

Managing for Results in America's Great City Schools

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America's Great City Schools are under enormous pressure to improve their academic performance, strengthen their leadership and management, and regain the public's confidence—maybe under more pressure than any institution or organization, public or private, in the nation.

We are being told to produce results or get out of the way. We are being told to improve or see the public go somewhere else. We are being told to be accountable for what we do or let someone else do it. Some of the criticism is justified. Some of it is not. Either way, we are being challenged in the court of public opinion and by history to improve in ways that we have never done before.

Many institutions might have folded under the pressure or sat passively by waiting for someone to save them. But urban school systems across the country are doing what a lot of people wouldn't have expected. They are rising to the occasion, working to reshape their own destinies and striving to produce better results. This effort in urban education has been particularly evident on the academic side of the house, where big city schools have backed the development of national standards, originated urban school participation in the National Assessment of Education Progress (NAEP), published their annual state test scores, launched innovative research on effective system reforms and provided hard-hitting technical assistance teams to help urban school districts improve student achievement.

These and other efforts are paying dividends. Between 2003 and 2007, the number of large central city students scoring at or above proficiency on NAEP has jumped 40 percent in math and 30 percent in reading—rates of gain that far outpace improvements nationwide.

While much remains to be done to improve student achievement in urban schools, urban education leaders finally have trend lines moving in the right direction. Now they are turning their attention to strengthening management, operations, and resource use. This chapter describes

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a broad national effort by America's Great City Schools to improve efficiencies, strengthen operations, save money, and deploy more scarce resources into our classrooms.

This effort could not have come at a more critical time. The current economic climate has forced many urban school systems to close gaping budget holes. New York City has faced a revenue loss of more than \$800 million, Los Angeles has had to narrow a deficit of nearly \$600 million and Chicago has had to close a deficit of almost \$400 million. Even with federal stimulus dollars, urban school systems have encountered a sea of red ink that is forcing them to think more urgently and strategically about how they deploy their resources and spend their monies.

The Council of the Great City Schools and its member big city school districts are developing a unique new system by which urban school districts can make this exercise more data-driven and effective. The system involves a large series of key performance indicators that allow an urban school system to compare itself operationally and financially with other big city schools—in much the way they are now able to do academically—and save millions of dollars by improving their relative standing among their peers.

Purposes and Design of the Project

The Council of the Great City Schools, the nation's primary coalition of large city public school districts, launched an initiative to design and build what it called its "Performance Measurement and Benchmarking Project." The project was based, in part, on lessons that the organization had learned in conducting scores of technical assistance projects for urban school districts to help them improve business and financial operations and, in part, on the assumption that greater effectiveness and efficiency would depend on the ability of these districts to better (1) measure their performance, (2) compare themselves to each other and to other sectors, (3) identify

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effective management and operational practices that produce top-of-the-line results, and (4) make better decisions about where to put their human and financial capital. The organization also assumed that better data were the key to making this happen.

When the Council looked around for prototypes by which to start, however, it was surprised to find almost nothing either in education or in municipal government except for limited datasets in niche organizations that specialized in one business operation or another. The Council also knew, from its technical assistance work, that very few cities had benchmarks or targets by which they could gauge the performance of their finances and non-instructional operations. And there was nothing in place that would allow the cities to compare themselves operationally or financially against one another.

If a school district was interested in performance metrics it would have to contract with a private firm that could reanalyze that system's data or create dashboards or indicators for that system, but the outcomes were not uniform from one city or another and often reflected what the companies could do rather than what was needed by the districts. The result was that school systems have had little way to compare themselves with others or to know whether their operations were efficient and cost-effective.

So in 2004, at the annual meetings of its chief operating officers (COOs) and chief financial officers (CFOs), the Council of the Great City Schools began to develop a series of Key Performance Indicators (KPI). Council staff members were the first to float the idea based on work that the Los Angeles Unified School District was doing at the time, but the CFOs and COOs quickly agreed that their operations could be vastly improved with better and more comparable data.

After much discussion, the two groups agreed to design and build a set of statistical indicators by which they could accomplish the following:

- Establish standardized performance measures for critical k-12 operational and financial functions in urban schools.
- Compare performance on these operational and financial functions from district to district.
- Document effective management practices used by top-performing urban school districts.
- Establish a clearinghouse of best practices so urban school districts could learn from one another.
- Improve decision making by urban schools by equipping them with better data on which to base policies.

An initial project framework was designed around (1) identifying initial indicators, (2) developing a common methodology for measuring the indicators, (3) implementing a measurement strategy, (4) gathering and analyzing comparative data and (5) documenting effective management practices. The initiative started with prototypes on a preliminary set of business-service KPIs. By the end of 2006 when the preliminary measures and prototypes were first laid out, urban superintendents and school board members greeted them with enormous enthusiasm because they held the promise of better decision making and less politicking.

The response prompted the Council late in 2006 to name a senior project team of COOs and CFOs to take the work forward. The COOs agreed to focus first on school business services, including procurement, transportation, food services, safety and security, and maintenance and operations. The CFOs agreed to focus initially on budgeting, financial management, general

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accounting and compensation. Technical teams were selected from these operating groups, and they began brainstorming potential indicators. The teams reviewed how each variable “added value” to the efficiency and effectiveness of the organization and developed a master list of indicators of the most important variables. The teams discussed potential measures of performance relating to each indicator and began developing methodologies for defining, quantifying and aggregating each indicator.

Then, draft surveys were created to gather preliminary information on the draft indicators and to pilot test the capacity of city school districts to report the necessary data. Results from these surveys were analyzed to determine the feasibility, range, and values of potential indicators using metric-definition worksheets based on Six Sigma processes. Definitions, data sources, and equations were prepared on each indicator. Measures were fine-tuned, and the teams decided which items to modify or to drop. At that point, every numerator and denominator from the Six Sigma worksheets was used as the basis for every question on the surveys.

Districts were asked to provide raw data and not to perform their own calculations. This was done to ensure quality control in the calculation process. This approach allowed the teams to analyze the same data points across surveys and to calculate uniform performance rates. The process also helped ensure the uniformity, reliability and validity of results across cities.

An initial report on business services was presented to the Council in March 2007. The technical teams reconvened at the April 2007 meeting of COOs to refine the measures further and to add others. The teams of COOs and CFOs subsequently developed a second survey that they used to gather and analyze data on new—and newly refined—measures. The results of this second round of surveying were presented to the Council in October 2007 and were well-received by superintendents and school board members.

In the meantime, two other Council groups began work in their areas of expertise: the human resources officers in February 2007 and the chief information officers (CIOs) in June 2007. The human resource officers chose to focus on human resource operations, recruiting, and staffing areas; the CIOs chose network operations, applications, and help desk support. And the CFOs met again in the fall of 2007 to define their original measures further and to add new ones, including grants management and risk management. Technical teams were chosen, measures were identified and surveys were developed to gather and analyze data. Results were reported to the broader organization at the 2008 annual meeting.

This 2008 report was followed by an intensive effort in 2009 to expand data collection on the full range of indicators, increase the number of participating districts and automate the results. This expansion was assisted by support from the Hewlett Foundation, the Microsoft Corporation and TransACT Communications—all of whom saw enormous potential in the initial work. Up to that point, major foundations and the U.S. Department of Education had refused to support the effort or had expressed no interest. The 2009 report includes data from 60 cities that returned 66 percent of 1,582 surveys on 227 indicators in four major operational functions. (See Figure 1.) The full list of 227 indicators, moreover, was winnowed down to 77 “power indicators.”

Figure 1: Functions and Numbers of Indicators for Each Function

Function	Sub-function	Number of Indicators	Number of Power Indicators*
Business Operations		97	32
	Food Services	18	4

	Maintenance and Operations	10	5
	Procurement/Supply Chain	32	10
	Safety and Security	16	9
	Transportation	21	4
Finance		57	19
	Accounts Payable	13	6
	Cash Management	7	
	Compensation	16	4
	Financial Management	13	5
	Grants Management	6	3
	Risk Management	2	1
Human Resources		46	16
	Employee Relations and Services	10	4
	Human Resources Development	12	
	Operations and School Support	12	6
	Recruitment and Staffing	12	6
Information Technology		27	10
	Applications	5	1
	General Technology Information	4	3

	Help Desk	7	2
	Network Operations	9	3
	Information Technology Security	2	1
Total		227	77

**Note: Power Indicators were those measures that school boards, superintendents, and other policy makers could use to broadly assess the performance of their districts in non-instructional areas and establish priorities and policies.*

The reports that are produced from these surveys include a brief description of each indicator, a short discussion of why the measure is important and a brief explanation of how each is calculated. The data also include brief descriptions of factors that influence the variables, response rates and ranges of results, and an explanation for why some variables are unusually high or low in some cities. These explanations and mitigating factors are important because unfavorable results do not always indicate inefficiency. For instance, it is possible for a district to have higher per pupil transportation costs due not to inefficiency but to large numbers of one-way streets, bad weather, or extensive square mileage.

Indicators were also broken into three categories: Power Indicators, the Essential Few and Performance Measures. Power Indicators were those measures that school boards, superintendents, and other policy makers could use to assess broadly the performance of their districts in non-instructional areas and establish priorities and policies. An example in the food service area would include overall meal participation rates.

The Essential Few (which are yet to be fully delineated) involved indicators that senior school managers could use in reviewing district performance, creating project plans and setting management directions. Examples in the same area would include elementary and secondary breakfasts and lunches and program fund balances. And Performance Measures were indicators

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that technical staff could use to assess their respective department operations and to implement and execute priorities and policies. Examples in food service might include point-of-sale sites, vacant positions, and indirect costs.

Initial Results

The results from the first three waves of data collection are proving to be both interesting and promising. Data on business services (transportation, procurement, maintenance and operations, food service, and security), finance and budget, human resources, and information technology are good examples. Data in the most recent report (2009) are presented on fiscal year 2008.

Business Services

The project collected information on some 21 transportation indicators, including (1) the total transportation cost per student, (2) the number of district and contracted buses in use on any given day, (3) the percentage of students enrolled receiving yellow-bus transportation, (4) the percentage of general-fund expenditures devoted to transportation, (5) the age of the bus fleet, (6) average daily ride-time per student, (7) on-time arrivals, (8) cost per mile and deadhead miles, (9) the number of mechanics per bus, (10) average miles between accidents, (11) the number of runs per bus and (12) the average number of students per bus.

The number of buses in daily operation, for instance, is an important indicator of efficiency because it tells a school district something about whether it has a fleet that is too large for its needs or has a maintenance program that is not keeping pace with repairs. In this case, the results ranged from a high of 94.1 percent of buses in operation on the average day to a low of 69.0 percent. The median among the Great City Schools was 84.9 percent (Figure 2). The

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numbers can be affected by enrollment projections, changes in transportation-eligibility policies, the age of the fleet and other factors.

Figure 2: Power Indicators for Transportation with High, Low and Median Values

Indicators	Low	Median	High
Annual cost of transportation per student	\$35	\$839	\$5,056
Percentage of all district and contracted buses used daily	69.0%	84.9%	94.1%
Percentage of students in district receiving home-to-school yellow bus service	8.8%	44.9%	99.9%
Percentage of general fund expenditures devoted to transportation	1.2%	4.9%	16.7%

Theoretically, if a district had 100 buses and only 69 were in operation on any given day, it could sell 16 seven-year old vehicles (in order to align with the median number of buses in use in the average district) at their expected rate of depreciation and save \$320,000—enough to hire five extra teachers. Other options, of course, might be to lease the buses to other organizations for special events; increase the pool of eligible riders, thereby accessing a higher state reimbursement rate or sit on the leases until the buses were fully depreciated. A district might not know that its fleet was in excess, however, unless it was able to compare itself against other cities (Figure 3).

Likewise, the project collected information on 32 procurement indicators, including the percentage of total purchases that were competitively bid, the costs per purchase order, total P-

card (i.e., purchase cards that are similar to personal debit cards) transactions, warehouse inventory value, and the like.

The number of P-card transactions is an important procurement indicator because use of P-cards significantly improves cycle times for schools acquiring low-cost items, decreases procurement transaction costs, reduces the workload of accounts-payable staff and provides more flexibility for school staff while central-office procurement staff members focus on more complex and strategic purchases (Figure 4).

P-card transactions can be affected by such factors as district policies on the possession of such cards, use of technology, internal controls and accounts payable policies. The data from this project indicated that 46.5 percent of all procurement transactions were made with P-cards. Usage ranged from a high of 94.4 percent to a low of 0.0 percent. P-cards, moreover, save money. Suppose a district that did not use P-cards completed 1,000 transactions at an average purchase-order cost of \$88.95 per transaction. By moving 46.5 percent of the transactions to P-cards at \$19.49 per transaction, the district could save \$79,487.

A school district with approximately 36,000 students, 5,500 full-time employees and an annual budget of \$387 million could easily have between 3,000 and 4,000 purchase orders per year, so the potential annual savings from moving to P-cards could run as high as \$318,000 per year for a district this size and much more in a larger district. A district with about 250,000 students could easily have 45,000 purchase orders a year to outside vendors, not including internal warehouse purchase orders and P-card transactions.

Figure 3: Daily Buses as Percent of Total Buses

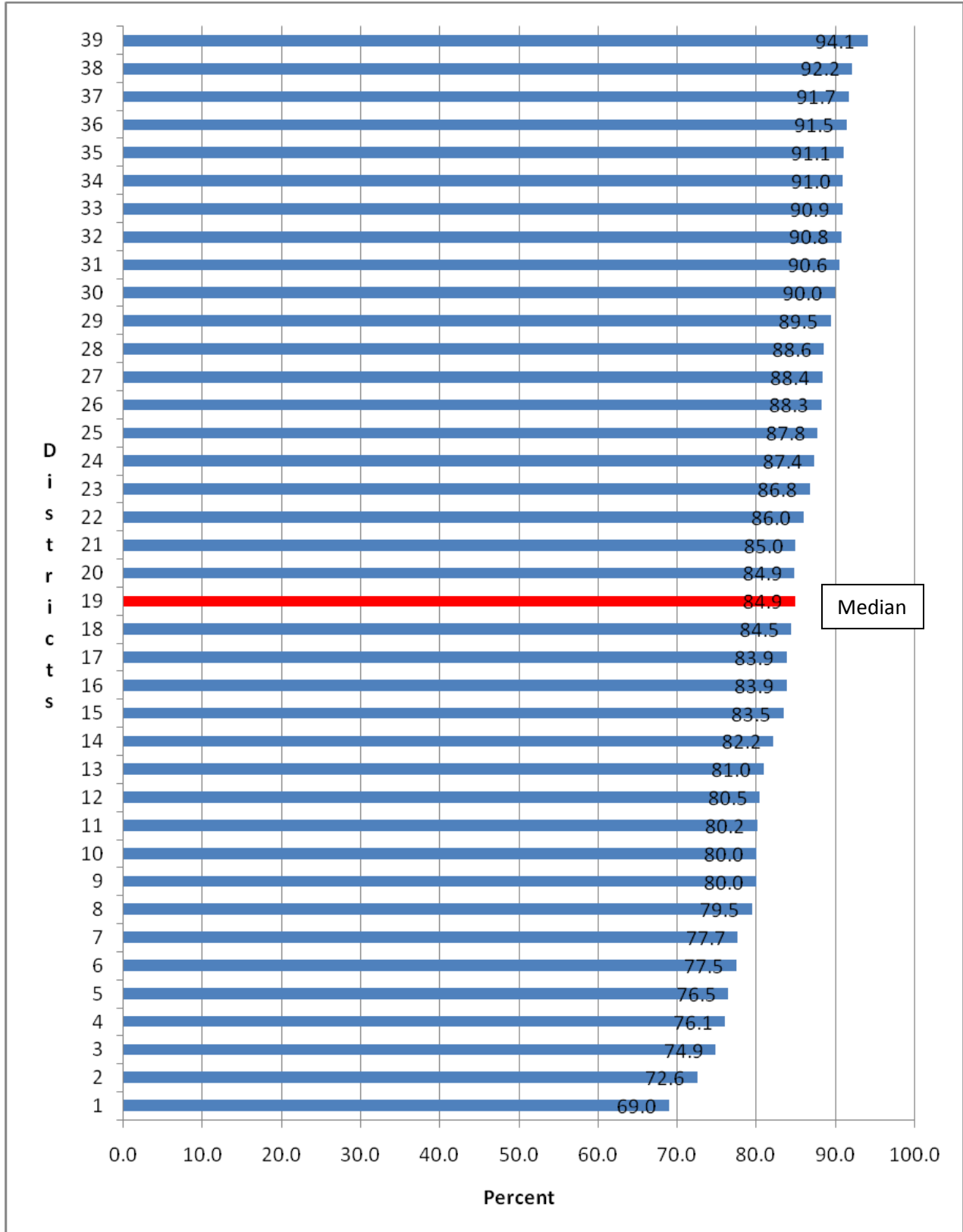


Figure 4: Power Indicators for Procurement with High, Low and Median Values

Indicators	Low	Median	High
Percentage of procurement staff professionally certified	0.0%	17.8%	100.0%
Total purchase dollars above the quote limit that were competitive <i>divided by</i> total purchase dollars above the single quote limit.	19.0%	85.5%	100.0%
Cost per purchase order	\$4.29	\$51.50	\$195.88
Average procurement administrative lead-time for bid requirements (in days)	8	45	180
Average procurement administrative lead-time for RFP requirements (in days)	3	56	270
Average procurement administrative lead-time for informal requirements (in days)	2	10	78
Total number of P-Card transactions as a percentage of all procurement transactions	0.0%	46.5%	94.4%
Total procurement savings as percentage of total procurement dollars spent	0.3%	1.8%	5.7%
Total warehouse sales as a percentage of total average inventory value—stock turn	0.1%	3.2%	13.7%
Percentage of all procurement dollars spent on strategically sourced goods and services	0.0%	5.4%	83.6%

In the area of maintenance and operations, ten indicators were created, including custodial cost per square foot, custodial workload, percentage of general fund expenditures devoted to maintenance and operations, maintenance costs per square foot, work-order completion time and utility usage per square foot.

One of these maintenance and operations indicators assesses custodial workload in square footage. The measure is important because it allows districts to evaluate the relative efficiency of custodial employees. The values ranged from a high of 76,995 square feet to a low of 14,792 square feet. The median was 25,536 square feet (Figure 5).

A low value on this indicator could indicate that custodians have other assigned duties or that there are opportunities for efficiencies. A high number could indicate that the custodial program is well managed or that some housekeeping responsibilities are assigned to other employees or that the facilities are not well-kept. A district with 10,000,000 square feet and an assigned custodial workload of 14,792 square feet per custodian could save approximately \$5.0 million by increasing the workload to the median of 25,536 square feet.

Again, a district with about 35 elementary schools, 9 middle schools and 5 high schools serving 36,000 students could easily have 5.5 million square feet of floor space, including mobile units. Larger districts could have at least ten times that much floor space with the potential of savings in excess of \$50 million.

Figure 5: Power Indicators for Maintenance and Operations with High, Low and Median Values

Maintenance and Operations Indicators	Low	Median	High
Custodial costs per square foot	\$0.01	\$1.57	\$4.46
Custodial workload or district square footage <i>divided by</i> number of custodians	14,792	25,536	803,437
Maintenance spending as a percentage of general fund spending	0.9%	9.7%	57.9%
Maintenance cost per square foot	\$0.61	\$1.71	\$10.02
Work-order completion time (in days)	1	17	131

In the area of food services, the project developed 18 indicators that included such information as free and reduced price eligibility and participation rates, total costs as a percentage of revenue, food costs, labor costs, fund balance, point-of-sale sites and compliance with federal nutritional standards.

One of the measures—food costs per total nutritional revenue—is important because food costs are the second largest expenditures in food service programs after labor but are more controllable.

The results of the data collection on food costs showed that districts devoted a high of 60.9 percent of food service revenue to food and a low of 24.1 percent. The median was 36.3 percent. The values can fluctuate with USDA menu requirements, purchasing practices, use of commodities and other factors. One district in the survey allocated 52.1 percent of its nutritional budget to food costs. If it were able to move to the 36.3 percent median—by more careful menu planning, more competitive bidding and commodities use and more consistent and standardized production practices—it could save \$3.9 million annually (Figure 6).

Figure 6: Power Indicators for Food Services with High, Low and Median Values

Indicators	Low	Median	High
Total direct cost plus total indirect costs as a percentage of total revenue	47.3%	101.5%	126.6%
Fund balance as a percentage of total revenue	-18.7%	2.8%	41.7%
Breakfast participation rate	18.6%	31.2%	76.1%
Lunch participation rate	33.8%	63.5%	81.7%

Finally, the project has developed a series of safety and security indicators to measure such variables as the presence of safety and security plans, annual training for security staff members, requirements for staff and visitors to wear identification badges in schools, general fund expenditures devoted to safety and security, weapons incidents per 1,000 students and the like. Specific data in this area are included in the reports prepared by the Council but are not presented here because they have less to do with cost savings as most other variables presented here do.

Finance and Budget

Some 57 indicators were developed in the area of finance, including 13 in accounts payable. These indicators encompassed such measures as invoice costs, number of days to process vendor payments, the number of invoices processed per person per month, voided checks, automation, positive payrolls and invoice payment methods.

One finance measure involved the average cost of processing invoices. The Institute of Management indicates that this measure is the second most commonly used metric in benchmarking accounts-payable operations in the private sector.

The results of the KPI data collection effort indicated that districts ranged from a high of \$65.39 per invoice to a low of \$1.70. The median was \$5.19. The values are sometimes affected by levels of automation, the number of staff in the accounts-payable department, organizational structure, and district policies. A district with an average cost per invoice of \$18.70 could save \$136,000 for every 10,000 invoices processed at the median rate of \$5.19 per invoice. Likewise, a district that increased the total number of invoices processed per person per month from 210.7 to the median of 711.7 could generate annual savings of \$245,000 (Figure 7).

A district with 36,000 students referred to previously could easily have 11,500 to 15,000 invoices per year. Larger districts will have many more. A district with about 250,000 students could easily have 315,000 invoices a year.

The project, moreover, collected a large amount of budget data. One of the most important indicators involves fund balance. This assesses the fiscal health of a school district—and other organizations—by examining the organization's ability to meet unexpected demands. A higher percentage often means greater fiscal health, while a low value signals risk. The Government Finance Officers' Association (GFOA) typically recommends that large government entities maintain unreserved fund balances in their general funds of between 5 and 15 percent or between one and two months of general operating expenses. The districts on which data were collected ranged from a high of 35.5 percent to a low of -10.6 percent. The median was 8.0 percent—well within the recommended levels. These values can depend on such factors as district policies, state or municipal requirements, spending volatility and revenue variances.

One school district in the survey had a general operating fund balance of 9.1 percent. If it reduced that balance to the median of 8.0 percent, it could redirect some \$6.8 million into the instructional budget. In another case, a district reported a fund balance of 35.5 percent. By reducing that balance to the median, the district could redirect some \$79.2 million into instruction.

Figure 7: Power Indicators for Finance and Budget with High, Low and Median Values

Indicators	Low	Median	High
Finance—Accounts Payable			
Cost per invoice	\$1.70	\$5.19	\$65.39
Number on non-PO invoices processed per FTE per month	19.4	428.4	1,960.4
Number of days to process vendor payments	0	15	80
Number of PO invoices processed per FTE per month	11.9	366.9	1,961.1
Total number of invoices processed per FTE per month	61.2	711.7	2,992.6
Percentage of total non-salary checks voided or reversed	0.0%	1.0%	5.2%
Finance—Cash Management			
Presence of a districtwide investment policy		83.7%	
District assesses return on investment against external benchmarks		70.8%	
Finance—Compensation			
Cost per pay check	\$0.47	\$7.18	\$236.38
Percentage of all payroll checks produced off-cycle	0.1%	2.8%	50.0%

Percentage of all W2s that have to be corrected annually	0.0%	0.1%	7.2%
Percentage of total checks made by direct deposit	0.0%	85.7%	99.8%
Finance—Financial Management			
Percentage of general fund expenditures in actual unreserved general fund balance	-10.6%	8%	35.5%
Percentage of approved budget actually spent or encumbered	75.4%	96.9%	116.9%
Percentage of approved revenue actually received	95.0%	100.9%	116.3%
Percentage of prior-year’s audit findings resolved	0.0%	66.7%	100.0%
Districts with unqualified audit opinions		95.2%	
Finance—Grants Management			
Percentage of operating budget targeted for grant funding	0.0%	14.4%	20.3%
Number of business days for budget approval and access to grant funds	5	30	110
Percentage of unspent grant funds lost	0.0%	9.0%	30.0%
Finance—Risk Management			
Percentage of total operating funds devoted to general liability claims	.04%	0.44%	1.15%

Human Resources and Personnel Operations

The project also developed 46 indicators in the area of human resources, including such personnel and organizational measures as the numbers of staff members handling benefits, compensation, employee relations, employee services, information, labor relations, recruitment, payroll, risk management and training. These indicators are important benchmarks by which city school systems can compare themselves on how they staff and structure their human resource departments.

Other human resource indicators are more operational in nature. These include such items as (1) approved workers-compensation claims, (2) average time to complete personnel transfers, (3) payroll transaction accuracy, (4) response times on personnel-information requests, (5) insurance programming, (6) professional development on operational procedures, (7) risk management and (8) investigations on alleged employee misconduct. These indicators give districts a sense of operational smoothness and timeliness.

A third category of human resource indicators relates to overall customer satisfaction with human resource operations and overall district functioning. These include items such as grievance rates and settlements, surveys of employee satisfaction, perceptions of union-administration collaboration, EEO charges filed, workers compensation days, employee turnover rates and terminations.

And a final category of human resource indicators was more directly related to instructional performance and academic achievement—some of which also have cost implications. For instance, the project measures the percentage of instructional days lost due to teacher absences. This bears directly on the quality of instruction, working conditions, teacher

supports and overall school climate. But it also means that the district has to spend money to hire and train substitute teachers while paying the daily rate of the absent teacher (Figure 8).

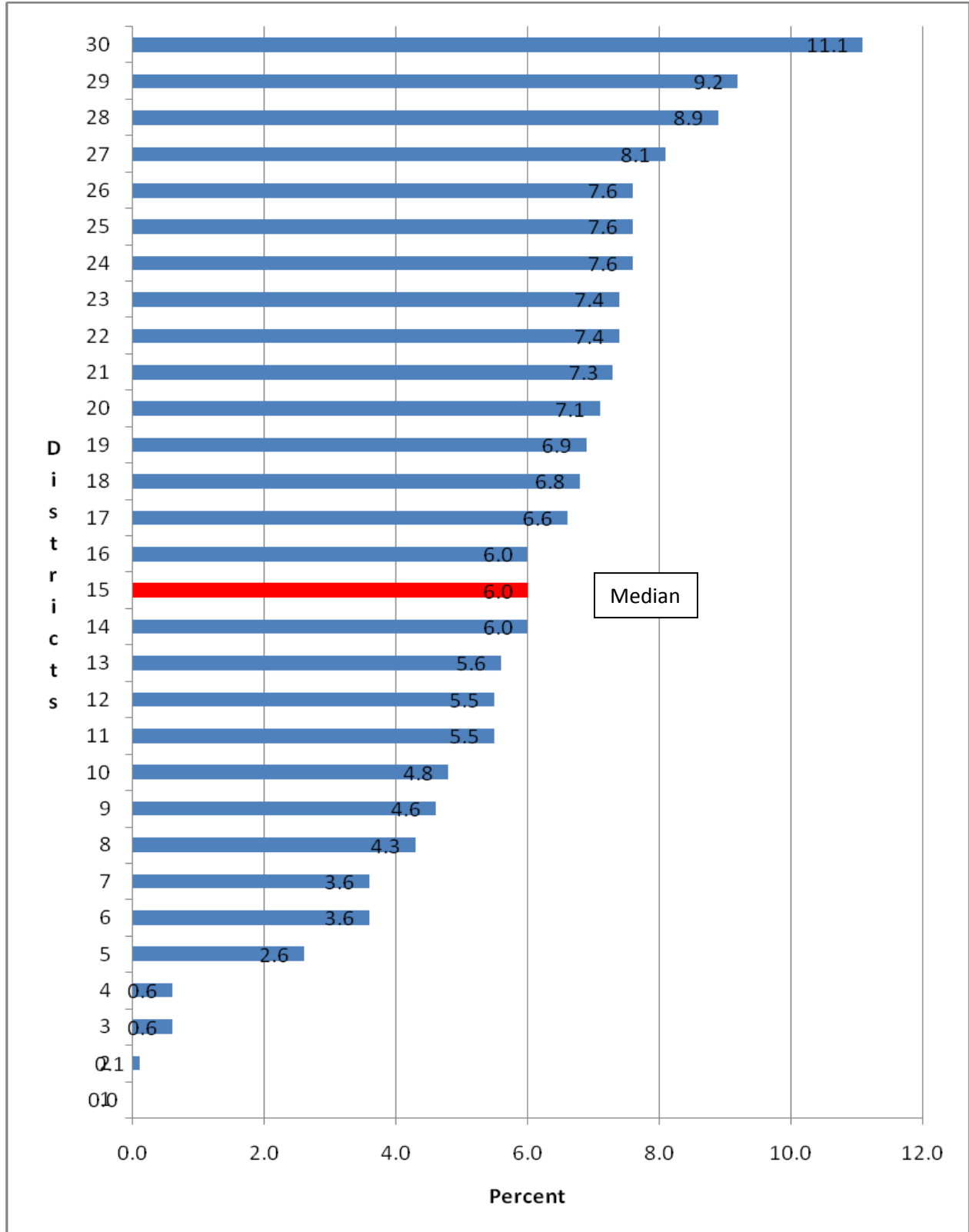
Figure 8: Power Indicators for Human Resources and Personnel Operations with High, Low and Median Values

Human Resources—Recruitment and Staffing	Low	Median	High
Percentage of teacher positions that are vacant on the first day of school	0.0%	1.7%	11.2%
Numbers of days required to fill teacher vacancies	0	15	58
Percentage of newly hired teachers retained after one year	58.7%	92.5%	100.0
Percentage of newly hired teachers retained after two years	51.1%	77.8%	100.0%
Percentage of newly hired teachers retained after three years	35.1%	65.8%	100.0%
Percentage of newly hired teachers retained after four years	33.7%	63.0%	100.0%
Percentage of newly hired teachers retained after five years	28.7%	58.3%	100.0%
Human Resources—Operations and School Support			
Length of time to complete personnel transfers in days	0	2	9
Length of time to complete displacements in days	0	1.5	10
Length of time to complete promotions or demotions in days	0	3.0	10
Length of time to complete pay-rate changes in days	0	1.5	9
Length of time to complete medical leaves in days	0	2.5	20
Length of time to complete non-medical leaves in days	0	2.0	10
Human Resources—Employee Relations and Services			

Percentage of all grievances filed by employees resolved in the district's favor	0.0%	42.9%	100.0%
Percentage of all grievances filed by employees that were settled	0.0%	25.7%	94.4%
Percentage of all grievances resolved in favor of the complainant	0.0%	10.3%	47.4%
Percentage of employees involved in formal investigations of misconduct	0.0%	0.5%	7.2%

The results of the KPI data collection effort indicated that the median teacher absenteeism rate among the districts was about 6 percent. Districts ranged from a low of almost zero absenteeism to a high of 11.1 percent. A district with 10,000 full-time equivalent teachers and an absenteeism rate of 11.1 percent could save \$229,500 each year by lowering its rate to the median, 6 percent. This would include savings on the average teacher daily rate and costs of the substitute teacher. A district with 50,000 employees might be expected to save \$1.1 million or more (Figure 9).

Figure 9: Percent of Lost Instructional Days Due to Teacher Absences



Other human resource indicators developed by the project—like teacher-position vacancies on the first day of school—are more a gauge of the effectiveness of a district’s recruiting, selecting, hiring and staffing processes than of cost. Still, these vacancies mean some lost instructional time, costs to fill the positions temporarily and weakened public confidence.

The same is also true for indicators the team has developed related to teacher retention over one to five years, an indicator that answers recurring questions about the staying power of new teachers over their first five years. The data on this indicator, teacher retention, show that the Great City Schools enjoy a median retention rate of 92.5 percent of their new teachers after their first year on the job, but the retention rate ranged from a high of 100 percent to a low of 58.7 percent. After the second year, however, the median retention rate of the new teachers had dropped to 77.8 percent. By the end of the third year, the median retention rate of the original new teachers had dropped to 65.8 percent. The lowest rate, moreover, fell to 35.1 percent. Interestingly, the retention rate did not change much between the end of the third year and the end of the fourth year, nor did the range. By the end of the fifth year, however, the retention rate of the original cohort had dropped to a median level of 58.3 percent, and the weakest district had retained only 28.7 percent.

These data are powerful because they tell the districts about their ability to hold onto their talent. The research is clear that the effectiveness of teachers is particularly high between their third and fifth years—about the time half of them leave. The data have tactical cost implications, as well, in the sense that newer teachers have to be recruited, trained, placed, and mentored as they replace the original new teachers, all at substantial cost to the districts and schools. And the data have particular relevance in that they can identify cities where the retention rates have been

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particularly strong. This means that it should be possible to find out what these cities are doing that other cities with high loss-rates are not doing.

These organizational, operational, customer satisfaction and teacher data provide school districts strong measures of whether their functions compare well with other cities. Most of these indicators have cost implications, but the project has not yet fully articulated or quantified all of them. For instance, the number of grievances filed relates to any number of factors, including relations with the unions, professional development on procedures and legal talent. But there are also financial costs associated with the amount of administrative time devoted to handling claims and with lost productivity among employees involved. The Council of the Great City Schools is working on methodologies for estimating financial costs and savings opportunities behind these organizational, operational and satisfaction indicators.

Information Technology

Finally, the project has developed 27 indicators in the area of information technology. These indicators include variables measuring such general information as a district's average age of computers; technology spending per pupil; student-to-networked computer ratio; help-desk information, including problem-resolution rates, network operation costs per student, bandwidth per student, telecommunications cost per student and annual personnel costs per number of help tickets created; and various computer security variables.

One information technology indicator relates to "first contact resolution rates (FCRR)." These rates measure the ability of local Help Desks to resolve technology problems on a first call, and are important because they measure a caller's ability to get back to productive work sooner. Districts with low resolution rates may need to investigate the types and patterns of

tickets not resolved, help desk staffing and training, the technology itself that staff members complain about or the automation used to track and report tickets. (Figure 10.)

Figure 10: Power Indicators for Information Technology Operations with High, Low and Median Values

Information Technology—Applications	Low	Median	High
Percentage of school customers satisfied with district software	50.9%	63.1%	100.0%
Information Technology—General Information Technology			
Average age of computers in years	1.73	3.81	6.00
Information technology spending per pupil	\$2.00	\$173	\$1,044
Student-to-networked computer ratio	1.87:1	3.06:1	18.82:1
Information Technology—Help Desk			
First-contact help resolution rate	6.2%	45.7%	95.0%
Annual personnel costs per number of help tickets created	\$1.74	\$16.01	\$180.51
Network Operations			
Bandwidth per student	0.0	1,296.36	60,585.87
Network operation center cost per student	\$0.00	\$31.73	\$435.66
Telecommunications services cost per student	\$0.00	\$25.26	\$99.95
Information Technology—Security			
Percentage of districts with best practice security measures	35.7%	78.6%	100.0%

The results of the KPI data-collection effort indicated that the median district had an FCRR rate of 45.7 percent. Districts ranged from a low of 6.2 percent to a high of 95.0 percent. A typical Help Desk staff member takes 20 to 30 calls per day on average, and the average cost per ticket is \$15.91 for a tier 1 call (i.e., a first-time call). If the call requires travel to a site to resolve or needs to be handled by a functional expert, then the average cost jumps to \$100 per ticket. A district with three Help Desk staff members could save \$448,410 per year by raising its FCRR rate from 6.2 percent to the median level of 45.7 percent. In the process, it would also increase customer satisfaction and productivity.

Return on Investment

The kinds of analyses, cost savings, and potential efficiencies described in the previous section are now increasingly possible with the Key Performance Indicator data that the city school systems have designed. More and more, the data and the Return on Investment (ROI) analyses that are being done with them are also being used as the districts face increasingly difficult economic challenges. A good example is found in Los Angeles, which is home to the KPI initiative. Historically, the Los Angeles Unified School District cut budgets the same way many of its school district counterparts across the country did: It made “across the board” reductions without much thought to core mission or ROI analyses. The district, however, has begun to move away from this traditional approach by assessing each prospective budget cut in two ways: (1) How the activity and cuts to it affect the core mission of the district and (2) what is the ROI of the cut compared to the district’s risk in making it.

In the Los Angeles case, every potential cut was subject to a “quadrant analysis” and received an index score based on its core mission-to-ROI ranking. The relationship to core mission was scored on a four-point scale ranging from “this is the reason for our existence” to “this is an activity that we might have conducted historically but has little relation to our mission.” The risk-to-ROI ratio ran from high risk/low return (i.e., implementing the cut is complex, may not be achievable, has considerable political ramifications and/or could jeopardize credibility, and the dollar savings are minimal) to low risk/high return (i.e., implementing the cut is viable and achievable, has limited political ramifications, and will result in high dollar savings). Staff members from the district estimate that about three-quarters of the 2008 budget cuts were subjected to this process before political considerations finally became paramount. Still, the methodology offered a rational way of conducting cutting process for a time.

The measures are also beginning to be used to improve operations and performance. Los Angeles now uses the KPI system as part of its annual performance management reports on each of its business services. The district also used the indicator on the age of the bus fleets, compared with other cities, to deploy \$75 million in bond funds for vehicle replacements. Columbus used the transportation indicators in much the same way as Los Angeles and allocated \$22 million for bus replacement. Boston used the transportation indicators with its city council during budget hearings. In Los Angeles, the data on secondary-grade student participation in school lunch programs prompted an increase in the amount of time that high school students were given to eat. Philadelphia is building the food services indicators into its districtwide report cards. Albuquerque has used the Information Technology indicators to better track monthly performance of their customer-call center. These examples illustrate the potential of these Key

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Performance Indicators to help urban school systems save money and deploy resources into activities that might enhance the instructional program.

In addition, the first fledgling steps are being taken to track trend lines on the indicators. For instance, one of the indicators mentioned previously—custodial workload—shows that the average square footage covered by custodians increased from 23,501 in FY05 to 24,164 in FY06 to 24,554 in FY07 to 25,536 in FY08. The average age of the bus fleets dropped from 7.7 years in FY05 to 7.0 years in FY08, meaning lower repair costs. Food costs as a percentage of all food service costs dropped from 39.3 percent in FY05 to 36.3 percent in FY08. Work order completion times dropped from a median 21 days in FY06 to 17 days in FY08. Electricity usage dropped from 58.3 units per square foot in FY05 to 53.7 units in FY08. Median general fund balance also improved from 7.2 percent in FY06 to 7.5 percent in FY07 to 8.0 percent in FY08. Work on these trend lines has only just begun, but the ability to create them has been demonstrated. Over time, the capacity to track these indicators will give the cities and the public a much better sense of whether and how cost savings are being realized as operational efficiencies are being put into place.

Theoretically, a district serving about 36,000 students that was consistently in the bottom quartile on most of the “power indicators” we have described could save between \$20 and \$50 million a year by moving closer to the median performance of their urban peers. Larger cities that are consistently weak performers on the critical metrics might be able to divert more than \$100 million a year into the classroom by adopting practices that their peers have already implemented.

Next-Generation Indicators

Although the project is now in its fifth year, in many ways it is only beginning. The effort has demonstrated that it is possible to identify and define a set of operational and performance indicators for the nation's big city school districts. The initiative has also shown it is feasible to collect comparable data from a substantial number of cities and to produce multi-year trend lines on that data. And the project has established that city school leaders and others find value in the data and will use them to improve operations and redeploy resources. But the Council knows that more needs to be done in order for the initiative to realize its full potential. Some of the next steps are described below.

Power Indicators. The Council and its members have now demonstrated proof-of-concept in developing 227 Key Performance Indicators in four broad functional areas. The project team has also taken the first steps in winnowing down the larger set of KPIs to 77 preliminary "power indicators." The Council now is setting up cross-functional teams to review the first draft of the power indicators and to determine if others are needed. The project also wants to make sure that these "power indicators" can be viably translated into data dashboards at the district level and regularly monitored. More importantly, however, the team wants to make sure that the best indicators are included not only to ensure operational effectiveness and resource efficiency but also to improve policy making at the local level.

There is considerable discussion, moreover, about extending the concepts behind the project into areas of academic attainment and instructional processes. The project envisions including special education, early childhood programming, afterschool, out-of-field teaching, ninth-grade

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course failure rates, NAEP data and other measures that would provide urban school systems with an unprecedented level of data to drive reform.

Finally, the development teams are looking at the possibility of articulating which of the measures might be thought of as “leading” indicators or predictors, which might be considered as “lagging” indicators. The team has already been differentiating between outcome-oriented rather than operational or process indicators.

Performance Standards. The initiative is also beginning to examine standards of performance for each of the indicators, particularly the power indicators. Currently, the project is able to tell each district whether its performance in a particular area is above or below the norm among the participating districts, but a district cannot tell whether the median itself is above or below an agreed-upon standard of performance.

The project team is considering the use of external standards from other fields if they do not exist in education or developing a consensus-building process to define them if they do not exist at all. The team has already begun to identify some existing standards. For example, as mentioned previously, the GFOA has standards for general operating fund balances. The National Institute of Governmental Purchasing (NIGB) has standards for initiating and completing formal competitive bid processes. The National Association of Purchasing Card Professionals has standards for the average cost of processing purchase orders. And there are national standards for on-time bus arrivals and custodian costs per square foot of building space. The teams are scouring these and other sources to determine operational standards in as many areas as is feasible so that the cities can compare themselves against more than each other’s averages.

In addition to these standards, the team envisions examining performance criteria in other sectors, such as the military, health care, airlines, manufacturing, insurance, energy and telecommunications companies, commercial services, government and other large-scale organizations. An initial pilot of this concept in Los Angeles showed that the school district had lower payroll costs as a percentage of revenue than the vast majority of 164 other private-sector companies but a considerably higher payroll-processing error rate.

Automation of Indicators. The Council and its development team are spending considerable time on automating the Key Performance Indicators. This is being done for two purposes: First, to allow data on the KPIs to be gathered electronically and automatically aggregated as the data come in, and second, to allow districts to ask how they would perform relative to other districts if certain variables or practices were changed in their districts. For instance, a district might ask whether the cost of paycheck preparation would rise or fall compared with other cities if online deposits were increased. Or a district might ask if drive time and expense would rise or fall with regional garaging of buses versus centralized garaging. The system is being designed to allow districts to analyze their own data and compare themselves to cities of similar size or other characteristics. And the new electronic system is currently being designed to allow districts to compare themselves with similar cities and to create their own web-based data dashboards with easy-to-use gauges, charts and tables that would keep plans, budgets and performance measures on target with a series of triggers.

Analyses of Best Practices Behind the Results. It is already clear that some urban school districts have more consistently positive indicators or KPIs than other districts. For example, Wichita,

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Buffalo, Columbus, Omaha and Rochester consistently rated more highly on both participation and operational indicators in the area of food services than did other major city school districts. Milwaukee, Columbus and Atlanta consistently rated higher than other cities in the area of maintenance and operation. Anchorage, Broward County and Buffalo consistently performed well on indicators of financial management; and Baton Rouge and Norfolk did particularly well on procurement indicators. What we don't know yet is why some districts consistently do better in some areas than in others, and why some cities do better than other cities across the board. What are the best practices, policies and procedures underlying these indicators that appear to produce positive performance, and how are they different from those in districts where the indicators are consistently low?

To determine the factors behind the results, the Council and its development team are now planning to conduct a series of case studies of high-performing and low-performing districts in each of the major functional areas. The findings could then be used to produce a set of “best practices” to guide the technical assistance that the Council delivers to its members.

Cross-functional and Policy Analyses. Finally, the Council and its development team is working on how to modify and shape the next generation of indicators so that they will allow a district not only to ask itself questions about how its practices might affect its relative standing among other cities on each KPI, but also to “war game” various operational scenarios and ask “what/if” about how the indicators inform outcomes: What the service/cost drivers are, how changes in practice influence numbers of students served or level and cost of services, and what the relative trade-offs are of one set of practices versus another. These tools would allow a school district to simulate or model management decisions before putting them into practice. We envision

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questions being aligned at both policy and leadership levels and management, operational and process levels. Finally, the development team is looking at the possibility of linking the operational indicators together with the instructional and academic ones to create a more comprehensive look at how these systems perform in tandem.

Looking to the Future

The nation's major urban public school districts are initiating an extensive array of efforts to improve academic achievement, enhance operations and improve efficiency. They know that many more years of rigorous work are needed to strengthen outcomes and gain the public's confidence. But there is growing confidence among city school leaders that both goals are attainable and that the districts generally are on the right track. A critical component in the districts' strategy to improve involves this "Performance Measurement and Benchmarking Project."

It has taken a number of years to get the project to its current point. Still, a considerable amount of architecture remains to be designed, particularly at the policy level to move the effort forward. Improving the efficiency and cost effectiveness of these school districts will require more than squeezing operational waste out of the system. To be sure, districts are tightening their belts and that process will be improved by the Key Performance Indicators described in this chapter. But the overall effort will also require addressing larger strategic questions about how the school systems are structured and how they use their resources broadly.

For instance, the project currently collects data on the number and percent of satisfactory job evaluations of administrators and some classified staff, but the Council is aware that such data on teacher evaluations may soon be part of the U.S. Department of Education's data

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collection efforts nationwide. This project can easily gather such data and better determine the need to overhaul staff evaluation procedures. In addition, the project has collected data on the costs of staff benefits but has not collected detailed information on teacher compensation systems.

Generally, huge questions remain about how the systems use their resources to compensate teachers and how current practices relate to instructional quality. Issues surrounding pay-for-performance and other results-based compensation systems are just the tip of the iceberg. New challenges are emerging about the whole “step and lane” structure of teacher pay and the back-end loading of compensation that may be benefiting older teachers to the detriment of younger teachers who may be just as effective and who districts are trying to retain.

And fresh questions are being asked about the degree of increased compensation received by teachers over their careers and how it relates to increased responsibility or performance versus longevity. There are emerging concerns that the practice of back-loading teacher compensation to reward tenure is short-sheeting the compensation of new teachers when it is not always clear that the more highly compensated teachers are that much more effective. How do districts use their resources in ways that provide incentives to new teachers, reward performance and retain the most effective teachers? What criteria other than seniority should districts use to lay off teachers and staff when budget cuts are needed? How should districts redeploy resources during bad economic times such as the present? How does a district align teacher salary increases with district priorities and student needs?

New challenges have also been raised about the return-on-investment of lowering class sizes beyond the point where they produce measurable results. Have we devoted more resources

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than necessary to lower class sizes at the expense of teacher quality? How do we balance effective teaching across schools?

Moreover, issues are emerging about how equitably distributed resources are across states, districts, schools and classrooms—and how those resources match up with the academic and social needs of students. How are resources added or cut from schools with differing student needs? What is an appropriate pattern of staffing in schools where students bring widely varying challenges? How should district leaders decide on closing schools and redeploying resources when there are limited options for where the children can go? How should resources best be used to turn around chronically low-performing schools versus how resources are used in other schools? How do the lowest-performing schools currently deploy their resources?

Finally, the existence of these Key Performance Indicators raises new issues about who should be accountable for ensuring that progress is made on them and how they align with the goals and priorities of the school systems. A district could easily focus considerable attention on demonstrating progress on the KPIs without fitting its broader vision of how to better align resources and strategic goals to produce a better outcome for the same resources or less. For instance, it is not unusual for school districts to tie up large amounts of resources on activities that sound productive but don't show much efficacy in raising student achievement—like K-8 schools, supplemental educational services, master's degrees for teachers or professional development units. It is also not unusual for districts to under-invest in activities that could work if done well—like better aligned formative assessments, pre-school programs, or collaborative teacher planning time. And it is not atypical for districts to devote considerable resources to things that could work but are done too un-strategically to be effective—like undifferentiated, generic, district-wide professional development. Finally, there is no end to the amount of money

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that is invested in one positive activity, but results in little benefit because of poor investment in or lack of attention to another activity—like spending lots of money on designing and building data systems but not training anyone to use them.

The alignment of resources with strategic priorities is just as important as the ability to squeeze operational efficiencies out of program administration. Are there better ways for districts—particularly large ones—to use economies of scale to reduce costs? Can more cohesive programming result in cost savings, compared with programming that is more fractured? Can costs be off-loaded through more out-sourcing or contracting, or does the strategy actually increase costs over the long run? Would multi-year budgeting help more districts think strategically about their resources, or is it an exercise in pretension and speculation? What resource reallocations would have the greatest impact on student achievement and how feasible are they? Can new revenue streams be created or existing ones be enhanced? Unfortunately, this type of alignment work takes careful assessment and analysis, target setting, prioritizing, planning, confidence building and time, something that an impatient public isn't always inclined to grant. But the task is highly complex and will require patience as schools struggle to get this right.

It is clear that the present economic condition of the country has spurred fresh questions about how school districts use their resources. These questions now involve public education's very organization, funding, infrastructure, human capital, programming, technology and other features.

But before critics assume that the enterprise is not capable of innovation, of learning from others, or of borrowing ideas and practices from other sectors, they should consider this effort by the nation's urban public schools to create a whole new mechanism—through both the urban

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NAEP on the instructional side and these KPIs on the non-instructional side—by which they can analyze their performance, assess their efficiencies, streamline their operations and save precious dollars. These new tools are not fully developed yet and are not as widely in use as they will be, but the leadership of city schools and their growing participation in their own handiwork holds enormous promise for them and for public education in general.