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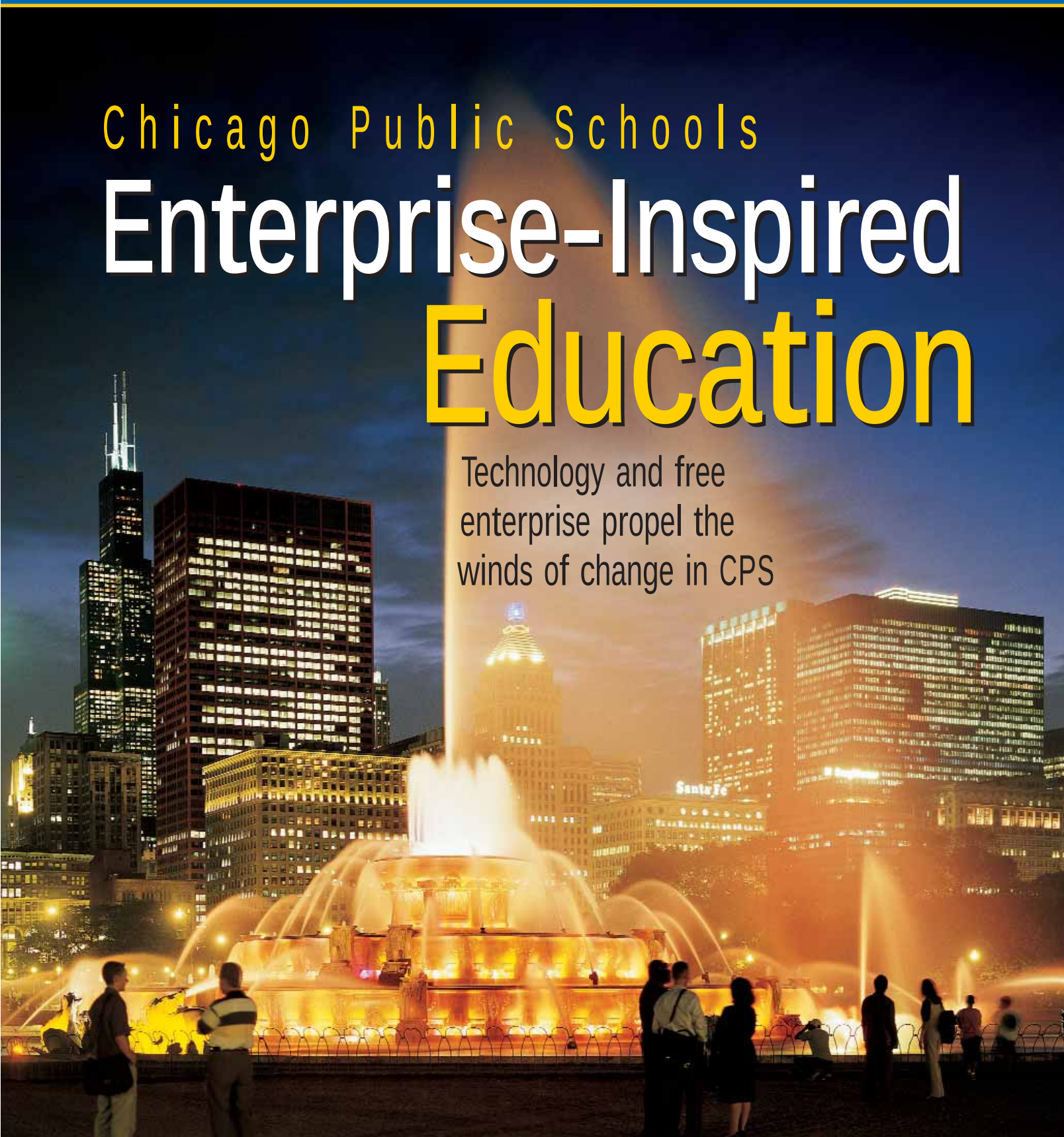

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Ed-Tech VANGUARD Report

By Jennifer Nastu

Agents of Change

How top-notch leadership has made the Chicago Public Schools a technology powerhouse

On an unseasonably warm morning not so long ago, a young, dark-haired boy darts through the double doors of Chicago's South Loop Elementary School. "Can you call my dad? I left my lunch money on the seat of the car!" he calls to a woman seated at a desk just inside the doors.

As other last-minute stragglers trickle into the school, the office worker at the desk calmly picks up the phone to call the boy's father, and another day in the Chicago Public Schools (CPS) has begun.

South Loop Elementary, one of CPS's 602 schools, is a public neighborhood school centrally located in Dearborn Park, in the heart of Chicago's South Loop. The walls are decorated with murals, an alcove has been turned into a jungle, and "I Can" statements adorn the bulletin boards. These statements are written by the children and serve as goals for the year. One such statement reads: "I can use the internet to research information about a topic."

It's obvious from a quick tour of the building that many of the students are busily working toward that goal. In the media center, seventh graders sit around the periphery of the room, playing games that teach them about history on one of the center's 45 computers. Tables in the center of the room form a block where students gather around laptops, working on science fair projects. A light chatter fills the room as children talk excitedly to each other.

> *"I can use the internet to research information about a topic."*
> *—Sign on the wall of Chicago's South Loop Elementary School*

In a fifth-grade classroom, a chart on the wall outlines the rotating schedule of computer use, both in the classroom and in the media center. One child points to the chart and explains the rotation, adding that he is learning to use Microsoft Excel to create graphs and charts. When asked if they like using computers, the answer is unanimous: "Yes!" the students shout. When asked what technology does for learning, a boy in glasses raises his hand and says firmly, "It makes it exciting."

This is a very different atmosphere from the way the school operated when Principal Patrick Baccillieri came aboard four years ago. At the time, South Loop had had six principals in the previous five years. The school was "totally segregated," Baccillieri says, even though it was located in an integrated neighborhood. The only internet access was in the main office, and the computer lab boasted only a few ancient IBMs.

Baccillieri began working toward better technology solutions within the school, buying a new server and upgrading the infrastructure. (In the Chicago Public Schools, each individual school has discretion over its own budget.) Then, through a CPS Office of Technology Services (OTS) program called TECH|XL—which allows CPS schools to lease computers for a reasonable fee that includes maintenance—Baccillieri was able to bring in the 45 lab computers, plus a laptop cart complete with 15 more machines for classroom use.

He also helped the parents raise money so the school could hire a technology teacher and an assistant, and so it could reopen the media center, which had closed for lack of funding. Then he began to challenge the teachers to learn about technology by making such knowledge part of their expected skill set.

Now, the school's media center and classrooms are filled with an increasingly tech-savvy student and teacher population. And these changes are helping to spur student achievement.

South Loop educators are using handheld computers to administer reading assessments, and Earobics software from Cognitive Concepts is used to help fill the gaps in students' reading abilities. The school also has a new electronic library system and is working to develop electronic portfolios for each student.

The results of these efforts? South Loop is the highest performing elementary school in the district—an achievement that is reflected in the demographics of its students. Four years ago, the school was 99 percent

Elisa Saphier/E Saphier Photography

At Chicago's South Loop Elementary School, strong leadership and a greater emphasis on technology integration have helped spark a rise in test scores.

black and 91 percent low-income, Baccillieri says; now, it's two-thirds black and 51 percent low-income. What that indicates, he says, is that more higher-income parents who have choices about where they send their children to school are electing to enroll them at South Loop.

The changes at the South Loop Elementary are remarkable not because they stand out from the rest of the schools in the CPS system, but because they don't. While South Loop has seen extraordinary change, so have other city schools in recent years.

In fact, South Loop's success story mirrors major changes that have been taking place in the Chicago Public Schools as a whole in the last three-and-a-half years, thanks largely to the district's focus on strong leadership.

A businesslike approach

Chicago Public Schools is the nation's third largest school district, with 602 schools, 26,548 teachers, and more than 438,500 students. With an impressive budget of about $140 million per year, the district's Office of Technology Services (OTS) should have been a robust technology department, providing ever-improved technology services to schools.

But that wasn't the case. When CPS's current CIO, Robert Runcie, joined the school system in May 2003, he realized that, while the world had changed substantially, very little had changed over the last 20 or 30 years in Chicago's classrooms. And the stagnation wasn't just at the classroom level; CPS was working from a 40-year-old legacy system that had outlived its usefulness.

Eighty percent or more of the data needed to run the Chicago schools are data on the children, says Runcie: Are the kids showing up at school? Are they improving? How well are they performing? How many are graduating? Yet the schools were still taking manual attendance, doing manual grading, and creating schedules manually.

"If you want to find attendance, you have to call the school. If you want to find the grades, you have to call the school. All that is stored offline," says Runcie. "In this day and age, that doesn't make sense."

Chicago did have a number of inherent strengths. The first and, perhaps, most important was its unusual governance structure. In 1995, Mayor Richard M. Daley was granted the ability to take control of the school system and appoint board members. "Everybody told him he was crazy," says Runcie, "but he's been in office so long [and has such powerful connections that] we've been able to get the kind of leadership on our board that you'd never find in an elected board."

The board members all have a strong business background, and the school superintendent—or CEO, as

he's called in the CPS system—reports directly to the board. Runcie himself reports directly to the CEO.

Runcie, too, has a powerful business background. Having served as president of a management consulting and technology services company for seven years prior to joining CPS, and having worked with large technology integration companies, such as Arthur Andersen (now Accenture), he knew that the OTS needed to be run from a business standpoint rather than just as a "technology shop."

Runcie brought on Maurice Woods—formerly principal consultant for IBM, specializing in developing and implementing corporate and operational strategies for Fortune 500 companies—as deputy chief information officer to run the OTS in that way. Woods agreed wholeheartedly with Runcie's vision. "Our value is how much we can contribute to our business of educating students," Woods says.

To run the OTS as a top-notch business enterprise, Runcie and Woods knew they needed to take some preliminary steps and begin making immediate changes.

Step No. 1: Reorganize staff.

When Woods first came aboard, there were about 300 OTS staff members, and about half of those were consultants, who came at a premium. "We implemented 'insourcing,' which reduced our consultants by 50 percent and saved us over $3 million," he says.

Salaries and job titles also were rationalized. "The spans of control now make sense," says Runcie.

Step No. 2: Bring in strong leadership.

Within OTS, hiring the right team players was a key to success. "This is almost like one large consulting opportunity," says Runcie. "Without the right kind of people, you'd never get it done."

This focus on strong leadership exists not only within the technology office, but also district-wide.

CPS has "identified the principals [of the schools] as being the core of what we do," says Woods. "Our best schools have great principals. They are the CEOs of their businesses."

Most school systems recognize the need for principals who are strong leaders—but this need is perhaps more important for CPS than elsewhere, because of another quirk in the system's set-up: The schools are each, individually, in charge of their own budgets, and principals can allocate what they want or need toward technology purposes. They manage close to $30 million per year on technology alone.

"When I first came here, I thought, 'This is outrageous, we have to have control,'" says Runcie. "But I've come to the realization that that's not bad. It introduces a competitive market aspect into [what we do]. What's beautiful about it is you give the leadership of the school to the principal, who's like a CEO."

Those principals, then, needed to be as strong as they could be, and CPS is currently replacing about 100 principals a year, bringing in those who have more of a technology focus. Over the course of five years, 65 percent of CPS's principals will have been replaced. "That's driving technology [use]" in the schools, says Runcie.

OTS also needed to find out exactly what school stakeholders wanted from a technology standpoint. So team members created a High School Technology Advisory Council and an Elementary School Technology Advisory Council. These councils consist of school principals, technology coordinators (depending on each school's priorities, this could be a hired position or simply a teacher or assistant principal who takes on technology tasks on the side), and members of OTS.

Step No. 3: Reduce inefficiencies.

When Runcie arrived, he needed a quick win to make sure the board of directors, the OTS staff, and other stakeholders believed he could do the job.

Working with Woods, he cut $7 million out of the system, simply by eliminating inefficiencies such as overstaffing.

Another area ripe for cutting was in hardware. "There's this thing called a multi-functional device," Woods jokes. By replacing many of the district's stand-alone fax machines, copiers, and printers with these devices, OTS was able to pull out another couple million dollars.

"With the quick-win mentality, we pulled the quick money out and reinvested it, so we got some credibility," Runcie says.

Replacing infrastructure

Soon after Mayor Daley took over the school system, CPS invested $600 million to improve the infrastructure of the older schools, including rewiring them for more bandwidth. That initiative was completed in 2000. But before the new OTS team could implement major changes, the infrastructure had to be improved even more.

Now, each school in the system has its own server. As for OTS's own servers, they are standardized on blade technology, which scales well, says Steve Dorner, deputy CIO in charge of infrastructure. "We can just add more servers to the group for any of the projects, plus it's a smaller footprint so it takes up less space, and it's cheaper," he says. The whole system is built upon redundancy so that if one fails, the load shifts over to another.

To increase bandwidth, elementary schools were given single T-1 connections, and now OTS is in the process of giving them a second T-1 connection (300 schools have received this second line so far). All the district's high schools now have a Gigabit Ethernet connection.

In addition to servers at every school, OTS maintains more than 29,000 active network electronics (switches, access points, routers, etc.); more than 89,000 active devices (computers, faxes, printers, etc.);

24,000 district phones; 600 PBX and key systems; 16,000 centrex lines; and more than 1,200 data circuits.

OTS also increased the amount of storage it is capable of holding to 35 terabytes (or more than 35,000 gigabytes) and will add another 34 terabytes this year—the amount it will need based on three-year growth projections. The district uses a remote location for its data backup, working with a company that picks up the tapes and stores them outside the city.

Office of eLearning

Of course, all that infrastructure would mean nothing without a plan for using it to enhance instruction. "Technology should not be driving what the needs are," says Sharnell Jackson, chief eLearning officer. "It should be the other way around."

Jackson was brought on board in September 2003 as the director of instructional technology. That department was later reorganized into the eLearning Office. Jackson's first task was to find out what the needs of the schools were. She conducted nearly 20 interviews with principals, managers, directors, and technology coordinators—and the glaring need turned out to be literacy.

> *"Technology should not be driving what the needs are. It should be the other way around."*
> *— Sharnell Jackson, Chief eLearning Officer*

The yearly benchmark assessment for literacy was a nightmare for schools. Teachers had little training in technology, and their lowest skill level was in spreadsheets—yet they were expected to input the data from the paper-and-pencil benchmark assessments into Excel spreadsheets. Those results—pulled together in different ways for every teacher—were then sent to a central office, where they were slowly compiled.

Elisa Saphier/E Saphier Photography

Online assessments taken by students reportedly help CPS administrators perform targeted remediation.

"The teachers administered the test in November ... and never received their results until the end of the school year," says Jackson. "The teachers weren't receiving the information they needed on their students" to effect any meaningful change in the classroom.

Jackson researched a technology solution and settled on the mClass Handheld-to-Web version of DIBELS (the "Dynamic Indicators of Basic Early Literacy Skills" assessment). The wireless DIBELS solution allows teachers to administer the test to students on the handheld device, upload students' answers, analyze the results, and send these results to the state. She presented the solution to the Office of Literacy and was given the green light to move forward.

There was, however, a catch: "I thought we could do 20 schools as a pilot," says Jackson. But district officials wanted to implement the solution immediately in all 123 of CPS's Reading First schools. "They called it a pilot; I called it an implementation," she says wryly.

To make the implementation work, each of the schools identified a core team, made up of curriculum coordinators, key teachers, and literacy teachers. Jackson's team trained those core teams—well over 1,000 teachers by the end of September 2004—and those teams, in turn, trained the schools' individual teachers.

The schools were able to send the assessment data to the state by the target deadline of mid-October. State officials "had never seen that kind of response from Chicago," Jackson says.

More profound, of course, was the impact for the teachers. The mClass DIBELS project cut the assessment time in half, from about 40 minutes per student to 20 or less. Even more important, the results of the tests could be seen almost at once. Teachers could identify gaps in each student's knowledge and begin the process of filling those gaps immediately.

CPS decided to administer the tests three times a year, rather than just the two times—pre- and post-year—required by the state. That gives the district an extra opportunity to check progress in mid-year and

adjust instruction accordingly.

The DIBELS program, however, highlighted an inherent problem with the system. While technology could point out the gaps in a student's knowledge, that was only a first step. "It's an assumption in this country that once a teacher has data, [he or she knows] what to do with the data," says Jackson.

On the other hand, Jackson knew that professional development couldn't help teachers much unless they had some basic technology skills. OTS considers itself a business, and the schools it services are its clients. "I wanted to know my clients and their technology skills," Jackson says.

Elisa Saphier/E Saphier Photography

Deputy CIO Maurice Woods sees technology as a way to 'level the global playing field.'

She decided to administer the Chicago Online Skills Assessment (COSA), which would test the level of very basic computer skills among all teachers. She knew, however, there would be some level of resistance from the teachers—not to mention from the teacher union.

"I went to the [school board] meeting and that was supposed to be last on the agenda, and it was first. There were 30 [union] reps in the room," she says. She simply made it clear that the assessment was to be used only to identify what teachers' technology needs were in order to address them. Nobody would know within a school who had taken or not taken the assessment (though the principal could see how many teachers had taken the assessment and what the aggregate results were), and nobody could access anybody's results but their own.

But the real way Jackson avoided major conflict with the unions was by getting buy-in from stakeholders. If nobody complained, then the union didn't have a case. She took the schools by storm, running an internal marketing campaign complete with posters and prizes. Posters read: "Attention high school teachers! Do you need more technology tools for your classrooms? Take or retake the Chicago Public Schools Online Skills Assessment..."

Prizes for the schools that had the most assessments taken included an interactive whiteboard, a desktop computer with flat-panel monitor, an LCD projector, and more. "I had teachers lined up to get the prizes," Jackson says proudly.

The tests showed that only 14.6 percent of elementary teachers were proficient in the most basic skills—Excel, Word, basic internet surfing. High school teachers were only 14.8 percent proficient, and they had been given laptop computers two years earlier. That simply proved Jackson's theory: "You can give [teachers] technology, but you have to teach them not only how to use it, but how to use it for instructional purposes. It takes a lot of professional development to teach them how to integrate it."

Vision for the future

Technology cannot help school leaders improve the performance of their students if it exists in a vacuum. But if used effectively, says Runcie, "it can help our instructional leaders to be more effective in how they deliver teaching and learning to our students."

Technology also can help break the isolation of teachers, he adds, pointing out that when teachers have the correct data and tools, different conversations begin to occur, and teachers interact with their peers more regularly.

Deputy CIO Woods envisions a day when CPS principals will walk around their buildings with handheld computers that give them a "dashboard" view into student data, security information, and so on—complete with "red-light indicators" that alert them to high-priority needs. He imagines them being able to order the products and services they need for their staff and students in real time from the central office—"customized solutions," he notes, that are right for their schools, instead of "the same old black Model T." Woods' vision aptly articulates a core CPS strategy: enhancing human capital.

"Technology is a huge hammer in how we can change urban districts," he concludes—both as a tool for better decision-making and a way to address iniquities and "level the global playing field."

How to Eliminate a 40-Year-Old Mainframe

Chicago brings its data management into the 21st century with three unique systems

For the Chicago Public Schools' Office of Technology Services, switching from an ancient mainframe to a series of state-of-the-art information systems was not a one-size-fits-all initiative.

The OTS team decided to create three different information systems: one for student information, dubbed the Instructional Management Program and Academic Communication Tool (IMPACT); one for human-resource information, called CPS@Work; and a third for back-office functions such as accounts payable, accounts receivable, and budgeting.

When all three systems are fully functional—and all staff members have been trained to use them—these systems will have the potential to revolutionize how CPS runs its operations. Here's how district officials have gone about this massive undertaking.

Making an IMPACT

IMPACT is a $41.4 million project that brings student data together into a single point of contact, allowing principals and teachers to access student information more easily, reducing paperwork, and giving teachers more instructional time with their students.

The project is the single most important initiative of the CPS tech team, "and if anyone else tells you different, you send them to me," jokes district CIO Robert Runcie.

IMPACT has three major components: the Student Information Management (SIM) system will replace the district's current student information system; the Curriculum and Instructional Management (CIM) system will provide helpful tools for instruction; and the Specialized Services Management (SSM) system will manage information for students with special needs.

Powered by software from Chancery Student Management Solutions, the SIM will allow teachers and administrators to access and manage student information such as grade reporting, progress reports, failure notices, enrollment, attendance, scheduling, behavior reports, and discipline issues. Users also will be able to schedule and build calendars.

"Say goodbye to 'Green Books,' the current, manual process for taking attendance! Teachers with classroom computers will be able to take attendance using IMPACT, making the gathering and sharing of attendance information easier, faster, and more accurate."
—CPS's IMPACT web site

A significant challenge to implementing the database is the fact that OTS cannot simply build a new database and then shut off the old one, because there are bound to be kinks that must be worked out. While the IMPACT system is rolling out, OTS must maintain the original student information system and run both systems simultaneously. Only after all stakeholders have been trained in IMPACT, and after it is guaranteed to work as it should, will OTS be able to turn off the old system.

IMPACT's CIM, powered by SchoolNet, is "leading the charge on how teachers pull [all of the data] together," says Sharnell Jackson, chief eLearning officer. "They're learning to make data-driven decisions." CIM will include modules for gathering and managing information for such tasks as data analysis and reporting, standards-based curriculum and instructional management, comprehensive benchmark testing, and web-based communication and collaboration.

The SSM component of IMPACT is the result of an effort by the CPS Office of Specialized Services (OSS) to analyze and improve its internal processes and the delivery of special-ed services. This endeavor will affect more than 55,000 students classified as special-needs children, as well as approximate-

ly 7,000 faculty members, case managers, clinicians, and support staff.

A major focus of the SSM project is the creation and management of Individualized Education Plans (IEPs), including the referral process and measurement of progress for special-needs students. By June 2007, OTS expects that more than 500 staff members will have been trained on SSM and that 450 schools will be using it.

"The reason we're rolling out in phases is because there's a large component of professional development," says Runcie. "We go into the school, teach the core team, make sure they can do enrollment, attendance, et cetera. Then, when they can do that, we move on to the next set of schools."

Financials that make sense

As important as IMPACT is to the Chicago school system's enterprise, the switch to Oracle for its back-office financial systems such as budgeting, accounts receivable, and accounts payable was actually the first project to move away from the mainframe.

Payables and purchasing were the first to go, with modules such as iSupplier, iPortal, and Mission Control implemented. Soon, OTS saw a dramatic shift taking place, from a school system where decisions were made at the central office to one that was more school-focused.

Later, budgeting was switched over to the Oracle platform. Modules such as Public Sector Budgeting and Position Control allowed principals to go into the system, create a job description for an available position, access the budget, and get it approved. "[Principals] can open and staff a position in less than a day," says Jerome Goudelock, director of financial and HR systems. "That's incredible."

Goudelock adds that before, "there were a lot of paper-based systems, particularly in budgeting." Forms had to be printed out from the mainframe and filled out manually by school principals. The principals would deliver these completed forms to the budget analysts, who would enter the information back into the system.

The legacy budgeting system was deactivated, but not disabled completely, when the new system was implemented. "We couldn't just turn off [the legacy system], because it was tied in with the other systems," Goudelock explains.

Working with Oracle, Goudelock's team had to do plenty of customizing to make the product easy to use. They gave it a web-based interface so that it could be accessed quickly and easily. "Principals can go in, do what they need to do in budgeting, and get out. They can put their [efforts] toward instructional time," he says.

As training was rolled out, OTS noticed that having multiple logins was a sore spot among users. Moving forward, the team will work to create a single sign-on approach, Goudelock says.

No more 'administrative headaches'

The CPS@Work initiative will see the final elimination of the mainframe. The initiative is a $19 million partnership between HR and OTS that will replace the current benefits, HR, and payroll systems.

Using PeopleSoft software, CPS@Work will "take away administrative headaches—the things that keep people up at night—and enable them to focus on the things that are really important in schools, which is the children," says Goudelock.

Why PeopleSoft, when OTS already was using Oracle for its back-office financial systems? (The question might not seem as important today, because Oracle now owns PeopleSoft. But the decision was made before Oracle purchased its business rival.)

Goudelock explains: "When going through the requirements of the HR processes, we wanted to buy best-in-breed [software], not simply a 'product.' PeopleSoft won." In other words, the OTS team chose PeopleSoft as its software vendor for CPS@Work, because it was the most effective system based on the needs of stakeholders.

Suppose a teacher has a new baby. She has to make changes to her list of insurance beneficiaries, to her health-care coverage, and to other related benefits. Traditionally, this paperwork would have to be filled out separately and mailed or taken by hand to various departments. Later, the teacher might go to the doctor because her baby was sick, only to discover that something wasn't covered, because a certain step in the process never happened.

With CPS@Work, employees will be able to enter all of this information into the system online. The system will take users through the various steps, ensuring that everything is completed. "It will walk you through all of that, online, in one sitting," says Goudelock. "At the end of the day, you'll get notification that you've made the changes, payroll will be updated automatically, the [insurance] carrier gets notified ... All of these projects take paperwork out of the equation. [Staff members then] can focus on teaching."

The CPS@Work team started by mapping out the district's business processes, which took about a year. Deputy CIO Maurice Woods was an important driver in this area, because one of his core functions is to challenge established business procedures. ("How can we streamline? How can we improve?" reportedly is his mantra.)

Then, OTS picked PeopleSoft as its software provider and brought on CherryRoad Technologies for the implementation.

CPS@Work is planned to roll out within the first quarter of next year. For three months, both systems will run side by side, performing functions in the legacy system and also in the PeopleSoft software, to make sure the new system works. "We'll be going through check by check, person by person, to make sure that everything either works the same or has a reconcilable difference," Goudelock says. *—JN*

A Better Way to Bring Computers to Schools

TECH|XL provides Chicago schools with a single point of contact for leasing, service, and support

The Chicago Public Schools' unique governance structure—all schools are given full autonomy over how they spend their technology budgets—poses some significant challenges for the district's Office of Technology Services (OTS). For instance, how can it ensure the equipment each school buys meets certain minimum standards and will work together? How can it ensure each school is getting the best value for its dollar? And, how can OTS meet each school's support needs?

To solve these challenges, OTS has created a program called TECH|XL. The program aims to help school leaders procure the right solutions in a cost-effective way, while also serving as a single point of contact for anything they need to know as far as technology is concerned.

"Even though we don't control the purchase of all machines, we do control their deployment," says Anthony McPhearson, director of TECH|XL Services.

Undoubtedly, one of the most important elements of the TECH|XL program is that it allows schools to lease Apple or Dell computers, printers from CDW-G, and various support services at an affordable rate. All contracts are handled through the TECH|XL program, which can procure the machines at a reduced rate through large-volume discounts.

"We recommend this approach to schools, because it offers the best value for their money," McPhearson says. But schools aren't required to lease their equipment through the program. If they don't go through TECH|XL, they are still required to meet certain minimum standards in the machines they procure on their own. These are spelled out in a 75-page document created by the TECH|XL team. Besides minimum tech specs, the document also specifies how each machine should be identified on the network, what software it should contain, and so on.

Though TECH|XL has been in place for only two years, about 60 percent of the district's schools that acquired new hardware this year leased their equipment through the program, McPhearson said—and one of his team's goals is to increase this number.

But that's not all the program does.

TECH|XL also monitors and tracks network and software licensing compliance within CPS, so the team created a special Network Compliance Site to help track the district's 100,000-plus computing devices. This is a unique, self-created, web-based interface that gives the TECH|XL team a single reference point for all the computers in the district. They can look to see the details of each individual machine—what domain it is on, whether it is an instructional or administrative computer, its IP address and serial number, whether it is a Windows or Macintosh computer, whether it's connected to

Before TECH|XL, the city's schools—because they had control of their own budgets—were purchasing hardware and software from anywhere and everywhere. "It was the wild, wild West of technology," says Anthony McPhearson, director of TECH|XL Services. Principals were buying equipment from their brother's company, their cousin's company, and "companies were charging what they wanted."

Elisa Saphier/E Saphier Photography

the network, whether there are any viruses or spyware on the machine, and so on. A green icon means compliance, and a red one means there's a problem—the machine might be offline, for example, or it might contain a virus.

Authorized personnel from each school, such as principals or technology coordinators, can use the interface to check the compliance of their own school's machines. "It's fully automated, because not all schools have a technology person," says McPhearson. "So we made it really easy for a non-tech person, such as a principal or appointed tech person, to go in and make sure they're in compliance."

Besides viewing network compliance and software vulnerability reports for each machine, authorized personnel can use the site to run Windows or Macintosh maintenance utilities for any machine with a single click. The interface is linked to the district's security software programs, such as DeepFreeze and Trend Micro, so users can remotely lock down certain desktops, eradicate viruses, and so on.

Schools that lease computers via the TECH|XL program enjoy several benefits. Leasing provides schools with an efficient and affordable way to acquire technology equipment and to manage their cash flow. Leasing allows them to choose a lease term and annual payment that fits their budget, while the annual cost to lease three computers is less than the cost to purchase one computer.

Leasing, then, helps schools acquire all of their needed technology without a large upfront expenditure, McPhearson says. Leasing also allows the schools to refresh their hardware with newer and faster technology every three to four years—and it removes the risk of ownership and costs associated with the maintenance and upkeep of outdated equipment.

Finally, the warranty coverage for all equipment matches the life of its lease. Flexible leasing options are accompanied by a full three- or four-year warranty that includes coverage for most parts and labor.

Schools leasing computers through TECH|XL receive help from the Service Desk, a team that serves as CPS's single point of contact for resolving technology-related issues.

The Service Desk is responsible for defining, prioritizing, referring, tracking, monitoring, and escalating end-user problems and technology requests.

The TECH|XL team also works with schools to advise them on whether they'd like to select high-end, mid-range, or low-level machines, and whether they want them mainly for instructional or administrative purposes.

"Our goal is to deliver the best possible services we can in the schools, to help them work smarter and more efficiently," says CIO Robert Runcie. —*JN*

Calling on New Technologies

CPS' $28 million VoIP project might be the largest of its kind in K-12 education

With approximately 24,000 school district phones (including 2,700 at its central office), 600 PBX and key systems, 16,000 centrex lines, and more than 1,200 data circuits, the Chicago Public Schools' telecommunications infrastructure was massive. To bring the system into the 21st century—and ultimately save millions of dollars in telephone line charges—the district's Office of Technology Services decided to make the switch to Voice over Internet Protocol (VoIP) technology.

The resulting $28 million Advanced Telecommunications Project is believed to be among the largest K-12 communications deployments of its kind in the United States. Installation already has begun and will continue over the next four years.

"We're looking at eliminating some of these key systems that are about 15 years old," says Steve Dorner, deputy CIO in charge of infrastructure. "We can't do things like caller ID because of the age of the system."

Plus, he noted, every time something within the phone system needed to be fixed or changed, "you'd have to send someone out there to do it. And every time we dispatch, we're spending money."

The switch to VoIP reportedly will save more than $20 per phone on maintenance alone. Total cost savings, according to Dorner, will be about $7 million per year.

OTS chose Mitel Networked Business Solutions for the initiative, which is funded in part by the federal eRate program. According to Mitel, the project aims to improve overall communications, reduce costs, gain operating efficiencies, increase school safety, and support the deployment of new applications now and into the future.

Specifically, the switch to VoIP will improve the district's communication in several ways, officials say. It will allow each teacher to have voice mail, which will improve parent-teacher communications dramatically. It also will enable caller ID, multilingual auto-attendant, text-to-speech, and fax mail services.

In addition, the new system will allow for the tracing of "malicious calls" (CPS reportedly receives about 10 of these per week), as well as outbound messaging to contact parents in the event of an emergency. The auto-attendant feature also advises callers of late-breaking news, such as school closures and special events.

Significantly, the project will allow the district to comply with Illinois state and city E-911 requirements. With increased awareness regarding safety in public schools and other environments, public-sector organizations are placing even more importance on handling emergency calls with efficiency. Mitel's Emergency Response Adviser for E-911 will enable CPS to notify on-site emergency response personnel of an emergency regardless of their location and will allow on-site and off-site emergency response personnel to pinpoint the exact location of an emergency call.

Eventually, there will be the capability for each classroom to have its own phone, though for now OTS is concentrating mainly on replacing existing phones, says Dorner.

"We chose Mitel to provide this new network because they offer a solution that allows us to reduce our operating costs and improve safety," said CIO Robert Runcie. "This is in line with our overall mission to provide all our students with high-quality instruction, advanced academic programs, and comprehensive student development in a safe and secure environment."

Mitel designed a network to maximize cost-effectiveness by using the district's existing private and public data network, as well as reconfiguring the CPS Public Switched Telephone Network. The end result is a resilient and fault-tolerant network that will seamlessly connect 700 schools and administrative buildings, officials say. The VoIP initiative uses the high schools as the hub, with connections to the elementary schools coming through those hubs. All told, there will be 75 hubs, with each elementary school connected to one of them.

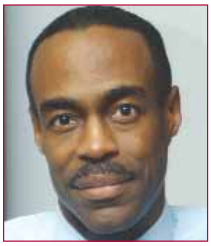
OTS will continue to maintain "a couple of centrex lines, as well as some of the POTS [plain old telephone system] lines," for the sake of redundancy, says Dorner. The district will use what Dorner calls "least-cost routing."

First, calls will go through the VoIP system. If for some reason the VoIP system is not available, then the calls "will go through centrex, or finally through POTS."

Surprisingly, for such a major investment, OTS seems to regard the rollout of its Advanced Telecommunications Project as just another task to be completed in a long list of accomplishments. Dorner needs to be prodded for him to talk about it as a major initiative—an indication, perhaps, of just how smooth the first year of the rollout has been so far. *—JN*

Profiles

Robert W. Runcie, Chief Information Officer



As CIO for the Chicago Board of Education, Runcie is responsible for finding ways to use technology to improve teaching, learning, and student achievement; provide decision makers with timely access to reliable data; and support the redesign of business processes to improve efficiency and accountability. Runcie joined the district in May 2003. Before that, he served as the president of Advanced Data Concepts, a Chicago-based management consulting and technology services company. He graduated with an MBA from Northwestern University's Kellogg School of Management and a BA in economics from Harvard University.

Maurice L. Woods, Deputy Chief Information Officer

As deputy CIO in charge of business, Woods' responsibilities include strategic planning, operations, business process improvement, and special project assignments. Before joining CPS in November 2004, he served as president and CEO of Harvest Advisors, a Chicago-based management education firm. Previously, he had been a principal consultant for IBM, specializing in developing and implementing corporate strategies for Fortune 500 companies. He earned a dual MBA degree in finance and management and strategy from Northwestern University's Kellogg School of Management and has a BS in finance and economics from California State University-Sacramento.

Steven A. Dorner, Deputy Chief Information Officer

As deputy CIO in charge of infrastructure, Dorner is

responsible for the strategic development, management, operations, and support of district-wide networking infrastructure and teams. These areas include the local- and wide-area networks, telecommunications, data security, server hardware administration and maintenance, data center operations, storage area networks, and backup operations. Dorner has been with CPS since September 1998 and has a 27-year history of experience in the IT industry. Before joining CPS, he worked at Weiss Memorial Hospital, a University of Chicago Hospital, as its information services operations manager. Dorner graduated from DeVry University with a BS in electronics engineering technology.

Sharnell Jackson, Chief eLearning Officer

As chief eLearning officer, Jackson provides leadership to a team of dedicated technology integration specialists who support programs that propel teaching and learning through professional development, distance learning, and technology integration. Jackson has been an administrator and educator in Illinois for more than 32 years. She is a board member of the Consortium for School Networking and a participating committee member for the International Society for Technology in Education. She has served as president of the Illinois Computing Educators, refined the Illinois State Learning Standards for Earth and Space Science, and received several awards, including a Golden Apple Teaching Recognition award.

Anthony L. McPhearson, Director of Tech|XL Services

McPhearson directs TECH|XL, which provides the entire district with a single-point-of-contact help desk, desktop management, and asset management. McPhearson's team is responsible for maintaining more than 100,000 computers and peripherals throughout the district. McPhearson has spent his entire 12-year career at CPS and is, himself, a "proud product" of the district's schools. He earned a BA in computing from DePaul University and holds several technical certifications in networking.

C. Jerome Goudelock, Director of Finance and HR Information Systems

Goudelock is in charge of leveraging financial and HR systems to alleviate the administrative burdens placed on educators. He does this by providing high-quality data to support processes in the areas of finance, budget, procurement, benefits, HR, and payroll. Before joining CPS in November 2005, Goudelock served for seven years as director at PricewaterhouseCoopers LLC, supporting enterprise resource planning (ERP) implementations. Goudelock holds an MBA from DePaul's Kellstadt Graduate School of Business and a BA in business information systems from Paine College.

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