

# LEADER TRACKING SYSTEMS:

Turning Data into Information  
For School Leadership

**POLICY STUDIES ASSOCIATES, INC.**

Leslie M. Anderson | Brenda J. Turnbull | Erikson R. Arcaira

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## EXECUTIVE SUMMARY

School districts can improve the chances that a new principal will be ready for success on the job by managing systems of principal preparation, selection, and support. And the management of this kind of principal pipeline, like other work that school districts do, can draw on data to inform decisions.

But just as the idea of intentionally crafting a principal pipeline is a relatively new one for school districts, bringing data together to inform pipeline management is also new. This report explores the possibilities. It describes work already being done in the six districts participating in The Wallace Foundation's Principal Pipeline Initiative:

- Charlotte-Mecklenburg Schools, North Carolina
- Denver Public Schools, Colorado
- Gwinnett County Public Schools, Georgia
- Hillsborough County Public Schools, Florida
- New York City Department of Education, New York
- Prince George's County Public Schools, Maryland

These districts have taken steps to define what they want from their principals and to improve the chances that principals will be able to deliver (Turnbull, Anderson, Riley, MacFarlane, & Aladjem, 2016). The idea of crafting data systems to support work on principal pipelines had its origins in the practical needs of the evaluation of the initiative, which gathered extensive data from the districts on principals and schools over many years before and during the operation of the initiative. But then, as the districts took more and more intentional approaches to managing the career opportunities of their aspiring and sitting principals, they took advantage of these Leader Tracking Systems (LTSes) in a number of ways. Compelling displays of information are helping district leaders address issues of school leadership.

This report discusses not only ways to use LTSes but also hard-won insights about how to build them and roll them out. It draws on interviews with system developers, directors of talent development, and other district leaders in fall and winter 2016-17. This report is not intended as an evaluation of the districts' work. Our analysis is intended to inform other practitioners about the lessons learned and the opportunities revealed in the process of building and using an LTS.

District leaders are pleased with the practical tools that they have built on the base of data housed in an LTS. Some common functions that the districts are either carrying out or planning to carry out with LTS help are the following:

- **SELECTING THE RIGHT PRINCIPAL FOR A SCHOOL VACANCY.** District decision makers review information-rich candidate profiles and school profiles. With the school's needs in mind, they can quickly identify potential matches and compare the finalists to each other.

- **IMPROVING ON-THE-JOB SUPPORT.** Principal supervisors, mentors, and coaches can use LTS tools to inform support for sitting principals. With at-a-glance displays of the principal's assessed strengths and growth areas in relation to district standards, support can focus on the principal's learning needs.
- **BUILDING THE BENCH.** With data-based forecasts of principal vacancies and summary data on their aspiring leaders, districts can assess the alignment between their anticipated needs and the potentially available talent, and step up recruiting efforts to improve the alignment if needed.
- **IMPROVING PIPELINE COMPONENTS.** With substantial data on principals' records of success in relation to their experiences in preparation, selection, and support, districts hope to gather clues to the kinds of preparation experiences, selection criteria, and supports that are associated with greater success on the job, and thus to keep improving their work on school leadership.

LTS tools and dashboards emerge in stages, after many early steps that lay the groundwork for useful, high-quality information. Having gone through the process and had both successes and frustrations, the PPI districts recommend something like the following sequence:

- Form a team that has a single leader and includes core information users. Make sure the team has ways to help IT staff listen to educators and vice versa. Gather ideas from other districts.
- Identify and focus on a specific purpose and an initial set of core users that the LTS will serve.
- Develop the data infrastructure through finding available data, converting it to workable formats, pulling together data that live in different systems, and validating the data—all before producing dashboards or other applications.
- Choose the right level of customization for the software, based on an assessment of existing systems.
- Begin to design the user experience. Test it. Test it again, and again.

We have seen in the Principal Pipeline districts that a commitment to managing the principalship more intentionally helps spur greater attention to information—and, in turn, better information presents new opportunities for shaping principal placement, support, and succession planning.



# 1. WHY A SCHOOL DISTRICT SHOULD CARE ABOUT ITS DATA ON PRINCIPALS

Principals matter. They rank second to teachers as an in-school influence on student learning (Seashore Louis et al., 2010). Their work has a “multiplier effect,” enhancing the effectiveness of instruction through influence on school climate and professional collaboration (Manna, 2015). Placing a well-prepared principal in the right school is one of the most important and high-stakes decisions a school district makes. As one district leader said in an interview for this report, “In sports, you have franchise players. Principals here are franchise players.”

School districts are finding that they can actively shape the caliber of principals in their schools. They can do more than simply selecting from the available applicants to fill a vacancy and then handing the keys to the new principal. By managing systems of principal preparation, selection, and support—in other words, a multi-year principal pipeline—they may improve the chances that new principals will be ready to succeed on the job.

The management of principal pipelines, like other work that school districts do, can draw on data to inform decisions. Turning data into usable information has become a critical function for businesses, governments, and other organizations. Why? As the U.S. Department of Education Office of Educational Technology explains, “in data mining and data analytics, tools and techniques once confined to research laboratories are being adopted by forward-looking industries to generate business intelligence for improving decision making.” The authors add that analytics “have the potential to make visible data that have heretofore gone unseen, unnoticed, and therefore unactionable,” and that the proliferation of data has the potential to help school districts discern patterns, “make sense of what is happening, predict what should come next, and take appropriate action” (Bienkowski, Feng, & Means, 2012).

Turning education-related data into information is possible because school districts are awash in data. Accountability systems generate data on achievement at the school and classroom levels; many districts track indicators of school climate, teacher retention, and relationships with the community. District offices of human capital house employee records, and the records may include evidence of leadership skills and accomplishments.

But just as the idea of intentionally crafting a principal pipeline is a relatively new idea for school districts, bringing data together to inform management of such a pipeline is also new. Districts may collect and maintain data on current employees primarily for purposes of payroll. Because a payroll office may not need to track each employee’s work history, those records may not be maintained over the years. Applicants for principal positions may craft their resumes in the form they choose, and once the principals are hired those resumes are seldom mined for information about the preparation that shaped the capabilities of the most successful principals. Offices of human capital and offices of evaluation and accountability

in a large district are likely to maintain separate data systems, with the result that an analysis of principal characteristics in relation to school results would pose formidable challenges.

This report explores the possibilities of using data systems to unleash the power of information for principal pipelines. It includes some speculation about what may become feasible for data-informed principal pipelines, but it draws concretely on the work that six districts participating in The Wallace Foundation's Principal Pipeline Initiative are already doing, which we describe next.

### ***Background: The Principal Pipeline Districts***

Six large urban districts participating in The Wallace Foundation's Principal Pipeline Initiative have demonstrated that they can change the district role in preparing, placing, and supporting principals. They are:

- Charlotte-Mecklenburg Schools, North Carolina
- Denver Public Schools, Colorado
- Gwinnett County Public Schools, Georgia
- Hillsborough County Public Schools, Florida
- New York City Department of Education, New York
- Prince George's County Public Schools, Maryland

These districts have taken steps to define what they want from their principals and to improve the chances that principals will be able to deliver. Since 2011 they have ramped up their efforts to spot talent, selectively groom and grow potential leaders, match the right leader to the right opportunity, and provide one-on-one support for new principals' learning and improvement. This work was shaped by The Wallace Foundation's design for the initiative, which called for districts to step up in (1) defining standards and competencies for their principals; (2) strengthening standards-aligned principal preparation inside and outside the district; (3) revising their approaches to selecting and placing new principals; (4) organizing both on-the-job evaluation and support around their principal standards; and (5) maintaining a focus on ways in which school leadership that focuses on instruction could serve important district purposes. The authors of this report have had major roles in the evaluation of this initiative and have released several reports on the work done in the districts.<sup>1</sup> A final report will address the longer-term impact of "pipeline principals" on school climate and achievement, but to date our evaluation has found evidence of near-term benefits. By 2015, newly placed principals in the districts were more likely than earlier cohorts of principals to report that their skills were an "excellent" fit for their schools; most reported that their supervisors offered support that fit their needs; and top district leaders reported that they were seeing better-prepared finalists for principal vacancies (Turnbull, Anderson, Riley, MacFarlane, & Aladjem, 2016).

<sup>1</sup> See Anderson & Turnbull, 2016; Turnbull, Anderson, Riley, MacFarlane, & Aladjem, 2016; and Turnbull, Riley, & MacFarlane, 2015. The final evaluation report on the initiative will present analyses by RAND Education, a collaborating organization for this evaluation.

The idea of crafting data systems to support work on principal pipelines was not featured in the initiative's original design, but it emerged fairly quickly in the districts' work. The main reason was practical, and it was related to the evaluation of the initiative. Because the final evaluation report will present analyses of extensive data on principals and schools over many years before and during the operation of the initiative, districts have had to provide these data. The Wallace Foundation grants supported the necessary compilation of data on principals (including past experience, formal preparation, on-the-job evaluation, and professional learning) and schools (teacher qualifications and evaluations, student demographics, student achievement, etc.). District administrators quickly realized that automating their systems for gathering and retrieving these data would save time and burden, and the foundation provided funding and technical assistance for what it called Leader Tracking Systems (LTSes).

Over the years of the initiative, as the districts took more and more intentional approaches to managing the career opportunities of their aspiring and sitting principals, they took advantage of their LTSes in a number of ways. They have also developed specific plans for next steps using data to inform pipeline work, and they continue to identify new ideas about what they may do in the future. Their experiences and ideas are cited throughout this report.

The report has a broad analytic lens, using the six pipeline districts to illustrate ways in which data *may* inform principal pipelines. Thus we not only describe LTS uses that we have seen but also describe future steps that the districts are actively planning or just beginning to consider. We speculate on what an LTS could do, based on what we have seen in these districts' pipelines.

For the Principal Pipeline districts, we have seen that a commitment to managing the principalship more intentionally helps spur greater attention to information—and, in turn, better information presents new opportunities for shaping principal placement, support, and succession planning. Compelling displays of information are helping district leaders take advantage of their opportunities to address issues of school leadership.

District leaders need the best available evidence not only for their hiring choices but also for designing and improving all components of a principal pipeline. After placing a new principal in a school, a district should provide the right supports at the right time. District leaders should also try to shape future school leadership by making sound forecasts about future vacancies and identifying and preparing the kinds of aspiring leaders who can best meet anticipated needs. And, over time, analysis of the data can inform a continuous process of improving the workings of the entire leader pipeline. There is no simple formula for any of this, but districts are using data to help them carry out many of these functions, and we can reasonably anticipate that they will do more with information in the future, for continuing cycles of improvement.

This report discusses not only ways to use LTSes but also hard-won insights about how to build them and roll them out. It draws on interviews with system developers, directors of talent development, and other district leaders in fall and winter 2016-17. Some additional information about the history of LTS development and early use in the districts comes from interviews with district administrators that our evaluation team conducted in annual district visits from spring 2012 through spring 2015. We note, however, that this report is not intended as an evaluation of the districts' work with LTSes. Our analysis is intended to inform other practitioners about the lessons learned and the opportunities revealed in the process of building and using an LTS.



## 2. WHAT PPI DISTRICTS DO WITH AN LTS

The PPI districts have begun to take advantage of well-organized information in their principal pipelines. This did not happen quickly. Building systems that turn raw data into usable information takes time and many steps, as the next chapter of this report discusses. However, once the system delivers useful information and practical tools for decision making, districts see opportunities to do more with data. The application of early tools was growing more sophisticated by fall 2016, and district leaders were foreseeing other potential applications of the LTS.

These districts are putting LTS data to work for functions that include placing principal candidates in schools, improving on-the-job support, projecting hiring needs, and shaping the bench of successors. Local purposes drive their choice of functions. However, within each pipeline function (principal preparation, hiring and placement, evaluation and support), the specific uses of LTS data tend to follow a sequence:

- First, meeting the established information requirements of a particular district task (e.g., for hiring and placement, pulling together the information that hiring managers routinely consider; or, for principal supervision, assembling a principal's existing evaluation data in a convenient format).
- Next, district staff involved with a principal pipeline may look beyond their information-using routines in several ways:
  - Bringing additional information into decisions (e.g., considering a wider range of candidate qualifications and school data in relation to each principal vacancy)
  - Looking for patterns and gaps related to pipeline functions (e.g., spotting a persistent shortage of principal candidates with particular backgrounds)
  - Bringing more stakeholders into the conversation (e.g., sharing information with the directors of programs that prepare principals)
- Still later, analysis of longitudinal data may shed light on the functioning of the pipeline itself—that is, on the ways in which a district's selection criteria for aspiring leaders, principal preparation, hiring criteria, or mentoring support appear to have affected the likelihood of principals' success.

We discuss both recent LTS uses and future possibilities in this chapter.

## ***Placing Principal Candidates in Schools***

Administrators in several districts described their past experience of facing the news of each principal vacancy with shock, surprise, and no plan of attack. “It was OMG, this vacancy just came up, who are we going to put in that school?” said one veteran administrator.

LTS data can help a district find a leader with the right skills to match a school’s needs, as experience in these districts illustrates. These LTS applications replace an antiquated process that relied on word-of-mouth to generate applicants and make placement decisions. As one district administrator summarized it, looking back, “What drove the hiring process was whoever happened to apply at that school.” Instead, a tool that displays relevant data about a pool of principal candidates allows district leaders to make better informed placements.

### ***The Data***

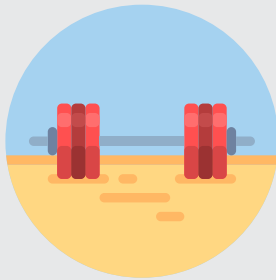
Every PPI district uses an LTS in some way to inform hiring and placement decisions. The districts pull together data on individual background, preparation, positions held, and competencies and strengths (based on on-the-job evaluation or on assessment conducted in a selection process). They include details about the schools in which candidates have served, such as grade level (elementary, middle, or high), size, student demographics, special focus area(s) (such as STEM, language immersion, etc.), and student achievement (Exhibit 1).

## EXHIBIT 1: TYPES OF PERSONNEL DATA INCLUDED IN HIRING AND PLACEMENT TOOLS



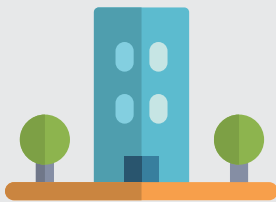
### *Demographic and Other Information*

- Gender, race/ethnicity, age
- Experience (e.g., as a teacher, teacher leader, and/or AP)
- Education (e.g., preparation program(s) attended and completed; certifications; highest degree earned)
- Professional development and support (e.g., coaching, mentoring, PD hours)



### *Measured Competencies and Strengths*

- Evaluation scores as a principal, AP, and/or teacher
- Scores on other leadership assessments used for screening or placement (e.g., diagnostic tools for identifying leadership strengths)
- Language(s) spoken



### *Schools Served*

- School level
- School size
- Student demographics (e.g., percent poverty, English learners, and special education)
- Special focus (e.g., STEM or other magnet, International Baccalaureate, language immersion, etc.)
- School performance (e.g., growth in student achievement during the candidate's tenure there)

In order to make a match, districts also gather and summarize data about schools that anticipate vacancies. They may also include the school data in an LTS. For example, Gwinnett County includes survey data from school communities. A district official explained: “We ask them to rate the leadership characteristics of the outgoing principal, but we also want to know what they are really looking for in that community. Some will be as simple as ‘Buck is retiring; we want to clone him.’”

To find a match for school needs, Hillsborough County has a lengthy and deliberate process of discussing and debating options. A principal supervisor who anticipates a school vacancy attends a meeting of the superintendent's cabinet to discuss the needs of the school and the leader qualifications that would be a fit. These top district leaders map the strengths, weaknesses, and opportunities for a school and consider what the "perfect principal" for that school would look like. They use an LTS tool to help quickly sort for the leader qualifications a school requires: "Sometimes people would want to add to the list or sometimes there's something we know that goes beyond what the tool might present, but it's a wonderful tool to add that additional layer [of data] to the succession planning process," an administrator said.

Importantly, a data system only *contributes* to the hiring and placement process; it does not drive the process. District administrators recognize that data users need to understand the full story behind a candidate. For example, they know that a school's performance depends on many factors and may not fully reflect a candidate's leadership qualifications. In one district, an administrator explained: "The data give us a first glance at [what's going on], but it doesn't tell us the story. So, once we have the numbers, then we can start using what we do know about individuals and schools to be able to make sense of what we're seeing." Administrators in another district also say that after looking at school performance data they focus on conversations with applicants about the goals they set for themselves and for the school.

As they use a selection tool, district staff come up with ideas for adding to it. Some said that the LTS data, while more comprehensive than what was available in the past, still did not fully capture the range of principal competencies. One principal, for example, commented that some leadership skills should be better highlighted: "My talent for professional development and my cultural proficiency [are] not tracked." At the same time, districts want to limit the complexity of the tool because speedy, intuitive access to information is valued. An administrator in one district suggested that the use of LTS data could be faster and easier for purposes of selecting and matching principals to schools: "Until I get to a point where I can [get what I need in] one or two clicks, there's always room for improvement; I think we can always improve how easily we can access and sort information to do the search and match."

## Using the LTS Hiring and Placement Tool — An Administrator's View

One of the bigger uses that I have with the LTS is that when I have a principal opening, I'll use the Leader Tracking System to see which of our candidates who have gone through our aspiring principal program are still available. And it just gives us easy access to their experience, both as a teacher and as an assistant principal, which can be important. For instance, I've got an elementary school that has a principal opening and when we're looking at good fits for this particular school, we have certain skill sets in mind.

So when I'm having conversations about a specific skill set with my boss, he may say, "Yeah, but I don't think that they have any elementary experience." Well, instead of calling HR and having them pull a resume to see what the experience is, all I have to do is go to the LTS, pop in that person's name and I can see how long they were a teacher or an assistant principal at the elementary level. I can look at things like Principal Insight data; I can look at evaluative data to see how they're doing. I mean, it used to take hours to find good lists of candidates to bring to the table for interviews; I can do that now in 10 minutes. I can give the data to my boss and say, "Here are my thoughts." It's just a huge time saver and it's turning good data into good information. The Leader Tracking System is helping us make good decisions.



## *An LTS Application — Denver’s Vacancy Matching Tool*

Denver’s Vacancy Matching Tool (VMT) generates a dashboard that provides up-to-date, aggregate information on the group of candidates applying to the district’s hiring pool and to individual school vacancies. The dashboard includes, for example, data on candidates’ Spanish proficiency, diversity, and interest in working at a particular school level (e.g., elementary, middle or high school). According to district administrators, by allowing hiring managers to see and sort candidates by background characteristics, experience, and performance, the VMT ultimately helps them select the best candidates to fill principal and AP vacancies.

As shown in Exhibit 2, the VMT permits hiring managers to look at a variety of available data, including applicants’ application status (e.g., current role, school, district, school-level preference); language background and experience working in schools with significant ELL populations (i.e., more than 40 percent of the students are English learners); performance evaluation and interview scores; educational background and licensing status; and professional experience (e.g., as a teacher, school, or district leader, in Title I or turnaround schools, etc.).

The inclusion of data filters, a particular feature of the VMT, allows hiring managers to identify principal candidates who meet a given set of hiring priorities and preferences. While not all the available principal data can be filtered, hiring managers can look at candidates by (1) school preference (i.e., elementary, middle, or high school); (2) Spanish language proficiency (yes/no), (3) ELL experience (yes/no); (4) turnaround experience (yes/no), and (5) recent performance evaluation scores (i.e., distinguished, effective, approaching, and needs improvement).

As Exhibit 2 shows, the criteria a hiring manager applies results in different selection scenarios. Perhaps more important, depending upon the first filter applied, the resulting group of candidates may look dramatically different. One administrator, recognizing the inherent danger of unknowingly filtering out candidates, described his filtering and selection process:

*What I tend to do is I apply my X filter first and then highlight the person's name [that comes up], then delete my filters. Then I'll filter for [something else] and highlight again. I'm looking for where I have cross-over [by selection criteria]. 'If I prioritize this, what do I get?' I'm trying not to screen out somebody who could be a good candidate. I think there's probably always going to be holes [in the data], but ... That's one thing that I do is I say, 'If these are my priorities, what if I switched that around? Am I going to capture somebody that I might have missed otherwise, so that we can get to [what we need]?'*

## EXHIBIT 2: DENVER'S PRINCIPAL VACANCY MATCHING TOOL

### Available Principal Data



#### Application Status



- Name, ID, email, internal/external
- Current role, school, district
- Tier 2 applications (i.e., to specific schools)
- 1st & 2nd preference schools



#### Language Background

- Spanish language proficiency
- ≥ 40% ELL years
- Additional language proficiency
- ≥ 40% ELL role



#### Educational Background/ Licensing Status:

- Pathway programs completed
- Principal license status



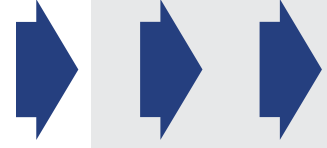
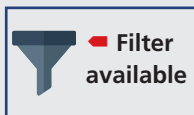
#### Professional Experience

- Teaching
- Title I and role
- Non-English instruction
- Total years school leader (by ES/K8, MS, HS)
- District leadership
- Turnaround experience



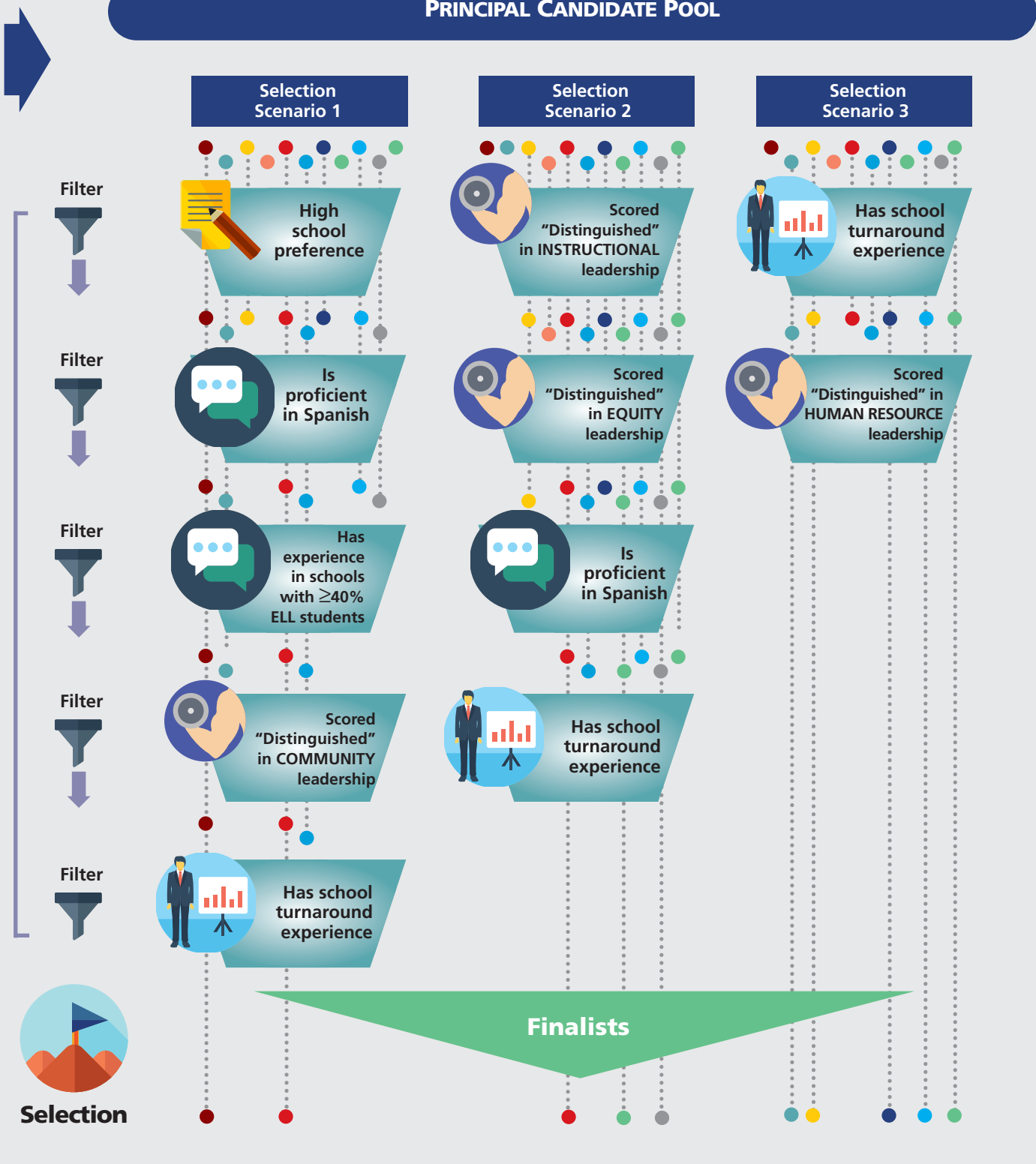
#### Evaluation/ Performance Results

- Most recent end-of-year evaluation scores (*Distinguished, Effective, Approaching, Needs Improvement*) by leadership competency:
  - Equity
  - Instructional
  - Human Resource
  - Strategic
  - Organizational
  - Community
- In-person interview scores

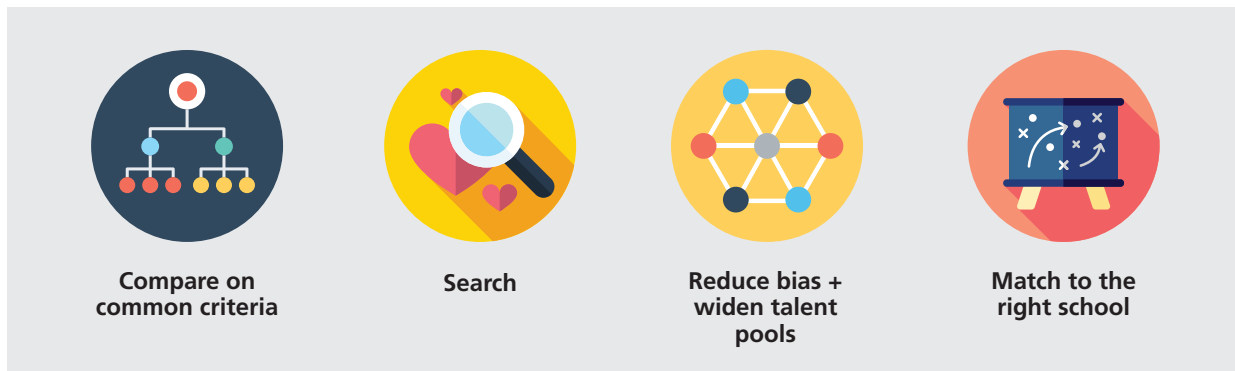


**NOTE:**  
The number and sequence of filters affects the number and names of possible candidates for a job

# PRINCIPAL CANDIDATE POOL



## How an LTS Can Improve Hiring and Placement Processes



Administrators say their new leader selection and matching tools have fundamentally improved the consistency, fairness, and quality of the hiring process. These tools (1) allow apples-to-apples comparison of candidates; (2) permit efficient, comprehensive, and often sophisticated searches for possible candidate/school matches; and (3) lessen the power of “who you know” in hiring.



**Compare on common criteria**

**ALLOWING “APPLES TO APPLES’ COMPARISON OF CANDIDATES.** As part of building and using an LTS, districts gather complete information about aspiring principals in a standard, easy-to-read form. The review of candidates’ credentials without such a process—using resumes composed by the candidates—is said to be slow at best and unfair at worst. Spotting relevant information in resumes can be subject to the inconsistencies and potential biases among different reviewers with varying levels of experience. One district administrator explained:

One of my initial struggles was that I’d post a position and would get this giant stack of paper [resumes] back and I’d have to spend my time trying to figure that out. That makes a huge assumption that all of our [principals and principal supervisors] have that analytical eye on being able to sort through that and do it effectively so that we’re not again screening in the wrong people or screening out the right ones.

For administrators faced with the daunting task of wading through as many as hundreds of resumes to fill one vacancy, a well-crafted resume could rise to the top of the heap. Resume-writing skills could determine who was screened in and who was screened out, some administrators said.

With the Vacancy Matching Tool, Denver decision makers can first quickly narrow the candidates to a manageable number based on preliminary selection criteria, such as experience in a high school or with English learners. Using objective, uniform data rather than resumes early in the selection process reduces the likelihood that qualified candidates slip through the cracks while unqualified ones are screened in.



Search

**ALLOWING AN EFFICIENT SEARCH FOR POSSIBLE MATCHES.** Among the most useful features of a selection tool is the filtering function, which gives decision makers the ability to search for candidates who meet one or more criteria. Principal supervisors and other district leaders can use filters to find all the candidates who bring backgrounds, skills, and experiences that the school may need. One described this process of quickly surfacing candidates who have the desired qualities: “You can filter it by principal or AP; you can filter by language proficiency. There’s different ways that [the data] can be sliced and diced at the hiring pool level.” As an administrator in another district explained, what you look at or filter for “depends on the needs of the site.” The tool gives users a starting point for the selection process, and the use of several filters helps narrow the selection pool to a manageable number. Then, the process usually moves to a more qualitative phase involving a closer look at individual candidates’ characteristics or experiences that might set them apart from others in the pool.



Reduce bias + widen talent pools

**REDUCING THE POWER OF “WHO YOU KNOW” IN HIRING.** Districts welcomed a chance to move away from a system in which “who you know” or the “old-boy” network could make a difference in hiring. Under pressure to decide on placements with limited information, administrators said they knew they had tended to recommend and hire the people they knew well, whom they had trained themselves or worked with, and whom they felt confident endorsing. Too often, as one summed it up, “we were deciding based on who somebody might have known.”



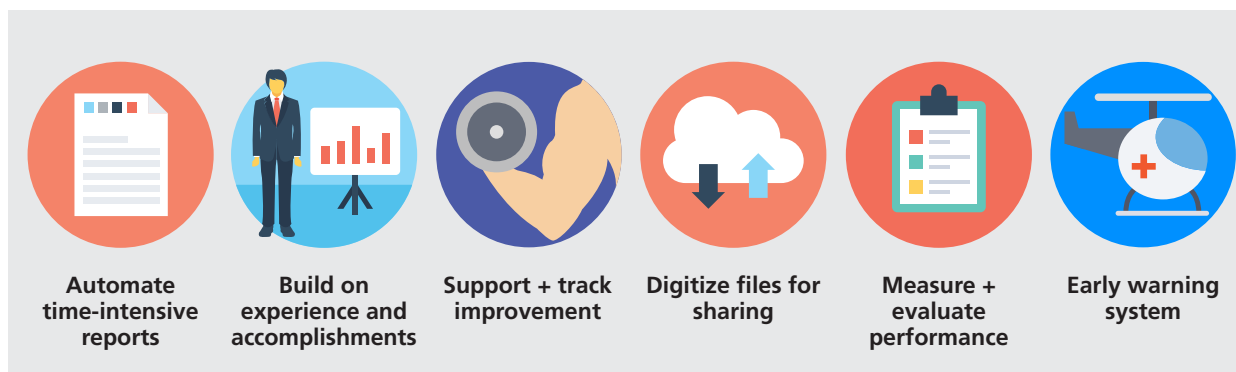
Match to the right school

Similar to the “who you know” syndrome was that of “who’s next in line.” With the tool in place, some district administrators say they are taking full advantage of the opportunity to strengthen their leader selection and placement decisions. One said, “...I know that I have a passion to make sure that we put the right leaders in the right schools as opposed to just saying, ‘Who’s next in line?’” He added, “The next person in line could be a great leader, but they’re not going to be a great leader at [this particular school].”

Another district administrator explained that the tool helps in identifying untapped talent “so that we’re not constantly calling on the same people, just because we know them.” He added that having the tool helps the district respond to unsuccessful applicants who assume—as many do—that they were unfairly denied a position: “With this [tool], we can say, ‘You didn’t come up when we screened.’” Other administrators commented that the tool will be particularly helpful to decision makers who are new to the district and still getting to know people.

Ultimately, the tool strengthens district leaders’ selection and placement decisions. One principal supervisor, for example, said she was convinced of the value of the tool when it brought the best candidate to light for a high-need school: “We’re a large district and I had never heard of this lady. It was the first time I put all my confidence in the placement tool, and she has been a tremendous success.”

## Improving On-the-Job Support



Some districts use data to inform and improve on-the-job support to principals. Charlotte-Mecklenburg principal supervisors use the LTS to assemble evaluation-related data to inform their work with principals; Gwinnett County has a dashboard for supervising mentors' work. Building on its experience, Gwinnett County has plans to develop next-generation LTS adaptations. Administrators hope that systematically compiling and scrutinizing patterns in their data on principal support, professional development, and performance will help them make further improvements in their overall design and delivery of tailored support for principals and APs. Prince George's County administrators describe their efforts to use LTS data to spot principals' and APs' assets as resources to their peers and the district, and their plans for doing more along these lines.



**Automate time-intensive reports**

### *Efficiently Informing the Work of Principal Supervisors*

Charlotte-Mecklenburg's principal supervisors have access to high-level data to inform principal evaluation. They can quickly review individual principal evaluation data, such as results of the TNTP Insight assessment, measures of school culture, staff retention rates, and rates of student suspensions, to name a few. They also have fast access to the principal's record of participation in professional learning. This matters because the principal supervisors' time is a valuable resource in the district. The time that they save in retrieving all these data points is time that they can spend delivering comprehensive, tailored support informed by the data.

Further development of the LTS in Charlotte-Mecklenburg may contribute to a central system that informs principal and AP professional development with increasingly systematic diagnosis and prescription based on strengths, competencies, and areas for growth.



Experience and accomplishments

### *Building on Experiences and Accomplishments*

When Prince George's County administrators talk about using their LTS to support principals and aspiring principals, they mention their interest in spotting and building on individual strengths. Principals who have particular kinds of experience or signature strengths have been tapped to lead professional learning sessions for their peers at the summer institute for school leaders. "We can identify principals or APs who have a background in professional development, who are communicators," an administrator said.

Prince George's County administrators look ahead to more ways of using LTS data to help them capitalize on the strengths of their principals and APs. They plan to include in the system an executive summary of each dissertation submitted to a doctoral-level university partner program for principals and other administrators in the district. Because most of the dissertations address a problem of practice related to leadership in the district, a key word search may allow district leaders to find a principal who is a knowledgeable resource in tackling that problem. The district also hopes to build on the strengths of aspiring principals at an earlier stage. Principal supervisors in the district, who are expected to encourage aspiring principals, have gained access to the LTS, and one commented that he plans to use LTS information in that work. He said it will give him a fast way to review a particular AP's job history and accomplishments so that the conversation can build on that history when that AP approaches him for career advice.



Support + track improvement

### *Organizing and Supervising the Work of Mentors*



Digitize files for sharing

Gwinnett County district leaders who oversee mentoring use a specially developed dashboard displaying LTS data related to mentoring. Retired principals may be selected as "leader mentors" who lend support to recently appointed principals in that district. The Office of Leadership Development oversees the work of leader mentors, helping them stay on track in delivering needed support to principals. The leader mentors and their supervisor use the dashboard to review progress and make any needed course corrections. The dashboard includes the leader mentor's notations about the challenges each principal is having and the specific standards and competencies addressed in each conversation between the principal and the leader mentor. Mentored principals complete surveys twice a year in which they rate the impact of their mentor related to each leadership standard. The survey also asks whether their mentor helped them identify their professional learning needs and the standards on which they needed help. Supervision and guidance for the leader mentors draw on all these data.

Over time, central office leaders say they expect that analysis of the data in this dashboard, combined with other data on principal performance, will help them determine whether and how mentoring support made a difference. For example, do principals gain greater capacity to engage staff at a higher, more productive level, "because we provided this leader coaching in a particular area.... Can we now show the connection between cause and effect?" And, looking ahead toward eventual system improvements, they also hope that analysis of their LTS data may reveal critical bands or periods in a principal's career when the principal is likely to need additional support and training. "Through data, we want to try and identify the most opportune time to provide this kind of training or that kind of support to principals."



Measure +  
evaluate  
performance



Early warning  
system

### Creating an Early-Warning System

Some districts want a tool—really an early warning system—to identify principal and AP needs sooner. It is difficult and frustrating, explained one district administrator, to learn only after a leader has stepped down that he or she was struggling alone, without adequate support. That administrator wants to see the district develop a tool that gives the principal supervisor just-in-time data on principal needs. The tool would be analogous to a dashboard that principals are using to monitor student data. Like that dashboard, which calls principals’ attention to recent changes in student attendance or behavior, a principal tracker would alert principal supervisors to principal support needs as a school shows early signs of trouble in areas such as teacher retention or overall school performance:

We want that same approach over in the leadership dashboard, so instead of waiting as school performance continues to decline, we want some alerts — we want to say, “Hey! Look at the results that just came in; this might be something that we want to pay attention to.” So just as the principal is getting these alerts for their [students], we would like the principal supervisors to get these alerts for their principals.

Extending the same kind of thinking to APs, another district has raised concerns about those who may not be getting enough support to prepare them for a principalship: “Some APs have principals that give opportunities to develop, and some don’t.” The district hopes to use the new LTS reports to identify areas of need that the district can address when an AP has little help from his or her own principal. And another district has already put the LTS to work in giving helpful, structured feedback to those APs who apply for principalships and are not selected: the ways in which a candidate fell short for a particular vacancy may point to skills or experience that he or she can strengthen, so as to be better prepared for future opportunities.



## Building the Bench of Principals the District Will Need



Districts are also recognizing how they can organize, analyze, and review data to inform districtwide planning. With data-based forecasts of trends, they can take steps in talent spotting and leader preparation that will give them a “bench” of future principals to meet foreseeable needs.



Bring evidence to discussions

### *Vacancy Forecasts as a First Step*

In an effort to better anticipate and prepare for vacancies, several PPI districts developed rough but useful vacancy forecasts using data on sitting principals’ ages and retirement eligibility. Studying their experience with principal attrition, they are adding other data points to the calculation. The result is a projection of future needs by grade level based on likely attrition through retirement, promotion, or resignation. A district administrator says, “We looked at data for folks who’ve left historically, identified multiple variables that identify statistical likelihood of departure in a given year and determined, based on their descriptors, who is likely to leave.”



Forecast vacancies

### *Managing Intake to Leader Preparation Based on Forecasting*

For Gwinnett County, an in-district preparation program for future principals is a critical pipeline component. In the past, uncertainty about the number of likely principal vacancies meant that the district sometimes prepared far too many aspiring principals. An administrator who works with this program—and with the LTS—said: “In the past, we weren’t as specific about or as purposeful with the size of each cohort. The vacancy projections we do now help us determine the size of each cohort, which keeps our bench at a reasonable [size].” At this point, the use of vacancy projections gives a better indication of how many aspiring leaders will be needed in a given year, by school level. This has contributed to achieving almost a 100 percent appointment rate for program graduates.

Another district has been able to see that it has more qualified candidates for AP positions than it will be able to place in the near future. Accordingly, it has the luxury of raising its standards for the in-district AP preparation program, aiming to develop a pool of AP candidates that will be the right size and will have even stronger qualifications.



Fill leadership gaps

### Looking at the Bench with an Equity Lens



Build the bench

Demographic data on aspiring leaders are helping districts pursue greater equity. For Hillsborough County, filtering the data by race and ethnicity brought home the depth of an important challenge: Black and Hispanic school leaders were in short supply, relative to the student population. The information has spurred greater recruiting efforts: high-performing teachers of color receive personal invitations to learn more about leader preparation programs in universities. Denver also tracks its progress on equity by using an LTS tool as a window into the composition of its hiring pool—the candidates who have passed the necessary screening for eligibility as principals—and applicants to the pool. For top district leaders and the school board, this tool is an efficient way to monitor the diversity of the pool, including Spanish proficiency as well as race/ ethnicity. It gives them “real-time metrics” related to the district’s equity goals. And one district has examined its data on aspiring principals’ cultural competency, finding “eye-opening” shortcomings that have prompted new kinds of discussion about the district’s needs.

An LTS does not set priorities for a district, but it can inform district conversations about the numbers and characteristics of its sitting and aspiring leaders, and can highlight needs. “You don't know what you don't know until you have the data right in your face,” an administrator said.



Identify recruitment priorities

### Identifying Recruitment Priorities



Build the bench

Demographic data generated by the LTS are informing districts’ recruitment priorities, as described above. Charlotte-Mecklenburg has developed a “Leader Identifier Tool” to capture data relevant to leadership potential. The district can identify and recruit leadership candidates who are doing well in their school based on past experiences such as types of schools where they have worked and other qualifications such as certification licenses. A district administrator explains that it is now possible to say, “Based on these data, I should contact this person and encourage them to get into the leader talent pool.”

Prince George’s County uses the LTS data to advise its university partners about the competencies and characteristics they should consider in selecting participants for their preservice program. A university partner says these data helped inform her and her colleagues about the type of information they should collect on their graduates and provide to Prince George’s County.

## Building Toward Longer-Term Improvements in Preparation



In-district preparation programs and university partner programs want to see information on the retention rates and effectiveness of their graduates, but amassing and analyzing that information takes time. Especially if graduating cohorts are small, this analysis will require effectiveness data from many cohorts. In addition, data-sharing across agencies and institutions is never easy, and the need to protect individual privacy has limited the extent to which LTS data contribute to partnerships with preparation programs outside the district. In the meantime, though, leaders of some preparation programs have found useful insights in the available data.



Share outcomes with partners

### Sharing Outcomes with Partners

Universities and districts face legal and regulatory barriers to sharing personally identifiable data with each other. And districts have much less data about individual aspiring principals' performance in university programs than about their performance in in-district programs. However, districts use aggregate data to deliver feedback to preparation programs in universities. This includes information on the placement rates of their graduates in leadership positions within the district. As one district administrator says, "You can easily pull down some reports [from the LTS] so that the district can understand how the [preparation] program is performing. And you should share some information that's not identifiable. And we've done that with our partners."

Hillsborough County has been providing data to its university partners about how many of their graduates were accepted into the district's AP preparation program and how many eventually became APs or principals. The aim is to help the preservice providers gauge their effectiveness and success and, over time, to align preparation more closely to district needs in order to improve graduates' chances of advancing toward principalships. A district administrator has seen university partners change their curriculum and coursework based on the information the district provides, and comments: "It has aided in us getting better candidates."

For Prince George’s County, a close partnership with Johns Hopkins University includes sharing information about what LTS data the district is using. This information about LTS structure and use is informing the university’s efforts to focus a preparation program more closely on the district’s needs, even without any access to the district’s individual-level data. Simply knowing what competencies the district is tracking among its aspiring leaders and principal candidates is useful to the university. Like Hillsborough County’s partners, this university is working to align its program with the competencies that the district will measure.



Identify process issues earlier

### Identifying Process Issues Earlier

Looking back at graduates of an in-district program who were not placed as principals, one district is looking at the data in an effort to determine whether the preservice program selection process needs improvement. As a district administrator wondered, “Is there something [about those candidates] that we should have been able to identify earlier in the process?”

District leaders have used displays of their LTS data to see how many candidates from previous cohorts have or have not been placed. They could see that 90 percent of one cohort was placed in leadership positions compared with 60 percent of another cohort: “So it gives us the opportunity to sit there and say, ‘Wow! Only 60 percent of the candidates from that group were placed. So, how did we select that cohort compared to a group with which we’ve had better success?’”



Analyze trends in competencies

### Analyzing Trends and Competencies Over Time

By analyzing the relationship between measured principal competencies and student achievement over time, districts hope to strengthen leader development. They want program curriculum as well as preservice selection criteria to focus on those competencies that are related to future success. New York City, for example, is working on a study of the impact of its LEAP program on student and school outcomes. An administrator described the key question: “Are LEAP graduates who become principals more successful as principals, and are their schools better than everybody else’s?”



Bridge systems for new insights

Gwinnett County wants to identify the competencies that characterize its highly effective principals and then use that information to ensure that all aspiring leaders receive the training and support that helps them develop those competencies. “We make sure these teacher leaders have these experiences and opportunities” to develop the competencies of highly effective leaders, an administrator explained.

## Summary

District leaders are pleased with the practical tools that they have built on the base of data housed in an LTS. These tools have different designs and purposes, reflecting local priorities. In many cases, district administrators are looking ahead to building on the tools that they have. Some common functions that the districts are either carrying out or planning to carry out with LTS help are the following:

- **SELECTING THE RIGHT PRINCIPAL FOR A SCHOOL VACANCY.** Candidate profiles pull together a wide array of data on individual characteristics, competencies and strengths, and schools served. School profiles summarize data on the students, the school's performance history, and special programs. With the school's needs in mind, decision makers can quickly filter a large pool of candidates by a variety of criteria in order to identify potential matches. Side-by-side comparison of a smaller group of candidates then helps in identifying finalists. The efficient use of these systematic processes helps decision makers find and consider well-qualified candidates without regard to "who you know."
- **IMPROVING ON-THE-JOB SUPPORT.** Principal supervisors, mentors, and coaches can use LTS tools to inform the work they do in supporting principals. With at-a-glance displays of the principal's assessed strengths and growth areas in relation to district standards, support can focus on the principal's learning needs. The data in the LTS from many principals may also help in improving the design of on-the-job support from supervisors, mentors, or an office of professional development.
- **BUILDING THE BENCH.** Districts can gaze into the near future with data-based forecasts of principal vacancies and summary data on their aspiring leaders. This helps them assess the alignment between their anticipated needs and the potentially available talent, and step up recruiting efforts to improve the alignment if needed.
- **IMPROVING PIPELINE COMPONENTS.** With substantial data on principals' records of success in relation to their experiences in preparation, selection, and support, districts may be able to strengthen the components of their pipeline. Analysis of the data can give clues to the kinds of preparation experiences, selection criteria, and supports that are associated with greater success on the job, enabling districts to keep improving their work on school leadership.



### 3. DISTRICTS' ADVICE ON DEVELOPING AND ROLLING OUT AN LTS

Building tech systems and moving into talent analytics may be daunting at first, particularly for staff with limited experience leading a technology venture. And there are pitfalls to avoid and best practices to consider in efficiently creating a useful LTS, as experienced by the six PPI districts. This chapter collects the lessons they have learned and describes their advice on developing and rolling out an LTS.

#### *Getting Started: Have One Leader and Many Participants*

One of the first tasks in developing an LTS is building the team responsible for conceptualizing, developing, and overseeing the system. The right team makes a difference in launch and early success. District administrators suggest appointing a single leader and involving many participants, and they offer the following advice:

**FIND A PROJECT LEAD WHO WILL OWN, DRIVE, AND TRACK THE PROJECT'S PROGRESS WHILE MONITORING DESIGN CHOICES FOR FEASIBILITY AND USEFULNESS TO CORE USERS.** One district official reflected that a reason the district “stumbled out of the gate” was that no single individual championed the LTS and saw its development as part of their daily work. A project lead has to wrangle different offices to meet, manage the technical design and development of the system, and regularly review usage to refine and update the system. Administrators in several PPI districts said that the project lead should have a clear sense of the system’s purpose and should bring persistence, skill in clear communication, and attention to detail. As one of them said, that person must actively manage the work:

Having formal project management was critical—if not, you would have people going in different directions. Everything was filtered through one person, and this helped to avoid duplicating systems.



#### *Engaging Core Users Early Is Important*

As one district administrator noted: “It would help others to know how hard it was for us to start. An early misstep was not engaging all the stakeholders that would have a voice. I talked directly to one person in IT, to articulate what I thought was being asked in terms of the grant’s data requirements. In those conversations, I realized I needed more people at the table.... Probably the most profound learning in this process was being inclusive in who needs to be at the table. It’s important to understand what that vision is at the beginning. I could give a sheet of paper and data requirements to IT, but it’s important to see where the LTS fits into what we were doing as a system and what it could be. Initially, we didn’t have those types of conversations in a helpful way.”

**IDENTIFY AND INVOLVE CORE USERS EARLY.** Core users likely include principal supervisors and administrators in the human resources and leadership development offices. Bringing together core users helps ensure the LTS development team understands the purposes and priorities for the system, knows the different decision points where leader data can be useful, and designs the types of dashboards and interfaces that appeal to users.

**MAKE SURE IT STAFF ARE GOOD LISTENERS, ASK GOOD QUESTIONS, AND ARE PATIENT AS THEY USHER THE SYSTEM THROUGH EACH STAGE OF THE DEVELOPMENT, REVIEW, AND REVISION PROCESS.** Also invaluable are staff members who can help translate between technical and educational experts. These translators help clarify what specific pieces of data mean and why they are important to users. For example, one administrator described the team member who “understood the end user, the practitioner side—and the tech side, the IT requirements and business rules.” The administrator added, “I was speaking one language and IT another, and apparently we weren’t saying much to each other. It was not a nuanced way to communicate about what the [LTS vision] meant.” The “translator” was able to articulate the team’s desired features for the LTS to the staffers and vendors who developed the algorithms.

**ONCE A TEAM IS IN PLACE, VISIT OTHER DISTRICTS TO GATHER IDEAS.** Several PPI districts recommended talking to or visiting other districts to gather a range of ideas for an LTS. Team members explained that their visits to other districts helped them see how others were using data. These visits triggered a storm of ideas. They helped teams expand their vision for an LTS, identify many functions and features to consider, identify partners and vendors who could help put their vision into operation, and gain a better understanding of what it takes to build an LTS:

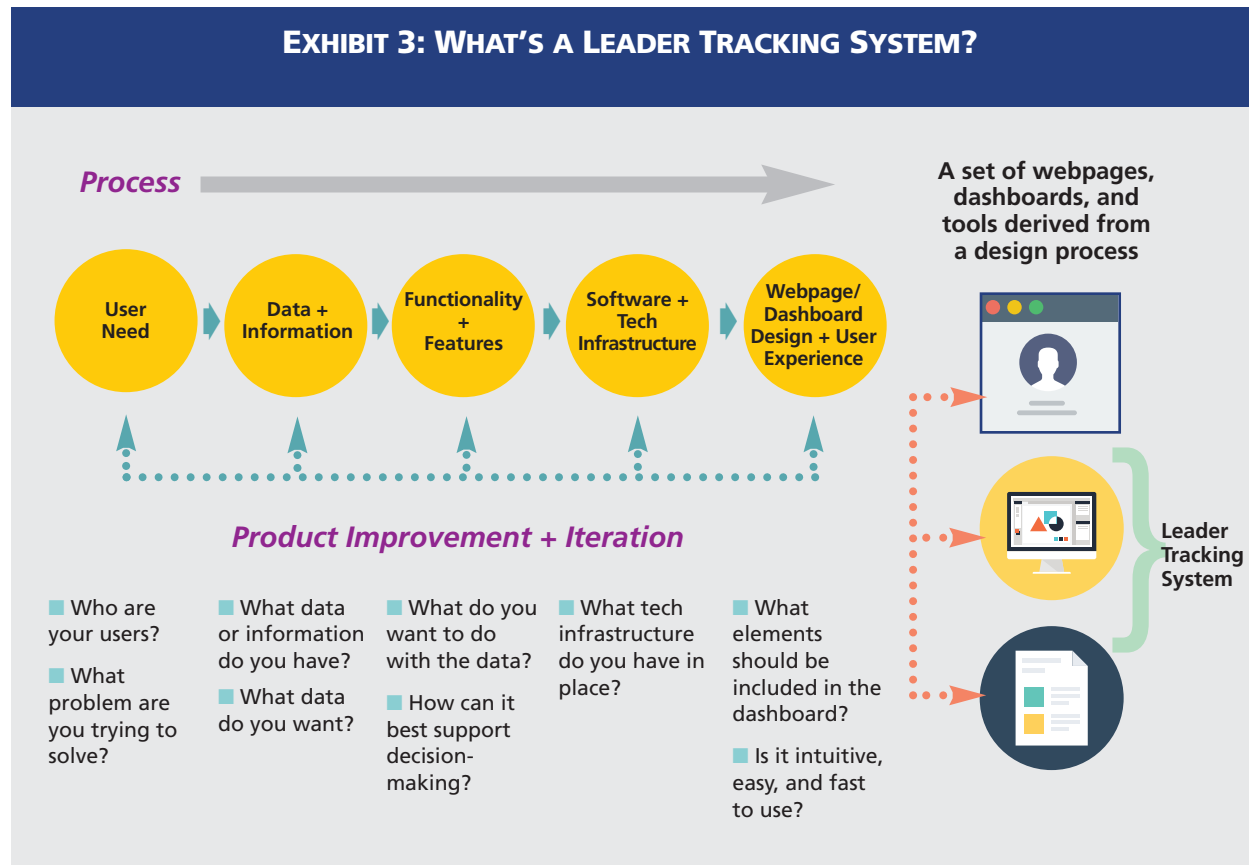
The first thing we did was go and observe [another district’s] LTS and talk to creators of their system. After that trip, we had an understanding of what [an LTS] is, and that it is really important. It seemed so vague a concept; I couldn’t envision what it would look like running. It was helpful to see how [that other district] was using it. We came to the conclusion that our data were not great; they were [housed] in a lot of different places and were not always reliable.

In sum, building a team with a dedicated leader, an inclusive process with core users, patient IT staff, and a team member able to translate between the practitioner and tech worlds will increase the team’s chances for a promising start. It is also useful to seek ideas from other districts that are harnessing data for use in their talent management systems.



## The Process of Building Each Tool

Administrators generally think of their LTS not as one grand system, but more as a set of helpful tools that serve specific user needs. Each tool emerges from the kind of design and development process outlined in Exhibit 3.



### User Need: Focus on a Need and Purpose

Like other tech products, an LTS is only useful if it meets the user's need. Although these six districts started their LTSes to meet the data needs of an external evaluation, they were motivated to keep building and refining these systems to serve local purposes. Multiple administrators stressed the importance of identifying a purpose early:

If I was a district and I was considering building a Leader Tracking System, I think the first thing I would be asking myself is, "What problem am I seeking to solve? What will this system do that other systems won't be able to do?"

Before tackling the technical aspects of an LTS design, a prior step is to pause, reflect, and understand the challenges leaders confront in the types of decisions they make. In identifying a tool or dashboard to create first, districts found it useful to focus on one stage in the principal lifecycle, such as preparation, hiring, or on-the-job support. For example, one district focused on principal evaluation systems first, as teacher and principal evaluations were being revamped and a digital system for capturing leader performance was needed. Another district wanted to capture the progress and performance of leaders in its preparation programs. Other districts wanted to focus on hiring by generating expanded lists of candidates, using data to determine fit with a specific school vacancy, and conducting side-by-side comparisons of finalists. As one district leader described:

The first question we asked was what did we want to track? We met with [principal supervisors] and asked what information is important to capture in a tool so that it will help them with hiring decisions. We wanted to improve our succession planning process. ...I focused on using the LTS as a hiring tool.

Once the team has focused on a stage in the pipeline to target for its first tool, team members find it helpful to build a road map with users, gaining an understanding of the timeline of activities involved, the decisions to be made, the data to be incorporated, and the teams to engage in prototyping and testing.

**MAKE SURE THE LTS WILL MAKE A DIFFERENCE.** Technology is more likely to be adopted if it provides value to users. LTS developers need to identify and address a unique challenge for core users, thereby helping ensure that the LTS is useful and attracts greater buy-in from other potential users. Several administrators said that questions such as the following were useful to consider as they moved from vision to development and pondered what features and functions to include in their first tool:

- What are the most common decisions that specific users make?
- What information requests do they make? What do others request of them?
- What data or information is hard to get?
- What data or information do they wish they had but cannot get?
- What systems do they currently use to obtain information?

Failing to focus on user need and user experience can be costly. For example, one PPI district built, then abandoned a performance evaluation platform that showed one or two data points per principal per year. A district administrator said: “We talked to at least half of [the intended users] and every one of them said, ‘I’m not going to use this tool. It’s only one point in time; I can generate my own report; I won’t use this.’” Wisely, based on this feedback, the district chose not to roll out this particular tool.

Similarly, an administrator in another district explained that potential users could already find the data elements in existing systems, “so it didn’t seem like we were solving a major issue. We were clearly solving some problems, but nothing that people didn’t already have work-arounds for.” Users ended up sticking to the processes with which they were familiar, and that particular LTS tool launched with a whimper instead of a roar.

## ***Developing the Data Infrastructure (The Data Phase)***

An LTS is only as powerful as the data it has at its core. While the PPI districts varied in their data infrastructures, districts with less advanced data systems used the data phase as an opportunity to have rich discussions on what information is important to capture and why. Common tasks associated with the data phase of the development process include the following:

1. Identifying the data to capture in the system
2. Converting currently available data from paper to digital, or from pdf (e.g., resumes) or “flat files” (i.e., files with no built-in relational structure) to a common report or data structure
3. Identifying what other data should be collected (e.g., journal entries documenting the coaching and mentoring provided to novice principals)
4. Combining data from multiple systems (e.g., educational background, school performance, and evaluation and support data). This step may require building a big data warehouse or data operational store that hosts all the district data in one place; building code so that data from different sources flow into the LTS; or manually inputting or copying data into the LTS
5. Validating the data for accuracy and ensuring that data updated in other systems get carried over to the LTS



### ***Expect Slow Progress, in Stages***

“Dream big, but work in stages,” says a director of leader development.

Each tool typically goes through multiple development stages: a data phase, a dashboard design/prototype phase, and a coding phase, which may entail working with external vendors or consultants. Each of these phases takes time although expanding from a strong technology infrastructure base is much easier than building a dream system from scratch. As one district leader noted. “You don’t know how much time the planning phase really takes. It’s short-sighted [to think] that they can build anything in less than a year of planning. Anything less is not enough.”

Building a data warehouse takes time. For some districts, the needed data existed in spreadsheets or had not been systematically collected. The data phase can be time-consuming and frustrating for a development team. As one team member noted, there was some frustration “over flat files and having to hand-enter things. [The process] made us change how we collected data because it was not helpful to the system. Some of our paper and pencil data collection was not helpful to where we wanted to be.” The data phase could take longer than building a dashboard, as an administrator explained:

I think that a lot of [the IT specialist’s] time was spent understanding the data requirements. What are the data elements, the originating system, what is the development that is needed? It was tedious and time consuming and involved technology and [practitioners] sitting down and looking at [specific pieces of data]. One side may say we don’t understand the business purpose of that [data element]: what does “preservice training” mean? It took a lot of time to identify the requirements and understand how data is collected and stored. Once you get all that, putting the dashboard together was not so complicated.

Based on this kind of experience, PPI district administrators suggest that other districts start with the data that they already have—which will probably pose enough challenges—rather than expect to gather and use new data right away.

There are innumerable choices to make about which data elements to include in an LTS. Educators and IT specialists must work together to understand the feasibility and implications of their choices. Because the LTS bridges data from different systems, district leaders noted the importance of developing uniform definitions of key terms and of coding consistently. Even seemingly straightforward elements like classifying what’s a school, a principal, a teacher leader, or a master’s degree may have different meanings depending on context and who uploads that information (i.e., the job applicant or the district). Because inconsistent definitions and labeling can make data worthless to users, development teams should pay particular attention to data validation and consistency. It takes time to develop and impose uniform definitions, to validate data, and to ensure that existing tech systems can talk to one another, but these steps prevent major headaches in the future. In fact, PPI districts that rolled out their first functioning tool in the third year of LTS development seemed to end up happier than those that rushed the earlier steps.

Priorities for data to include in an LTS reflect districts’ priorities for data use, as described in the previous chapter. Across the PPI districts, the following categories of data elements were commonly included in an LTS (Exhibit 4):

- Potential leaders’ experience and readiness to lead
- School and community data
- On-the-job evaluation and development of each individual
- Data relevant to vacancy forecasting, such as sitting principals’ age and pension eligibility

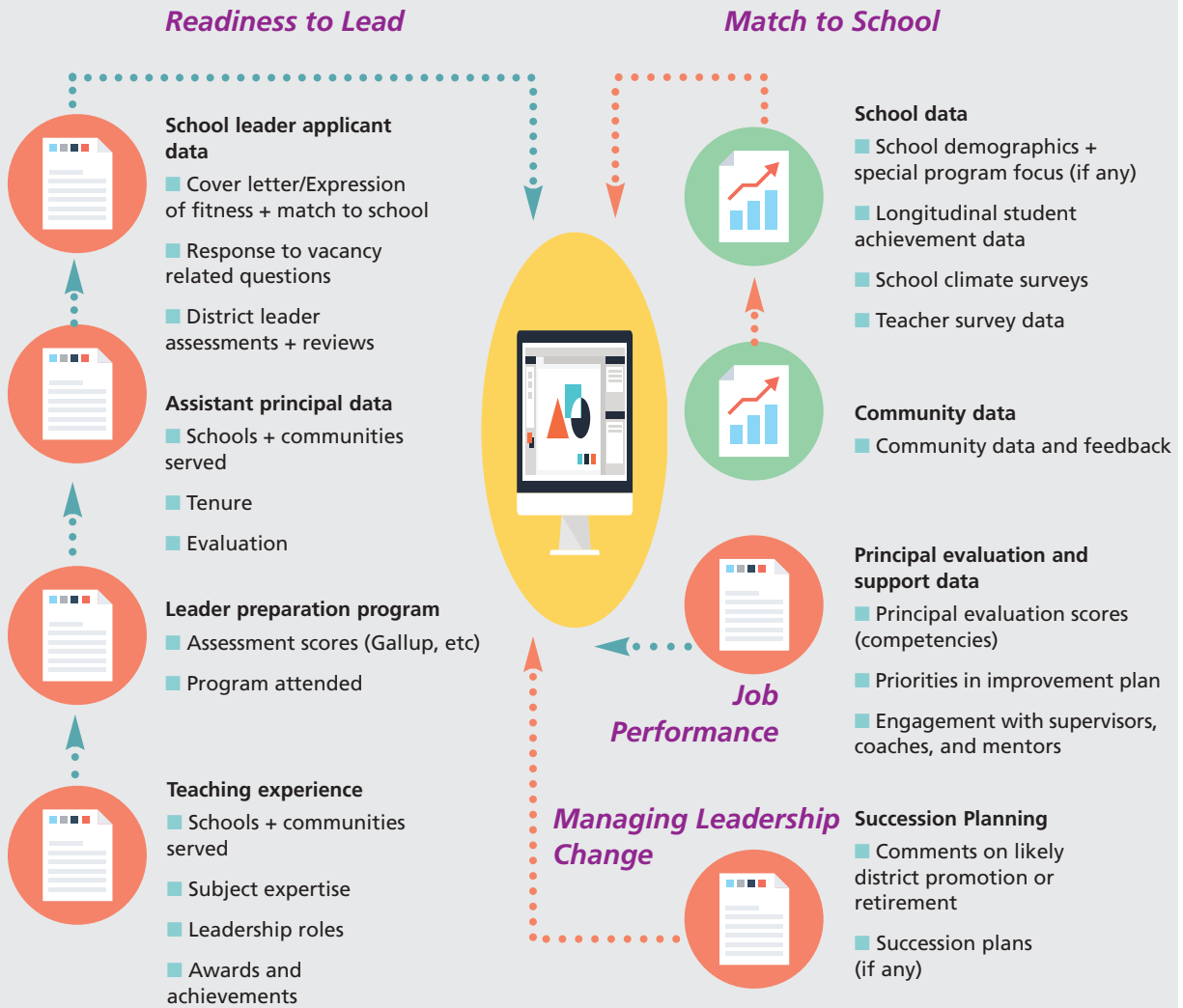
**READINESS TO LEAD.** A great deal of LTS data is related to a potential leader's preparation, experience, and achievements. Districts often track degrees earned, university programs attended, certifications or specializations attained, subjects taught, other school or district roles taken, and awards conferred. Assistant principal data such as schools served, length of experience, and evaluation scores are also often catalogued. The record of schools served includes data on school demographics, performance, and any special focus (such as a magnet program). Districts that have their own preparation programs have also incorporated assessment data on enrollees from sources such as StrengthsFinder and Gallup Principal Insight, performance on specific learning modules (instruction, data analysis, culture, community engagement, etc.), and comments about their leadership residency. Once a leader has applied for principalships the LTS may also capture the candidate's cover letter and expression of fitness and match to the school, references, and, in some districts, comments on readiness to lead from principal supervisors or other district leaders.

**SCHOOL AND COMMUNITY.** To improve the match between principals and schools, a district may assemble school-level data. Such data include student demographic and achievement data, information about specialized school programming (e.g., International Baccalaureate, STEM, arts, language immersion). In addition, data on school climate, teacher perceptions, and community feedback from a variety of sources could appear in the LTS. Some districts surveyed school staff and community members, asking them to identify strengths and challenges in the school and their desired characteristics in a school leader.

**ON-THE-JOB EVALUATION AND SUPPORT.** The LTS also stores information about principal performance. Districts capture notes from school visits, observations, and performance ratings on specific competencies from principal supervisors. In some districts, principals receive a summative score calculated from student performance, teacher ratings, and other measures. In others, principals are rated based on the priorities and goals they outlined in their school improvement plan. Some of the PPI districts also document the support provided by principal supervisors, mentors, or coaches.

**SUCCESSION PLANNING.** The PPI districts also forecast the number of leader vacancies, by school level, likely to occur in coming years. These forecasts inform decisions about how many candidates to bring into their leader preparation programs. Patterns in the types of schools with projected vacancies may also inform targeted recruitment by school level, specialty programming, or school demographics.

## EXHIBIT 4: LEADER TRACKING SYSTEM DATA SOURCES



## Functionality and Features

Districts recommend starting with core users, then expanding. Along with the data phase, teams typically discuss the desired features and algorithms they want in the dashboards that make up their LTS. The PPI districts' development teams recommend starting with those features that appeal to core users, then expanding to others.

One core user is the superintendent. If the LTS initially offers the superintendent a good value proposition, his or her early buy-in brings others on board. Teams therefore build LTS reports and dashboards with the superintendent in mind. An example is dashboards that provide macro or district-wide statistics. Basic descriptive data can help a superintendent more confidently inform the board and the public. For example, the LTS gave one superintendent the first definitive number of schools in the district, correcting inconsistencies that had existed across district offices. In other districts, superintendents' desire for a clearer comparison of finalists for principalships has helped propel development of profiles for comparison of prospective leaders on common criteria at the hiring and placement stage—what one district calls the “baseball card.”

Directors of leader development also commented that starting with tools to inform their own office's work was—or would have been—a good choice. A leader development office spans different phases of the principal pipeline and has responsibilities beyond matching and hiring candidates. The office may identify promising leaders, develop curricula, conduct assessments and performance evaluations, and organize professional development for school leaders. A leader development office is likely to welcome LTS tools that can boost its efficiency. It is also a natural locus for testing new tools and determining what other tools to develop. Finally, wider circles of users (principal supervisors, principals) can receive tools tailored to their purposes, accompanied by just-in-time training and hands-on assistance.



### Individual Privacy Is a Concern


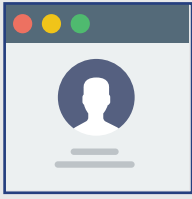








Before teams build prototypes and grant access to the LTS to an expanding set of users, privacy issues must be addressed. District administrators caution that LTS teams should be knowledgeable about regulations pertaining to personally identifiable data. In addition, development teams found that members of each new user group often react with anxiety when they see their own data. Principal supervisors in one district had this reaction. In another district, a principal who had seen the data described the worry that particular data elements would be taken out of context, particularly evaluation scores.

Districts have formal rules about who can see what data. In one district, individual principal evaluations are not available beyond the leader and the direct supervisor while in another, access is only granted to the top leaders in the district. Labor regulations drove access decisions in another district, where only a small group of “confidential employees” had access to all data in the system. In that same district, regulations also barred the sharing of personal data within the same union; since principals and APs belong to the same union, principals cannot be allowed to see AP evaluation data. Districts must take these privacy concerns seriously as they roll out LTS tools to a growing number of users.

Once foundational data elements are in place and data privacy issues have been resolved, algorithms and dashboards can be created.

Exhibit 5 lists some of the common features incorporated by PPI districts in their LTSes. See Chapter 2 for an extended description of LTS usage.

### EXHIBIT 5: COMMON FUNCTIONS AND FEATURES INCLUDED IN AN LTS

 <b>Track vacancies + talent rosters</b>	 <b>Review candidate profiles</b>	 <b>Search</b>	 <b>Filter quickly</b>	 <b>Analyze student, teacher + community data</b>
 <b>Compare on common criteria</b>	 <b>Match to the right school</b>	 <b>Measure + evaluate performance</b>	 <b>Support + track improvement</b>	 <b>Automate time-intensive reports</b>



## ***Software and Tech Infrastructure***

Districts may select software earlier or later, depending on their existing technology infrastructure. Some districts select a database, HR, or business enterprise software package after identifying user needs and desired functions. Others may decide that their current data infrastructure will meet their LTS needs and therefore choose to adapt existing programs to build tools and dashboards. Business enterprise packages often come with implementation support, in which consultants help adapt the technology system based on the client's need.

In selecting the right technology package, PPI districts recommend steering a middle ground on customization. On one hand, one district recommends avoiding vendors that keep data in the cloud and produce a set of canned reports. The built-in reports and dashboards are unlikely to meet a district's specific information needs on their own. On the other hand, another district recommends resisting the urge to code from scratch and to hire vendors to build a highly customized LTS:

Where we've gotten ourselves into trouble... is we've tried to create and customize things to fit that perfect solution and it's just not possible.... By the time we think we have it, technology has evolved and our needs have changed. So, we're really trying to figure out what are those bare minimums, the critical few [features] that are going to have the highest leverage. How do we ensure that the tool can do that so that we're not continually buying tools or trying to retrofit or customize something.

The administrator added that it may be easier to use an existing data tool and adapt it, which reduces the amount of technology and data integration required and the overall complexity of the development process. If a district is interested in upgrading its data systems, the administrator recommends looking at enterprise models that can serve multiple HR and talent management functions (including teacher hiring), while allowing for some level of customization.

## ***Dashboard Design and User Experience***

Once the development team has the underlying data infrastructure in place and has brainstormed a set of tools to address specific user needs, a next step is to build mockups of dashboards before technical production or coding. Mockups for users allow many rounds of revising function and appearance before production starts.

For information users, districts noted that LTS tools should not only address a real need but also load quickly, provide accurate and up-to-date information, and be intuitive to use. Slow loading or visible errors discourage users. Loading time was a fatal flaw in one complex dashboard that was developed but never used: it drew on multiple sources of data and included numerous filters that weighed down the system, leading to five-minute download times for generating one report for a single applicant:

The biggest reason we never really unveiled the initial performance evaluation dashboard we created is because every click you made would take five minutes to generate the refresh. The people we're dealing with—principals and principal supervisors—don't have time to sit there and wait for five minutes. They've already moved on; somebody's already come into their office; they've already gotten a phone call.

With respect to accuracy, an LTS that centers on the achievements of individual leaders, incorporates performance evaluations, includes high-stakes student test results, and is used during important decision points must meet a high standard. Because errors bring high risks, validation procedures must be thorough and timely. Resolving sources of error is essential for system credibility. Consequently, district leaders recommend that the development team not roll out the LTS to an expanded set of users until it contains accurate data, frequently updated.

System design can also include some simplification of the process by which individual employees and applicants enter data that will move into the LTS. However, there may be a tradeoff between simplicity for the user and smooth functioning of the underlying system. A highly customized system is easiest for users but brings high costs for both development and maintenance. An administrator gave an example of this kind of trade-off, with a candid assessment of the risks in customization:

As you set up a lot of different systems, users have to go to different points of entry, as well. We're trying to minimize that. . . . It's like, how do we want to design the user experience to look? Do we want them to go to two different systems to apply [to two different positions]? [But, for a more seamless user experience,] do we want to build a large number of background processes, which are very expensive and difficult to manage and quite frankly break when you upgrade or do something?

The process of user testing also reveals many simple ways to make dashboards more user-friendly. Because some users like to see numbers in tables and others prefer pie charts, one district shows data in both formats. As more tools and displays are available, users need a way to navigate easily through the screens.

In all these ways, paying attention to user experience helps ensure greater usage and perceived value of the LTS.



## Product Improvement and Iteration Are Essential

The iterative improvement of an LTS never ends. District administrators have learned to **keep probing and testing**. They caution that rounds of prototyping and testing last longer than one would expect. The process includes enlisting a broad, dedicated group of testers to try out the tools and provide honest reactions on features and overall experience. When test users report a glitch, developers fix the code and retest prototypes. As districts build additional tools and dashboards for their LTS, they continue to follow the same steps each time in system design and improvement.

## Summary

LTS tools and dashboards emerge in stages, after many early steps that lay the groundwork for useful, high-quality information. Having gone through the process and had both successes and frustrations, the PPI districts recommend something like the following sequence:

- Form a team that has a single leader and includes core information users. Make sure the team has ways to help IT staff listen to educators and vice versa. Early in the team's work, learning from other districts will spark new ideas and deepen understanding of the job ahead.
- With a core team in place, focus on a specific purpose that the LTS will serve.
- Develop the data infrastructure through finding available data, converting it to workable formats, pulling together data that live in different systems, and validating the data—all before producing dashboards or other applications.
- Start by focusing on core users before trying to serve a wide range of users.
- Choose the right level of customization for the software, based on an assessment of existing systems.
- Begin to design the user experience. Test it. Test it again, and again.



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