



WORKING TOGETHER FOR STUDENT SUCCESS

A GUIDE FOR SBOS & CTOS



ASSOCIATION OF
SCHOOL BUSINESS OFFICIALS
INTERNATIONAL



LEADING EDUCATION INNOVATION

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ABOUT THIS TOOLKIT

This toolkit was created by the Association of School Business Officials International (ASBO) and the Consortium for School Networking (CoSN) to help ASBO and CoSN members understand the value of a school district’s business and technology departments working together. This resource identifies some common issues impacting the roles of school business officials (SBOs) and chief technology officers (CTOs) and shares best practices, tips, and tools to address them. We hope this toolkit is useful in highlighting areas of opportunity for business and IT office collaboration to help support your school district’s education goals and increase students’ chances for success.

A special thanks to all ASBO International and CoSN members who contributed to this technology toolkit. Without the help of these volunteers, this project would not have been possible. Readers may find a full list of individuals who helped create this resource at the end of the toolkit.

For additional information or questions, please contact ASBO International at 866.682.2729 or asboreq@asbointl.org, and contact CoSN at 202.822.9491 or media@cosn.org.



ABOUT ASBO INTERNATIONAL

Founded in 1910, the Association of School Business Officials International (ASBO) is a nonprofit organization that, through its members and affiliates, represents approximately 30,000 school business professionals worldwide. ASBO International is committed to providing programs, services, and a global network that promote the highest standards in school business. Its members support student achievement through effective resource management in various areas ranging from finance and operations to food services and transportation. Learn more at asbointl.org.

ABOUT COSN

CoSN (the Consortium for School Networking) is the premier professional association for school system technology leaders. CoSN provides thought leadership resources, community, best practices, and advocacy tools to help leaders in the digital transformation. CoSN represents over 13 million students in school district nationwide and continues to grow as a powerful and influential voice in K-12 education. For more information, visit www.cosn.org.

WORKING TOGETHER: SBOS AND CTOS ARE VALUABLE PARTNERS

School business officials (SBOs) and chief technology officers (CTOs) have varied responsibilities when it comes to school district operations. However, their duties often cross paths. So why do alone what you can do better together?

Breaking down the silos between the business and IT offices and building a solid working relationship benefits the school district in many ways, including increased staff productivity and efficiency, and positive spillover benefits for overall district operations, educational services, and student achievement. Failing to work together is a missed opportunity to free up more time and resources to focus on what matters: student success.

For SBOs and CTOs to work together effectively, they must first understand each other’s roles. By understanding where duties overlap, the business and technology teams can identify new areas for collaboration. Below are two frameworks that outline the essential skills, knowledge, and tasks for what successful school business and technology leaders look like.

ASBO International’s International School Business Management Professional Standards and Code of Ethics	CoSN’s Framework of Essential Skills of the K–12 CTO
The Educational Enterprise Financial Resource Management Human Resource Management Facility Management Property Acquisition & Management Information Management Ancillary Services Code of Ethics & Professional Conduct	Leadership & Vision Strategic Planning Ethics & Policies Instructional Focus & Professional Development Team Building & Staffing Information Technology Management Communication Systems Management Business Management Data Management Data Privacy & Security



Recommendation: After reviewing the frameworks above, schedule a meeting with your SBO or CTO partner to discuss your roles, assess how each of you measures up with your respective professional standards, and identify areas where your offices should collaborate based on where your responsibilities overlap. Here are some questions to help you reflect as you review:

- How do my skills as an SBO or CTO align with the standards of my profession?
Where am I meeting these standards and where is there room for improvement?
- How aware am I of my colleagues’ responsibilities in the business/IT department?
Am I familiar with the delegation of duties?
- How is the IT/business office currently working together?
Are we only working together on IT/financial issues?
- Are there other areas of district operations where we could be collaborating more—for example with district leadership and strategic planning, instructional support, or ancillary services?

NEED HELP GETTING STARTED?

Think of all the ways SBOs interact with technology in their district every day to identify potential collaborative opportunities.



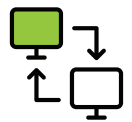
Managing Resources Responsibly

SBOs work extensively with financial, human resources (HR), and administrative data. What would they do if they had to manage that data manually, without technology's help? How difficult would it be to report where district funds are coming/going? Could they easily show how dollars are linked to student learning? CTOs can help SBOs ensure they have the right IT software and solutions to identify relevant data for making informed financial decisions.



Engaging Education Stakeholders

School districts are responsible for engaging with students and parents about the educational programs they offer. Without a functioning website, secure email system, or responsible social media presence, how well can the district share information with the public? If there is an emergency, how can staff understand and relay what happened and effectively respond? Technology speeds up communication and plays a major role in risk management, so SBOs and CTOs should cooperate to protect students and staff and maintain a positive district image.



Maintaining Business Continuity

What do you do when you log onto your computer and a message pops up that reads, "The network is currently not available"? When all systems are down—business, student information, classrooms, food service, security/alarms, building automation, phones—who do you call for help? All school systems are powered by technology, which also enables education delivery, so SBOs need to work closely with their IT team to keep business running as usual.



Other Ideas for Collaboration

- Launching a new technology initiative (BYOD¹, 1:1², e-learning, remote learning, VR/AR³ technology, new STEM⁴ courses, creating makerspaces⁵, etc.).
- Improving school security (monitoring student web activity, adding filters/censoring websites, protecting student personal data and school financial information, implementing new camera systems, improving cybersecurity, conducting IT assessments/audits, etc.).

¹ **Bring Your Own Device/Technology (BYOD or BYOT)**—a program that allows students to use their own phones, tablets, PCs, and/or other technology to support their learning throughout the school day.

² **One-to-one computing (1:1)**—a program where students have access to one device per individual (e.g., laptop, iPad, Chromebook, etc.) as a tool for learning.

³ **Virtual/Augmented Reality (VR/AR)**—VR technology replaces one's vision/world with a simulated environment (ex: Oculus Rift), while AR overlays or projects data or images into one's vision/world (e.g., Pokémon Go).

⁴ **STEM**—an acronym for Science, Technology, Engineering, and Math.

⁵ **Makerspace**—a place where students can creatively work together to design, experiment, build, and invent as they engage with STEM subjects and use specialized technology (e.g., 3D printers, PCs, craft supplies, tools, etc.).

- Leveraging IT to achieve efficiencies (implementing software to streamline operations, building a new information database, improving interoperability⁶, going paperless, standardizing workflow processes, improving transportation and energy systems, etc.).
- Investing in infrastructure (purchasing hardware and software, designing smart networks^{7,8}, improving network capacity⁹ for online learning, recovering from a natural disaster, passing bonds¹⁰ to upgrade IT or other infrastructure, etc.).

Sources/More Reading:

[Critical Skills for Today's CTO](#)

[7 Areas to Collaborate with Your IT Office](#)

[Finding Gold in Data Mining](#)



⁶ **Interoperability**—the ability of IT systems and software to exchange information and work seamlessly together to break down data silos.

⁷ **Smart network**—a network that contains specific capabilities to run smoothly (e.g., built-in diagnostics, Wi-Fi enabled, ability to switch between Wi-Fi/mobile networks to optimize connectivity, etc.).

⁸ **Network**—a group of two or more computer systems linked together, either wired or wirelessly.

⁹ **Network capacity**—the amount of traffic (i.e., simultaneous calls, users, data transfers, etc.) that a network can handle at any given time.

¹⁰ **Bond**—a long-term financing option that school districts can use to borrow large sums of money at a fixed interest rate by selling notes to investors in order to raise funds for infrastructure, IT, or other expensive projects; depending on the amount/type, voter approval may be required to issue them.

FIRST STEPS FOR BUILDING A POSITIVE RELATIONSHIP

Maybe you don't have the closest relationship with your SBO or CTO yet and need a little nudge. Consider these tips to help you build a positive relationship.



1. Meet early on (preferably one-on-one) to get to know each other. Invite your colleague to grab coffee or lunch.

- Relationships are founded upon recurring, face-to-face meetings over time. Frequent interactions help build familiarity and trust.
- Discuss each other's processes, procedures, expectations, goals, challenges, etc., to help understand each other's scope of responsibilities. Colleagues must clearly communicate who they are and what they do to work together effectively.



2. Schedule an introductory staff meeting to help your business and IT teams get to know each other, too. Plan a team-building activity to help break the ice.

- Schedule ongoing cross-departmental meetings to build team trust and morale. These meetings can allow staff a chance to share their areas of focus and project status updates.
- Breaking down silos and improving teamwork between the business/IT offices is beneficial to problem solving and innovation. Putting several heads together can help identify an out-of-the-box solution or potential issue before a problem arises.



3. Remember that your areas of expertise are not the same as your colleagues'.

- Be patient and understanding when communicating and sharing perspectives. Finance and IT specialists speak their own language, and that "curse of knowledge" can prevent you from clearly communicating to and understanding your peers.
- Although your expertise may differ from your SBO or CTO, everything you and they do affects every aspect of the district, from resource management and strategic planning, to classroom instruction and student services. Each person's contributions are valuable and critical to the overall success of the district.





EDUCATION RESOURCE MANAGEMENT

Challenge/Opportunity: Scarce funding and increasing calls for accountability and transparency require SBOs and CTOs to work together to provide great value and high return on investments in IT and other educational initiatives for student learning, well-being, and success.

EVALUATING THE MERIT OF NEW TECHNOLOGY INITIATIVES

SBOs and CTOs can work together to determine if a new technology initiative is worth the district's time and resources. They can evaluate the reasonableness of a request by determining whether the initiative makes sense, is systemic, and is sustainable.

When presented with a request for a new initiative, consider...

-  Does the proposal make sense for the entire organization? Can it be implemented throughout the district?
-  Is it possible to sustain the initiative over time? Will it receive “one-time” funding that may not be available in the future?
-  How will the program's hardware and software be replaced or upgraded 3–5 years from now?
-  Has adequate funding been allocated for teacher and/or staff professional development?

If the answer is “yes” to these questions, the proposal should be further considered for piloting or full implementation. If not, SBOs and CTOs should give pause before approving the request.

Source/More Reading:

[How to Evaluate Requests for New Technology Initiatives](#)

IDENTIFYING AREAS TO FIND EFFICIENCIES

Since budgets are always tight, SBOs and CTOs can help each other identify the wisest areas to invest in and cut programs with minimal impact to district operations. They can seek input from other departments to identify how technology is being used; where staff can manage with cutbacks in hardware, applications, and support; and how IT could be further leveraged to support staff productivity and student learning. SBOs and CTOs also can calculate returns on investment (ROI)¹¹ and the value of investment (VOI)¹² to weigh the pros and cons of IT investments and share that data with stakeholders to justify specific decisions.

¹¹ **Return on investment (ROI)**—a performance metric that evaluates the efficiency of an investment by measuring the amount of return relative to cost.

¹² **Value of investment (VOI)**—a performance metric that accounts for financial and other abstract returns on an investment relative to cost.



TIP: Consider these ideas for improving IT efficiencies and reducing costs in your district.

- Standardize on cloud-based email.
- Replace old computers and reduce the number of operating systems supported.
- Use IT asset management to track computers and application usage.
- Use self-services for data entry and go paperless where possible.
- Implement centralized user support tools and computer software upgrades.
- Evaluate the purchase of spare equipment versus extended warranties.
- Leverage volume purchasing with vendors through multidistrict contracts.
- Restructure service contracts and negotiate lower vendor maintenance charges.
- Lease or purchase refurbished equipment to replace old technology.
- Discard personal printers and consolidate print-copy center devices to multifunction.

Sources/More Reading:

[Getting the Most from IT](#)

[Smart IT: Strategic Technology Planning & Investment](#)

[Smart IT Guide](#)

[Total Cost of Ownership \(TCO\) Assessment](#)

[Value of Investment \(VOI\) Tools](#)

INVESTING WISELY TO BOOST DISTRICT GROWTH

Technology investments can make a major difference for a district's growth, decline, or stagnation. Whether you need to replace outdated IT systems or determine the most appropriate school success solutions, SBOs and CTOs should consider these strategies.

1. **Look for IT systems that link expenditures to achievement.** Find a comprehensive administrative/management software system that includes tools that tie spending to growth (e.g., streamlined gradebook processes, efficient human resources functions, curriculum tracking, parent access portals). This will save the district time and money.
2. **Remember that all district data must be managed in ways that can help administrators, teachers, and other stakeholders make sense of it.** Powerful reporting and analytics programs can integrate data gathering and analysis from all operational and educational aspects of district administration, while simultaneously revealing ROI/VOI.
3. **Ensure the IT system includes training and support as needed.** Every stakeholder must be able to understand and take advantage of the full benefits of their programs. A robust IT system provides information about data collection and analysis; IT personnel offer users opportunities to learn what the data/systems mean for continuous improvement.
4. **Understand that strategic planning must drive IT spending.** All IT expenditures should support the school board's and community's envisioned future and the district's mission. This alignment is critical.

Source/More Reading:

[Five Ways IT Spending Boosts District Growth](#)

CONDUCTING TECHNOLOGY AUDITS/PEER REVIEWS

Schools are ramping up technology use as a teaching tool and administrative asset for staff and students, but increased adoption means more work for SBOs and CTOs who must manage, secure, and optimize multiple devices across the district's network infrastructure.

A technology audit or peer review can help districts assess the effectiveness of technology for administrative and instructional purposes and identify the status and location of all district IT assets. Audits play an important role in meeting IT readiness requirements, managing software licenses and inventory, capital planning, and more. Knowing which assets you have, how they're used, and who's using them is critical to efficient, cost-effective resource management.

4 Steps for Effective IT Audits

1. **Determine whether the audit or peer review will be conducted internally or externally.**
 - Audits can be conducted by district staff or a third party. Regular audits can improve compliance, protect assets, minimize unauthorized installations, and provide a plan for future upgrades/replacements—but be aware that they also can place a burden on staff in terms of time and resources.
2. **Gather vital information via document reviews, surveys, and interviews for an accurate picture of K–12 technology use.**
 - Review the district's strategic plan, technology plan, budget, organization chart, professional learning plan, and special program plans to provide perspective on how important the technology is and how it is being implemented.
 - Identify all IT assets, such as PCs, tablets, and notebooks; component parts and servers; printers; networking/telecommunications equipment; projectors; security systems; and software. IT audit software and automation¹³ can assist with this task.
 - Gather insights about the effectiveness of the technology program by surveying parents, students, teachers, and administrators to get a more detailed picture of technology use as well as challenges.
 - Use survey results to create more insightful questions and incorporate them in formal interview with key stakeholders. Use their responses to clarify specific issues and further refine data already gathered.
3. **Create the audit or peer review report.**
 - Include the current state of technology use. Start with evidence of the success of technology-driven programs in the district, then provide an analysis of the data gathered and a list of recommendations.
 - Districts often don't have the in-house expertise needed to analyze data and establish a baseline¹⁴ to determine the implementation level of all its various technologies. If hiring a consultant, find someone who knows education technology and has a broad understanding of the district's instructional needs.

¹³ **Automation**—a method or system of operating or controlling a process by automatic means without requiring continuous input/work from an operator.

¹⁴ **Baseline**—a benchmark or minimum starting point used for reference for comparisons.

- The report’s recommendation section should state the current condition, suggest ways to improve it, and examine other impacted items to determine what changes are truly needed. For instance, a technology integration¹⁵ peer review may find that technology infrastructure must also be addressed to encourage technology use (if currently inadequate) and may recommend teachers receive professional training to increase the chances for adoption and integration, too.

4. Provide a roadmap for district improvement.

- A helpful audit or peer review report provides the district with a general road map for improvement; the most helpful road map is a model that includes a rubric.
- An audit report or peer review is just a report. Improvement depends on whether the district incorporates the findings of the report into its plans and practices.

Sources/More Reading:

[Conducting a Technology Audit](#)

[Automating Technology Audits](#)

[CoSN Peer Review Resources](#)



LEVERAGING IT TO IMPROVE STUDENT EQUITY

Students with limited or no high-quality Internet access at home are at a disadvantage when compared to their well-connected peers. SBOs and CTOs must work with other K–12 leaders to reduce the access gap for learning and can consider these strategies to address digital equity¹⁶.

How Can SBOs and CTOs Address The “Homework Gap”?

1. **Survey the community to get a scope of the problem.** Teachers and administrators may be able to identify specific students without home Internet access; however, school districts should quantify the issue via survey data. Consider bundling home connectivity surveys with other forms distributed at the start of the school year and/or to new students.
2. **Identify community “homework hotspots.”** Explore partnerships with libraries, community organizations, and businesses to provide Wi-Fi hotspots¹⁷ for students without home Internet access. Research online for information about local organizations to partner with.
3. **Promote low-cost broadband¹⁸ offerings.** Many Internet Service Providers (ISPs)¹⁹ provide discounted Internet plans for low-income households. However, some companies only provide discounts for a limited time and restrictions can exist, so check the fine print first.

¹⁵ **Technology integration**—the use of IT tools, software, etc. to enhance curricula and support the educational environment so that students can learn and solve problems.

¹⁶ **Digital equity**—a condition in which information technology is available to all people, regardless of age, race, gender, income, status, etc. so they can fully participate in society.

¹⁷ **Wi-Fi hotspot**—a physical location with an access point that can connect devices to one another via wireless network technology, which uses radio waves to connect devices to the Internet without cables. These are often found in public spaces, like cafés, hotels, or airports.

¹⁸ **Broadband**—high-speed Internet access that includes DSL, cable modem, fiber optic, wireless, satellite, and BPL data transmission technologies.

¹⁹ **Internet service provider (ISP)**—a company/vendor that provides subscribers with Internet access.

4. **Deploy mobile hotspot programs.** These programs can be an effective digital equity strategy, especially for students living in households that frequently move and for whom low-cost wired broadband plans may not be an effective solution. Note that some hotspots cap bandwidth²⁰ on a monthly basis, and several factors affect how much data students will need (e.g., basic web research, email, and learning management systems²¹ don't require as much data as streaming videos or downloading large files).
5. **Install Wi-Fi on school buses.** More districts are installing Wi-Fi on school buses to allow students to do daily homework during their commute or when traveling to after-school activities. Also, bus Wi-Fi connectivity can reduce behavioral problems while in transit.

Improving Digital Equity Requires a Holistic Approach

Solving the “homework gap” isn't the only challenge for improving digital equity. Whether education leaders are looking to bring broadband to a rural area, or simply take a broader approach to digital access and inclusion, community collaboration is a powerful tool. After all, equity isn't just a school or district problem—it's a community problem. Regardless of the initiative, here are some steps to help you work toward your digital equity goals.



Assemble a coalition and develop a shared vision. Engage local elected officials, community organizations, libraries and other educational institutions, social service facilities, local governments, chambers of commerce, and others.



Assess existing community resources, gaps, and needs. Identify existing physical and human capacity community resources, conduct a needs assessment, and determine what structures/systems are needed to implement and sustain digital equity efforts.



Engage stakeholders and partners. Seek community input about the best way to move forward. Strengthen relationships, seek areas of agreement, and pull a wider scope of constituents into a common vision for the future.



Develop and execute a project plan. Include input from all stakeholders, create detailed project timelines and deliverables, and use contracts/other documentation to ensure all parties understand their roles and responsibilities. Appoint a project manager and planning team to meet regularly to evaluate progress and refine processes as needed.

Sources/More Reading:

[CoSN's Digital Equity Toolkit](#)

²⁰ **Bandwidth**—the amount of data that can be transmitted over a certain time, bits/bytes per second (bps).

²¹ **Learning management systems (LMS)**—software application for the administration, documentation, tracking, reporting, and delivery of educational, training, learning, and development courses/programs.

IDENTIFYING REVENUES TO FINANCE TECHNOLOGY INITIATIVES

SBOs/SBPs and CTOs can help each other identify funding sources for IT projects at the local, state, and federal level. Here are some options to consider for financing specific endeavors.

User Fees

Collecting reasonable fees for student technology use may be an option depending on local district and state policies. Some schools charge general usage or insurance fees to cover ongoing costs with repairing and replacing hardware and to mitigate damage and loss.

Bonds and Levies

Local voter-approved funding proposals can be leveraged to finance large technology upgrades and improvements. However, early planning and consistent follow through is critical to help ensure successful bond or levy²² passage. When SBOs and CTOs work together on a bond campaign, they can increase the district's chances for success for voter approval. They can help each other create a realistic timeline and vision statement to ensure it reflects the district's mission, obtain buy-in from other district leadership, determine the best launch time to increase turnout and support, and collect data to communicate project's benefit to the public.

E-Rate

Also known as the Universal Service Program for Schools and Libraries, this federal program is run by the Federal Communications Commission (FCC) and funded via the Universal Service Fund (USF)²³. E-Rate offers discounts and reimbursements for telecommunications, Internet access, and internal connections for eligible schools and libraries. Discounts range from 20–90% based on school poverty level, and higher discounts are available for rural schools and libraries.

Every Student Succeeds Act (ESSA)²⁴ Title IV-A Grant

ESSA's Title IV-A program²⁵ is a federal block grant²⁶ that can fund district projects to: 1) provide students with a well-rounded education, 2) support safe and healthy students, and 3) support the effective use of technology. Note that funding is subject to federal appropriations²⁷ and there are certain thresholds and requirements for spending grant funds.

²² **Levy**—a tax, fee, or fine imposed to finance a local public project.

²³ **Universal Service Fund (USF)**—a federal program administered by the Universal Service Administrative Company (USAC) under the FCC to provide affordable, nationwide telecommunications services for eligible high-cost communities, low-income families, rural health providers, and schools and libraries.

²⁴ **Every Student Succeeds Act (ESSA)**—the latest iteration of the Elementary and Secondary Education Act (ESEA), the major federal law that authorizes funding for most federal education programs that support schools.

²⁵ **ESSA Title IV-A**—also known as the “Student Support and Academic Enrichment” (SSAE) grant program; authorizes funding for expanding curricula, improving school climate, and IT in classrooms (and related PD).

²⁶ **Block grant**—a flexible government grant program that can fund a wide range of programs and services.

²⁷ **Federal appropriations**—U.S. Congress' annual process to determine annual funding for all federal departments, agencies, and programs based on the federal fiscal year.

Other ESSA Title Grants and IDEA

Other federal formula grants from ESSA and the Individuals with Disabilities Education Act (IDEA)²⁸ may be used to support technology use so long as it remains within the scope of the specific grant program. For example, funds could potentially be used to serve historically disadvantaged students in a schoolwide program (Title I²⁹), for personalizing professional support and learning for educators (Title II³⁰), for supporting English Language Learners (Title III³¹), and so forth. SBOs and CTOs will have to think innovatively about using funds while remaining in compliance with the program's scope to help finance district technology goals.

One-Time Grants, PPPs, and Crowdfunding

Many non-profit and private sector organizations can help school districts finance IT initiatives through one-off grants or public-private partnerships (PPPs³²). It never hurts to reach out to community and business partners to see what opportunities are out there. Districts may also consider crowdfunding³³ initiatives so long as proper internal controls are in place.

Sources/More Reading:

[Tips to Plan a Successful Funding Initiative](#)

[FCC Website: E-Rate Universal Service Program for Schools and Libraries](#)

[USAC Website: Eligible Services List for E-Rate](#)

[E-Rate Reimbursements: Are They Just for IT Expenses?](#)

[Elementary and Secondary Education Act of 1965 as Amended by ESSA](#)

[Every Student Succeeds Act: A Comprehensive Guide](#)

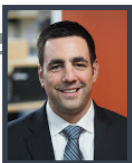
[Title IV-A Coalition Website](#)

[Dear Colleague Letter: U.S. Department of Education](#)

[The Journal: K-12 Grant Opportunities & Ed Tech Event Listings](#)

[ASBO International Crowdfunding Toolkit](#)

[CoSN Crowdfunding Toolkit](#)



“Be sure to keep your SBO/CSBO in the loop on all current major initiatives and any potential future large scale initiatives and take it a step further by bringing them along for the entire ride moving forward including initial planning and pre-planning stages all the way through execution of the initiative. The last thing they want is to be surprised and have to make quick funding decisions to support the CTO (if needed) on something that they are not fully onboard with or understand, so involve them early and often. Taking your SBO/CSBO along for the entire ride of an initiative and educating them on your plan including the “why” and “how” will make the process much smoother, will promote transparency, and will create buy-in and ownership creating a unified front, which is very important for districts and will lead to more successful initiatives!”

—Mike Frantini, Chief Technology Officer, Community Consolidated School District 21 (CCSD21)

²⁸ **Individuals with Disabilities Education Act (IDEA)**—the major federal law that ensures students with disabilities are provided a Free Appropriate Public Education (FAPE) tailored to their unique needs.

²⁹ **ESSA Title I**—authorizes federal funding for school improvement, direct student services, schoolwide programs, migrant children, neglected/delinquent/at-risk students, and other programs to provide historically disadvantaged children an equitable education.

³⁰ **ESSA Title II**—authorizes federal funding for teacher and school leader training and professional development, literacy programs, civics education, and teacher and school leader recruitment.

³¹ **ESSA Title III**—authorizes federal funding for language instruction for English learners and immigrant students.

³² **Public-Private Partnership (PPP or P3)**—a cooperative agreement between two or more public and private sector entities (e.g., a local government and a business) that provides better services for customers and/or the community and improves the city's/locality's ability to operate effectively.

³³ **Crowdfunding**—the process of funding a project by raising money from many people, typically via the Internet.

DATA MANAGEMENT & SECURITY

Challenge/Opportunity: With a rapidly changing and increasingly interconnected world combined with new emerging technologies and the rise of the Internet of Things (IoT)³⁴ also come new threats. SBOs and CTOs must work together to protect sensitive student, staff, and other school information.

BALANCING DATA PROTECTION AND TRANSPARENCY

Data privacy and management can be contentious and divisive topics that put educators on the defense, especially as parental concerns are on the rise about how much of their children's data is collected, how it is being secured, and how it can be used by third-parties. Given the possible serious repercussions with school data breaches, parents and other education stakeholders want assurances that data privacy is being protected.

SBOs and CTOs must work together to identify threats, develop policies and practices to protect data, and prove how the district is safeguarding data to the public. K-12 leaders must balance regulatory compliance with transparency when sharing data about teachers, budgets, staff, and more. Here are best practices to help make school data available yet safe at the same time.

5 Safeguards to Protect School Data

1. **Know your laws and regulations.** Districts must annually notify students and parents of their rights under the Family Educational Rights and Privacy Act (FERPA)³⁵. Review compliance procedures to maintain good habits and stay informed of any changes.
2. **Prioritize critical data.** Critical information (e.g., personnel and payroll records, student medical histories, and personally identifying information like Social Security numbers) must be carefully stored and securely protected. Other information, like lunch menus, graduation rates, and calendar events aren't critical and don't need to be treated the same way.
3. **Protect passwords.** Many school data breaches occur because of weak passwords. Insist that all personnel and vendors are trained in basic password security to protect critical data.
4. **Secure storage.** As school districts rely more on technology to complete everyday tasks (e.g., learning apps, online assessments, cloud data storage³⁶, etc.), strong data security is crucial. Partner with IT staff and a trusted provider to find the safest option for your district.
5. **Schedule an audit.** The best time to do an IT and cybersecurity audit is when you think you've done everything right. If you think you've decided the extent of your district's critical information and how best to secure it, an audit can determine if your efforts have paid off.

Sources/More Reading:

[Protecting Student Privacy in a Trusted Learning Environment](#)

[Five Cybersecurity Safeguards for School Districts](#)

[Student Data Privacy: Five Critical Guidelines](#)

[U.S. Department of Education: Protecting Student Data Privacy](#)

³⁴ **Internet of Things (IoT)**—an ecosystem of interconnected devices, machines, etc. to different sensors, devices, software, or other “things” that enables data connection and transfer over its network without requiring human interaction. (EX: Phillips-Hue LED system that includes lightbulbs, Wi-Fi, hub/bridge, mobile phone, app, etc. which all exchange data with each other in order to provide customized lighting.)

³⁵ **Family Educational Rights and Privacy Act (FERPA)**—federal law that protects the privacy of student education records and gives specific rights to parents regarding their children's records until the child is 18 years old.

³⁶ **Cloud data storage**—a type of data storage in which digital data is maintained, managed, and backed up remotely via multiple servers and made available to use over a network (e.g., the Internet).

Student Data Principles to Improve K–12 Practices

SBOs and CTOs should reference these leading principles for data privacy and management to improve their district data policies and procedures, as adapted from studentdatapinciples.org.

1. Student data should be used to further/support student learning and success. It should help inform, engage, and empower students and education stakeholders. Data should inform but not replace educators' professional judgments.
2. Students, families, and educators should have timely access to student information. Anyone who has access to students' personal information should be trained and know how to effectively and ethically use, protect, and secure it.
3. Students' personal information should only be shared, under terms or agreement, with service providers for legitimate educational purposes. Otherwise, consent to share data must be given by a parent/guardian or a student (if they are over 18). Schools should have policies for overseeing this process, including support and guidance for teachers.
4. Educational institutions and contracted service providers with student data access should have clear, publicly available rules/guidelines for how they collect, use, safeguard, and destroy data. They should only have access to the minimum amount of data needed to support student success.
5. Any educational institution with the authority to collect/maintain student data should have a governance system that designates rules, procedures, and the individual(s) responsible for decisions regarding data collection, use, access, sharing, and use of online educational programs. It should have a notification policy for any misuse/breach of data and available remedies; follow industry best practices for security; and provide a designated place or contact where stakeholders can learn their rights and ask student data-related questions.

Sources/More Reading:

[CoSN's Protecting Privacy in Connected Learning Toolkit](#)

DEVELOPING BETTER DATA POLICIES VIA STAKEHOLDER ENGAGEMENT

Effective transparency policies can promote better human resource management, boost student achievement, and create greater community understanding and engagement. Here is a checklist of questions SBOs, CTOs, and others should consider when developing district policies.

- ✓ Are relevant stakeholders included in the development of transparency policies?
- ✓ Are stakeholders given enough time and information to make participation meaningful?
- ✓ Are superintendents, SBOs, CTOs, and school board members on the same page? If not, can transparency measures help them get there?
- ✓ Can transparency of data collection and analysis facilitate needed benchmarking?
- ✓ Is transparency policy designed to be useful in benchmarking with comparable districts?
- ✓ Will the district's data management software system customize school success solutions? Can it be leveraged to engage internal and external stakeholders?
- ✓ Is transparency promoted as a two-way street within the district? Are all stakeholders free to use transparent information to engage with one another and with district leaders?

Build a Trusted Learning Environment (TLE)



CoSN, ASBO International, AASA, ASCD and 28 school systems created the Trusted Learning Environment (TLE) program to help school districts implement best practices in data privacy. Successful applicants earn the TLE Seal, the only data privacy seal for school systems in the U.S., which demonstrates their commitment to building a culture of transparency and trust. The TLE program requires school systems to implement high data privacy standards around five core practice areas: Leadership, Business, Data Security, Professional Development, and Classrooms.

Applying for the TLE Seal presents SBOs and CTOs an opportunity to collaborate on building a better relationship with their community while meeting their district's data privacy goals. [Read Loudoun County Public Schools' story](#) about their experience applying for the TLE, and learn more about the program at trustedlearning.org.

Sources/More Reading:

[A Transparency Checklist for K-12 Administrative Software](#)

[Trusted Learning from the Ground Up: Fundamental Data Governance Policies and Procedures](#)

[TLE Resources Website](#)

PREVENTING RANSOMWARE AND OTHER CYBERTHREATS IN SCHOOLS

Ransomware is malicious software that blocks access to files or systems using encryption³⁷ until the victim pays a ransom in exchange for a decryption key³⁸ to unlock the files. Although ransomware isn't new, it has advanced in sophistication over the years, allowing it to spread, evade detection, and encrypt files in increasingly complex ways. The threat is real and can be very expensive to resolve. In 2018 alone, there were 122 publicly-disclosed cybersecurity incidents affecting 119 public K-12 education agencies across 38 different states, several of which involved hackers demanding substantial sums of money.

How Can School Districts Protect Themselves from Data Breaches?



Secure data backups. Frequently back up data and secure files in locations not directly connected to the district's servers. Follow the 3-2-1 rule: keep three copies of data, two different types of media, and one copy off-site.



Be aware of suspicious activity. Early detection is key to mitigating data loss. Run select backups during the day and pay attention to data storage anomalies to stay alert of an attack that has recently occurred or is actively underway.



Train all users. Educate staff and students on data security best practices (e.g., downloading software from secure/trusted sources, changing passwords, etc.). Warn users to quickly physically disconnect from the network if they suspect a virus or other threat has occurred.

³⁷ **Encryption**—a process of scrambling data or information so that only authorized users can access/understand it (requires an encryption key to “lock” or “scramble” the data).

³⁸ **Decryption**—a process of unscrambling data or information that appears random into an accessible/ understandable format (requires a decryption key to “translate” the data).



Engage the experts. Employ security experts and IT staff to examine systems and protocols and invest in cyber insurance³⁹. Reach out to local, state, and federal authorities early on to build relationships and establish contacts to collaborate on a cybersecurity plan. That way if something happens, you'll know who to call and be able to swiftly coordinate response with the appropriate agency to prosecute offenders and minimize district impact.



Be Proactive. Don't rush to connect IT systems and make yourself vulnerable to threats. Ensure your business and IT teams meet regularly to review security tools, processes, procedures, and internal controls to determine where improvements are needed. CTOs and SBOs can collaborate on the district's budget to procure cybersecurity safeguards as needed and prioritize IT as a strategic investment to support overarching risk management goals.

Sources/More Reading:

[Ransomware: Holding Data Hostage](#)

[Report: Half of K-12 Data Breaches Caused by Staff & Students](#)

[Top 5 Cybersecurity Threats for Schools](#)

[Getting Started with Cybersecurity: What Should Schools vs. Districts Do?](#)

[Cyber Insurance Guidelines](#)

[Multi-State Information Sharing & Analysis Center Cybersecurity Resources](#)

DETECTING AND PREVENTING FRAUD

When fraud happens in a school district, it is a traumatic event for the whole community. An SBO's time is better spent working to minimize the risk of fraud rather than playing damage control, and the CTO can help. Prevention is important, since fraud not only causes the school system to suffer financial losses, but it destroys public trust and redirects time and resources that should be spent on student learning toward addressing the incident instead. However, SBOs and CTOs can prevent fraud if they understand the conditions in which it is likely to occur, as illustrated below.



Fraud can be detected via employee or anonymous tips, internal/external audits, internal controls, by accident, and by local authorities. Forensic auditing⁴⁰ techniques and software can be strong fraud countermeasures since they can mine and analyze data to catch double payments, suspicious vendors, numbering gaps or duplicates, and outlier data. SBOs and CTOs can identify the right software and initiate steps to reduce fraud opportunities by strengthening internal controls, setting up safeguards for authorizing and approving transactions, and securing financial assets and records.

³⁹ **Cyber insurance**—an insurance product/service that protects users or organizations from Internet-based risks and risks dealing with IT infrastructure and activities (e.g., data damage, loss, theft, corruption, etc.).

⁴⁰ **Forensic auditing**—the examination of an organization's financial records to find evidence that can be used in a court of law or legal proceeding, such as for prosecuting a party for fraud, embezzlement, or other crimes.

Sources/More Reading:

[Understanding, Detecting, and Preventing Fraud](#)

[Adding Data Mining and Analytics to Your Toolbox](#)

CREATING CYBER-PHYSICAL SECURITY SYSTEMS IN SCHOOLS

In the wake of school violence, bullying, and other safety threats, districts are turning to technology to secure campuses with Cyber-Physical Security Systems (CPSS)⁴¹. CPSS bridge physical and digital environments and may include anything from entryway cameras and automatic locks, to intercoms, facial recognition software, and biometric readers. They can be integrated into security platforms for automatic threat detection and facility lock-down; remote video observation through web-enabled camera systems; and enhance communications with stakeholders and first responders. Here are examples of tools districts use in support of CPSS:

- Access controls—locks, gates, vestibules, metal detectors, door barriers, entry cards, access software, facial recognition software, and central lockdown capability.
- Surveillance—cameras, live video feeds, body-worn cameras, and other monitoring tools.
- Communications equipment and platforms—wired/wireless communication technologies, intercom systems, local alarm communicators, phone systems, two-way radios, enhanced 911 communications, and attendance and check-in apps.
- Sensors and alarms—mapping and verification solutions, duress alarms/panic buttons, door and window sensors, gunshot detectors, robots, and lighting.
- Fogging and pepper spray systems—smokescreens, chemical aversives, etc.

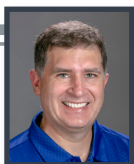
SBOs and CTOs can work together to build these systems and determine the impact they will have on physical facilities, network infrastructure, and district procedures and policies as part of its broader school security strategy. Two issues to definitely consider are: 1) the potential legal impact these technologies may have on student privacy and civil rights, and 2) the network burdens a new CPSS can put on the district in order to successfully utilize it.

Sources/More Reading:

[The Latest in Video Surveillance: Increasing School Security Campuswide](#)

[What Are Cyber-Physical Security Systems?](#)

[The Impact of Cyber-Physical Systems on IT Infrastructure](#)



“Sometimes people think of IT as really being either devices (computers, iPads, Chromebooks) in the hands of staff and/or students, or infrastructure including servers and networking. It’s worthwhile for SBOs to meet with their IT counterparts to talk more expansively about roles, responsibilities and scope. Copiers may be all IT, all business office, or some overlap. It’s not common that they do not involve at least some basic amount of networking or connectivity. Physical security (not just email/phishing/etc.) often involves some technology, whether that’s how doors lock or release, or video cameras, or something else. Talking about who takes the lead and how the groups work together can help avoid missing things or compromising systems.”

—Dr. David Bein, SFO, Assistant Superintendent of Business Services/Chief School Business Official, Barrington 220 School District

⁴¹ **Cyber-Physical Security System (CPSS)**—a security system that integrates computing, networking, and physical processes; embedded computers and smart networks monitor/control physical processes, with feedback loops where physical processes affect computations (and vice versa).

IT INFRASTRUCTURE & SYSTEMS MANAGEMENT

Challenge/Opportunity: Technology is everywhere—we rely on it for nearly everything. And, as Internet connectivity becomes increasingly essential to school district operations and classroom instruction, SBOs and CTOs should work together to meet rising demands for digital devices and 24x7x365 access to support learning. They also need a backup plan for when things go wrong.

LEVERAGING CLOUD COMPUTING TO SUPPORT K-12 OPERATIONS

Cloud computing can be a game changer for district operations and education service delivery. CTOs can help SBOs understand the potential benefits of cloud computing and considerations when investing in this solution for operational and educational challenges.

What Is Cloud Computing?

Cloud computing is managed/hosted computing services by another supplier that provides convenient, on-demand access to networks, servers, storage, applications, and services. It can be quickly provided with minimal management/service provider interaction and does not require major up-front capital investment. It has three models: Infrastructure, Platform, and Software as a Service (IaaS⁴², PaaS⁴³, and SaaS⁴⁴), and is defined by several characteristics.

1. **On-demand self-service**—users can access computing resources whenever they need them.
2. **Broad network access**—users can access capabilities with a variety of devices.
3. **Resource pooling**—resources are pooled to serve several consumers using a multitenant model.
4. **Rapid elasticity**—resources are delivered quickly according to the user's capacity requirements.
5. **Measured service**—usage is monitored, controlled, and measured for billing, reporting, and managing.

Cloud Computing: Benefits & Considerations

- Offers great advantages for understaffed districts and districts looking to save money.
- Is often less expensive than doing the services in-house, since the hardware and levels of application support move from the district to the vendor.

⁴² **Infrastructure-as-a-service (IaaS)**—a cloud service model that is made of scalable and automated compute resources. It is fully self-service for accessing and monitoring computers, networking, storage, etc. and allows businesses to purchase resources on-demand instead of buying hardware outright. EX: Amazon Web Services, Microsoft Azure, Google Compute Engine

⁴³ **Platform-as-a-service (PaaS)**—a cloud service model that provides cloud components to certain software while being used mainly for applications; all servers, storage, and networking can be managed internally or by a third-party, while developers maintain/manage the applications. EX: Windows Azure, Google App Engine, OpenShift

⁴⁴ **Software-as-a-service (SaaS)**—a cloud service model that is commonly used by businesses, which uses the Internet to deliver applications managed by a third-party vendor (many run via a web browser). EX: Google Apps, Dropbox, Cisco WebEx, GoToMeeting.

- The district will still need to administer the application, manage the service provider, and pay operational fees, but no expensive capital investment in server hardware is required.
- Offers a possible solution to rising student and staff demand for 24/7 mobile application and digital content access while lacking internal district support capabilities meet demand.
- Can help IT staff offload some server and application-specific support requirements.
- Still requires districts to address/safeguard data security, privacy, and identity management.
- Districts must ensure their Internet and internal network bandwidth can accommodate data transmission loads and extra bandwidth needed for responsiveness, backup, and recovery.

Sources/More Reading:

[The Basics of Cloud Computing](#)

[Cloud Computing: Email, Learning Management Systems, and Productivity Tools](#)

[Smart Education Networks by Design \(SEND\) Initiative: Cloud](#)

[SaaS vs PaaS vs IaaS: What's The Difference and How To Choose](#)

IMPROVING K-12 INTEROPERABILITY

As school districts look to technology products to meet evolving education needs and goals, they may come across roadblocks that prevent it from delivering on its promises. K-12 technology promises to provide learning environments where students can seamlessly access multiple resources—but these promises rely on interoperability.

Inoperability occurs when data from one system or software package cannot be shared with others or is trapped in data siloes. For instance, when a teacher wants to mix and match different digital resources but doing so requires students to log into each resource separately using different IDs/passwords because the resources don't "talk to each other," that's inoperability. At the district level, a growing demand for interoperability emerges with growing demands for data warehousing, sophisticated analytics, accountability reporting, and performance management tools too. For cost efficiencies, as well as teaching and learning effectiveness, interoperability standards are a necessary component of emerging systems.

9 Areas to Enhance Interoperability

1. **Digital content** – effective interoperability allows seamless access to digital content and software for students and teachers, via student learning platforms or LMS.
2. **Data connectivity** – effective interoperability allows data to transfer in/out of databases in an efficient, cost-effective way, including for enterprise resource planning (ERP)⁴⁵, student information systems (SIS)⁴⁶, LMS, and data warehouse applications.
3. **Data integration** – effective interoperability allows data residing in different sources to be combined easily and provide users a unified view of the data, e.g., via data dashboards⁴⁷.

⁴⁵ **Enterprise resource planning (ERP)**—business process management software that allows organizations to use an integrated system of applications to manage administrative office functions for finance, IT, and HR purposes.

⁴⁶ **Student information systems (SIS)**—information management system for education institutions to collect, maintain, manage, and report student records (e.g., scheduling, attendance, health, grades, assessments, etc.).

⁴⁷ **Data dashboard**—a graphical user interface/data management tool that visually tracks, analyzes, and displays performance metrics and other key data points at-a-glance to monitor a specific business, department, or process.

4. **Authentication⁴⁸, authorization⁴⁹, and identity management** – effective interoperability allows districts to manage access to resources so that students, teachers, and staff can see relevant information. It provides a system to identify the person logging on and keeps record of what can be accessed, by whom, and how.
5. **Rostering** – effective interoperability allows large groups of students to be enrolled into software solutions, and rosters can be automatically created and shared with other applications, whether for creating IDs/passwords, allowing access to specific content, etc.
6. **Portals⁵⁰ and portlets⁵¹** – effective interoperability allows student or parent website portals to easily share information through one location (e.g., email, weather, news, and forums).
7. **File sharing** – effective interoperability allows districts to share files and integrate large amounts of data into another system. These processes can require significant IT staff time and resources and is a highly customized solution not easily replicated by outside vendors.
8. **Network infrastructure** – effective interoperability allows multiple devices supporting a wide range of uses to have access to wired/wireless networks and deliver high-performance services in a cost-effective way; it can include LAN/WAN⁵² telecommunications, PC hardware, databases, security and privacy, applications, cabling, and more.
9. **Digital accessibility** – effective interoperability allows all students to access technology and learn, regardless of their ability. It addresses a host of impairments and learning disabilities.

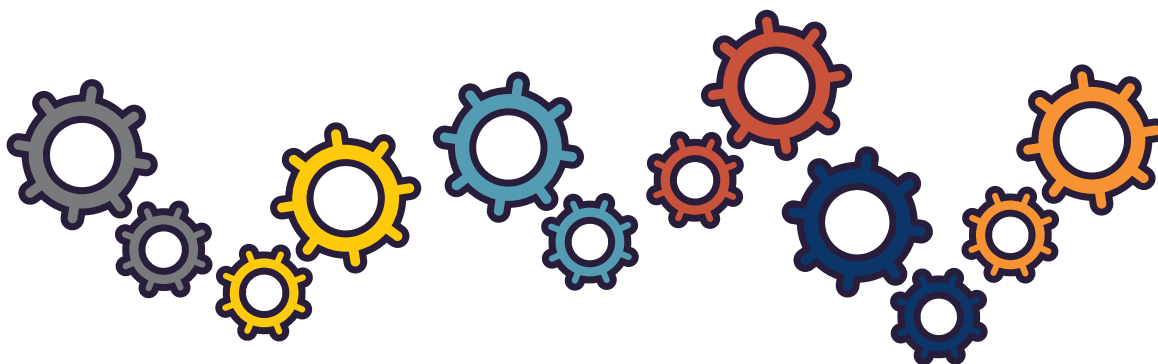
More strategic approaches to interoperability are increasingly important in education because all systems and platforms must work together to seamlessly deliver services across the district. When systems work well together, so will the district's ability to collaborate, cut costs, improve security and privacy, drive transformation, and serve customers efficiently. To achieve effective interoperability, districts must agree on standards for procuring systems and platforms, which presents another opportunity for SBOs and CTOs to work together.

Sources/More Reading:

[Interoperability Toolkit](#)

[Working Together to Strategically Connect the K-12 Enterprise: Interoperability Standards for Education](#)

[How to Not Invest in Data Management Systems](#)



⁴⁸ **Authentication**—the process of verifying who a user is/their identity.

⁴⁹ **Authorization**—the process of verifying what privileges/rights or information someone has access to.

⁵⁰ **Portal**—a website that is a major hub or gateway serving as a starting point/anchor site for users to visit and access other content or portlets from it.

⁵¹ **Portlet**—a window/Web module on a portal site that provides a specific service or information (e.g., a calendar or news feed).

⁵² **Local area network/wide area network (LAN/WAN)**—a LAN is a group of computers and network devices connected within a close area (i.e., within a building); a WAN is less restricted by geographical location (i.e., confined within a state or country).

MAINTAINING CONTINUITY DURING A CRISIS

SBOs and CTOs must be prepared for any emergency that can impact technology operations, whether it be a hurricane, earthquake, or something else. Before a disaster strikes, districts must be ready to assess damage, bring critical systems back online, update stakeholders, and resume operations. They should collaborate on an IT continuity plan for any emergency.

How to Develop a Crisis Plan for Any Situation

1. **Form a crisis preparedness team.**
 - Include administrative, IT, custodial, and personnel office staff, along with community partners from local fire and police departments.
 - Ask the team to identify potential threats, develop and communicate the crisis preparedness plan, and implement the plan when a disaster strikes.
2. **Ensure the team prepares a comprehensive emergency plan for different types of disasters.**
 - Prepare for natural disasters, pandemics, violence, and other potential crises.
 - Focus on technology's role with providing continuity during a crisis (e.g., for instructional activities, data/record keeping, assessment and accountability, and internal and external communication with stakeholders).
 - Ensure the plan accounts for personnel, facilities, hardware, software, and critical communication resources, and prioritizes which systems should be protected first.
3. **When developing a crisis mitigation plan, at minimum, the plan should:**
 - Identify preventable vs. unavoidable disasters and address what can be done to eliminate or reduce the likelihood of the disaster and its impact.
 - Ensure student and personnel information is up-to-date so all students and staff can be notified of a problem at the school.
 - Clearly label all rooms in buildings with room numbers inside and out.
 - Ensure all servers are protected from physical disruptions (e.g., water damage, tampering, etc.) and are routinely backed up.
4. **Think through all processes, people, and procedures to guarantee district preparedness.**
 - Detailed planning, redundancy in personnel and equipment, and drills and practices for preparation and response are key to efficiently restore critical operations.

Sources/More Reading:

[IT Crisis Preparedness Countdown](#)

[At the Ready: Planning for Business Continuity](#)

[SEND: IT Crisis Preparedness](#)

INNOVATION IN TECHNOLOGY & EDUCATION

Challenge/opportunity: New advances in technology and increasing interconnectivity require students to learn new skills to be successful and competitive in the global economy. SBOs and CTOs must work together to provide educational programs and services that prepare students for their future careers.

ADAPTING TO NEW TRENDS AND DRIVING INNOVATION IN EDUCATION

SBOs and CTOs must stay ahead of rapidly changing trends in education to ensure students graduate and can succeed in the 21st century workforce. District leaders must be aware of key drivers of change that define and dominate local and global demands for labor, so that students learn the professional skills they need. SBOs and CTOs must shift from a reactionary to a proactive mindset to drive change in their communities. Identifying what drives, hinders, and enables innovative teaching and learning in schools can help districts implement strategies to positively manage and lead change. Here are key hurdles and accelerators for school innovation in 2020 and beyond to keep in mind as educators work together to support student success.

Top 5 Hurdles for K-12 Innovation

1. **Scaling and sustaining innovation.** Schools are challenged in this area in several respects, including supporting risk-taking projects; identifying value-adding innovations; investing in ongoing integration; adapting/applying what is working well at a small scale to a school, district, or state level; and embracing transformation and an innovation-led culture.
2. **Data privacy.** Student data can be powerful for teaching and learning, but increased data usage exacerbates data privacy, collection, and control issues. Schools are challenged to create digital ecosystems and build an understanding of/participation in data management.
3. **Evolution of teaching and learning.** Education landscapes are changing to allow more opportunities for teacher facilitation and student learning with the help of technology. As teaching, learning, and learning outcomes are constantly being redefined, schools must ensure that teaching practices aren't outpaced by technology trends, nor by advances in our knowledge of how people learn. Professional development is key in this evolution.
4. **Pedagogy vs. technology gap.** When new technologies are introduced and mandated, educators don't always have adequate training to understand how it can integrate into curriculum and effective practices. Forced use of technology can blindside stakeholders across the education system, and overcoming this hurdle requires input from students, teachers, administrators, district leaders, and others.
5. **Digital equity.** Equitable access to quality technologies, Internet and connectivity, digital literacy curricula and skills, technology use, support, and digital content are major hurdles in education. Not all students have adequate Internet connectivity/access to tools and technologies, and not all schools can afford the latest equipment.

Top 5 Accelerators for K-12 Innovation

1. **Learners as creators.** Students don't have to wait to change the world, which is motivating schools to embrace real-world learning experiences and promote student ideas/solutions.
2. **Data-driven practices.** Schools are collecting and leveraging new data to make decisions about curriculum, hiring, teaching, learning, and technology investments. Increasingly, school leaders are using data visualization to view academic and operational outcomes.
3. **Personalization.** Schools are learning from the private sector to customize user experiences and products and apply that to provide learning support to students via personalized learning. Schools are starting to offer education in a way that is chosen by the learner and customized by topic, pace, strategy, and presentation of knowledge/skills.
4. **Social and emotional learning.** Schools are building empathy, grit, persistence, flexibility, and adaptability into curriculum to help students learn collaborative, problem-solving, and civic engagement skills. Learning experiences that help build students' character and identity and encourage creative and social risk-taking are also being emphasized.
5. **Building human capacity of leaders.** Strategic leadership that invests in/strengthens the professional community of schools by providing opportunities for all K-12 staff to learn and master new skills opens the door to innovative practices that enhance student experiences.



Recommendation: Discuss these questions with your team to assess your district's preparedness for the future.

- What is the impact of the trends mentioned above on your school district? How are these advances in technology affecting the way educators teach and students learn?
- How well is your school district preparing for and adapting to these changes? Where has the district been successful? Where is there room for improvement?
- How will the district work together as a team to accommodate these trends?
- How will the district engage teachers, parents, students, and the community throughout this process? Is it helpful to invite neighboring school districts, businesses, nonprofits, or professional associations to engage on these issues?
- What other shifts, changes, or trends do you foresee that will impact education? How will your school district prepare for them?

Sources/More Reading:

[Driving K-12 Innovation Toolkit](#)

PREPARING FOR THE IMPACT OF NEW TECHNOLOGY IN SCHOOLS

Education technology can be a powerful tool—if your infrastructure can handle it. SBOs and CTOs must consider how changes in teaching and learning will affect demands on school infrastructure so that when it's time to take the digital leap, the district will be ready. Remember:



As technology programs grow, new grade levels will be added, and more schools will come onboard. This means more students will bring their devices and put pressure on networks.



Education content is changing. Digital curriculum is getting larger, requiring more bandwidth to transfer lessons onto student devices. Devices also need to synch with cloud computing systems, making them “chattier” as they send data across networks. Even simple web pages have more content, which requires more bandwidth for web browsing.



As teaching and learning with technology matures in the district, usually it will shift to more student-centered/personalized learning. Anticipate increased student Internet usage, demand for digital resources, and use of online learning communities for students and staff.



Districts may need to do a cost trade-off analysis to determine the best ways to connect schools to the Internet, via “lit” and “dark” fiber networks⁵³ that are ISP-owned, school leased, or created from scratch. The trade-off costs between taking on operations and maintenance versus being beholden to a single provider must be considered carefully, but there are opportunities for reducing costs via taking control of the district’s WAN.

Sources/More Reading:

[Will Transformed Teaching and Learning Break Your Network?](#)

[SEND: Smart Education Networks by Design Toolkit](#)

ADVANCING PERSONALIZED LEARNING IN CLASSROOMS

Personalized learning has proven to improve student engagement and achievement. It’s also a highly attractive feature for districts to offer students and stay competitive and curtail declining enrollment. SBOs and CTOs have unique perspectives to share with instructional leaders when investing in this trend, especially since these initiatives often require a lot of staff, financial, and IT resources to guarantee success. SBOs and CTOs must advocate for a joint seat at the table for these discussions.

So, what is “personalized learning” exactly? It is a teaching and learning framework that...

1. **Aligns** instruction to college- and career-ready standards and social/emotional skills that students need to be successful.
2. **Customizes** instruction in a way that allows all students to design their learning experiences according to their own interests.
3. **Varies** the pace of instruction according to each student’s needs, so students may accelerate/ decelerate their pace based on their level of mastery.

⁵³ **Lit and dark fiber**—Lit fiber is fiber-optic infrastructure currently in service that provides large bandwidth connections for high-speed Internet or data services; dark fiber is not in use (i.e., has no light passing through it).

4. **Encourages** educators to use data from formative assessments and student feedback to differentiate instruction and provide supports and interventions to ensure all students remain on track for graduation
5. **Allows** students and parents access to clear, transferable learning objectives and assessment results to better understand expectations for mastery and advancement.



TIP: Looking for more resources to help your team implement a new digital initiative? [Check out CoSN's Leadership for Digital Learning Toolkit](#), which has district advice and case studies, checklists, and other resources to help you create a recipe for success with your latest technology initiative, whether for mobile learning, a new 1:1 program, or something else.



Do you have another idea or resource that can help school business professionals and technology leaders work better together in education? Contact us today!

ASBO International—Call **866.682.2729** or email asboreq@asbointl.org.

CoSN—Call **202.822.9491** or email media@cosn.org.

APPENDIX

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