**K-12
BLUEPRINT**

Infrastructure and Assessments

In the modern classroom, bandwidth is productivity. For every frozen screen or maddeningly slow load time, precious learning time is lost: for good.

But as schools rely more on digital content and testing, how much bandwidth is enough?

For the Common Core tests, the Smarter Balanced Assessment Consortium (SBAC) recommends approximately 10 to 20 Kbps per student for simultaneous testing. And, anticipating future usage, the State Educational Technology Directors Association (SETDA) predicts that schools—by the 2017-2018—will need at least 1 Mbps per student.

Since standardized tests are given over a 12-week window, meeting these recommendations may not prove a challenge for many schools. Some districts are utilizing cabled labs for testing to better avoid wireless infrastructure traffic jams.

Yet with so much innovative media available for learning and problem simulation—video, audio, drag-and-drop interactivity, etc.—why are so many K-12 tests still so old school?

In comes down, mostly, to money, time and usefulness.

Creating compelling content requires resources and research. It also requires significant investment in infrastructure. If a test delivers multimedia, every digital device used has to be able to properly utilize the media, and the school's network bandwidth needs to be up to snuff.

Multimedia can also make for longer tests, as interactivity and video or audio clips consume more time than simply reading a question and picking an answer.

Lastly, just because innovative media can be used for testing doesn't mean it should be used for testing. It should only be used if it enables a more comprehensive and meaningful gauge of learning than traditional testing methods.

Both Common Core assessment consortia include constructed-response items or drag-and-drop manipulations in their tests. And while this won't require the bandwidth to support rich video content, for instance, it does require a reliable infrastructure to create an optimum, frustration-free testing environment.

But, in the case of the Common Core standards, technology use is inherent to the curriculum, not just assessment. So supporting robust infrastructure is vital for both instruction as well as testing.

It is important to note that even a wireless infrastructure relies on cabling up until wireless access points. Outmoded cabling and switches, creating choke points for Internet access, can compromise these access points. So even if schools are able to test students using existing computer labs, the need for more wireless technology to empower both students and teachers with dynamic digital curriculum requires a strong and scalable data backbone.