7. TAKE ACTION

Implementation Action III
Transition Technology and Assessment System

Part of IMPLEMENTING Common Core State Standards and Assessments
A Workbook for State and District Leaders

To download the full workbook, go to www.parcconline.org/CommonCoreImplementationWorkbook
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7. Implementation Action III: Transition Technology and Assessment System

Diagnostic questions to guide your team’s reading of this chapter:

- Has your system defined what “ready” looks like in terms of technology preparedness?
- Do you have data about where the gaps in readiness exist?
- How will you ensure that all districts receive the information and support they need to close gaps in technology readiness ahead of the assessment?

In preparing all students for college and career readiness, schools and districts must provide students the 21st century skills they will need to be successful in this increasingly global, technology-driven world. Providing these skills will require a broad transformation in the culture of many schools as they become true digital learning environments where technology is integrated into all parts of the school experience, including instruction and assessment. Making this transition happen for all students in all grade levels may be one of the largest challenges you face as you implement the Common Core State Standards (CCSS) and assessments. Though the challenge seems daunting, you can do a lot now to plan for the transition and begin assessing gaps and identifying areas for improvement.

Your strategic implementation team should work closely with technology leaders at the state level to identify a state readiness team that will be responsible for this work. One of the first steps will be to identify gaps in readiness and craft a definition of what “ready” looks like in your state. From there, you can segment districts based on their level of need and assign responsibility for ensuring that each is ready in time. Taking the time to do this analysis and planning up front, and creating mechanisms to check on progress along the way, will ensure that your state is prepared to implement the assessment in 2014–15. As you read the chapter, keep in mind that much of the specific information, particularly around exact recommended specifications of devices required for the assessment, may not yet be known, so you may need to come back to certain exercises as more information becomes available.

While much of this chapter focuses on ensuring that the schools in your state have the necessary infrastructure and devices to deliver online assessments, this effort must take place in the context of a new focus on instruction that leverages digital learning tools to ensure that students have access to the full range of the CCSS. This new focus calls for a change in both instruction and assessments. Your state readiness team should also consider and address the interoperability of data and reporting systems, although this is not detailed directly in this chapter.
Getting Started: Assessing Current Gaps

An analysis of your gaps in readiness is a critical starting point for your effort. Every school must address four main areas to ensure at least minimum readiness by the time testing begins:

- **Infrastructure:** What is the maximum number of test-takers per session that can be supported with current configurations — including facilities for administering tests and other infrastructure (e.g., computer lab capacities, electrical power supplies, availability of mobile cart for carrying devices)?

- **Network:** What is the maximum number of test-takers per session that can be supported with the current levels of Internet connectivity, including network bandwidth and wireless coverage?

- **Devices:** How many devices at the school meet minimum requirements to administer the test? What is the maximum number of test-takers per session that can be supported with this number of devices?

- **Staff and personnel:** How many staff in the school have been trained to administer, troubleshoot and provide appropriate security for the tests? (Note that parameters for such training will be available in 2013, when the test delivery platform is developed.) What is the maximum number of test-takers per session that these trained staff can support?

For each of these areas, it is possible to measure a single indicator of readiness: **Given the number of scheduled testing sessions at the school, what percentage of eligible test-takers will the school be able to test within the state's (or district's or school's) testing window?** The challenge in each state will be to get this number to 100 percent for every area of readiness, in every school.

While these are the minimum areas of readiness, they may not be the only considerations. Depending on your state's policy environment — especially regarding regulations and requirements for testing — there may be other definitions of readiness that your team will need to define as clearly as the items on the list above. Changing some of your state’s regulations and requirements to make implementation easier over the next several years may make sense. Similarly, instructional practices are critical to consider to ensure that students have adequate opportunities to use relevant technologies as part of their learning prior to encountering them in a testing scenario. If your policies and practices will need to be changed, you may want to consider additional categories beyond those above, so you can create plans for removing or managing these barriers.

**Assessing Gaps: Partnership for Assessment of Readiness for College and Careers/Smarter Balanced Assessment Consortium Readiness Tool**

The Partnership for Assessment of Readiness for College and Careers (PARCC) is collaborating with the Smarter Balanced Assessment Consortium (SBAC) to develop a tool for assessing districts’ current level of technology readiness. The tool will be available beginning in March 2012, with five testing windows every spring and fall until 2014. The tool will allow districts to automatically capture information from the computers on which it is run to determine whether they meet the minimum specifications for the assessments. The tool will also request that districts provide a certain amount of information via survey about their network capacity, devices and specifications, staff and personnel knowledge, and testing configuration at each school.
This tool will give state systems detailed information on three of the four areas of readiness: network, devices, and staff and personnel. It will then automatically generate reports at the school, district and state levels that show the percentage of eligible test-takers that can be supported in each area. It will also break down the components of readiness in each area. For example, for device readiness, it will show the number of devices that meet requirements, the resulting device-to-test-taker ratio, the number of sessions per day and the number of days in the testing window to show the percentage of eligible test-takers that can be tested with current devices during the testing window. This information will allow leaders at the school, district and state levels to pinpoint the changes that can or should be made to bring each school to 100 percent readiness.

For many states, the tool may be sufficient to gather the necessary data for implementation (this will be particularly true in states that have already satisfied infrastructure requirements and have no additional state-specific requirements). If your state has additional requirements that need to be tested at each school, you will need to develop an additional instrument or instruments to complement the PARCC/SBAC readiness tool. For example, state regulations may require certain room setups or stricter protocols for testing security. If you do not feel you have the necessary information to determine readiness in these areas, you may need to conduct an additional survey or interviews with each school or district.

### Using Readiness Data

Once you have completed your gap analysis, you can use the resulting data to determine the size of the gap that needs to be closed to reach 100 percent readiness (percentage of eligible test-takers that can be tested in the window) in each district.

You can break this information down in a “league table” of color-coded ratings of readiness for each district and each area. Producing such a table will require that you convert the readiness data into ratings; you might decide, for example, that those districts with less than 50 percent readiness would be rated red in your table, those between 50 percent and 90 percent would be rated yellow, and those above 90 percent would be rated green. This will help you to pinpoint which districts need further work and in what areas, as well as identify those districts that are leading the way and that might provide advice or guidance for others. Choose simple rules for ratings that will help you differentiate between districts that are already the most prepared and those that have the furthest yet to go.

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**PARCC Proposed Technology Guidelines**

PARCC has proposed the following minimum recommended hardware specifications. These specifications are meant to be used as guidelines for states and districts to evaluate existing hardware and plan instructional technology purchases in the near future that will meet assessment requirements. Confirmed specifications requirements will be released soon.

**Minimum:**
- 1.0 GHz processor speed
- 1 GB RAM
- 1 GB available memory/storage
- 1024 x 768 resolution
- 10" min display size
- Input devices must include the ability to enter text and to interact and manipulate virtual objects.
- Audio and video support will be required.
Communications

Because your technology transition efforts herald a broader shift in the use of technology in both instruction and assessment at every school, your state needs to develop a clear, coherent communications strategy for this work. This should be a cross-agency effort, involving several leaders, including the chief information officer, communications director and head of assessment.

A number of key stakeholders will need to be engaged, including district superintendents and technology directors, school leaders, and teachers. Consider integrating communications into each of your necessary touch points. For example, when you are reaching out to schools and districts to assess current gaps, you can communicate with them about what is coming. Also think about the ways in which your team is already communicating with the field and consider using those opportunities to communicate about technology readiness, gaps and strategies to close them, as well as get feedback from local leaders and technology leaders.

Refer to Chapter 4 for more information on creating a communications plan.

### Readiness League Table (EXAMPLE)

<table>
<thead>
<tr>
<th></th>
<th>Infrastructure</th>
<th>Network</th>
<th>Devices</th>
<th>Staff and personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>District 1</td>
<td>98%</td>
<td>95%</td>
<td>93%</td>
<td>75%</td>
</tr>
<tr>
<td>District 2</td>
<td>60%</td>
<td>52%</td>
<td>92%</td>
<td>10%</td>
</tr>
<tr>
<td>District 3</td>
<td>91%</td>
<td>48%</td>
<td>60%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Once you have identified the areas of strength and challenge for each district, you may then choose to segment your districts based on their current areas of need. The purpose of this exercise will be to identify the districts of highest need, districts that have the capacity to achieve readiness on their own and specific areas of need for those districts that you do not expect will achieve readiness on their own.

For example, some districts may need support in all four areas, some districts may need support in devices and knowledge only, and other districts may need support in training staff and personnel only. You might identify a segment of districts that you believe can achieve readiness on their own. Factors to consider when making these judgments include the number of technology personnel a district has, the technology budget or access to funding in a given district, and current technology initiatives in that district.

One key segment might be those districts that will be involved in field testing, as they will need to be ready a year ahead of your other districts. These districts should be representative of your student population, not just a group that is furthest along in readiness today.

Identifying one person from your readiness team responsible for each district or segment of districts will allow you to develop a coverage model for working with each to reach its target. Some districts will not need coverage at all, of course, if they are already deemed to be ready or on track to achieve readiness independently.
**EXERCISE: SEGMENT YOUR DISTRICTS**

**Purpose:** To divide your districts into manageable segments based on their similar qualities so that your team can better prepare to meet the needs of the various districts.

**Who should participate?** The state readiness team should complete this exercise.

**Directions:**

1. With your league table in front of you, consider the current ratings of all of the districts in your state and create a segmentation that will help you meaningfully differentiate your treatment of them. Some factors to consider include:
   
   a. Area of greatest need: Where is the district’s bottleneck to readiness?
      
      • Staff and personnel only?
      • Staff/personnel and devices?
      • Staff/personnel, devices and network?
      • All four categories?
   
   b. Capacity: How likely is it that the district will achieve readiness on its own? Consider:
      
      • The number of technology personnel in the district;
      • The district’s budget for technology and/or access to technology funding; and
      • Current technology initiatives in the district that might improve existing the instructional technology.
   
   c. District size
   
   d. Inclusion (or not) in field testing

   Whatever your resulting segmentation, map it in a table like the 3 x 2 matrix below. In this example, the most important factors are area of greatest need and capacity, but infrastructure is not as much a concern.

<table>
<thead>
<tr>
<th></th>
<th>Staff/personnel only</th>
<th>Staff/personnel + devices</th>
<th>Staff/personnel + devices + network</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CAPACITY TO ACHIEVE READINESS WITHOUT STATE ASSISTANCE</strong></td>
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<tr>
<td>High</td>
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<td></td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AREA OF GREATEST NEED</strong></td>
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<td></td>
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</tbody>
</table>

(continued on next page)
2. Place your districts on the map according to their individual characteristics. It may be helpful to use sticky cards or Post-its on chart paper, so you can move the districts around to the various segments during your conversation.

3. Complete the table below outlining each segment, identifying a person or persons responsible for ensuring that segment reaches 100 percent readiness and articulating an approach for reaching each one. Note that the final column will be easier to complete after thinking through your strategies and delivery chains, so you may want to revisit that column at the end of this chapter.

<table>
<thead>
<tr>
<th>Segment</th>
<th>Criteria for putting districts into this segment</th>
<th>Districts in this segment</th>
<th>Person responsible</th>
<th>How should we reach them?</th>
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</table>
**Filling Gaps: Possible Strategies**

Given the budgetary challenges that most states and districts are facing today, finding funding to fill the gaps you have identified will likely be the most challenging aspect of moving every school to complete technology readiness.

**Strategies for Filling Infrastructure, Network and Device Gaps**

The main strategies around filling the gaps around infrastructure, network capacity and devices will depend on using various funding streams to purchase the relevant technologies. Several states have already begun to explore this issue, both in previous initiatives and in the context of the upcoming transition to the CCSS.

As you plan this transition, there is an important connection to consider between instructional technology and assessment technology. In the past, initiatives and funding streams for improving instructional technology have not fully addressed changing practice as part of an integrated system that includes pedagogy, instructional materials and assessments. The transition to computer-based testing should, ideally, be a driver that supports meaningful shifts toward technology-enhanced learning as well. Emphasizing that assessment-ready devices should not merely be used a few times a year during testing windows is important; rather, they should be a consistent part of each student’s overall learning experience. To that end, one important source of potential funding is to piggyback the demand for assessment technology on existing funding streams that pay for instructional technology more broadly.

More generally, there are a number of strategies you should consider to fill these gaps:

- **Appropriating additional statewide funding:** Will the political and fiscal environment allow new money to be appropriated by the legislature? Is it necessary?

- **Redirecting existing statewide funding:** Is it possible to increase the flexibility of certain existing state funding streams to allow them to be spent on instructional and assessment technology? Can an existing instructional technology funding stream be repurposed to include assessment technology?

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**Delivery Plans**

“The plan is nothing. The planning is everything.”
— Dwight Eisenhower

Taking the time to draft a delivery plan around a specific goal (such as transitioning technology systems) will help your team gain clarity around what needs to be done and how you plan to get there. The delivery plan provides a road map for how the implementation should proceed. This important operational tool is a work in progress, and there is no such thing as a perfect plan. A good delivery plan begins with the end in mind, linking the purpose of the plan (transitioning technology systems) to the overall vision for the system (100 percent readiness).

Unlike a typical strategic plan, the delivery plan should connect three primary components: the prioritized reform strategies, relevant delivery chains and expected impact on key outcome metrics. The plan should also meet the following criteria. It should:

- Assign leadership, management and accountability for the plan owner and project managers (e.g., those responsible for major strategies or activities).

- Detail performance management, such as key indicators that can be used to monitor the impact of the plan more regularly or implementation milestones to track progress.

- Describe the resources and support required for the plan’s success.

- Prepare to manage stakeholders and users by providing a thoughtful engagement strategy.

- Anticipate and prepare for risks that might throw the work off course, with particular attention given to areas of implementation most likely to deviate from plan.

You can learn more about creating delivery plans here.
Forming partnerships: Is there a role for philanthropy or the business community to play? Can the state play a role in forging these partnerships or in matching high-need districts to particular partners?

Facilitating procurement centrally: Can the state set up purchasing programs that will allow districts and schools to purchase necessary equipment at discounted rates? Alternatively, can it facilitate the establishment of clusters of districts that make volume purchases? Can the data from your gap analysis be brought to bear to guarantee certain purchase volumes?

Working with districts to find funding: Can the state focus on certain high-needs districts and assist them in strategizing to find or redirect additional funding?

CASE STORY: LOUISIANA

The Louisiana Department of Education has been working with districts to create contracts for procuring hardware, software and Internet connectivity to allow expanded regional or statewide procurements. The state has been researching various approaches, both in and out of state, to craft contracts and procurement processes to improve and expand private-sector service offerings, efficiencies and cost savings for PK–12 schools. Louisiana’s PK–12 schools want the state to create centralized procurement mechanisms for acquiring private network and telecommunication services, hardware and software, deployment and management services, and support services while achieving savings similar to those enjoyed by Louisiana’s education and government institutions. Louisiana’s higher education institutions have saved more than $6 million annually and receive up to eight times more bandwidth services for their educational institutions than they would if they were to procure and contract these services individually. The PK–12 effort is expected to save districts and the state a significant amount of money over time with relatively modest support from the state.

CASE STORY: NEW YORK

In 2011, New York State Education Law was amended to provide flexibility to districts in the use of instructional materials aids, which include textbooks, library materials, computer software and instructional computer hardware. Under the new provisions, a school district may spend more than its maximum allocation in any one of the areas by drawing on available aid in the other categories (with the exception of library materials aid). The change allows schools to use portions of state textbook aid for instructional software and hardware purchases. These new provisions first apply to 2011–12 expenses for 2012–13 aids. You can find out more here.

CASE STORY: RHODE ISLAND

As Rhode Island began planning for next-generation assessments, officials realized districts needed assistance to improve school infrastructure in two primary areas: securing sufficient bandwidth and building classroom infrastructure (e.g., sufficient number of electrical outlets, wireless access in classrooms, etc.). To help districts first address any classroom infrastructure concerns, state education officials have proposed a Technology Bond, which would invest $20 million over the next three years to improve classroom and building infrastructure. The Technology Bond is currently pending official inclusion in the governor’s budget and, ultimately, legislative approval. There has been strong state leadership to prepare this proposal for the governor and legislative leaders and to make building technology infrastructure a priority in the state.

Achieve will release a white paper in spring 2012 that will provide more examples and advice for states around using various funding sources to purchase devices or improve infrastructure. This document will be available on the Achieve website.
Strategies for Filling Knowledge Gaps for Staff and Personnel

To successfully transition to new assessments, you will need to provide training for existing staff. As you prepare for and design these trainings, there are a number of questions to consider to make the trainings relevant and effective:

➤ Who needs to be trained?

➤ What content should be covered?

➤ How will you communicate about training opportunities and recruit participants?

➤ How can you connect this training to a broader and longer-term shift toward technology-based instruction?

➤ How can you coordinate these workshops with other professional development offerings related to the CCSS and the PARCC assessments? (For more on this topic, please see Chapter 6 on professional development.)

Particularly, consider the professional development provided to teachers around the assessment. This professional development will include not just training on administering the assessment but also a number of additional components, including changing classroom instruction to prepare students for this kind of assessment and using the data that come from the assessments to inform instruction. You will likely need to use a number of strategies to ensure that teachers and other staff are ready on each of these fronts. Possible strategies include:

➤ Creating new professional development offerings;

➤ Weaving these topics into existing professional development offerings;

➤ Creating online professional development modules;

➤ Drafting an in-depth but readable user guide with practical advice for administering the assessment;

➤ Providing a help desk for users administering the assessment; and

➤ Loaning staff from the state or between schools or districts to those schools or district that may not have sufficient technology staff capacity during the assessment window.
**EXERCISE: IDENTIFY YOUR STRATEGIES FOR TRANSITIONING TECHNOLOGY SYSTEMS**

**Purpose:** To articulate your prioritized strategies for filling gaps in technology or knowledge. With options from your own state and this workbook in hand, use this exercise to narrow the list of strategies and choose those that will have the greatest impact.

**Who should participate?** The state readiness team should complete this exercise.

**Directions:**

1. Brainstorm the strategies you will use to fill your identified gaps in infrastructure, network capacity, devices, or staff and personnel knowledge.

2. Use the template below to answer the following questions:
   a. To which segments (or districts) would this strategy apply?
   b. Which areas of readiness (infrastructure, network capacity, devices, or staff and personnel knowledge) would this strategy address?
   c. To what extent will this strategy address each area of readiness gap? For example, is the strategy going to get 100 percent of the targeted districts (or targeted segments of districts) to 100 percent readiness in that area of readiness? Or will you need to scale up that strategy or combine it with other strategies to reach 100 percent?

<table>
<thead>
<tr>
<th>Strategy 1</th>
<th>To which segments (or districts) would this strategy apply?</th>
<th>Which areas of readiness would this strategy address?</th>
<th>To what extent will this strategy address each area of readiness gap?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy 2</td>
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<tr>
<td>Strategy 3</td>
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<td></td>
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<tr>
<td>Strategy 4</td>
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</tr>
</tbody>
</table>
2. Next, consider whether the strategies you have identified and the coverage you expect from each will match up with the needs you identified. If necessary, use a 2 x 2 matrix to prioritize those strategies. You may choose a number of criteria for each axis, depending on what matters most in your state. Some potential criteria include:

   a. Potential impact on total readiness;
   b. Budgetary cost;
   c. Degree of difficulty; and
   d. Capacity to implement.

A sample matrix is given below:

<table>
<thead>
<tr>
<th></th>
<th>Low</th>
<th>High</th>
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<tbody>
<tr>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUDGETARY COST</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>High</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
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<tr>
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<th>Low</th>
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<tr>
<td>High</td>
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</tbody>
</table>
Determining the Delivery Chain To Reach Every School

How will you ensure that every school is ready to administer the new computer-based assessments, and how will you help meet the needs of each school? To answer this question, the state readiness team must identify the delivery chain for reaching these schools. The delivery chain is the set of actors, and the relationships among them, through which the strategies you have chosen will be implemented. The delivery chain for technology readiness answers one core question: **Starting from the intent of state leaders to fill these gaps and ending with readiness on the front line, how — and through whom — will the transition support actually happen?**

To address this question, first map the chain for one strategy (or group of similar strategies) and one specific segment of districts. Repeat for other strategies and the segments to which they apply, building on your prior work where the chains are similar. Once you have done this for the relevant strategies and segments, step back and consider the map you have drawn for implementation in every district. What will be the overall impact on your staffing and budgetary resources at the state level? Is this feasible and sustainable? These questions may lead you to adjust your strategies and/or the delivery chains that you work through to implement them.

In your delivery chain, you will also establish potential additional venues for feedback loops on the quality of implementation. These feedback loops will allow you to receive two types of information that may be useful and are not provided by the readiness tool: (1) information on the quality of implementation of specific strategies and (2) information on areas such as staff/personnel knowledge and infrastructure that may be specific to your state and not picked up by the readiness tool (particularly in areas of educator readiness). To the extent that you feel you need additional information on either of these, you can use the delivery chains to help you understand which information is most critical and how best to collect it.
EXERCISE: MAP THE DELIVERY CHAIN FOR TECHNOLOGY READINESS

**Purpose:** To draw a delivery chain for technology readiness for a given segment of your districts, identify the weaknesses in the chain and identify solutions to address those weaknesses.

**Who should participate?** This exercise should be done individually for each strategy and segment you have identified but also considered among the full team.

**Directions:**

1. Identify a given strategy and list the key actors in your ideal delivery chain — the ones who will be a critical part of ensuring that this segment of districts is technologically ready for the new assessment. Think of actors at five levels: state, region (if applicable), district, school and classroom. In addition to recording which actors are involved, also note how many of each there are in your state (e.g., 100 district technology directors, 1,000 principals, etc.).

2. Draw the single, most important line of influence between your workgroup at the state level and the schools, and articulate how you would like it to function at the level of each link in the chain.

3. Identify and draw secondary lines to other actors who need to be involved.

4. On the delivery chain, identify any **feedback loops** that you might need to build in to give you additional information on readiness. Beyond what the readiness tool gives you, will you need information on implementation of this specific strategy or additional information about infrastructure or staff/personnel readiness? For each piece of information you need, how will you collect it in a way that is efficient and minimally burdensome to the field? Can you adapt already existing lines of communication or events to gather feedback from the field?

5. Identify potential weaknesses in the delivery chain and the ways you will address them. Use the worksheet template on the next page.

### Potential weaknesses in delivery chains (EXAMPLE)

<table>
<thead>
<tr>
<th>Typical challenges</th>
<th>Potential solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individual relationships</strong></td>
<td>• Weak personal relationships</td>
</tr>
<tr>
<td>• Low leverage</td>
<td>• Identify alternate routes to the end of the chain</td>
</tr>
<tr>
<td><strong>Complexity</strong></td>
<td>• Too many actors necessary to get something done</td>
</tr>
<tr>
<td>• &quot;Rationalize&quot; chain</td>
<td>• Identify alternate routes to the end of the chain</td>
</tr>
<tr>
<td><strong>Funding flows</strong></td>
<td>• Mismatch between resource flows and delivery chain</td>
</tr>
<tr>
<td><strong>Feedback loops</strong></td>
<td>• Few or no feedback loops</td>
</tr>
<tr>
<td>• Over-reliance on a few key actors</td>
<td>• Use feedback loops to exert influence</td>
</tr>
<tr>
<td><strong>Choke points</strong></td>
<td>• Build capacity/cooperation of key actors</td>
</tr>
</tbody>
</table>
## Delivery chain analysis of weaknesses and solutions worksheet

<table>
<thead>
<tr>
<th>Potential weaknesses</th>
<th>Potential solutions</th>
</tr>
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<tbody>
<tr>
<td>Individual relationships</td>
<td></td>
</tr>
<tr>
<td>Complexity</td>
<td></td>
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<tr>
<td>Funding flows</td>
<td></td>
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<tr>
<td>Feedback loops</td>
<td></td>
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<tr>
<td>Choke points</td>
<td></td>
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<tr>
<td>Other</td>
<td></td>
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</table>
Planning for Readiness

Once you have identified your state’s gaps, the next step is to create a plan for reaching the target of 100 percent readiness by the 2014–15 school year, when the assessments will first be used statewide. To assess your state’s progress along the way, it will be helpful to set targets or milestones for filling those gaps over time.

First, you should use the data from your gap analysis to identify the specific gaps that need to be closed in each district to achieve total readiness, along with the strategy or strategies to be used to close each. You may find it helpful to use a simple template, shown below, to conduct this analysis.

### Identifying Gaps and Strategies To Close Them (EXAMPLE)

<table>
<thead>
<tr>
<th>Infrastructure</th>
<th>District (or segment of districts)</th>
<th>Total number of eligible test-takers</th>
<th>Readiness (percentage of eligible test-takers)</th>
<th>Gap to close (number of test-takers)</th>
<th>Deadline to close gap</th>
<th>Strategy or strategies to be used</th>
<th>Person responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network</td>
<td>District (or segment of districts)</td>
<td>Total number of eligible test-takers</td>
<td>Readiness (percentage of eligible test-takers)</td>
<td>Gap to close (number of test-takers)</td>
<td>Deadline to close gap</td>
<td>Strategy or strategies to be used</td>
<td>Person responsible</td>
</tr>
<tr>
<td>Devices</td>
<td>District (or segment of districts)</td>
<td>Total number of eligible test-takers</td>
<td>Readiness (percentage of eligible test-takers)</td>
<td>Gap to close (number of test-takers)</td>
<td>Deadline to close gap</td>
<td>Strategy or strategies to be used</td>
<td>Person responsible</td>
</tr>
<tr>
<td>Staff and Personnel</td>
<td>District (or segment of districts)</td>
<td>Total number of eligible test-takers</td>
<td>Readiness (percentage of eligible test-takers)</td>
<td>Gap to close (number of test-takers)</td>
<td>Deadline to close gap</td>
<td>Strategy or strategies to be used</td>
<td>Person responsible</td>
</tr>
</tbody>
</table>
Building the Trajectory

Based on the targets you have identified for each individual district or segment of districts, you can plot the level of infrastructure, broadband, devices and knowledge you should expect to have at any given time. In particular, you may want to identify your expected levels of readiness in infrastructure, network capacity, devices, and staff and personnel knowledge at each of the readiness tool testing periods. For example, what percentage of readiness will you have three months from now? Six months from now? Six months before the assessment goes live? This information will enable you to know at any given point in time whether your work is on track.

The example below plots the percentage of ready devices for a hypothetical state with six districts. Here, you can identify, based on the various targets, where the state should be at each progress check and therefore identify whether the state is on track as a whole to achieve 100 percent readiness by 2014–15. Being behind on this trajectory would trigger a closer look at the data to try to identify and resolve the cause of the delay.
Establishing Routines To Monitor Progress

Now that you have established a clear trajectory with milestones for readiness as well as persons responsible for given segments of districts, your system should establish regular routines to review progress and data. These routines will be an important mechanism for regularly checking in to ensure that your team is on track and for problem-solving when you find that your team is off track. It may be helpful to align these routines with the data collection windows for the technology readiness tool, as these will be the periods when you have new information coming in (see previous page for examples of trajectories that are also aligned with these data collection windows). You should also consider what regular meetings currently exist that can be adapted to include these check-ins, so as not to require new meetings.

Chapter 11 gives broader guidance on how to establish routines for your overall CCSS effort. Though designing plans and routines specifically for the technology transition is important, they should be connected as a whole to your broader system for managing and monitoring implementation of new standards and assessments.

Conclusion

You should now have a clear plan for how to ensure that your districts and schools are ready for the new computer-based assessments by 2014. The plan considers what “ready” will look like in at least four categories; where current gaps exist; key strategies for filling gaps; persons responsible for working with districts to ensure that the gaps are filled; and milestones, feedback loops and routines for monitoring progress along the way. It is now time to examine accountability and reporting systems in the context of your CCSS implementation effort.