Raising the BAR
Becoming Assessment Ready
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Finally, ENA would like to extend a special thanks to the school districts and their superintendents, administrators and educators who participated in the case studies included in the white paper. Metropolitan Nashville Public Schools (TN), Metropolitan School District of Warren Township (IN) and West Side School District #202 (ID) provided enormous insight into the strategic planning, concerns and opportunities surrounding online assessments. Their leadership and vision will provide inspiration for other districts preparing to become assessment ready.
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Introduction

This is truly an exciting time for education in this country. We have an opportunity to transform from Industrial Age school systems that are more group focused to Information Age schools systems that are much more customized to the unique needs of individual children, while providing all students greater access to content, resources and support. The opportunity exists for transformation to take place not only at the classroom level, but also in the way schools and central offices across the country function to meet the needs of students. In order to achieve this needed transformation, education will finally be moving technology from the sidelines of education to center stage, not as the focus of teaching and learning but as an essential tool in creating the environments of success we so earnestly need for all children.

Change is a difficult for many people, and the system of education in our country can be resistant to major reforms. Several of the educators interviewed for this white paper expressed concern about investing a lot of time and effort into another potentially short-lived educational initiative. But many in the education community believe that Common Core State Standards (CCSS) and online assessments are long-term initiatives worth every educator’s focus.

There are several educational trends that strongly suggest major change is happening, including low-cost mobile devices, blended learning, the development of quality digital content and the significant increase in mobile networks, to name a few. Data from several reports provides evidence that this shift to digital resources in schools will continue to increase into the foreseeable future. The upcoming CCSS online assessments take advantage of these trends, combining them into a powerful tool for change.

As this white paper will highlight, there are several direct benefits to online assessments:

- Quick return of results providing educators the information needed to modify instruction
- Increased instructional time
- Test security
- Tools to collect useful information about students that were previously unavailable through paper and pencil tests
- Ability to better capture student subject matter performance and mastery

Developing performance-based metrics and the systems to collect those data are still very new in education. These systems will improve and be refined with time, especially as educators become comfortable with the use of the technology.

Politics aside, the CCSS initiative has placed a “stake in the ground” for schools and systems to build out the infrastructure necessary to support not only online assessment, but also classroom learning environments that will finally provide educators the tools they need to meet the unique needs of children. Online assessment is just one of a number of inter-related education components, all of which need to be strategically planned for and implemented. Implementing online assessments won’t “auto-magically” happen. There are a number of obstacles to overcome over the next 12 months, but the benefits outweigh the challenges. Regardless of whether your district is participating in the current CCSS initiative, online assessment is an important tool for educators.

This white paper is primarily focused on the Smarter Balanced Assessment Consortia (Smarter Balanced) and Partnership for Assessment of Readiness for College and Careers (PARCC) online assessments, but this study will be of high value to school districts across the U.S., regardless of whether they participate in the PARCC and Smarter Balanced 2014-2015 online tests, and are applicable for online assessments in general.
Preparing for online assessments is a high priority for school districts across the nation and “becoming assessment ready” is a complex and challenging task. This white paper, a collaborative effort of the Consortium for School Networking (CoSN), eLearn Institute and Education Networks of America (ENA), analyzes what practical steps small, medium and large school districts are evaluating and taking as part of their preparation process. It shares the experiences, recommendations and best practices of three school districts—Metropolitan Nashville Public Schools (TN), Metropolitan School District of Warren Township (IN) and West Side School District #202 (ID)—as they plan for becoming assessment ready.

In addition to the case studies, find a list of frequently asked questions from district practitioners with responses from the two primary assessment consortia. As a result of this nationwide education community outreach and the school district case studies, a readiness checklist of practical action steps and suggestions districts should consider in preparation for the online assessments has been created.

This white paper is intended to be a district-to-district endeavor, and it is hoped that the plans, processes and activities outlined in the case studies may be useful to other school districts as they prepare for online assessments.

“Deploying assessments that can measure the needs of each individual student and personalizing learning according to those needs can bring about the improvements in learning we seek.”

Brandt Redd, CTO
Smarter Balanced Assessment Consortium
What is the Purpose and Value of Online Assessments?

Why Online Assessments?

The Common Core State Standards (CCSS) not only establish common standards for English language arts/literacy and mathematics across the country, but they also raise the bar for rigor and higher order thinking, communication and problem solving skills. The intent is to dramatically improve educational outcomes through new teaching and learning instructional strategies and will require both summative end-of-year assessments for accountability decisions and formative interim assessments that provide the teacher data on student progress. Ultimately, teachers should be able to use assessment data to modify instruction based on student academic needs.

Traditional paper and pencil tests do not provide feedback to teachers in a timely manner, severely limit how we assess higher-order thinking skills and make it difficult to customize instruction for students. The need to break free from these limitations has led to the decision to conduct online assessments for the CCSS.

Online assessments promise several advantages over paper and pencil tests:

• Saving time for students taking the test
• Reducing some of the burden of teachers grading the test
• Providing tools to quickly and easily disaggregate and interpret test data
• Saving time in administering and analyzing results
• Using timely data to inform or modify instruction based on individual student learning needs
• Allowing for multiple formats, including video, audio and other digital resources to present information and collect responses
• Increasing the range of skills assessed
• Offering tools to safeguard security of test items and student responses
• Engaging for students
• Improving assessments of English language learners and students with disabilities

Susan Van Gundy, Director for Assessment Technology with the Partnership for Assessment of Readiness for College and Careers (PARCC), notes that “computer-based testing can increase the accessibility of assessments for students with disabilities, English Language Learners and other students that need specific accommodations and supports to participate equitably.”

Tony Alpert, Chief Operating Officer for the Smarter Balanced Assessment Consortium (Smarter Balanced), offers several additional reasons to move to online assessments:

• Scoring using machine-based algorithms
• Faster feedback to students, teachers and parents
• Fewer opportunities for student tests to be lost or damaged
• More consistency with the direction of instruction
• Interactive items that measure applied problem solving and reasoning
• Adaptive tests (Smarter Balanced only) that more accurately measure lower and higher performing students without adding additional testing time
• Investment in infrastructure that can be used to support instruction versus an annual expenditure on paper
Information Age Schools Need Digital Infrastructure

Tony Alpert’s last point is important to note. The investment in the infrastructure required for online assessments is the same infrastructure necessary for Information Age teaching and learning. Online assessments are just one of the many shift to digital trends impacting education.

Other trends include:

- FCC calling for U.S. students to have e-textbooks by 2017
- e-books outselling print books
- States requiring an online course for graduation
- States requiring digital instructional materials
- Exponential growth of tablets and other mobile devices
- Growth in enrollment in online schools

Blended learning, e-books, interactive digital content and online course material all require a robust infrastructure. The technology infrastructure schools invest in will be used to primarily support effective teaching and learning. The shift to digital is happening. The only choice we have is whether we will strategically plan for it or not.

Although there have been demands for significant improvement in our educational system, little has been done to upgrade our teaching and learning environments from the Industrial Age school buildings of the past to the Information Age learning communities needed today. The shift to digital learning resources has been a slow and difficult process in education. In a study conducted by the U.S. Department of Commerce, Digital Economy 2002 shows that of the 55 largest industries that make up the nation’s GDP, education ranks last in information technology investment.¹

The CCSS movement has helped develop concrete minimum infrastructure and device requirements that technology leaders can plan for and build toward. The spring 2015 test window has also created a sense of urgency and a focus for schools across the country to move forward on their infrastructure and instructional integration plans. The call to action has additionally created legitimate concerns on prioritizing tight budget resources to build out the required infrastructure.

Online Assessments on the Rise

While the education and media communities are primarily focused on the PARCC and Smarter Balanced online assessments, there are several other assessment consortia as well as traditional assessment entities that are developing online assessments. In fact, a recent Education Week article, “Education Testing Industry Sees Rising Demand,” predicts that the demand for all assessments is rising between four and five percent a year with a total market forecast of $4.5 billion in 2014.² That’s a lot of testing.

The market forecast includes state-level summative assessments as well as formative, interim and classroom-based assessments. The CCSS online assessments are credited in part for driving some of the demand. School districts want their students and teachers to be as prepared as possible for the upcoming 2014-2015 assessments and are using currently available online grade-level and classroom-based assessments that provide timely and precise feedback about what students know and do not know in order to provide the interventions needed and improve future outcomes on the CCSS assessments.
The Assessment Consortia

Despite the negative media about education in the United States, this is a unique and exciting time to be in education. Student assessment is being significantly transformed, driven by the following initiatives:

1 Race to the Top (RttT) and other federal funds supporting the development of online assessments

2 Broad adoption of the Common Core State Standards and RttT funds supporting states and districts for this adoption

3 The digital shift or transformation that is intensifying in schools across the nation

4 ConnectED broadband initiative to connect 99 percent of America’s students to the Internet with high-speed broadband connectivity within five years

As part of the American Recovery and Reinvestment Act of 2009 (ARRA), the RttT Assessment Program provided funding to state assessment consortia to develop a new generation of assessments aligned to the CCSS that are valid, support and inform instruction, provide accurate information about what students know and can do and measure student achievement against standards designed to ensure that all students gain the knowledge and skills needed to succeed in college and the workplace. Beyond building better test instruments, the overall objective is to reduce state-to-state variability in standards and achievement against those standards.

The adoption of the CCSS and assessment consortia online assessments will provide consistent content standards and assessment measurement. The new online assessments are also expected to significantly “raise the bar” by presenting more challenging, complex and real-world tasks that measure knowledge and performance through a variety of test item types, including technology-enhanced, complex performance tasks, selected-response and constructed response.

Who Are the Primary Comprehensive State Consortia?

In 2010, two primary comprehensive state consortia were awarded RttT funds to develop online assessments in English language arts and mathematics for grades 3 through 8 and high school that will be ready to use by the 2014-2015 school year for federally required assessments. These consortia are Smarter Balanced Assessment Consortium (Smarter Balanced) and the Partnership for Assessment of Readiness for College and Careers (PARCC).

While these two organizations share the goal of implementing successful online assessments, each entity has a unique and valuable new approach to assessment. The most notable difference between the two is that Smarter Balanced uses adaptive technology embedded in the testing instrument that is intended to maximize the precision of concept mastery and PARCC uses a fixed-form of delivery where students take one of several fixed, equated sets of items and tasks. Both allow computers, laptops and tablets for test taking, and both use a combination of electronic and human scoring techniques.

Both assessment systems are computer-based and designed to utilize technology for innovation, student engagement, accessibility, cost efficiencies and rapid return of results. Both will also provide a paper and pencil version as accommodation and under the following circumstances:

- **Smarter Balanced** will provide a paper and pencil version for three years for schools not ready for online assessments as approved by their state.

- **PARCC** will provide a paper and pencil version for the 2014-2015 school year for schools approved to do so by their state. PARCC’s goal is for the vast majority of schools to be conducting computer-based testing by the third year of operation assessments.

Information on each of the comprehensive state consortia is provided on the following pages.
Smarter Balanced Assessment Consortium (Smarter Balanced)

The Smarter Balanced next-generation assessments will be aligned to the CCSS and test in English language arts/literacy and mathematics for grades 3-8 and 11. The Smarter Balanced assessments will test students using computer adaptive technology that will ask students tailored questions based on their previous answers. Smarter Balanced system includes summative tests administered near the end of the school year for accountability purposes, optional interim tests administered at locally determined intervals for instructional use to inform students, parents and teachers about whether students are on track, and a Digital Library of Formative Assessment Tools and Practices to provide teachers with high quality instructional resources and professional development materials to support classroom-based formative assessment. http://www.smarterbalanced.org

Smarter Balanced believes that computer adaptive testing (CAT) will provide a significant improvement over traditional testing by providing more accurate scores for students across the full range of the achievement continuum. They also believe that CAT will provide better information for teachers and be more efficient and secure.

Smarter Balanced summative tests will be administered during the last 40 percent of instructional days (or approximately 12 weeks) for grades 3–8 and during the last 25 percent of the instructional days (or approximately 8 weeks) for grade 11. These assessments will be used for accountability and consist of two parts—a computer adaptive test and performance tasks. The computer adaptive tests will include selected-response, constructed-response and technology-enhanced items. In English language arts, the computer adaptive test includes items that measure student’s listening skills. The performance tasks will challenge students to apply their knowledge and skills to respond to real-world problems and are intended to measure more abstract skills like problem solving, writing and research, and complex analysis. The performance tasks will not be computer adaptive and will provide students the opportunity to demonstrate their writing skills via extended written responses.

Partnership for Assessment of Readiness for College and Careers (PARCC)

PARCC will test a student’s ability to read and comprehend complex literary and informational texts, complete authentic research tasks drawing evidence from multiple sources, and solve multistep real-world mathematics problems including those involving modeling and mathematical reasoning. PARCC will replace the single end-of-year high stakes accountability test with a series of assessments throughout the year and at year end that will be averaged into one score for accountability purposes, reducing the weight given to a single test administered on a single day and providing valuable information to students and teachers throughout the year for instruction and interventions. PARCC selected Achieve, an independent, bipartisan, non-profit education reform organization to serve as the Project Management Partner for the consortium. In 2013, the consortium of states created PARCC, Inc., a new non-profit entity that succeeded Achieve in the role of project manager. http://www.parcconline.org/

PARCC states have committed to building a K-12 CCSS assessment system that builds a pathway to college and career readiness for all students, makes better use of technology in assessments and advances accountability at all levels.

The PARCC assessment system will have the following required components:

1. A two-part required computer-based summative assessment administered in the last quarter of the school year—one part that is a performance assessment, and the other an end-of-year assessment. The performance-based assessment and end-of-year summative assessment scores will be combined for accountability purposes.

2. Two optional components consisting of a diagnostic assessment and a mid-year assessment designed to identify a student’s strengths and weaknesses relative to the CCSS. The scheduling of these tests is flexible and is primarily used to inform instruction and interventions. The mid-year assessment is due to be available for the 2014-2015 school year. The diagnostic assessment will follow in 2015-2016. Formative assessment tools for K-1 educators are also being developed.
PARCC will also offer a non-summative assessment in speaking and listening. The scheduling of these tests is flexible and they are not used for accountability purposes. Teachers will use a standardized rubric to assess a student’s speaking and listening skills.

Each of the consortia is working with states that have selected them. Originally, PARCC had 26 states as part of their consortia and Smarter Balanced had 31 states (several states elected to join both, and some states did not join either). Over time, some states dropped out of or suspended their participation in the consortia due to funding or cost issues (not only for the cost of the assessments, but also for the cost of technology and infrastructure upgrades required), technology readiness concerns or political reasons.

State participation remains fluid, and as of the publishing of this white paper Smarter Balanced has 23 states and the U.S. Virgin Islands representing approximately 19 million students, and PARCC has 18 states plus the District of Columbia representing approximately 16 million students as illustrated in the map above.

### Additional Assessment Consortia Entities

In addition to Smarter Balanced and PARCC, the Department of Education issued grants to four specialized assessment consortia—two alternative assessment consortia focused on students with cognitive disabilities and two English language proficiency consortia focused on English language learners.

**National Center and State Collaborative Partnership (NCSC)** - NCSC is building a comprehensive assessment system that includes project-developed products and processes to help Individualized Education Program teams accurately identify the learner characteristics of students with the most significant cognitive disabilities and make appropriate decisions about how each student participates in the overall system of assessments. The NCSC is a collaborative of national centers and 19 state partners. A listing of their states can be found on their website. [http://ncscpartners.org](http://ncscpartners.org)

**Dynamic Learning Maps Alternative Assessment System Consortium (DLM)** - The DLM Alternate Assessment System will let students with significant cognitive disabilities show what they know in ways that traditional multiple-choice tests cannot. It is designed to map a student’s learning throughout the year by using items and tasks that are embedded in day-to-day instruction. In this way, testing happens as part of instruction, which both informs teaching and benefits students. An end-of-year assessment will be created for states that want to include a summative test in addition to the instructionally embedded system. A listing of DLM states can be found on their website. [http://dynamiclearningmaps.org/](http://dynamiclearningmaps.org/)

**Assessment Services Supporting English Language Learners Through Technology Systems (ASSETS)** - The ASSETS project was awarded an Enhanced Assessment Grant in fall 2011 to build a comprehensive and balanced next-generation, technology-based assessment system for English language learners. ASSETS has 35 state members in its consortium representing over 1 million English language learners. A listing of their states can be found on their website. [http://assets.wceruw.org/](http://assets.wceruw.org/)

**English Language Proficiency Assessment for the 21st Century (ELPA21)** – ELPA21 is an enhanced assessment system that measures the English language proficiency (ELP) of English language learners. The English Language Proficiency Development (ELPD) Framework will be used to guide the development of ELP standards that reflect the academic vocabulary and English language skills needed to be successful in content area classes. A website is not currently available for this organization.
PARCC and Smarter Balanced Implementation

Despite competing for state adoption, the two primary assessment consortia are operating in collaboration with the overarching goal of implementing successful online assessments that will not only deliver substantive improvements in testing, but also provide useful feedback that will quickly and effectively inform instruction and ultimately improve student mastery of standards and outcomes. Provided below is key information about each of the online assessments being developed by the consortia and their activities leading up to the 2014-2015 assessments.

PARCC and Smarter Balanced Timelines

Both of the assessment consortia have published timelines for their activities leading up to and including the 2014-2015 school year online assessments as provided below. Pilot or field tests are planned by PARCC and Smarter Balanced in the spring of 2014.

PARCC Timeline of Events

The following graphic is a high-level overview of the PARCC timeline.
A detailed timeline of PARCC activities is provided below.

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2013</td>
<td>* Operational assessment administration RFP released</td>
</tr>
<tr>
<td></td>
<td>* Plan for student level reporting/score reports released</td>
</tr>
<tr>
<td></td>
<td>* Timeline and plan for student registration for Field Test released</td>
</tr>
<tr>
<td></td>
<td>* Anticipated timing of data return for year one announced</td>
</tr>
<tr>
<td></td>
<td>* Training materials for IEP writing teams based on Accommodations Manual</td>
</tr>
<tr>
<td></td>
<td>* Additional information about minimum and recommended technology specifications, including minimum bandwidth requirements</td>
</tr>
<tr>
<td></td>
<td>* Technology requirements for the field test released</td>
</tr>
<tr>
<td>Winter 2013-2014</td>
<td>* Sample items re-released on PARCC technology platform</td>
</tr>
<tr>
<td></td>
<td>* Specifications for online testing portal released</td>
</tr>
<tr>
<td></td>
<td>* Final information released about the Field Test (including Administration Manual)</td>
</tr>
<tr>
<td></td>
<td>* Final information released about the Operational Assessment timeline for data return</td>
</tr>
<tr>
<td></td>
<td>* Standard-setting methodology released+</td>
</tr>
<tr>
<td>Spring 2014</td>
<td>* Field test of Performance Based Assessment (PBA) components (March 24 – April 11, 2014)</td>
</tr>
<tr>
<td></td>
<td>* Field test of end-of-year (EOY) components (May 6 – June 6, 2014)</td>
</tr>
<tr>
<td></td>
<td>* Practice test available to any interested school systems</td>
</tr>
<tr>
<td></td>
<td>* Final summative assessment costs released</td>
</tr>
<tr>
<td>Summer 2014</td>
<td>* Final information about registration timeline and process for Operational Testing</td>
</tr>
<tr>
<td></td>
<td>* Final test security policies released</td>
</tr>
<tr>
<td></td>
<td>* Final Technology Specifications information released</td>
</tr>
<tr>
<td></td>
<td>* Field Test scoring complete</td>
</tr>
<tr>
<td></td>
<td>* Phase II item development complete</td>
</tr>
<tr>
<td>Fall 2014</td>
<td>* Forms construction for Operational Administration complete</td>
</tr>
<tr>
<td>Winter 2014-2013*</td>
<td>* 1st Operational Administration – Fall 2014 Block Schedule Administration*</td>
</tr>
<tr>
<td>Spring 2015</td>
<td>* 1st Operational Administration (PBA and EOY) – Spring 2015 Administration*</td>
</tr>
<tr>
<td>August 2015</td>
<td>* Student performance levels and associated cut scores set (standard-setting)</td>
</tr>
<tr>
<td></td>
<td>* Student cut scores for college and career readiness determination set (standard-setting)</td>
</tr>
<tr>
<td>Fall 2015</td>
<td>* 2015 Retest Administration for states requiring them</td>
</tr>
</tbody>
</table>

+ The methodology includes a suite of research studies that reflect the iterative nature of the standard-setting process and address issues such as face, judgment, predictive and concurrent validity through the first full administration of the PARCC assessments in 2014-15 and beyond.

* The testing window will vary according to school start dates. The Performance-Based component will be administered after approximately 75% of instructional time and the End-of-Year component after approximately 90% of instructional time.
Smarter Balanced Timeline of Events

A detailed timeline of Smarter Balanced activities is provided below.

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall 2012</strong></td>
<td>• Technology Specifications released  &lt;br&gt;• Cognitive labs and small-scale trials conducted</td>
</tr>
<tr>
<td><strong>Spring 2013</strong></td>
<td>• Pilot Test conducted in more than 5,000 schools with approximately 650,000 student participants  &lt;br&gt;• Online Practice Tests for both subjects and all test grades launched (May 2013)</td>
</tr>
<tr>
<td><strong>Summer/Fall 2013</strong></td>
<td>• Usability, Accessibility and Accommodations Guidelines adopted to ensure assessment system meets the needs of English language learners and students with disabilities (September 2013)  &lt;br&gt;• Initial bank of 21,000 items and tasks are completed and reviewed for content, accessibility, and bias/sensitivity (December 2013)</td>
</tr>
<tr>
<td><strong>Spring 2014</strong></td>
<td>• Smarter Balanced conducts Field Test of summative and interim assessment items and performance tasks in all Governing States. Participation of at least 3 million expected</td>
</tr>
<tr>
<td><strong>Summer 2014</strong></td>
<td>• Field Test scoring</td>
</tr>
<tr>
<td><strong>Summer/Fall 2014</strong></td>
<td>• Training materials available for all users on interpreting interim and summative assessment reports, searching resources and using collaboration tools in the Digital Library</td>
</tr>
<tr>
<td><strong>Fall 2014</strong></td>
<td>• Preliminary standard-setting (September 2014)  &lt;br&gt;• Smarter Balanced assessments and Digital Library ready for use by states</td>
</tr>
<tr>
<td><strong>Spring 2015</strong></td>
<td>• States administer summative assessment</td>
</tr>
<tr>
<td><strong>Summer 2015</strong></td>
<td>• Final achievement standards for summative assessment verified and adopted</td>
</tr>
</tbody>
</table>
Consortia Assessment Costs

The assessment consortia have released information on costs for their assessments. As noted in the August 7, 2013 article in Education Week, “States Ponder Price Tag of Common Tests,” half of the PARCC states will face increased costs for summative tests (one-third of Smarter Balanced states currently pay less than the estimated total cost for the Smarter Balanced assessment). Test costs coupled with the investment in technology infrastructure has caused concern for some states, but in the defense of the assessment consortia, the tests are designed to be more robust and include performance-based measures that are not possible with existing assessment vehicles. Additionally, when compared to the overall cost per student states spend, the cost of high-quality assessments that inform improved instruction is a very small percentage of the total cost per student.

Estimated costs for the assessments are depicted in the graphic below as appeared in Education Week.6

### COMMON-CORE ASSESSMENTS: COMPARING PER-STUDENT COSTS

<table>
<thead>
<tr>
<th></th>
<th>PARCC</th>
<th>SMARTER BALANCED ASSESSMENT CONSORTIUM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Reading, Writing, and Mathematics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Summative Only</td>
</tr>
<tr>
<td>Consortium Services +</td>
<td>$9.55</td>
<td>= $27.30*</td>
</tr>
<tr>
<td>State-Managed</td>
<td>$17.75</td>
<td>Grades 3-8, 11 (NCLB Required)</td>
</tr>
<tr>
<td></td>
<td>$6.20</td>
<td>= $22.50*</td>
</tr>
<tr>
<td></td>
<td>$16.30</td>
<td>Grades 3-8, 11 (NCLB Required)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*NOTE: States can add tests in grades 9, 10, and 12 for no additional cost.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SOURCES: PARCC; Smarter Balanced Assessment Consortium</td>
</tr>
</tbody>
</table>

The Smarter Balanced cost of $27.30 per student is for their complete system, including interim and summative assessments and access to the formative assessment digital library for all teachers. Scoring is included under the state-managed cost estimate. Smarter Balanced states have the option of implementing just the basic system of summative assessments for $22.50 per student. PARCC on the other hand has provided a single price for its summative assessments of $29.50 per student and will be responsible for scoring the tests. PARCC has not yet published its pricing for their interim diagnostic and formative assessments. They estimate that traditional paper and pencil versions of their tests will cost an additional $3.00 to $4.00 more per student.

At the time of publishing this white paper, the consortia are not anticipating cost increases.
Estimated Testing Time

Each of the consortia has provided estimated total testing time for their assessments; however, once the field tests in the spring of 2014 are complete, these estimates will be updated. Estimated total testing time for combined English language arts and mathematics assessments is outlined in the following tables.

<table>
<thead>
<tr>
<th>Grade(s)</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3</td>
<td>8 hours</td>
</tr>
<tr>
<td>Grades 4-5</td>
<td>9 hours 20 minutes</td>
</tr>
<tr>
<td>Grades 6-8</td>
<td>9 hours 25 minutes</td>
</tr>
<tr>
<td>Grades 9-10</td>
<td>9 hours 45 minutes</td>
</tr>
<tr>
<td>Grade 11</td>
<td>9 hours 55 minutes</td>
</tr>
</tbody>
</table>

PARCC
Testing is spread over nine testing sessions.

<table>
<thead>
<tr>
<th>Grade(s)</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades 3-5</td>
<td>6 hours</td>
</tr>
<tr>
<td>Grades 6-8</td>
<td>6.5 hours</td>
</tr>
<tr>
<td>Grade 11</td>
<td>7.5 hours</td>
</tr>
</tbody>
</table>

*In addition, students will participate in brief classroom activities led by their teacher to introduce the subject of the performance task portion of the assessment.

Technology Readiness Tool

PARCC and Smarter Balanced have collaborated on the development and administration of a Technology Readiness Tool to help districts and states assess their readiness for online assessments. This TechReadinessTool (TRT) was developed by Pearson and the tool assesses a district’s current capacity and compares it to the technology that will be needed to administer the consortia online assessments in the following four key readiness indicator areas:

1. **Devices** – Degree to which hardware and software at the school level meet the minimum requirements set by the consortia (see information on minimum device requirements in the section on Device Considerations)

2. **Device-to-tester ratio** – Adequate ratio of test-taking devices to test takers within a prescribed timetable (see information on minimum device requirements in the section on Device Considerations)

3. **Network infrastructure** – Sufficient bandwidth to handle the expected volume of traffic and content (see information on minimum infrastructure requirements in the section on Infrastructure and Support Considerations)

4. **Staff and personnel** – Adequate number of trained personnel to support the process (see information in the section on IT Support Considerations and Instructional Design and Preparation Considerations)

Each state participating in the consortia has a State Readiness Coordinator (SRC) within their Department of Education. It is the SRC’s role to work with districts to be sure they take the technology readiness survey and then address any identified technology deficiencies for assessment readiness. Measures of operational readiness are derived from the collective evaluation of data captured at the local (school) level and rolled up in reports to districts, state and consortia levels.
The TRT delivers reports on **Results and Indicators**. Reports include the following indicators:

<table>
<thead>
<tr>
<th>Readiness Report</th>
<th>Results Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Readiness Indicators</td>
<td>Percentage of overall readiness indicators that meet minimum or recommended requirements</td>
</tr>
<tr>
<td>Device Indicators</td>
<td>Percentage of devices that meet requirements</td>
</tr>
<tr>
<td>Device to Test-Taker Indicators</td>
<td>Percentage of students who can be tested with available devices</td>
</tr>
<tr>
<td>Network Indicators</td>
<td>Percentage of bandwidth currently available to test the maximum number of testers</td>
</tr>
<tr>
<td>Staff and Personnel</td>
<td>Concerns about staff and personnel readiness</td>
</tr>
<tr>
<td>School Exception Report</td>
<td>Identify schools that have missing data</td>
</tr>
<tr>
<td>Completion Status</td>
<td>Schools that have indicated they have completed device and school survey data</td>
</tr>
</tbody>
</table>

While the TRT provides good indicators of readiness, it is not a guarantee of absolute readiness, and schools and districts are urged to conduct pilot tests prior to the accountability summative assessments to truly monitor technology assessment readiness on all the key measures (devices, device ratios, network infrastructure and support staff). Schools in Smarter Balanced states may do this by using the Practice Test described below.

You can find more information on the TechReadinessTool at [http://techreadiness.org/r/Resources](http://techreadiness.org/r/Resources).

**PARCC**

In addition to the TRT, PARCC has provided two additional tools for districts to use to assess their overall technology readiness:

1. **The PARCC System Check Tool for TestNav** – This tool helps districts assess their computer and infrastructure readiness for online assessments.

2. **PARCC Capacity Planning Tool** – This tool was developed as part of the first phase of assessment administration guidance issued in preparation for the spring 2014 field test and the school year 2014-2015 assessment. It is designed to assist district and school leaders in identifying gaps in assessment administration capacity, including computer-based test taking devices and bandwidth, and exploring possible scenarios for addressing those gaps.

These tools are located at [http://www.parcconline.org/technology](http://www.parcconline.org/technology).
**Smarter Balanced**

In addition to the TRT, Smarter Balanced has developed a Smarter Balanced Readiness Calculator. The calculator estimates the number of days and associated network bandwidth required to administer English language arts (ELA) and mathematics assessments given the number of students, number of computers and number of hours per day computers are available for testing at a specific school. This tool is located at [http://www3.cde.ca.gov/SmarterBalancedtechcalc](http://www3.cde.ca.gov/SmarterBalancedtechcalc).

**Field Testing and Pilots**

Becoming familiar with the online assessments and conducting pilots are important elements to becoming assessment ready for all stakeholders. Students, educators, administrators and parents are anxious to know what to expect and what to plan for. Both consortia have planned field test administration and practice tests available in the spring of 2014 so educators and students will have the chance to experience them firsthand. Additionally, both consortia have sample test items on their websites for anyone to check out. You can find more information about the sample test items for PARCC at [http://www.parcconline.org/samples/item-task-prototypes](http://www.parcconline.org/samples/item-task-prototypes) and Smarter Balanced at [http://sbac.portal.airast.org/practice-test](http://sbac.portal.airast.org/practice-test).

**PARCC**

PARCC will administer field assessments that mirror the 2014-2015 assessments to a random selection of schools representing a sample demographic of the state. Selected schools have already been notified, and students will take a partial test in one content area. Metropolitan Nashville Public Schools is one of the selected school districts to administer the field tests. The published dates for the field tests are outlined in the chart below.

<table>
<thead>
<tr>
<th>Assessment Component</th>
<th>2014 Administration Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance-Based Assessment (PBA)</td>
<td>March 24 to April 11</td>
</tr>
<tr>
<td>End of Year Assessment (EOY)</td>
<td>May 5 to June 6</td>
</tr>
</tbody>
</table>

In addition to the field test administration, PARCC will provide access to a practice test for interested schools in the spring of 2014. These tests will include technology-enhanced items and will be delivered using the same technology platform that will be used for field testing. This will provide the experience students and educators need in order to become more familiar with the types of items that will appear on the assessments. You can find more information about the field and practice tests at [http://www.parcconline.org/field-test](http://www.parcconline.org/field-test).

**Smarter Balanced**

Smarter Balanced also plans for field tests in the spring of 2014. Their planned field tests will be administered from March 18, 2014 through June 6, 2014. Smarter Balanced allowed their states to determine how broadly the test will be administered. The field test will closely resemble the summative assessment, and most students will complete a test in one subject, either English language arts/literacy or mathematics. You can read more information about Smarter Balanced’s field tests at [http://www.smarterbalanced.org/field-test](http://www.smarterbalanced.org/field-test).

During 2013, Smarter Balanced conducted pilot tests in more than 5,000 schools with 650,000 students that provided information about the performance of its assessment items and its test delivery system real time.

Smarter Balanced has created a practice test available through their Practice Test Portal at [http://sbac.portal.airast.org/practice-test](http://sbac.portal.airast.org/practice-test). The test is available to schools and districts for practice and training purposes, professional development activities and for discussions with parents, policymakers and other interested stakeholders. It is designed to allow educators and students the ability to experience the features of Smarter Balanced online assessments and understand how the assessments will measure a student’s mastery of the CCSS. The practice tests include constructed-response, selected-response and technology-enhanced items, as well as performance tasks. They do not, however, use the computer-adaptive feature of the actual Smarter Balanced assessments and are given in a fixed-form model.

What all these innovations in teaching and testing share is a dependence on technology—particularly, reliable, high-speed Internet connections. Yet today fewer than 20 percent of educators say their school’s Internet connection meets their teaching needs.”

Arne Duncan, Secretary of Education
How Technology will Revolutionize Testing and Learning, Scientific American, August 5, 2013

Frequently Asked Questions

Based on work with the case study school districts represented in this white paper as well as others across the country, four major areas of concern emerge over becoming assessment ready: infrastructure, devices, professional development and funding.

CoSN and the e-Learn Institute conducted a national online survey with school districts to find out what key questions and concerns they had about each of these categories. District respondents included members from CoSN as well as the Council of the Great City Schools. Key questions were asked of the school districts, and the most frequently asked questions (FAQs) or concerns from their responses were collated and combined into questions posed to the assessment consortia.

Questions were segmented into four major areas as well as a general category to capture recurring questions that did not fit into the other categories. The consortia provided answers to these key questions via video sessions and a response document.

The survey posed the following questions:

1. **Network Infrastructure**: What are your major network infrastructure or network management challenges?

2. **Device and Device Management**: What are your major challenges with student devices and device management?

3. **Training and Professional Development**: What are your major challenges for staff training and professional development?

4. **Funding**: What are your major challenges for funding and procuring the resources necessary to support CCSS online assessments?

5. **Other**: Please identify any other major concerns or challenges that may not have been covered in the questions above.

Please see Appendix on Frequently Asked Questions for more information about the specific questions posed to the consortia as well as their written responses. You can view the videos for each of the major categories along with the written responses from each of the consortia on the CoSN or ENA websites at:

- CoSN: [http://www.cosn.org/raisingthebar](http://www.cosn.org/raisingthebar)
- ENA: [http://www.ena.com/raisingthebar](http://www.ena.com/raisingthebar)
Network Infrastructure and Support Considerations

**What is Recommended?**

Online assessments require a robust, reliable and secure high-speed broadband network infrastructure, and sufficient infrastructure (Internet access, wired and wireless connectivity) is one of the most important foundations for successful implementation of online assessments.

In an “E-Rate and Broadband” survey conducted by CoSN and Market Data Retrieval (MDR) in the fall of 2013, an overwhelming 99 percent of school districts indicated the need for additional Internet bandwidth and connectivity in the next 36 months. Further, only 57 percent of the elementary schools and 64 percent of the secondary schools report 100 percent of their classrooms have wireless Internet capability. Consequently, schools ranked Internet connectivity as the most important connectivity upgrades needed with internal wireless connectivity coming in as second. You can find the results of this survey on the CoSN website at [http://www.cosn.org/e-rate-broadband-survey](http://www.cosn.org/e-rate-broadband-survey).

**SETDA Recommendations**

In its report titled, “The Broadband Imperative: Recommendations to Address K-12 Education Infrastructure Needs,” SETDA established the forward-looking standards for the connectivity infrastructure needed to meet today’s and tomorrow’s educational technology requirements, including the requirements for online assessments.

Education Networks of America (ENA) was invited by SETDA to be part of the working group that actively contributed information to help inform the report and develop the bandwidth recommendations. The chart below outlines the SETDA infrastructure recommendations:

<table>
<thead>
<tr>
<th>Broadband Access for Teaching, Learning and School Operations</th>
<th>2014-15 School Year Target</th>
<th>2017-18 School Year Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>An external Internet connection to the Internet Service Provider (ISP)</td>
<td>At least 100 Mbps per 1,000 students/staff</td>
<td>At least 1 Gbps per 1,000 students/staff</td>
</tr>
<tr>
<td>Internal wide area network (WAN) connections from the district to each school and among schools within the district</td>
<td>At least 1 Gbps per 1,000 students/staff</td>
<td>At least 10 Gbps per 1,000 students/staff</td>
</tr>
</tbody>
</table>

You can access the “The Broadband Imperative: Recommendations to Address K-12 Education Infrastructure Needs,” including an executive summary, at [http://www.setda.org/web/guest/broadbandimperative](http://www.setda.org/web/guest/broadbandimperative).

It is important to note there is a 10-fold increase in broadband access for the 2017-2018 target over the 2014-2015 target. This reflects the growth in mobile devices and tools as well as education’s dependence on broadband. Many school districts see these recommendations as aspirational and have voiced concern that they do not have the funding or, in some cases, availability of broadband connectivity at these speeds. Almost everyone, however, agrees that this level of connectivity should be the standard for schools and districts to fully transition to digital resources without bandwidth constraints.
**PARCC and Smarter Balanced Recommendations**

While both PARCC and Smarter Balanced emphasize the SETDA high-speed broadband recommendations as the connectivity goals for school districts, each have suggested the following “acceptable” broadband capacity minimums:

**PARCC**

PARCC has established 50 Kbps or more of external Internet access per simultaneous-use device as an acceptable level of connectivity. PARCC will have the availability of Proctor Caching for schools with limited bandwidth options and schools that plan on using this as a low bandwidth solution can plan on 5 Kbps of external Internet access per simultaneous-use device as an acceptable level of connectivity. Proctor Caching is a method where a district pre-downloads as much of the encrypted test content prior to testing as possible, stages it on a computer (or multiple computers) in a district network location(s) and distributes it to student test-taking computers from the caching server. Proctor Caching will be made available to PARCC districts as part of the Pearson TestNav8 delivery platform that PARCC will use for the field tests and the first operational administration of the 2014-2015 assessments. PARCC offers the following tiered recommendations for bandwidth:

<table>
<thead>
<tr>
<th>External connection to the Internet</th>
<th>Minimum with Caching</th>
<th>Minimum without Caching</th>
<th>Recommendation for Assessment + Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 kilobits per second (kbps)/simultaneous-use device</td>
<td>50 kilobits per second (kbps)/simultaneous-use device</td>
<td>100 kilobits per second (kbps)/simultaneous-use device or faster</td>
<td></td>
</tr>
</tbody>
</table>

**Smarter Balanced**

Smarter Balanced has established 20 Kbps or more of external Internet access per actively testing student as an acceptable level. Smarter Balanced will not utilize caching for its assessments; however, it is offering schools a longer test-taking window to help schools with low bandwidth by allowing them to spread the testing over a longer window, effectively reducing the amount of simultaneous users on the network.

**Additional Considerations**

*Infrastructure as a Service (IaaS):* Smarter Balanced recommends that schools and districts consider using the services of managed service providers who offer a wide variety of connectivity and communication solutions as a service rather than try to go it on their own or use piecemeal solutions. In their response to the FAQs, they cited the following benefits for using a network service provider that offers infrastructure as a service (IaaS):

- Service providers can leverage experience from previous schools to ensure best practices
- Service providers can negotiate volume purchasing agreements with equipment manufacturers
- If schools procure in-school networking as a service, rather than as an equipment purchase, they may qualify for E-Rate even under current guidelines

*Resiliency:* When relying on the Internet for critical applications such as online assessments, it is imperative for districts to have resiliency and failover built into their network designs so that in the unlikely event of a failure, network traffic can be rerouted. Districts should work with their network service providers to discuss their network design architecture and establish resiliency strategies far in advance of the actual testing windows.

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“We recommend districts consider purchasing infrastructure as a service through service providers to address infrastructure expertise and funding challenges.”

Brandt Redd, CTO, Smarter Balanced Assessment Consortium
**Wi-Fi Networks:** Some schools have installed consumer-grade wireless access points to provide Wi-Fi capability. It is highly recommended that schools immediately replace their consumer-grade Wi-Fi products with enterprise-grade Wi-Fi network products. The complexity of designing Wi-Fi networks has increased dramatically, and in addition to the physical coverage area requirements, density of devices, mobility of devices, applications used and security all now need to be taken into consideration. Beyond the design of the physical network, districts need to plan for installation, monitoring and maintenance of access points as well as the overall Wi-Fi network and technology refresh to fully address their current and future Wi-Fi network needs. Many districts have opted to work with a managed network service provider, such as ENA, that can design and install a robust, enterprise-grade managed Wi-Fi network in their schools or districts alleviating staff from the burden of deploying and managing a reliable Wi-Fi network.

**Wired vs. Wireless Networks:** When equipment is in a fixed location such as labs, it is recommended that wired networks be used for speed, security and resistance to external interference. Most schools, however, are moving away from labs and bringing mobile technology to the student, and in these circumstances, Wi-Fi networks are preferred.

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**CoSN Recommendations**

CoSN has recently launched a new initiative called Smart Education Networks by Design (SEND). This initiative is designed to help districts design, deploy and maintain next-generation networks, which will serve as “critical onramps to transformed learning environments.”

As part of this initiative CoSN, with sponsorship from Qualcomm, published a report titled, “Smart Education Networks by Design: Guidelines for School System Chief Technology Officers.” The report provides detailed insight into designing education networks that are “designed and deployed to provide robust, reliable and secure access to designated resources and content by authorized users, on approved devices and at times and locations that support established learning objectives.”

The report provides scenarios for districts to determine the broadband capacity needed at the classroom and district levels. The following chart is an example of broadband access needed in a scenario where students are simultaneously accessing a video. In this scenario a minimum of 1 Gbps would be required for an elementary school and up to 3 Gbps for a high school. This is one example of the escalating demand for bandwidth in education.

In general, the report supports the SETDA high-speed broadband recommendations but notes that one of the findings of the “E-Rate and Broadband Survey 2013” is that over 40 percent of districts reported that none of their schools meet SETDA recommendations today. More information about the SEND initiative is located at [http://www.cosn.org/smartednetworks](http://www.cosn.org/smartednetworks).

---

<table>
<thead>
<tr>
<th></th>
<th>Number classrooms</th>
<th>Active video sessions per room</th>
<th>Maximum data per session</th>
<th>Campus bandwidth needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary School</td>
<td>50</td>
<td>30</td>
<td>21 Mbps</td>
<td>1 Gbps</td>
</tr>
<tr>
<td>Middle School</td>
<td>75</td>
<td>30</td>
<td>21 Mbps</td>
<td>1.6 Gbps</td>
</tr>
<tr>
<td>High School</td>
<td>150</td>
<td>30</td>
<td>21 Mbps</td>
<td>3 Gbps</td>
</tr>
</tbody>
</table>

---

“There is a strong and growing need to develop strategic, end-to-end school network designs that address internal infrastructure and broadband connections as equal steps in delivering a robust learning environment for students.”

Keith Krueger, CEO, CoSN
Device Considerations

What the Consortia Recommend

PARCC

Similar to infrastructure, devices are clearly a critical component of administering and preparing for online assessments. One of the most important recommendations for student success is for students to test in the same environment they are taught in and, preferably, with the same devices they are accustomed to using. As such, bringing the technology to the student (providing classroom devices) instead of bringing the student to the technology (lab scenarios) is an accelerating district focus. This is demonstrated by the significant increase in device purchases driven by the shift to digital in K-12 as well as the 1:1 initiatives happening in districts and states across the country.

In a May 2013 Insight publication titled, Tablets Changing the Education Sector in the United States, Major Momentum Underway, IDC reports, “Combining notebooks, desktops, and tablets, the client device category in the U.S. education sector grew unit wise by 15.3 percent in 2012, with a volume nearing 8.5 million systems.” Much of this growth was fueled by the tablet category, which grew over 103 percent alone and shows continued signs of growing.9

The assessment consortia have published specifications on the types of devices—desktops, laptops or tablets—that can be used to take the assessments as well as the ratio of devices to students as described below. As is commonly known, there is a very broad range and age of devices in K-12 schools, and due to funding restrictions, it is difficult for schools to do a technology refresh to match the optimum device configuration recommendations for taking the online assessments.

The consortia have attempted to set a flexible and relatively low compliance threshold of requirements in order for schools to utilize as much existing technology as possible. A good example of this is that the consortia will allow the use of Windows XP, even though Microsoft will discontinue supporting this operating system in April of 2014. This was decided after the TechReadinessTool revealed that over half of the computers reported were running Windows XP.

It is critical to select devices that not only meet the consortia recommendations, but also meet instructional needs. The minimum technology requirements for taking assessments should not be equated to the minimum technology requirements to support instruction. Individual student needs as well as overall district instructional requirements should be taken into consideration along with the assessment requirements before purchasing devices.

There is an important difference between minimum and recommended specifications. The minimum specifications are the oldest operating systems and lowest levels of hardware that can be considered compatible with the assessments; these specifications will only meet the 2014-2015 guidelines. This should be considered a guideline only for determining if existing school devices are assessment compatible and not for optimum performance during testing. Using devices that meet the minimum requirement could result in slowness and response-lag during the assessment. The recommended specifications should be followed for optimum performance during testing or when making new purchases, as assessments in subsequent years will most likely have increased requirements. Districts are urged to purchase new equipment that meets the recommended specifications, as these are expected to meet future guidelines through the 2018-2019 school year.

PARCC and Smarter Balanced Device Specifications

PARCC and Smarter Balanced allow desktops, laptops, netbooks (Windows, Mac, Chrome, Linux), thin clients, tablets (iPad, Windows, and Android) and hybrid laptop/tablets as compatible devices, provided they meet the established hardware, operating system and networking specifications and are able to address the security requirements as described in the Security Considerations section.

Students should have ample opportunity to learn with devices they will use to take the test.”

Susan Van Gundy, Director for Assessment Technology, PARCC
The following chart outlines the recommended specifications for devices for Smarter Balanced and PARCC. For additional details as well as information on the minimum specification requirements, please see the technology section of their individual websites.

<table>
<thead>
<tr>
<th>Recommended Specifications</th>
<th>Smarter Balanced</th>
<th>PARCC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hardware</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 GHz or faster processor</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1 GB RAM or greater memory for Windows, Mac OS X and Linux systems</td>
<td>✓</td>
<td>✓ 512 MB RAM or greater for iPad2</td>
</tr>
<tr>
<td>9.5” (10” class) or larger screen size</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1024 x 768 or better screen resolution</td>
<td>✓</td>
<td>✓ Note: PARCC recognizes that some netbook computers may have screen resolutions slightly less than the 1024 x 768 minimum yet may meet all other minimum requirements. Depending on netbook model specifics, school technology administrators may be able to reset screen resolution to meet PARCC guidelines.</td>
</tr>
<tr>
<td>80 GB hard drive or at least 1GB of hard drive space available</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Computers must be able to connect to the Internet via wired or wireless networks</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Operating Systems</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows 7 or newer recommended (Minimum is Windows XP)</td>
<td>✓ Note: Windows 8 or newer for tablets</td>
<td>✓ Note: Windows 8 or newer for tablets</td>
</tr>
<tr>
<td>Windows RT</td>
<td>Windows RT is not yet supported by Smarter Balanced at this time.</td>
<td>Windows RT is not supported for the spring 2014 Field Test. PARCC has not yet evaluated the compatibility of Windows RT for 2014-2015.</td>
</tr>
<tr>
<td>Mac 10.7 or newer</td>
<td>✓</td>
<td>10.5 or newer</td>
</tr>
<tr>
<td>Linux (Ubuntu 11.10, Fedora 16 or newer)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Chrome OS 19 or newer</td>
<td></td>
<td>Chrome OS 32 or newer</td>
</tr>
<tr>
<td>Apple iOS 6 or newer</td>
<td>✓ iPad 2+</td>
<td>✓ iPad 2+ with 512 MB of RAM or greater</td>
</tr>
</tbody>
</table>
Just recently, Smarter Balanced announced a technology compatibility certification testing for hardware manufacturers and software developers. This new process would charge vendors $35,000 annually per device, peripheral or operating system to test their products for compatibility with their online assessment system. The testing would guarantee compatibility and result in being included in a list of approved devices.

<table>
<thead>
<tr>
<th>Recommended Specifications</th>
<th>Smarter Balanced</th>
<th>PARCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Android 4.0 or newer</td>
<td>✓ Note: Smarter Balanced certified Android-based tablets.</td>
<td>✓ Note: Android operating systems will not be supported for the spring 2014 Field Test, but will be supported in 2014-2015 Operational Tests.</td>
</tr>
<tr>
<td>Input Devices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keyboard – wired or wireless/Bluetooth*</td>
<td>External keyboards are required in all cases unless specified differently by a student’s IEP or 504 plan. Any form of external keyboard that disables the on-screen virtual keyboard is acceptable.</td>
<td>Due to the onscreen space occupied by a tablet’s virtual keyboard, PARCC assessments will require external keyboards for test takers using tablets so as not to limit or obscure the view of test item content and related functionalities when text input is required.</td>
</tr>
<tr>
<td>Touchscreen or Mouse</td>
<td>Mouse, Touchpad or Touchscreen must be included</td>
<td>Mouse, Touchpad or Touchscreen must be included.</td>
</tr>
<tr>
<td>Headphones/Earphones/Earbuds</td>
<td>Available to students for use during the English language arts test and for students who require text-to-speech features on the mathematics test - USB headphones are recommended.</td>
<td>Only required for English language arts literacy testing sessions, not mathematics (except for students who need them for accommodations purposes).</td>
</tr>
<tr>
<td>Microphones</td>
<td>At this time, neither microphones nor stylus devices have been identified as necessary input devices for the 2014–2015 assessment implementation.</td>
<td>Microphones are required for all students taking the Speaking and Listening Assessment beginning in 2015-2016. Some student accommodations may also require microphones (e.g., speech to text, voice controls) for other parts of the PARCC assessments.</td>
</tr>
<tr>
<td>Web Browsers</td>
<td>Google Chrome, Safari, Firefox, and IE 8 and newer can be used for data report access.</td>
<td>IE 9.0, IE 10.0, Chrome, Firefox, Safari</td>
</tr>
</tbody>
</table>
**Ratio of Devices**

The number of devices required is dependent on several variables:

1. The number of students enrolled in each tested grade level
2. The number of students that can be tested simultaneously, considering the way in which devices are deployed (i.e. labs, classroom, carts, etc.)
3. The available bandwidth capacity
4. The length of the testing window

While districts should consider the variables listed as well as the consortia recommendations outlined below, to determine the number of devices needed, a generally accepted guideline is 7:1.

Based on the research and data analysis, Smarter Balanced estimates that the majority of schools and districts in member states will be able to successfully administer the assessments with their existing infrastructure. This statement assumes at least an 8:1 to 11:1 student-to-computer ratio.

PARCC has provided recommendations for the adequate number of devices needed for their assessments in the table below.

<table>
<thead>
<tr>
<th>School Type</th>
<th>Minimum number of devices</th>
<th>Recommended number of devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>For a school with three tested grades (K-5, 6-8, 9-12)</td>
<td>One device for every two students in the largest tested grade</td>
<td>One device per student for the largest tested grade</td>
</tr>
<tr>
<td>For a school with six tested grades (K-8)</td>
<td>One device per student for the largest tested grade</td>
<td>One device per student for the two largest tested grades</td>
</tr>
</tbody>
</table>

**“Rule of Thumb” Guidance on Number of Devices Needed to Administer Computer-Based Tests**

Districts with a 1:1 learning environment may have a false sense of security about being assessment ready. Devices are only one part of an overall strategic approach to online assessments.
Security Considerations

PARCC

Eligible devices of any type or operating system must have the administrative tools and capabilities to lock down the device to temporarily disable features, functionalities and applications that could present a security risk during test administration and should not prevent a PARCC secure browser or other test software, to be determined, from entering the computer into lockdown mode. Features that will need to be controlled during test administration include but are not limited to unrestricted Internet access, cameras (still and video), screen capture (live and recorded), email, instant messaging, Bluetooth connections, application switching and printing. Schools will be able to test the security lockdown settings of their systems as part of the System Check Tools that PARCC will make available to schools for the PARCC Field Test and by August 2014 for the Year One Operational Assessment.

Smarter Balanced

The device must have the administrative tools and capabilities to temporarily disable features, functionalities and applications that could present a security risk during test administration. The actual student testing site will only function if accessed by way of a Secure Browser. Smarter Balanced supplies secure browsers for major platforms like Mac OS X and Microsoft Windows. Most other platforms will use a vendor-supplied secure browser developed as part of the Smarter Balanced device certification program (http://certification.airast.org/). Secure browsers are required in order to create a simple, secure interface for students to access only the test without any other online-enabled utility. The browser must be installed on each computer used for online testing (individually on each computer or deployed to all computers through a distributed, remote administrative process).

It is important to note that the Consortia continue to publish detailed guidance and recommendations on technology requirements and districts should check the consortia websites for these updates.
IT Support Considerations

CoSN Findings

With the ever-increasing demand for technology (infrastructure and devices) not only to support online assessments, but also to support virtually every aspect of a district’s academic and administrative goals, the demand on district internal support personnel is intense. In CoSN’s “K-12 IT Leadership Survey 2013,” it is reported that over 80 percent of school districts surveyed indicated that their IT Leaders are in charge of both administrative and instructional technology, with both central and school-based staff reporting to them. While this is positive for administrative and instructional technology alignment, demands on IT staff can be overwhelming. The survey also noted that while demands are increasing, 80 percent of the district IT leaders predicted flat or declining IT budgets. So when asked, “What are your top three challenges to planning and implementing technology-enabled learning environments?” it was not a surprise to see over 75 percent of those surveyed indicated budget constraints and lack of resources.

You can see the full results of this survey at http://www.cosn.org/focus-areas/it-management/it-leadership-survey.

In another national survey conducted by SchoolDude and CoSN, “The Unique Challenges Facing the IT Professional in K-12 Education,” it was estimated that one technician supports almost 2,000 students, and as the numbers of computers increase, 74 percent of the districts indicated their staffing levels have stayed the same, with another 15 percent indicating staff levels have decreased. You can see the full results of this survey at http://www.schooldude.com/Resources/Documents/Resource-Library.

For school districts working on becoming assessment ready, this means that IT departments:

1. Need to have an increased number of experienced technical staff available to assist schools not only on testing days, but also throughout the year
2. Have to do more with less, if additional staff is not an option, creating additional strain on already high workloads
3. Should consider outsourcing aspects of their infrastructure or technology support services to service providers to reduce the burden on IT staff
4. Need to find innovative tools and resources to help them manage the increasing number of devices
5. May have to establish district-wide standards for devices so the variety of devices to support are reduced, making support more streamlined

The bottom line is that budget restraints and lack of resources present significant challenges for schools in their efforts to become assessment ready. Those districts who are making the technology and personnel investments required indicate that the only way they can accomplish the task is to make becoming assessment ready a district priority and allocate operational funds as well as other funds to support the effort.

School districts have invested heavily in the build-out of their technology infrastructure, and education has become dependent on that infrastructure to work reliably to support both the instructional and business requirements of teaching and learning. School and community leadership should recognize that the infrastructure must be maintained and supported to function properly and to protect their investment.

What are your top 3 challenges to planning and implementing technology-enabled learning environments?

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of support from the school board</td>
<td>5.4%</td>
</tr>
<tr>
<td>Lack of vision from senior district leadership</td>
<td>27.7%</td>
</tr>
<tr>
<td>Relevant training and professional development unavailable</td>
<td>28.9%</td>
</tr>
<tr>
<td>Personalized learning is not supported by technology or practice</td>
<td>10.8%</td>
</tr>
<tr>
<td>Lack of support by the community</td>
<td>6%</td>
</tr>
<tr>
<td>Changing the culture of teaching and learning to a student-centered environment with ubiquitous computing (one-to-one student to device or better)</td>
<td>67.5%</td>
</tr>
<tr>
<td>Budget constraints and lack of resources</td>
<td>75.9%</td>
</tr>
<tr>
<td>Breaking down silos in the district</td>
<td>39.8%</td>
</tr>
</tbody>
</table>
Instructional Design and Preparation Considerations

Technology and Instructional Intersections

One of the least talked about but possibly the most important component of becoming assessment ready is the systemic changes in instruction and intervention that necessitate improvements in curriculum, content and professional development and drive a deeper reliance on digital resources. The next-generation online assessments are driving a cultural shift in instruction in a positive way. Most states that have adopted the CCSS are making excellent progress in implementing the standards, and the majority of teachers like the rigor and relevance of the new standards. Teachers are not “teaching to the test” but are able to use the data from formative interim assessments to not only modify whole class instruction, but also personalize instruction to meet the needs of individual students.

We hear schools use many terms such as personalized, individualized and differentiated learning. These terms may be interpreted differently, but they all relate to the ability to customize teaching and learning. Providing students with a blended learning environment combining the face-to-face guidance of a teacher with online learning instructional resources allows for customized learning where students can work at their own pace and teachers have insight into the learning needs of each student.

Without taking advantage of technology tools, customizing teaching and learning for 25 to 30 students (or more) in a classroom is extremely difficult if not impossible. The investment in technology—infrastructure, devices, online resources and content and professional development—districts are making across the county is not just to satisfy assessment requirements, although that is critical, but to give teachers and students the tools and resources they need for personalized learning.

As you read the case studies from Metropolitan Nashville Public Schools, Metropolitan School District of Warren Township and West Side School District #202, you will see that technology and instruction are fully integrated and the silos that once existed among district departments are gone; in its place are cross-functional teams, allowing for transparent and seamless intersections between technology and instruction.

The Shift to Digital Should be Sooner Rather than Later

Having compliant devices in place to administer online assessments is only a small piece of the puzzle. To achieve success with the assessment, teachers and students will need digital tools and resources available on a daily basis in their classrooms. Educators must make sure that students and teachers have the technological readiness and necessary learning experience with digital resources to fully implement the CCSS strategies.

Successful implementation will require significant planning for infrastructure and devices as well as integrating online instructional content and resources. Staff and students alike echo the message that you can’t expect success if you teach in a paper and pencil environment and test online. Districts recommend implementing the International Society for Technology in Education (ISTE) Standards (formerly NETS) to help with this challenge.

Students need technology readiness skills to take the test but also want the experience of taking an online assessment before the having to perform on the high-stakes test. They know what to expect when taking a paper and pencil test and want the same level of comfort with an online assessment. Student readiness is essential for success, and participating in the pilots will be as important for students as it is for districts.

“Technology Readiness for College and Career Ready Teaching, Learning and Assessment” SETDA, June 2013
Equity Remains an Issue

Educators contributing to this white paper repeatedly voiced that students need to be tested in the same environment in which they are taught. This is a significant concern for high-poverty populations who do not have access to technology at home or limited access at schools. Without access to Internet-connected devices, high-poverty students will not be able to develop the skills to be successful on the assessment, nor will they develop the skills necessary to be successful for college or careers. As educators take advantage of the instructional benefits of digital tools to teach and resources become more available to students to customize and enhance their learning, it is vital that we assure all students have the skills necessary to achieve at high levels. As Susan Patrick, President and CEO of the International Association for K-12 Online Learning (iNACOL), stated,

“Customized learning environments supported by technology expand content offerings, allow multiple pathways to learning and provide unprecedented access to teaching resources. Education is a civil right for every child—and we must protect the integrity of our educational system to ensure every student has access to a high-quality education system that prepares them for a lifetime of success. In order to eliminate huge gaps in knowledge, we need to invest in ensuring success is the only outcome.”

In addition to the digital divide equity issue, accessibility and accommodations for special populations such as English language learners and students with disabilities is an equally important equity issue. Both PARCC and Smarter Balanced are developing built-in accommodations that will expand accessibility for students, but these features may not be available for the spring field tests creating additional concerns about equity.

Teacher and Staff Preparation and Training

Districts are taking several approaches to teacher and staff preparation, with the ultimate goal of making a culture shift to embrace the CCSS and technology. Staff at each school visited in the development of this white paper pointed to the culture shift that has to happen to be successful and the intentional things they are doing to accelerate the shift. Changing a culture requires leadership, courage and a plan—and each case study district has that in place. As expected, direct professional development or professional learning is a significant part of the effort, but in each of the school districts, school-based support – both instructional and technical—were an important focus as well.

Metropolitan Nashville Public Schools (MNPS) is undertaking five parallel efforts to teacher and staff preparation:

1 Model Instructional Technology – Professional learning sessions model learner-centered technology use, helping shift from a teacher-centered to student-centered approach

2 Librarians as Instructional Designers – Site-based librarians are being trained in instructional design to provide local support

3 Instructional Technology Training for Schools – Priority schools are provided weekly instructional design support

4 Online Assessment Training – Principals and tech leads are being trained to manage online assessment environments

5 Teacher Technology Proficiency – MNPS requires new teachers hired to be technology-proficient based on the ISTE Standards and is assessing current teachers on technology literacy and directing them to appropriate professional learning

In Metropolitan School District of Warren Township (Warren Township), the goal is seamless integration of the CCSS and technology. Their focus is to build capacity at the site level, and eLearning mentors and Common Core coaches assist educators in aligning instruction and curriculum to the CCSS and integrating technology by lesson modeling and co-teaching. Warren Township plans to redo their teacher evaluation rubric to include effective use of technology for instruction as a domain. They noted that training on and using Google Docs has resulted in a transformation throughout the district that will have a positive impact on their efforts to prepare teachers and staff for the online assessments.

For all the case study school districts, it was noted that site-based technical support is far less robust than instructional technology efforts. As noted in the earlier section on IT Support Recommendations, IT departments cannot keep up with the rising number of devices and site-based technology assistance needed. Making the investment in technical staff to support the schools will be one of the key criteria for success in implementing online assessments.
Readiness Recommendations and Checklist
Based on observations from the case studies, interviews with experts, feedback from the consortia, and information gleaned from school district responses to the Becoming Assessment Ready Survey, a list of eight key recommendations for becoming assessment ready was created. Each recommendation is accompanied by a checklist of items for school districts to consider as they prepare for online assessments.

The checklist helps school districts not only learn from the experience and key observations of other districts, but also be intentional and comprehensive in their own planning process. The eight key recommendations include:

**Eight Key Recommendations**

1. Create a cross-functional strategic planning team
2. Secure funding sources for modern learning environments
3. Embed technology in instructional practice
4. Invest in robust professional development for teachers, administrators and technical staff
5. Build out a robust infrastructure
6. Select devices meeting instructional needs and assessment consortia requirements
7. Communicate—a lot
8. Pay attention to logistics

“Districts need to have a punch list and make sure they have everything they need to be ready. But they also have to understand that high-stakes testing is a complicated environment. They’re not going to be able to control everything.”

Keith Kruger, CEO, CoSN
Education Week Supplement, October 2, 2013
Recommendation 1:
Create a cross-functional strategic planning team

One of the challenges that school systems must overcome is the silo effect, and the larger the system, the greater the problem. The silo effect occurs when departments within a district act independently of other departments or schools. The silo mentality and cultures of information hoarding are fostered when activities and operations are not well integrated, operate independently and are not transparent.

The CCSS initiative involves the collaborative work of curriculum, instruction, professional development, assessment and technology departments, not to mention school-based teams. In many cases these departments have historically not been working from a common plan but making decisions independently with the hope that it will all come together in the end.

It is important to create a strategic planning team with membership from each of the major stakeholder groups and establish an 18-month roadmap, working back from critical dates. Identify critical “must have” priorities and timelines with metrics to assure understanding and accountability. Ensure that a strong communication strategy is included in the plan. Parents, media, legislators and the community need to understand the difference between proficiency standards on state tests and the CCSS assessments. Communication is imperative. Keeping stakeholders aware of progress and setting expectations for test performance will help reduce problems.

For the spring 2014 practice assessment, establish a cross-functional first response team that proactively monitors both successes and challenges. Create a set of metrics that measures not only technical performance (network, device and systems), but also assessment of professional development, technical training and operational efficiencies.

This team should review school-based scheduling plans and share best practices and lessons learned across the system. Scheduling the CCSS assessments drives how much bandwidth and the number of devices required for student success.

CHECKLIST:

- Make becoming assessment ready a priority for the district
- Create a cross-functional team, including curriculum, instruction, assessment, finance, professional development and technology to create a strategic plan
- Build an 18-month roadmap
- Create a cross-functional response team to respond quickly to issues during the assessment period
- Proactively collect data from 2014 practice assessments on training, infrastructure, device and preparation
- Work with individual schools on assessment scheduling
Recommendation 2:

Secure funding sources for modern learning environments

It is time to recognize that the shift to digital is happening and that online assessment plays a critical role in the future of teaching and learning. Exponential growth in broadband, mobile devices and digital content such as e-books is not a passing fad. No one expects the trend to end or reverse in the foreseeable future. Online assessments will play a critical role in classrooms regardless of whether your state is participating in the CCSS assessment program. Therefore funding is not merely focused on implementing the CCSS assessments but on building the 21st century learning environments today's students need and deserve.

Districts can reduce costs by inventorying existing digital resources and prioritizing their use. Many districts have multiple tools that perform the same essential function. Examples include multiple Learning Management Systems (LMS) and online courses and content. Narrowing the number of tools that perform the same function can reduce licensing fees, reduce training costs, improve support and reduce the complexity of multiple system interfaces. District staff should evaluate and identify things that should no longer be funded and reallocate those funds to prioritize digital learning environments. The trend toward e-books and the reduction of paper-based resources is a prime area to be considered.

There are a number of quality low/no cost Open Educational Resources (OER) available that can significantly reduce content costs. The money saved can be shifted to support device and infrastructure build out.

Districts need to strategically plan for the shift to digital. The need for every student to have an Internet-connected device and access to a robust network infrastructure is inevitable.

CHECKLIST:

- Create a strategic plan that shifts funding from paper-based practices, resources, staffing and content toward digital-based functions
- Prioritize operational, categorical, grant and capital funds toward the strategic digital plan
- Review and consolidate digital resources and assets
- Adopt OER to help defray costs
Recommendation 3:

Embed technology in instructional practice

The best way to prepare for success with the CCSS online assessments is to fully embed the use of technology into daily instruction to meet the teaching and learning needs of individual students. Teachers and students should see technology and assessments as a natural component of great teaching and learning and not as a special event. Ubiquitous access to digital content is especially important for students who may not have Internet-connected devices at home. It is also important to assure that elementary students develop appropriate keyboarding and technology skills early so they are comfortable using the assessment technology.

CHECKLIST:

- Embed the use of technology throughout lesson delivery
- Ensure all students are comfortable using computers and applications such as online calculators
- Ensure early grades have adequate access to technology tools
- Make assessment a natural part of the teaching and learning environment—not a special event
- Participate in field tests and pilots and take every opportunity to become familiar with new online assessments
Recommendation 4:

Invest in robust professional development for teachers, administrators and technical staff

Teaching is a social activity, and the most successful efforts will include robust professional development and training for teachers, administrators and technical staff. Taking the assessment is just one step; creating a prescription from data to customized teaching to meet the unique educational demands of every student is where the benefit will be realized.

As with the CCSS assessments, the focus should be on performance and not just information. Create metrics of your professional development program that provide evidence that staff is prepared and can do the job.

CHECKLIST:

- Assure support staff receive adequate training specific to support the classroom test environment
- Help teachers and students become familiar with the new question format and tools, as the CCSS assessment question format is different than traditional “high stakes” assessments
- Support teachers and administrators in proactive use of technology to personalize teaching and learning, as this will help them be better prepared for online assessments
- Create a technology skills roadmap, such as ISTE Standards for Students (formerly NETS), for each grade level; roadmap should address not only technology, but also assessment format
- Participate in field tests and pilots and take every opportunity to practice with new testing environments

“

All of your decisions are about priorities.”

James Aldridge, CTO, MSD Warren Township
Recommendation 5:
Build out a robust infrastructure

Having a robust network infrastructure is a priority for success in the classroom, but not all districts will meet the SETDA recommendations for bandwidth. Getting as close as possible to the recommendations will ensure success during the assessments as well as help districts create a future-ready network. For districts that cannot meet the minimum requirements, there are a number of ways to take advantage of lower levels of bandwidth access:

- Work closely with your Internet service provider to not only advise them of the district’s testing dates, but also and more importantly to project infrastructure needs and develop traffic management and quality of service (QoS) policies that establish priority for key applications traversing the network
- Limit activities that compete for bandwidth during assessments; this can be accomplished through several means, however the easiest is communicating what Internet activities are allowed during testing
- Use network monitoring tools and packet shaping as effective tools in enforcing bandwidth policies and understanding what type of traffic is on your network
- Employ web caching to locally store frequently accessed documents, web pages and images and reduce the demand on bandwidth to the Internet

In today’s modern learning environments, network access is more than just bandwidth. School districts must also assure that the density of their wireless network is adequate to meet the demand. Network design and management is becoming more complex, especially with the increase in mobile devices. Wired, wireless and cellular networks need comprehensive strategic planning, often exceeding the skills and time demands of local school technicians.

Taking advantage of managed network service providers, such as Education Networks of America (ENA), who can work closely with districts to fully prepare their infrastructure is an excellent option for districts to consider. As an example, ENA provides Infrastructure as a Service (IaaS) solutions to alleviate the burden on districts and their staff of managing their own infrastructure.

CHECKLIST:

- Meet SETDA recommendations for bandwidth no later than the start of the 2014 school year
- Consider partnering with a managed network services provider to provide overall IaaS solutions as well as QoS strategies for the district
- Use tools to manage and prioritize existing bandwidth for high priority data traffic
- If implementing the PARCC assessments and bandwidth is a constraint, explore Proctor Caching
- Assure network density is adequate across the system to handle the wireless load
- Plan for increased ongoing technical support to meet increased demands on infrastructure and devices
- Implement strategic scheduling to reduce the number of students tested at one time when adequate bandwidth is not available
- Participate in field tests to determine network capacity real-time to know what to expect on actual test day(s)
Recommendation 6:

Select devices meeting instructional needs AND assessment consortia requirements

There are many factors that must be considered when selecting devices such as cost, maintenance, warranties, peripheral devices, screen size, content availability, battery life, power and professional development, but the decision should ultimately be driven by instructional drivers, not the operational drivers previously listed. Device selection and informed decision making requires input from a variety of stakeholders. Just because a device meets minimum requirement of the CCSS assessments does not mean it meets the academic needs of all students and teachers. The Center for Digital Education (CDE) has developed a helpful review of mobile devices in its 2013 Q4 Special Report Toolkit. For more information, go to http://www.centerdigitaled.com/reports/q4-2013.

CHECKLIST:

- Intentionally select the appropriate device, based on student academic success, realizing that desktops, tablets, laptops, Chromebooks and netbooks have different strengths and weaknesses and interact differently with online resources
- Although many devices may meet minimum standards, select devices that give students the best opportunity for success
- Avoid smaller screen size, which makes it difficult for students in online assessments and requires more back and forth scrolling, taking time and being distracting for students
- Avoid smaller keyboards that make data entry more difficult
- Consider age appropriate devices, as one district-wide device may not be appropriate for all grade levels
- Move from lab-based assessments to fully integrated classrooms, as it is important for students to test in the same environment in which they are taught
- Protect expensive digital investments with quality maintenance and support programs; digital tools, content and systems are growing exponentially, yet technical support has remained the same or decreased
Recommendation 7:

Communicate—a lot

The CCSS are significantly higher than most current state standards, and the online assessments are new, so the number of students initially meeting proficiency is likely to go down. Some schools are very proactive in understanding the processes and implementation planning required to be prepared for the online assessments, and some schools are waiting to be told what to do. Everyone in your school community has an important role to play in the success of online assessments. Each state department of education is providing information and resources to districts. Districts need to have a mechanism in place to ensure information flows to the schools and then to all key school stakeholders, including students and parents. It is also important to communicate regularly with your testing provider to understand what support they provide and best practices they can share from their experiences with other districts.

CHECKLIST:

- Be intentional about your communication plan to school sites and site-based educators as well as other stakeholders, such as parents and the community, so they know what to expect
- Communicate with your infrastructure service provider(s)
- Communicate with your testing provider
- Create opportunities for parents and community members to take practice questions to increase awareness of the test rigor
- Provide town hall meetings, parent nights or sample CCSS challenge questions on broadcast news and in the newspaper to raise awareness
Recommendation 8: Pay attention to logistics

The devil is in the details. Small things that you did not expect or plan for can mean big challenges and even failure when you conduct online testing. Take time to think through and address all the logistics well in advance of the testing windows.

CHECKLIST:

- Work out detailed scheduling for assessments well in advance
- Make sure you have ample devices and peripherals that meet minimum or recommended required specifications, including back-up equipment
- Make sure you have developmentally appropriate devices meeting the consortia guidelines
- Test wireless density capacity to be sure there are enough access points to handle the load
- Make sure devices are fully charged and will last for the duration of the test
- Make sure power adapters, power cords and power are available
- Train testing proctors on the devices being used
- Participate in field tests and pilots and take every opportunity to practice with new testing environments
School District Case Study Briefs
Getting Ready and Lessons Learned

Three school districts, Metropolitan Nashville Public Schools (TN), Metropolitan School District of Warren Township (IN) and West Side School District #202 (ID), were visited and interviewed to capture their experiences, recommendations and best practices as they prepare for online assessments.

The case studies from these visits provide insight into what practical steps small, medium and large school districts are taking to become assessment ready.

We have provided the case study briefs on the following pages, and we encourage you to read the full case studies, including details on the preparation steps each district has taken and lessons learned, located in the Appendix.

**Metropolitan Nashville Public Schools, Nashville, Tennessee**

**Metropolitan Nashville Public School (MNPS), Tennessee,** serves 83,000 students in more than 150 schools. As with many large urban school districts, it serves a very diverse student population representing a wide array of cultures, ethnicities and socio-economic levels. Tennessee is a member of the PARCC Consortium and MNPS will participate in the spring Field Tests as well as the 2014-2015 online assessments.

Dr. Jesse Register leads the district and is focusing the community and staff on personalized learning as the “lever of change.” Personalized learning provides a customized learning environment to meet the diverse needs of each student. This focus is helping the district to intentionally break down departmental silos so often found in large urban systems. MNPS has built an effective strategic alignment among departments through pure and ongoing departmental collaboration, positioning departmental resources to support the overall district vision and co-creating action plans that align workflow, support cohesive messages and ensure fidelity of implementation.

MNPS has established blended learning standards for all grade levels that require 30 percent of instruction and content to be digital and adaptive for elementary schools, 50 percent for middle schools and 70 percent for high schools. The district is also moving all content in social studies and science into a digital format for blended learning, with all textbooks to go to a digital format within five years. Other initiatives implemented by the district include requiring librarians to become instructional designers, establishing a year-round virtual school, requiring new teachers to pass an ISTE Standards-aligned skills assessment and appointing an assessment coordinator at each school.

“Our emphasis isn’t on 1:1, for example,” explains Dr. Kecia Ray, executive director of Learning Technology and Library Services, “and that's a very deliberate, strategic decision on the district’s part. We’re focused on the seamless integration of technology into classroom instruction and not on the devices themselves. It's really about college and career readiness, to get our students competitive in a global marketplace. So we’re not focused on PARCC or CCSS or even on the word ‘digital’ either.”
District leadership believes differentiation “is the only way to move kids along.” Significantly, in an effort to make technology seamless and to dispel the notion and practice of technology as add-on, the district no longer installs computer labs in its schools and has shifted to laptop carts in classrooms.

These initiatives have borne promising results. In 2008, MNPS redesigned its high schools into smaller learning communities (collectively known as The Academies of Nashville), and in 2009, MNPS introduced blended learning with positive outcomes. In 2009, all the district’s high schools not only met AYP but saw their graduation rates climb from 58 to 76 percent.

MNPS students are taking online high-stakes assessment in the run-up to the district-wide 2014-2015 online PARCC assessment. Many district schools elected to take last year’s (2012-2013) four Discovery Education Assessments (DEA) in core subjects as well as the Tennessee Comprehensive Assessment Program (TCAP) Writing Assessment in the online format. During the 2013-2014 school year, all schools will take the online version of these assessments. Even more importantly, grades 3 through 11 will take the PARCC pilot assessments in English language arts and mathematics in the spring of 2014.

The district has partnered with ENA, a managed Infrastructure as a Service provider, to help build a robust network that supports both the CCSS assessments and the use of digital tools. MNPS will complete its high-density network upgrade by January 2014. MNPS provides schools with a menu of approved devices but does not allow tablets or Chromebooks.

MNPS is clearly making the human and financial investments to ensure its students, teachers, administrators and parents are prepared not only for the upcoming CCSS online assessments, but also for the digital learning transformation that is necessary to implement its personalized learning initiative. MNPS has specific and measureable metrics in place to monitor its progress during its three-year implementation plan.

You can find the full MNPS case study in the Becoming Assessment Ready: School District Case Studies Appendix.
The Metropolitan School District of Warren Township (Warren Township), Indiana, is a medium-sized urban school district located on the east side of Indianapolis that serves approximately 11,500 students in grades kindergarten through twelfth grade. There are nine elementary buildings, three intermediate academies, three middle schools, a 3600-student high school, an early childhood center, career center and an alternative school.

Although the state has not made a final decision whether to go with PARCC, Smarter Balanced or create their own standards-based assessments, Warren Township realizes that online assessments are an important component of modern school systems. Warren Township’s quality improvement process is deeply ingrained in the district’s culture and the use of assessment data is evident in classrooms.

Warren Township already uses a number of tools and systems to assess student performance including predictive and diagnostic online assessments for tailoring instruction to individual students. Diagnostic tests are given three times, and a summative assessment comes at the end of the year. “The key switch here in Warren Township,” says Dr. John Keller, the district’s director of Instructional Technology and eLearning, “isn’t necessarily more assessment but that we’re going to move all assessment online so that we have ready, dynamic, accessible data for our teachers. It will actually allow us to connect curriculum and prescribe what students need. Assessment will become more targeted and allow our teachers to be more responsive. We’re beginning to pilot that now.”

Warren Township believes personalized, data-driven learning is critical to student success and has moved to a one-to-one (1:1) student-to-computer model to achieve that goal. They have also prioritized a comprehensive network upgrade to support 1:1 teaching and learning and believe the future of education will depend on a robust infrastructure.

They have invested 27,000 man-hours in unpacking the Common Core State Standards (CCSS) and are currently implementing changes in the classrooms. Professional development is comprehensive and ongoing. They have Common Core coaches that model lessons, conduct data meetings, participate in team teaching, teach intervention and lead professional development.

Teachers and administrators already see the benefits of online assessments, especially the much quicker turnaround time for results and the use of data to modify lessons. Although there are concerns with the rigor of the new assessment, they believe the best way to prepare for the assessment is a comprehensive implementation of CCSS in the classroom.

You can find the full Warren Township case study in the Becoming Assessment Ready: School District Case Studies Appendix.
West Side School District #202,
Dayton, Idaho

Westside School District #202 (WSSD), is located in a small rural community of southeast Idaho and serves 635 students in three school buildings with 40 teachers. Idaho belongs to the Smarter Balanced Assessment Consortium. As with many smaller school districts, WSSD does not have the resources for curriculum developers, full-time staff training personnel or multiple teachers for each subject. Often it is the principal of the school that provides professional development to its teachers. WSSD has one technician for the entire district who also teaches. Being small does come with some benefits. For one, having smaller class sizes allows for more individualization with curriculum. The demographic makeup of a fairly homogeneous student population results in the absence of many of the diversity challenges large districts face, such as significant numbers of students transferring from one school to another throughout the year.

Though their district ranks as one of the highest in the state for student achievement, WSSD’s administration and staff recognize that ever-higher levels of success won’t come with complacency but will be predicated upon technology-supported teaching, learning and assessment. As in other districts, some teachers are uncomfortable with change, and fear “pouring their heart and soul into something that will only last for three years.” They want to be confident that the effort is for authentic, lasting transformation. There are over 400 devices in the district, including iPads and laptops from Dell and HP. They are implementing a 1:1 program in the middle school and allow those devices to go home. Thanks to the iKeepSafe safety and security program and active parental involvement, WSSD has experienced no problems with damage and security. To broaden Internet access for students, the district keeps its schools’ doors open for two extra hours in the afternoon.

District leaders believe the biggest challenges of the CCSS assessment will not be with the technology or technology skills needed; it will be with the shift to a different question format, such as multiple correct answers and the requirement to defend answers. Knowing this, the district is busy rewriting curriculum and increasing rigor. In an effort to hone critical thinking skills, teachers are shifting students from creative writing to text analysis.

The district looks forward to realizing the many promises of online formative assessments, including creation of a more empirical, transparent educational environment for students and teachers in which what works and what doesn’t work is clear. The superintendent believes this will allow the district to more easily identify, model and spread best practices of the most successful teachers to other teachers in the district.

You can find the full WSSD case study in the Becoming Assessment Ready: School District Case Studies Appendix.
Conclusion: Putting it All Together
This is truly an exciting time to be in education. There is an opportunity to break the status quo and make significant improvements to our education system. One of those improvements is through implementing online assessments in an effective way to improve learning environments. It will require a robust infrastructure, significant professional development, attention to devices and device management, a different way of thinking about assessment and the tools that collect information as well as integrating several assessment and data systems both locally and nationally to be successful. Becoming assessment ready is the first step in the improvement process.

The case studies brought to light that several educators that are doing amazing things with students in classrooms. Many teachers are using blended learning environments to customize teaching and learning to meet individual needs of students. They are using online assessments as a tool to guide practice and fully integrating technology into daily instruction. The assessments are a natural part of teaching and learning and not “special events” that are threatening.

District administrators have created strategic plans that partner instruction, technology, professional development and assessment to implement district-wide CCSS programs. The best way to achieve success with online assessments is to focus on implementing the CCSS in daily classroom instruction and not just on the assessment.

It will be an extremely difficult and complex process to achieve the promise of online assessments and realize the benefits of the CCSS. There are going to be challenges and obstacles to overcome in the near future. In fact, the whole area of collecting meaningful performance data for student learning is just in its beginning stages.

It is hoped that the information, recommendations, checklists and best practices of educators contained in this report help will benefit others in developing and implementing a successful online assessment program.

“"At first, dreams seem impossible, then improbable, and eventually inevitable.”"  
Christopher Reeves
Resources

For school districts and educators wishing to learn more about the CCSS and the online assessments, there is a plethora of information available through various organizations and their websites. Organizations or websites marked with an asterisk (*) have the most detailed and current information. The PARCC and Smarter Balanced websites have the most comprehensive information with resource centers and professional development assistance.

White Paper Collaborators

Education Networks of America (ENA)*: http://www.ena.com

a. ENA also has a section of their website dedicated to the “Becoming Assessment Ready” white paper where you can find resources, webinars with Metropolitan Nashville School District and video interviews from Smarter Balanced and PARCC at: http://www.ena.com/raisingthebar

CoSN*: http://www.cosn.org

a. CoSN has a section of their website dedicated to the “Becoming Assessment Ready” white paper where you can find resources and video interviews from Smarter Balanced and PARCC at: http://www.cosn.org/raisingthebar


e. Smart Education Networks by Design: http://www.cosn.org/smartednetworks

eLearn Institute: http://www.elearninstitute.org

Case Study School Districts

MNPS

a. District Website: http://www.mnps.org

b. Technology & Information Services: http://www.mnps.org/Page65939.aspx


MSD of Warren Township

a. District Website: http://www.warren.k12.in.us

b. District’s Race to the Top Grant Information: http://www.warren.k12.in.us/race-to-the-top

West Side School District #202

a. District Website: http://www.wssd.k12.id.us

Assessment Consortia

Smarter Balanced Assessment Consortium (Smarter Balanced)*: http://www.smarterbalanced.org


Partnership for Assessment of Readiness for College and Careers (PARCC)*: http://www.parcconline.org

a. PACC Technology Information: http://www.parcconline.org/technology

b. PARCC Capacity Planning Tool: http://www.parcconline.org/technology

d. PARCC System Check Tool: http://www.parcconline.org/technology

National Center and State Collaborative Partnership (NCSC)*: http://www.ncscpartners.org
Dynamic Learning Maps Alternative Assessment System Consortium (DLM)*: http://dynamiclearningmaps.org

Assessment Services Supporting English Language Learners Through Technology Systems (ASSETS)*: http://assets.wceruw.org

Common Core

Common Core State Standards Initiative*: http://www.corestandards.org

ASCD*: http://www.ascd.org/common-core.aspx

National Governors Association: http://www.nga.org

Assessment Companies

College Board: http://www.collegeboard.org

Computerized Assessments and Learning: http://www.caltesting.org/index.html


ETS: http://www.ets.org/k12/commonassessments

a. The K-12 Center at ETS*: http://www.k12center.org


Measured Progress: http://www.measuredprogress.org

Northwest Evaluation Association (NWEA): http://www.nwea.org

Pacific Metrics Corporation: http://www.pacificmetrics.com

Pearson:


Questar Assessments: http://www.questarai.com/Page/default.aspx

Riverside: http://www.riversidepublishing.com

Scantron: http://www.scantron.com

Education Associations and Organizations

State Education Technology Directors Association (SETDA)*: http://www.setda.org


Council of Chief State School Officers (CCSSO)*: http://www.ccsso.org

ASCD: http://www.ascd.org

Alliance for Excellent Education, Project 24: http://all4ed.org/issues/project-24/

ISTE: http://www.iste.org

a. ISTE Standards: http://www.iste.org/standards

Education Media

Center for Digital Education: http://www.centerdigitaled.com

Education Week*: http://www.edweek.org

eSchool News: http://www.eschoolnews.org

THE Journal: http://www.thejournal.com

Technology and Learning: http://www.techlearning.com

General

TechReadinessTool: http://techreadiness.org/r/Resources/

USDOE RttT Assessment Website: http://www2.ed.gov/programs/racetothetop-assessment/performance.html
Endnotes

5 “Learn More About the Assessment Consortia,” last modified 01/01/14, http://www.ccsso.org/Resources/Programs/Learn_More_About_the_Assessment_Consortia.html
9 “The Broadband Imperative: Recommendations to Address K-12 Education Infrastructure Needs,” last modified 05/21/12, http://www.setda.org/web/guest/broadbandimperative
10 “Smart Education Networks by Design: Guidelines for School System Chief Technology Officers,” last modified 01/01/14, http://www.cosn.org/smartednetworks
12 “K-12 IT Leadership Survey 2013,” last modified 01/01/14, http://www.cosn.org/focus-areas/it-management/it-leadership-survey
13 “Five Things I’ve Learned,” last modified 01/17/14, http://www.thefivethings.org/susan-patrick
ENA is the leading provider of managed Infrastructure as a Service (IaaS) solutions to school systems, libraries and governments. In 1996, ENA created one of the first statewide K-12 networks in the U.S. and has earned a reputation as experts in the design, deployment and management of data, voice and video solutions. Today, ENA manages multiple statewide and district-wide education and library networks, including 11 of the largest school systems in the country, successfully serving over 5,200 end sites, 555 school districts and 295 libraries, more than 2.5 million students, educators and administrators, and 3.6 million librarians and patrons. For more information, please visit http://www.ena.com or call 866-615-1101.

The eLearn Institute is a non-profit organization that is dedicated to transforming education through the effective use of digital learning tools. The central focus of the institute is to help schools and districts design, build, and "own" their eLearning programs. The eLearn Institute understands that having the right digital tools is one half of the challenge that educators and schools face, and using these tools effectively to building transformative educational models that support great learning is the other half of the challenge. The institute assists schools to create a facilitated community of online educators to share best practices, effective learning models, and new ideas specific to online and blended learning. For more information, please visit http://www.elearninstitute.org.

CoSN (the Consortium for School Networking) is the premier professional association for school district technology leaders. The mission of CoSN is to empower educational leaders to leverage technology to realize engaging learning environments. For over two decades, CoSN has provided leaders with the management, community building, and advocacy tools essential for success. Today, the CoSN community represents nine million students in school districts nationwide and continues to grow as a powerful and influential voice in K-12 education. For more information, please visit http://www.cosn.org or call 866-267-8747 to find out more about CoSN.