Planning
for the Future

COVID gave schools a chance to reinvent teaching and learning. Now, where do we go from here?

Although the pandemic created very real challenges for school systems, it has also given K–12 leaders an opportunity to reimagine teaching, learning and school operations. To serve the needs of students and their families more effectively moving forward as well as take advantage of funding to put these ideas into practice.

"School districts made historic accomplishments during unprecedented times," said Chrisha Elmer, Senior Regional Sales Director for K–12 Education at Lumen. "They accomplished at least five years of their technology plan in just a few months, typically by picking solutions that were quick and easy to install."

In response to the pandemic, schools very rapidly deployed technologies for teaching, learning, and collaborating in an online or hybrid environment. They also developed the capacity of teachers and students to use these tools.

Now, with COVID receding in the rear-view mirror, "K–12 leaders have the chance to evaluate their technology solutions for the long term, as opposed to the emergency-based approach they took during the pandemic," Elmer said.

Time for new approaches

As Elmer alludes to, the current moment presents an opening for leaders to press the "pause" button, rethink and rebuild in a way that will benefit all stakeholders in the future.

Leaders can use the lessons learned during the pandemic to inform this work. For instance, many districts found that having the opportunity to learn remotely served some students better than learning in a traditional classroom. Districts can use this information to design hybrid learning environments or create fully online options that are more inclusive to the needs of all students.

"My youngest child started high school during COVID," Elmer said. "He actually struggled with going back to school in a face-to-face setting."

As Elmer's experience demonstrates, the needs of every student are different. Yet, technology enables school systems to provide instruction in the manner that students desire. What's more, the billions of dollars in federal pandemic relief aid for education could be instrumental in supporting this work.

Congress allocated nearly $190 billion in aid for K–12 schools through the Elementary and Secondary School Emergency Relief (ESSER) fund. Schools have until Sept. 30, 2023, to spend the $54 billion in aid from the Coronavirus Response and Relief Supplemental Appropriations Act, and Sept. 30, 2024, to spend the $122 billion from the American Rescue Plan Act. As of Feb. 1, 2023, less than $31 billion of this money had been spent, **according to a government website**.

As K–12 leaders look toward a post-pandemic world and reimagine what's possible, they'll need a new technology roadmap to help them reach their destination, Elmer said. Here are nine recommendations for creating such a plan.

1 **Involve all stakeholders in planning.** Students are the primary stakeholders in education. However, many school systems fail to include them in planning for technology.

Meeting the needs of staff, students, and their families requires understanding those needs. K–12 leaders can achieve this understanding by engaging all of these groups in the planning process.

According to **an analysis** from the National Association of State Boards of Education, more than 33 states now have some level of student engagement on school boards — and more than 400 students are serving on state boards and education agencies.

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growing, and students are now calling out what they want in their school experience," Elmer said. Giving students a voice ensures that K–12 innovations align with what students require for success.

2 Consider digital equity.

Whatever learning looks like at school, students need high-speed internet service at home to participate fully in their education. While a significant amount of money has been spent to bring broadband into students' homes through programs such as the FCC's Emergency Connectivity Fund, the digital divide has yet to be solved for everyone.

"Whether cost or availability is the issue, there are solutions to each of those challenges," Elmer said. There are many grassroots efforts under way to address digital equity, and K–12 school systems should look to partner with these local organizations to address the connectivity needs in their communities.

3 Develop action steps.

While a vision is important, districts also need a plan for how they can deliver on this vision, Elmer says. An effective plan spells out the specific actions that districts will take to achieve their goals.

The plan, which should describe the steps your district will take to migrate to new technologies, should be incremental in nature. Think of the old joke about how you eat an elephant — one bite at a time — so leaders and staff don't get overwhelmed and can see sustainable progress. In addition, your plan should include professional development opportunities for everyone affected by these innovations.

4 Invest in modern infrastructure.

Your network is the backbone that connects students, faculty, and staff with digital tools and services, which is why successful digital transformation begins (and ends) with the network. Effective digital learning "requires a network infrastructure that is high-performance, secure, and scalable," Elmer said. School systems should take advantage of software-defined networking and other modern technologies to ensure their networks can adapt to the evolving needs of students and employees.

School districts relied heavily on web conferencing platforms like Zoom, Cisco Webex, and Microsoft Teams to facilitate online or hybrid learning during the pandemic. As districts are looking to upgrade or replace their legacy voice and customer premises equipment (CPE) platforms, they should consider taking the next step toward an integrated cloud platform for voice, video, and data communications. An integrated cloud platform provides flexibility and mobility for users and administrators, while also supporting districts in keeping systems secure and up to date.

5 Don't neglect security.

Network security continues to be a top priority for districts of all sizes, and an effective technology roadmap needs to address this critical issue. K–12 organizations have become targets for a growing number of cyberattacks in recent years: **According to the K12 Security Information Exchange**, there have been more than 1,300 publicly disclosed cybersecurity breaches involving K–12

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districts in the United States since 2016.

"School districts have a lot of equipment that needs to be refreshed, monitored, patched, and updated," Elmer said. "These day-to-day operations can't be ignored, as this is often the entry point for any cybersecurity breach. Performing these tasks is the baseline for keeping networks safe."

6 **Be nimble.**
Technology is changing much more rapidly than even a three- or five-year request for proposals (RFP) typically allows for. "As districts are putting new services out for bidding, they should allow for some evolution in services so their contracts can take advantage of those future iterations," Elmer said. "As fast as technology is changing, districts don't want to put out another RFP the following year, because it's too costly and labor-intensive to do so."

Writing language into RFPs and contracts to allow for some flexibility solves this challenge. "The vendors that districts select would have an opportunity to move them along on their roadmap a little faster when there is flexibility built into these contracts," she observed.

7 **Think about long-term sustainability.**
While the pandemic relief aid has given school systems a welcome infusion of money, K–12 leaders must find a way to grow and sustain their digital transformation initiatives when this funding runs out.

"The money that exists from a grant program today might not be there five years from now," Elmer said. "How are you going to fund your technology plan beyond the duration of a grant?" An effective roadmap addresses the issue of sustainability with a long-term

funding plan that ensures districts can continue to innovate well into the future.

8 **Be creative.**
Attracting and retaining IT professionals is a huge challenge for school systems. K–12 leaders must be creative and look to collaborate both within their walls and throughout their communities in order to solve this challenge.

"I know of a school system in which high school students can earn their Cisco certifications during their junior and senior years," Elmer said. "A lot of their lab time is used for installing devices and racking and stacking servers within the district. The students are getting real-world experience while also filling that staffing gap. It gives them a great opportunity, so when they enter the job market they're better prepared — and they're helping the district at the same time."

9 **Look to industry partners for help.**
Because of their difficulties in hiring and retaining IT staff, many school systems don't have enough personnel to execute key IT functions. In a **CoSN survey**, nearly half of the K–12 CIO's polled said their districts struggled to provide help desk capabilities to students and parents. An industry partner like Lumen can help districts solve this challenge with managed network services.

"Vendors can be very nimble in filling the gaps that districts might have," Elmer said. "It could be simply answering help desk calls, up to a fully managed service where the equipment is provided and maintained — and districts don't have to worry about cybersecurity because it's built into the service."

Building on the Changes from COVID

How can districts successfully build on the changes they've made during the pandemic to support long-term transformation?

We talked with **Michael Olson**, Manager of Solution Architecture for Lumen, about this issue. Here's what he had to say.

What lessons have schools learned from the pandemic that can inform the work of K–12 leaders moving forward?

I found it interesting that when the pandemic hit, a lot of our larger school districts were more easily able to transition to a virtual classroom environment than some of our smaller school districts. Many smaller districts had not really invested in technology over the years, and as a result, it was very challenging for them to implement virtual classrooms.

I was surprised by the number of requests we received for emergency bandwidth upgrades, remote access solutions and collaboration platforms, so districts could continue what they do every day. It really highlighted the importance of flexibility and adaptability in our systems to support teachers and students.

Post-pandemic, there are still school districts that are behind the curve. The modernization of IT systems should be a key priority for K–12 leaders moving forward.

The pandemic led to the creation of the ESSER fund, with nearly $190 billion to help schools make those important investments. As K–12 leaders reimagine what's possible, where should they start? How can leaders redesign their systems to better meet students' needs?

The first thing leaders should recognize is, it's not going to be a revolutionary process. They can't just do a flash cut from old to new technology.

It's going to be an evolutionary process and it will take time to make those changes. That's really the foundation for how leaders should approach these investments: They don't need to modernize and update everything tomorrow, but they do need to start the process now.

There are two common threads I would point to. The first is security and privacy. Any new system or process should first be evaluated from the perspective of risk. Our educational system is foundational to our future, so mitigating risk should be our top priority.

The second, don't look for like-to-like upgrades. I was on a call with an IT leader recently, and he wanted to replace his district's phone system. The leader stated, "I just want to buy a new phone system." My counsel to him was to take a step back, and rather than replace like for like, look for more current technologies, like managed collaboration platforms in the cloud.

Explore opportunities to move to more agile IT systems. The skills needed to accomplish that can be a challenge. However, leveraging the expertise of the vendor community to supplement the work of district IT staff or take over the operation and management of

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the entire system can help districts continue on the path toward IT modernization.

You made a few key points there: moving to more agile IT systems and considering the role that managed services can play, especially in districts that are facing IT staffing challenges. How can Lumen help meet these challenges?

I group technologies into two categories. The first includes the obvious. For instance, K–12 leaders know that collaboration tools are important. They should leverage cloud computing for application delivery. They want to update their network services, so they are flexible enough to allow for education anytime, anywhere with virtual classrooms.

The less obvious include smart technologies, such as modern WiFi systems that can collect a significant amount of data on system usage. We can use those analytics to make better decisions. Managed security services are something that districts should look at as well. And finally, secure network technologies. The days of simple WANS and internet service have been replaced with security technologies such as Secure Access Service Edge, or SASE.

Lumen can help in all these areas. From a collaboration

standpoint, our cloud-based platform enables a secure connection to Zoom, Teams, or WebEx. We have a service called Cloud Connect that allows customers to connect dynamically to the cloud services of their choice. For example, if they have services that run in Azure and need to run a backup in Amazon Web Services, they can dynamically connect between the two cloud service providers over the Lumen network.
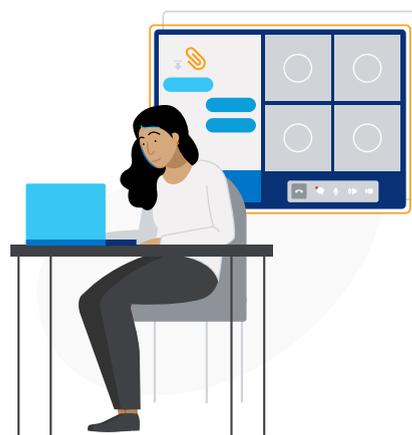
We also offer dynamic bandwidth connections. Many customers don't know what their bandwidth needs are going to be. Dynamic bandwidth allows them to scale as needed. They can increase their bandwidth in high-demand circumstances, such as online testing periods, and reduce bandwidth when it's not needed, such as during the summer months.

SASE secure endpoints can allow for virtual classrooms anywhere. For smart buildings and campuses, we can implement services within schools that allows us to collect and analyze data and provide a means to act upon that information for executives. Finally, we provide managed services for schools. To wrap it all together, Lumen can provide a variety of services to help school districts accomplish their mission.

Let's circle back to managed services for a minute, because there could be some misunderstanding among K–12 leaders about what that means. Some leaders might be hesitant to hand over management of their systems to a third-party provider, for instance. How do managed services work, and how much control do districts have to give up?

There are varying levels of management. Some school districts have IT staff who might be afraid of managed services because they feel their jobs might be outsourced. That's not necessarily the case. We can customize those management services to fit the framework that a district has put into place.

A managed services approach provides IT expertise that a school district might not have on staff, and it frees up district IT employees to focus on higher-level tasks beyond the day-to-day operation of their network infrastructure. Many IT employees spend a lot of time patching and

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upgrading systems, looking for security bugs. These are the kind of tasks that could be handed off to Lumen easily, allowing IT employees to focus on work that is more strategic to the district.

Do you have any final advice for K–12 leaders as they develop their vision for the future?

First, don't deny the fact that many of our old technology models are obsolete and need to be updated. Don't assume a like-for-like upgrade is the best thing to do. If you've got a system in place that isn't performing for you, don't go out and buy another box. Look at what's available in the marketplace and take advantage of newer technologies.

We're at a key turning point, so embrace technology as it evolves. I've seen stories in the press about tools and platforms like OpenAI and ChatGPT. Embrace those technologies because they're not going away. We need to bring them into the open, instead of thinking they're a dirty secret. School systems should take advantage of these emerging technologies as they move forward. It will be very important as we evolve in the future.

Finally, be brave. Don't be afraid to make a mistake. Make substantive changes to IT where it makes sense. It's not always easy, but it's a critical process for the future of education.