginia).

What type of institution are you from?

K-12 Leaders from the district level, school level, statewide and regional levels, public, private, charter and religious sectors all participated. The majority of respondents came from the public school district level (70.4%).

CoSN defines school districts by size: small (2,500 students or fewer), medium (2,500 – 14,999), and large (15,000+). Almost half of the respondents were from medium-sized school districts (2,500–14,999 students).

Respondents came from diverse environments, but nearly half (46.9%) worked in suburban settings.
Districts of all socio-economic statuses participated in the survey, as shown by the free and reduced lunch benchmark. The majority of respondents came from schools where between 25% and 74.9% of students receive free or reduced lunch.

**Priorities**

Top priorities for this year are:

1. Assessment Readiness
2. Mobile Learning
3. Wireless Access

These top-tier issues are followed by additional priorities, such as Deploying Bring Your Own Device (BYOD) Strategies, Internal Connections, Data Driven Decision Making, Learning Management Systems, and Broadband Access. All of these priorities reflect a growing interest in developing and implementing systemic approaches for successful technology deployment in education.
Online assessment readiness is the number one priority identified by districts this year, up from second place last year. Despite this, school districts are still facing significant obstacles to assessment readiness, and 11% of those responding reported that they had no resources available to fulfill the online assessment requirements. Survey results revealed that fewer than 18% of district technology leaders believe their district is fully ready for
online assessments, whether they are facing the two Common Core Assessment Consortia or other state assessments. Given the very low number of school systems fully ready to address these issues and the limited amount of funding available for IT projects overall, it seems likely that this will continue to be a top issue for IT Leaders in the near future.

The second- and third-place priorities, mobile learning and wireless access, are closely linked. CoSN’s E-rate and Broadband Survey clarified this link last fall: approximately 40% of U.S. classrooms lack the wireless access they need to employ mobile learning, a serious infrastructure problem that is receiving attention by the Federal Communications Commission.

When respondents were asked about the overall transition to digital resources, 83% predicted that digital materials would account for more than 50% of the educational resources in their district over the next 3 years. MDR asked curriculum directors a similar question in their State of the K-12 Market and the response was consistent with the current findings.

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2 http://www.cosn.org/blog/cosn-survey-reveals-widespread-need-increased-broadband#sthash.98LMIOpW.dpuf

Nearly three-fourths (73%) of curriculum directors rated “comes in a digital format” as an important factor influencing purchasing decisions of basal and supplemental materials (and only 3% said it was not important). More than half (53% each) of all curriculum and technology directors believe that digital materials will replace print instructional materials to a substantial extent over the next three years.
The fourth priority this year, Bring Your Own Device (BYOD), was last year’s number one priority. BYOD continues to be a major priority for school districts; however, it appears to be reaching a more mature status in some districts which may account for its decline in priority ranking. The K-12 IT Leadership Survey elucidates the situation: 81% of districts support or are interested in exploring use of BYOD, and a full 51% have already implemented some type of BYOD program. This acceptance of and interest in BYOD is in stark contrast to 5 years ago, when personal devices were banned in nearly all schools.

Privacy concerns have recently received significant media attention due to concerns expressed by parents and policymakers. Interestingly, privacy ranked very low on the priority list for IT leaders despite this public debate. Is this oversight simply a matter of limited resources which prevent IT Leaders from addressing all issues, or has the debate over privacy not yet reached the top of the agenda at the district level? Future trends on the privacy of educational data will merit close monitoring over the coming year.

CoSN has provided resources to address the priorities identified in this survey. Be sure to take advantage of some of these offerings.

- **Raising the BAR: Becoming Assessment Ready** is a primer for school districts on dealing with the challenges they are facing in terms of online assessments. [www.cosn.org/RasingTheBar](http://www.cosn.org/RasingTheBar)
- **Leadership for Mobile Learning** is a source of valuable information about deploying mobile learning in school districts. [www.cosn.org/MobileLead](http://www.cosn.org/MobileLead)
- **Smart Education Networks by Design (SEND)** will help districts design networks that support educational transformations. [www.cosn.org/SmartEdNetworks](http://www.cosn.org/SmartEdNetworks)
- **Protecting Student Privacy in Connected Learning** toolkit was created with the help of Harvard Law School’s Cyberlaw Clinic, which is based at the Berkman Center. [www.cosn.org/privacy](http://www.cosn.org/privacy)
- **CoSN’s 2013 E-rate and Broadband Survey** found that 90% of district leaders think the current E-Rate program is inadequate for their districts' needs and documented the compelling need in most school districts for broadband and internal connections. [www.cosn.org/ErateSurvey](http://www.cosn.org/ErateSurvey)

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2014 K-12 IT Leadership Survey

Challenges

CoSN’s 2013 survey revealed that the top three challenges school district technology leaders/CTO/CIOs were facing were:

1. Budget constraints and lack of resources
2. Dealing with the changing culture of teaching and learning
3. Breaking down the silos within the district

The 2014 K-12 IT Survey respondents identified the same three challenges, but flipped the order of the first two. This year, the top challenge reflects the need for teacher training when rolling out technology applications and the dramatic changes that are occurring in classrooms.

1. Dealing with the changing culture of teaching and learning
2. Budget constraints and lack of resources
3. Breaking down the silos within the district

The chart below shows the top challenges facing districts; the greatest priority has the highest number.

Top Challenges facing CTOs

- Lack of support - community
- Lack of support - school board
- Personalized learning not supported
- Relevant Prof. Dev unavailable
- Lack of vision - Senior leadership
- Breaking down district silos
- Budget constraints / lack of resources
- Changing teaching & learning culture

CoSN provides resources to help leaders deal with these challenges and work through changes. Leadership initiatives such as those below are focused on changing teaching and learning:

- Participatory Learning in Schools: Leadership and Policy [www.cosn.org/participatoryLearning](http://www.cosn.org/participatoryLearning),
- Data driven Decision Making [www.cosn.org/3dm](http://www.cosn.org/3dm),
- Collaboration for Innovation: Advancing Excellence and Equity [www.cosn.org/OnlineCoP](http://www.cosn.org/OnlineCoP),
- Teaming for Transformation [www.cosn.org/OnlineCoP](http://www.cosn.org/OnlineCoP)

In addition, CoSN provides relevant resources through its Webinar series and EdTechNext Reports.
The 2014 CoSN IT Leadership Survey revealed a bright spot: **34% of the respondents expected budget increases this year**. After several years of crushing cuts in budget, staff, and resources, this finding provides a glimmer of hope that things will continue to improve for the 66% of respondents still experiencing stagnant or decreasing budgets.

MDR identified a similar trend in its report, *State of K-12 Market Report for 2013*: Overall, 2013–2014 budgets for technology—comprised of hardware, software, teacher training, and tech support—seem to have stabilized. Coming after the significant budgetary challenges of the past several years, it is welcome news that in at least 75% of districts, budgets in all four areas will either stay the same or increase.⁵

**Even with this good news, 48% of respondents report that budgets are not adequate to meet all the technology needs in a school district.** Now more than ever, districts need to understand the true cost of new initiatives and be able to plan for initial expenses and on-going costs.

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More lukewarm news: those surveyed agreed that existing funds do not meet school board expectations (52.3%), do not support existing technologies (47%), and do not allow for investment in new technologies (51.8%).

These responses reveal that district technology departments are still hindered by limited funding as they try to achieve difficult goals and meet high expectations.
When asked how they planned to overcome these budget and funding issues, 68% indicated that they had decided to delay replacements or defer maintenance upgrades and contracts, a decision that can be harmful in the long run. Deferring and delaying maintenance leads to inefficient performance or complete failure in equipment and networks, ultimately disrupting the education environment for students and staff. The second and third most popular strategies to solve funding issues were E-rate funds and grants, neither of which is a guaranteed funding source. Clearly, the major strategies in use do not achieve consistent, long-term, and sustainable improvements in IT budgets.
CTO Characteristics

As diverse as our survey respondents were, they revealed at least one major trend. 1 in 5 – 20% – of all school system CTOs plan to retire in the next 5 years. When the timeline expands, the trend becomes even more dramatic: 1 in 2 – a full 50% – plan to retire in the next 10 years.

This finding raises a series of unanswered questions: who will replace the existing group of CTOs when they retire? What type of career path is needed to prepare for the complex job of overseeing both traditional IT functions and educational technology in the classroom?

Considering the huge turnover on the horizon, the survey asked if districts had succession plans in place. Over half – 53% – responded “Don’t know,” a finding which should raise an alarm for superintendents, school boards,
and the community. When a mature CTO leaves, he or she takes a significant amount of institutional memory and knowledge with him. School systems will increasingly need to address succession planning for their technology leadership.

The current CTO/CIOs have strong educational attainment – in fact, 67% have earned a Master’s degree or higher. When compared to the latest census data, showing that just 11% of the general population in the US has earned a master’s degree, CTOs’ education stands out. Education levels for CTOs are slightly lower in rural and smaller schools; however, a master’s degree is still the most prevalent level of education even in areas where geography can make advanced degrees difficult to obtain.

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6 http://www.nytimes.com/2012/02/24/education/census-finds-bachelors-degrees-at-record-level.html
Current CTO/CIOs have considerable experience in their positions. Over 76% of the IT Leaders responding to the survey have been in the K-12 education technology field for 10 years or more.
57% of those surveyed have been in their current positions for more than 6 years, 26.5% for more than 10 years, and 3.5% more than 20 years. These numbers are largely unchanged from last year; CTOs’ longevity is impressive, especially when compared to a superintendent’s average of 3.6 years in a district. Combined with their high level of educational attainment, CTOs’ long-term work experience may be challenging for districts to replace given the future retirement trend.

A question about the professional backgrounds of K-12 IT leaders revealed little change from last year. The largest number of CTOs come from an education background (48.2%), closely followed by technology/technical background (39.1%); a small number come from business management (6.8%). The graphs below show how similar responses are from year to year.

2013: Which of these competencies best describes your primary professional background?
Despite high education levels and many years of experience, district technology leaders continue to report low salaries compared to CTO/CIOs from the private sector. 59% of school district CTO/CIOs surveyed reported salaries of less than $100,000. This is an improvement from the 2013 K-12 IT Survey, when 65% reported salaries of less than $100,000, but the income gap is still very large between CTOs working in the public sector and those working in the private sector. The average CIO in the private sector is paid around $195,000\(^7\). This income gap hampers school system recruitment efforts, particularly as the qualified technology workforce in K-12 shrinks and demand in the private sector also rises.

\(^7\) [http://www1.salary.com/Chief-Technology-Officer-Salary.html](http://www1.salary.com/Chief-Technology-Officer-Salary.html)
When asked to document the time they spent on certain tasks, school system CTO/CIOs indicated that “technology management,” such as fixing broken machines, consumed the most time, followed by “project management” and then “strategic planning.”

This data gives us a glimpse into a typical day or week of a CTO, showing a wide and varied set of responsibilities. Today’s CTO must possess skills and an understanding of both the educational arena and the world of IT to successfully navigate culture changes, budget limitations, and the traditional isolated classroom of the past.
The majority (54%) of school system IT leaders indicated that they spent less than $2,500 on professional development and training for themselves. Given the rapidly changing field of technology and the increasing priority that many districts are placing on digital conversions, technology leaders are likely in need of substantial professional development. This finding may indicate that many leaders have limited resources to gain needed leadership skills and the understanding of what they need to do to upgrade school technology systems for safety, reliability, and cost efficiencies.

Along with education industry experience and post graduate education, many of those surveyed have IT technical/industry-specific certifications, often more than one. Over 30% of those surveyed hold software specific certifications such as Apple, Microsoft, CompTIA, or Cisco’s CCNA. However, most of these certifications are single topic certifications and do not cover the broader skill set a successful CTO needs.
Nearly 72% of those responding were aware of CoSN’s two year old Certified Education Technology Leader Certification (CETL) -- up substantially from 50% last year, and a strong showing for a growing program. On an encouraging note, the majority of those surveyed indicated that they would provide some type of recognition or reimbursement for those on their staff that worked to obtain the CETL certification.

CoSN’s Framework of Essential Skills of the K-12 CTO is the body of knowledge defining the skill areas critical to today’s education technology leaders. The Framework was created and is kept up-to-date by volunteer panels of education technology leaders. It is the only consistent, nationally recognized skill set outlining the career path for those aspiring to be a school district technology leader/CTO.

8 www.cosn.org/framework and www.cosn.org/certification
CTOs in today’s education environment must have knowledge of and skills for managing technology and support services, understanding the educational environment, and most importantly, possessing leadership and vision. Earning CoSN’s Certified Education Technology Leader (CETL)™ certification will demonstrate to your staff, superintendent, and other stakeholders that you have mastered the knowledge and skills needed to define the vision for and successfully build 21st century learning environments in your school district.

Leadership

The value of strong, strategic technology leadership continues to be increasingly recognized in school districts, as demonstrated through the use of job titles. 73.9% of district level respondents now use and recognize Chief Technology Officer or Chief Information Officer titles, up from 43% in 2013. This appears to indicate a substantial increase in the use of CTO/CIO titles – or their generic equivalents – in school districts across the country. It likely also indicates that leaders are moving from titles such as technology coordinator to more senior job titles (CTO/CIO/Deputy Superintendent for Technology).

Of the district IT Leaders participating, over 52.1% said they report to their superintendent, which is up by 6% from last year. 51% of district based leaders also responded that there was technology representation on the district leadership cabinet. Having a technology voice at the cabinet level is a leading practice recognized by CoSN; it supports informed decisions, increases successful implementations of programs, and identifies long-term cost savings. CTOs must be able to strategically plan and budget for not only initial costs of projects but long-term and on-going expenses needed to sustain a new technology initiative. While the acceptance of the CTO as a cabinet-level employee and understanding of the CTO’s overall value have grown significantly, 47.8% of the respondents still reported that the person overseeing all of the technology functionality in a district may have little or no technology expertise. This coupled with limited budgets and IT staffs may lead to problematic decision-making.

76.8% of district IT respondents indicated they are in charge of both Instructional Technology and Administrative Technology.
School level technology leaders are reporting to either both the district and school leaders (principal) or just the district technology leader for the majority of districts; this focus beyond the individual school facilitates strategic planning and collaboration and further breaks down the silos within a district. This is a positive shift from a few years ago, when schools usually counted technology support staff out of the local budget and in turn made local decisions.
Along with increasing budgets, the survey revealed that more than 27% of districts reported an increase in staff this year, a 13% improvement over the 2013 survey and a hopeful sign. However, it is important to remember that 72% still reported stagnant or decreased staffing during the past year, a significant finding considering an increase of IT assets was also reported. This finding is also supported by SchoolDude survey.\(^\text{10}\)

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Years of budget cuts and increased demand have reduced district IT staff, and respondents report that technology staffs are consistently too thin to meet district needs and board expectations. More than 57% of respondents report a limited staff that works in a reactionary mode more than half of the time.¹¹

The slight improvement shows that even small increases in staffing and budget can have large impacts on IT departments that have been operating in reactionary mode for some time.

In prior years, over 70% of those surveyed indicated they had inadequate staffing to implement new technology and integrate it into the classroom. The gap in technology staff capacity will likely impact IT leaders’ ability to be ready for new online assessments, implement mobile learning, and deploy wireless access, the top three priorities identified by respondents. Qualified staffing is important not only to the initial purchase and roll out of a program, but to the continued success and support of these investments. The skills and services that an IT staff provides are important components in making smart and strategic budgeting decisions.

Overall, Do you feel that you have enough IT Staff?

<table>
<thead>
<tr>
<th>Task</th>
<th>% of respondents identified they are stretched to thin to accomplish this task</th>
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<tbody>
<tr>
<td>Integrate technology into the classroom</td>
<td>60%</td>
</tr>
<tr>
<td>Implement new technology</td>
<td>51%</td>
</tr>
<tr>
<td>Plan for new technology</td>
<td>46%</td>
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<tr>
<td>Meet your department’s yearly objectives</td>
<td>40%</td>
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<tr>
<td>Effectively support the needs of the district/school</td>
<td>37%</td>
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<tr>
<td>Maintain IT applications</td>
<td>36%</td>
</tr>
<tr>
<td>Install IT applications</td>
<td>32%</td>
</tr>
<tr>
<td>Maintain network systems adequately</td>
<td>31%</td>
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</tbody>
</table>

When asked, do you feel that you have enough IT staff?:

- 30% or more of the respondents indicated that they did not and were stretched too thin to address various current priorities and challenges.
- 60% reported that district technology staff has no time to implement new classroom technologies, impacting students directly. Due to this time crunch, school systems will likely struggle when adopting 1:1 and BYOD environments, virtual/blended learning, online assessments, and the transition from textbooks to the digital content needed for successful mobile learning environments.

This trend should be monitored and hopefully addressed in the coming years by policymakers who can provide fiscal and programmatic support in these areas. When the majority of an IT department’s time is spent reacting to problems, its abilities to innovate and keep a positive staff morale are hindered.

The survey once again shows that CTOs are dealing with growing assets to support despite this limited funding and thin staffing. 77.4% of those surveyed indicated that the number of IT assets had increased again this year. This increase in assets has received widespread media coverage, particularly as districts purchase new laptops, tablets, and other mobile devices for 1:1 initiatives and online assessments.

Nearly half of all survey respondents (49%) indicated that more than a quarter of district-owned computers are at least five years old. This number would be much higher without the influx of funding for the new initiatives mentioned above.¹²

When asked “How often do you conduct an inventory of IT assets and to whom do you report the results?” respondents indicated that inventory information was readily available internally, but may not generally be reaching key decisionmakers such as school boards and state DoEs.

The majority of IT Leaders track equipment and resources, but almost a third of them do not appear to present the information to either the school board (38.1%) or the state department of education (32.6%). SchoolDude has been tracking inventory statistics in past years and finds these figures consistent with past years. This trend is problematic because it indicates that documented increases in software and hardware may not financial and programmatic decision-makers.

Outsourcing is often a way to deliver cost effective and quality service when budgets and staffing are limited. Districts are increasingly open to outsourcing some aspects of technology; in fact, 58% of those surveyed report outsourcing one or more functions.

SaaS (Software as a Service) seems to be much more accepted in districts than hardware outsourcing. Hardware outsourcing techniques that are popular and economical in the private sector, such as remote data centers and server hosting, are generally not considered viable options in school districts today. School districts need robust, reliable, and scalable broadband infrastructure to be able to take advantage of hardware outsourcing cost saving measures; the lack of this strong broadband infrastructure makes school districts reluctant to outsource hardware. Perhaps this is the reason that 66% of the districts responding indicated that they would purchase and house hardware internally rather than consider potentially cost saving outsourcing opportunities.
44% of districts would consider outsourcing software, but only 26% that would consider hardware outsourcing, likely as a result of limited broadband abilities.
The top two outsourced applications are student information systems and learning management systems, but respondents outsource a variety of applications, from accounting and transportation applications to telephones and wireless systems.

Tracking district outsourcing is likely to change as broadband and infrastructure access is upgraded over the coming years. Once access and connectivity issues are improved, we should see an increase in outsourcing of both hardware and software and a corresponding increase in savings, network reliability, and positive end user experiences.
Conclusions

After years of budget cuts, decreases in staffing, and delays in technology improvements in school districts, the 2014 IT Leadership Survey indicates that components of the big picture might be improving. A word of caution, however: a small positive improvement does not make up for all the cuts that have been made in budgets, staffing, and resources in recent years. In addition, not all districts are seeing positive improvements.

Districts need to not only play catch up, a process which could take many years, but also address new priorities and manage increasing assets, often with limited budget and staffing. The priorities and challenges identified by survey respondents reflect a real desire to leverage technology to improve and transform the learning process, which is encouraging and was not the case several years ago. However, respondents may be falling behind in other areas: looming issues like privacy, network security, and moving from existing analog phones to VOIP are not yet key K-12 technology issues, even though they are immediate concerns in the private sector.

It was only 10 years ago that we considered a one computer to five students ratio to be a leading practice. Today, many districts are implementing 1:1 and BYOD projects, solving off campus access issues, and coordinating the growing field of online digital content that is rapidly replacing printed textbooks. Technology is increasingly a ubiquitous part of daily K-12 life. Additional funding, resources, and long-term strategic planning become essential to the success of educational programs seeking to leverage technology and provide students with the opportunity to learn anywhere and anytime.

CoSN is committed to providing the leadership, vision, and resources to help school system leaders succeed in these exciting and challenging times.