The School District of Palm Beach County

Technology Plan

DR -07 v6

July 1, 2007 – June 30, 2010
FY 2008 – FY 2010

MISSION STATEMENT

The School Board of Palm Beach County is committed to excellence in education and preparation of all our students with the knowledge, skills and ethics required for responsible citizenship and productive employment.

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Alison Adler, Ed.D.

The School District of Palm Beach County's Technology Plan is written in support of the District Mission Statement, the School District Goals and the District's Key Results.

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Mission and Vision

The Technology Plan is designed to support and reinforce all efforts to create a challenging, supportive, educational environment that results in higher levels of achievement for all students. Student success is the most critical focus for the entire School District. In order to make this success a reality for each student, the availability and effective use of technology is paramount. By combining technology with new approaches to teaching and learning, our schools will provide an education that meets the needs of our students and the expectations of all stakeholders. Three guiding principles are embedded in this plan:

- Students' needs must be the basis for decisions regarding all technologies
- Instructional and administrative components must function collaboratively to serve the needs of students, teachers, and administrators
- Service delivery must be designed to effectively respond to customer needs in a timely manner.

The plan reflects recommendations to support the District's mission to excellence in education and preparation of all students with the knowledge, skills and ethics required for responsible citizenship and productive employment. Implementation of the recommendations will result in the use of technology as a catalyst to restructure the way students learn, the way employees work, and the way the District manages its resources. The major objectives of this plan are to:

- Support the achievement of the District's mission statement, goals, and strategies
- Improve the quality of teaching and learning
- Improve student achievement
- Provide cost-effective resources to school administrators, to school instructional staff, and to District administrators.

The purpose of the Technology Plan is to bring cohesiveness to all aspects of technology resources that support increased student achievement. In order to do so, assessment criteria must be disseminated throughout the implementation of the plan. Measurement criteria related to the effective use of instructional and administrative technology is part of the ongoing process for all District stakeholders. Measurable results will identify technology integration strategies that help children to reach higher levels of learning.

No Child Left Behind (NCLB) recognizes the importance of technology and has challenged educational leaders to ensure technology literacy becomes a "basic skill" needed in much the same way as reading

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and math for success. For many students, everyday life is already technology-driven. They use email, instant messaging and chat rooms, search the web, express themselves with multimedia, learn with software, play video games in virtual realities, manipulate digital photos and take pictures with cell phones. Yet, they come to school and learn with traditional methods using paper and pen, read from textbooks, and take one-dimensional assessments to measure their knowledge. There is a wide gap between the knowledge and skills students learn in school and the knowledge and skills needed in the workplace.

It is essential we provide equal opportunities for our students as it becomes apparent that students without access to technology at either school or at home will be at a disadvantage in 21st Century society. Therefore, providing students with routine and regular access to technology both from school and home should be an integral part of the Technology Plan.

Without a robust, centrally managed technology and support infrastructure Wide Area Network (WAN) that provides adequate bandwidth, security, and anytime, anywhere access, the District cannot provide the environment required by our students.

When a school district purchases computers or installs a network, the cost of the hardware is only one small part of the expenses it can expect to incur in subsequent years if it is going to effectively use those technology resources. As technology is implemented, the District needs people to maintain the networks and other hardware and to help users solve the problems they encounter with their computers, software packages, and District applications. The number of support staff required depends on several variables, including the number of workstations and the variety of operating systems and software applications that must be supported.

In the business environment, a full-time computer support person is generally required for every 50 to 75-computer users. A study by Forrester Research Inc. found that in large corporations, there was one support person for every 50 PCs, at a cost of $142 per PC per year. The School District has a ratio of 500 to 1, which is five times higher than the recommended industry maximum.

A recent issue of School Administrator magazine contained information on an index listing best practices across four technology support areas: equipment, staffing, professional development and systems. Chip Kimball, Assistant Superintendent, Lake Washington School District developed the

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index. He found consistent strategies that districts with successful in-house technology support programs employ. Among them:

- Limiting computer models throughout the District
- Removing surplus equipment from service at a predetermined age
- Purchasing warranties for the life of the equipment
- Establishing a District Help Desk staffed with highly qualified trained people
- Maintaining a District culture that encourages people with technology troubles to try the help desk first
- Hiring only certified technical staff
- Offering online training opportunities.

According to Michael Sullivan, Executive Director of the Agency for Instructional Technology in Bloomington, Indiana, failure to address support issues can create a vicious cycle that is hard to escape, no matter how many in-service workshops a district schedules. He further states that when the network crashes again and again, teachers will be less inclined to build lesson plans around technology.

Public education is experiencing dramatic increases in public expectations for services and results. Appropriate and innovative use of technology is essential for improving performance. Investments in information management and communications are prerequisites for public education to maintain public confidence in its ability to expand services, reduce costs, and become accountable for program expenditures and student test scores.

Telecommunication networks and Internet access can transform our schools into information age learning centers. No matter where a school is located, its teachers and students can use technology to tap into the world's knowledge bank. As powerful as they are, however, modern computers and telecommunication networks alone will not be enough to improve learning. Educators must begin with a clear vision of how these tools can be linked with strong professional development strategies, new curriculum content and enhanced services to improve schools. Careful planning and sound operational strategies will ensure that District investments in technology pay off in service advancements.

The Technology Plan has incorporated the requirements of the Schools and Libraries Division (SLD) for compliance with the Universal Service Program and the Federal Communications Commission (FCC) for application for services through the E-rate program. Prior to the start of services the District must

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have an approved plan. The approved technology plan should establish explicit connections between the proposed physical infrastructure of the information technology and professional development strategies that will lead to specific curriculum reforms. It is critical that technology planning not be viewed or treated as a separate exercise dealing primarily with hardware and telecommunications infrastructure.

Students rely on web-based student services and course content; staff members use web-based applications to complete a wide range of business and work transactions; parents utilize the web to access information regarding their children's academic progress; instructional staff access online information and digital content in support of their teaching, research, professional staff development, and build upon individual creativity to support their efforts toward student achievement. These web-based services must be fully supported technologically, administratively, and culturally to the broad base of students, parents, teachers, staff and the public at large.

The Technology Plan supports the District's commitment to excellence in education and the preparation of all students with the knowledge, skills, and ethics required for responsible citizenship and productive employment. Further, the Technology Plan includes the infrastructure, equipment, staff training and partnerships necessary to provide access to educational resources. These resources support the Sunshine State Standards, the District's Goals, and the Achievement for All Key Results. All are critical to the teaching-learning process and will enable students to become lifelong learners and compete successfully in the 21st Century.

Broad participation, significant collaborative work, and extensive District input will be the hallmarks of the technology planning process. Participants, representing teachers, principals, parents, administrators, media specialists, guidance counselors, and representatives from business and higher education, will participate in identifying essential technology for future years. The Principal's Technology Committee and the Technology Steering Committee will continue to be the guiding force for technology planning. The Technology Plan will be approved by The School Board of Palm Beach County every three years and will also undergo an annual review. The resulting plans will serve as the blueprint for technology in the School District of Palm Beach County, Florida.

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Demographic Information

The School District of Palm Beach County (SDPBC) is the largest geographical school district east of the Mississippi River. A staff of approximately 21,616 serves the eleventh largest student population in the United States. During the 2005-06 school year, the total PreKindergarten-12 student population was 176,162, an increase of over one percent since the 2001 - 2002 school year. However, the student population is currently decreasing at a rate of approximately 300 students per year in part due to hurricanes and real estate prices.

There are presently 165 public school centers (104 elementary, 32 middle or junior high, 23 high, and 6 other) and 43 charter schools, where 113 schools are designated as Title I schools. The SDPBC currently has 81 magnet/choice programs in place at 46 school centers that are open to qualified students from a broad geographical area. There are 27 different Community School programs meeting the needs of our adult population. Additionally, 27 sites serve as special and alternative education centers.

Our student population remains diverse, with approximately 42 % White, 28 % Black, 22 % Hispanic, 2.7 % Asian, 0.8 % Indian, and 4.5 % multi-racial. Recent student figures show that 14 % were enrolled in Exceptional Student Education (ESE) programs, 11.6 % were classified as Limited English Proficiency (LEP) students, and 5.6 % were enrolled in the gifted program. Currently, the SDPBC has a dropout rate of 2.8 % and a graduation rate of 69 %. Approximately 45.3 % of SDPBC students qualify for free or reduced lunch.

With the number of challenges facing education today, the need for new strategies, tools, and attractive educational alternatives is paramount. Technology offers many potential solutions for SDPBC teachers and students, as well as for the surrounding communities. Strong partnerships between school centers and District departments have positively affected instructional technology. Utilizing school-based trainers (teachers and staff) has enabled us to expand professional development opportunities through on-going technology workshops, District technology conferences, and the sharing of resources and best practices.

The SDPBC has long valued, and committed itself to the use of instructional technology to enrich the curriculum, enhance instruction, and accelerate learning for all students. This commitment prepares all

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District students with both the academic and technical skills needed to lead productive lives in the 21st Century. The SDPBC is widely acknowledged as a leader in the use of educational technology, with many District initiatives having received both state and national recognition.

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School District Goals

The School District of Palm Beach County has eight goals. These goals are intended to establish the school system's educational priorities. They provide a direction of focus for achievement in Palm Beach County's schools.

1. *Increased Literacy* - Increased literacy in reading, writing, and mathematics, for all students, including students in Exceptional Student Education and English for Speakers of Other Languages, with an emphasis on grades K-3.
2. *Student Performance* - Improve achievement at critically low performing schools and among students in Quartile One District wide.
3. *School Safety and Environment* - Provide safe and nurturing school environments that are free of drugs, alcohol, firearms, and harassment, and where standards of appropriate and ethical behavior are upheld.
4. *Challenging Curriculum* - Implement a challenging curriculum, including methods for individualized and group instruction, which supports the Board's mission and goals.
5. *Staff Development* - Provide continuous staff development that supports the Board's mission and goals.
6. *Financial Responsibility*- Institutionalize and correct, as needed, financial and management practices that are sound and accountable.
7. *Parental Involvement* - Increase involvement by parents, business, and other community interests through partnerships designed to achieve both management and academic improvement and accountability.
8. *Productive Citizenship* – Provide experiences that prepare students for productive citizenship.

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School District Key Results

The School District Key Results define how progress toward establishing our goals will be measured. They provide direction or focus for departments and school centers.

1. *K-Literacy* – All students of each racial/ethnic group will read independently on grade level by the end of second grade.
2. *Algebra I* – All students of each racial/ethnic group will successfully complete Algebra I prior to 10th grade.
3. *Proficiency in Reading, Writing, and Math* – All students of each racial/ethnic group will be proficient in mathematics, reading, and writing as measured by FCAT and FCAT Writes.
4. *School Grade Criteria* – All schools will meet or exceed a grade of B as measured by the Florida accountability system.
5. *Upper Level Math and Science Classes* – All schools will increase enrollment and performance of each racial/ethnic group in upper level mathematics and science courses, with a particular emphasis on underrepresented populations.
6. *SAT* – All schools will increase participation and performance of students in each racial/ethnic group taking the SAT, with a particular emphasis on underrepresented populations.
7. *Advanced Programs* - All schools will increase participation and performance of students in each racial/ethnic group in Gifted, Honors, Advanced Placement, IB, and other advanced programs, with a particular emphasis on underrepresented populations
8. *Dropout and Graduation Rates* – All schools will decrease dropout rates and increase graduation rates for students of each racial/ethnic group
9. *Suspensions* – All schools will reduce suspensions and eliminate disproportionate suspension rates among student groups.
10. *Resources* – All District and system offices will align efforts and resources to accomplish Key Results.

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Florida State Technology Goals

The NCLB Act is premised on the belief that all children can learn and achieve high standards. While this federal law lays the foundation for preparing students to develop their academic skills, business groups and other organizations have recommended that additional attention be paid to developing those 21st Century technology skills required to be productive citizens in the community and workplace (Partnership for 21st Century Skills, 2002). Therefore, a learning environment must be cultivated in the classroom that improves students' rates of learning while developing 21st Century skills.

1. *Digital Learning Environment* - Engage students in their education in ways never before possible.
2. *Instructional Leadership* - Invest in leadership programs to develop technology savvy leaders at all levels of the educational system.
3. *Florida's Digital Educators* - Empower educators with the skills necessary to integrate technology to improve students' rates of learning.
4. *Access to Technology* - Expand access to innovative digital technologies and learning opportunities.
5. *Infrastructure and Support* - Establish that all public schools have the infrastructure that supports dedicated, high-speed connections to the point of learning, and provide "just-in-time" technology support.

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District Technology Goals

The SDPBC Technology Goals, which are aligned with the District's Mission Statement, District Goals, Achievement for All Key Results, and the Florida State Technology Goals, are to accomplish the following in support of student achievement:

1. Provide teachers and administrators (both public and private schools invited to participate) with professional development opportunities that will enable them to successfully integrate technology into classroom instruction and improve their professional productivity **[SDPBC Goal(s) 2; Key Results(s) 3, 4; Florida Tech Goal(s) 3]**
2. Provide support to learning needs of Level I and II students **[SDPBC Goal(s) 2; Key Result(s) 3, 4; Florida Tech Goal(s) 1, 4]**
3. Provide support to the District's K-2 Reading, K-9 Algebra, 6-12 Reading Initiatives as well as other prioritized instructional initiatives **[SDPBC Goal(s) 1; Key Result(s) 1, 2, 3; Florida Tech Goal(s) 1, 4]**
4. Provide educational technologies that will make students active participants in their own learning and enable them to acquire the skills to become lifelong learners **[SDPBC Goal(s) 4, 8; Key Results(s) 3, 5 8, 9; Florida Tech Goal(s) 1, 4]**
5. Assure that acquired technologies are integrated into the curriculum in a manner which reflects the goals and standards of Florida's Initiative in School Improvement and Accountability and the Florida Sunshine State Standards **[SDPBC Goal(s) 4; Key Result(s) 1, 2, 3; Florida Tech Goal(s) 2, 3, 4, 5]**
6. Establish a continuum of K-12 student performance competencies and instructional strategies for the application of technology **[SDPBC Goal(s) 4, 8; Key Result(s) 8, 9; Florida Tech Goal(s) 1, 3, 4]**
7. Identify and support technologies that facilitate data analysis for instructional improvement **[SDPBC Goal(s) 2; Key Result(s) 1-4; Florida Tech Goal(s) 4, 5]**
8. Identify and utilize adaptive and assistive devices that make technology available to all learners, including students with special needs **[SDPBC Goal(s) 2, 8; Key Result(s) 1-4, 10; Florida Tech Goal(s) 1, 4]**
9. Identify and support student use of technology that is present in the modern workplace **[SDPBC Goal(s) 8; Key Result(s) 8, 9; Florida Tech Goal(s) 1, 4, 5]**

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10. Provide access to electronic communications by establishing, maintaining, and updating the District-wide data, voice and video network, including the expansion of Internet access for appropriate educational uses **[SDPBC Goal(s) 2, 4; Key Result(s) 10; Florida Tech Goal(s) 4, 5]**
11. Identify and support the use of technology for educational, professional, and personal growth and development, thereby enabling learners to be global and responsible citizens **[SDPBC Goal(s) 5, 8; Key Result(s) 8, 9; Florida Tech Goal(s) 1, 2, 3, 4, 5]**
12. Provide direction and support to school centers, enabling them to maximize their investments in technology, assuring adherence to District-established core standards, facilitating volume purchasing, and assisting them with future decisions **[SDPBC Goal(s) 6; Key Result(s) 10; Florida Tech Goal(s) 4, 5]**
13. Ensure school technology tools (hardware, software, access) are available for use after the school day for students, teachers and special programs (staff development, community schools, Adult Literacy Programs) **[SDPBC Goal(s) 1,2,5,6,7,8; Key Result(s) 1-10, Florida Tech Goal(s) 1, 4, 5]**
14. Provide ongoing opportunities for the Instructional Technology Support Committee (a group of District departments that support instructional technology initiatives) to meet and coordinate instructional technology project implementation and staff development plans **[SDPBC Goal(s) 5,6; Key Result(s) 10, Florida Tech Goal(s) 2, 3]**
15. Comply with federal, state, and local health, safety, and administrative codes and regulations **[SDPBC Goal(s) 3; Key Result(s) 10, Florida Tech Goal(s) 4, 5]**
16. Progress toward providing an appropriate ratio of modern computers to students as proposed by the United States Department of Education **[SDPBC Goal(s) 1; Key Result(s) 10, Florida Tech Goal(s) 4, 5]**
17. Ensure equitable access to technology for all schools and students **[SDPBC Goal(s) 1,2; Key Result(s) 10, Florida Tech Goal(s) 4, 5]**
18. Provide opportunities for increased parent and community involvement through the use of technology tools and electronic communication capabilities (email, electronic resources, web-based information, etc.) **[SDPBC Goal(s) 7; Key Result(s) 1-10, Florida Tech Goal(s) 4,5]**

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Funding Plan

Funding for technology, including infrastructure, hardware, software, training and support, is provided through the Capital Budget (as illustrated below). Additional annual funding sources include: operating budget, federal E-rate funds, grant awards, as well as ESE, ESOL and Title 1 allocated funds.

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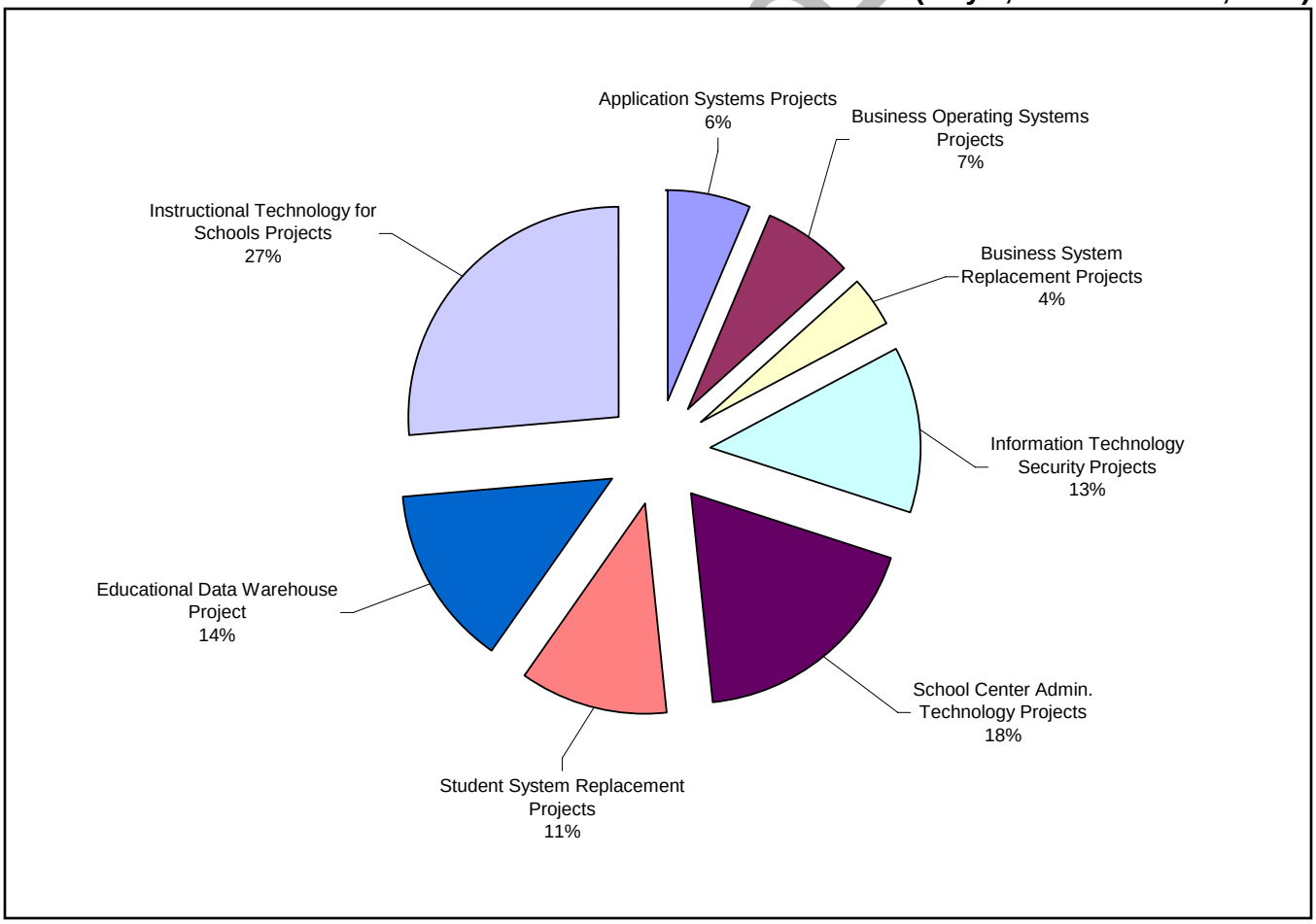
Technology FY2008-2010 Budget
(Submitted for Final Adoption)
For District Technology Capital Projects

(July 1, 2007 – June 30, 2010)



Three-Year Technology Capital Budget Plan (Submitted for Final Adoption)					
	Current	---------- Projected ----------			
DESCRIPTION	FY07	FY08	FY09	FY10	TOTAL FY08-FY10
Application Systems Projects	3,121,160	3,121,160	3,121,160	3,121,160	$ 9,363,480
Business Operating Systems Projects	3,995,139	3,101,139	3,038,139	3,765,139	$ 9,904,417
Business System Replacement Projects	8,461,995	1,746,078	1,815,921	1,888,557	$ 5,450,556
Information Technology Security Projects	5,616,629	5,887,891	6,172,428	6,470,897	$ 18,531,216
School Center Admin. Technology Projects	8,736,690	8,736,690	8,736,690	8,736,690	$ 26,210,070
Student System Replacement Projects		7,863,500	6,101,500	2,447,000	$ 16,412,000
Computer Assisted Facility Mgmt Projects	1,802,452				$ -
Educational Data Warehouse Project	6,323,000	6,539,000	6,763,000	6,989,000	$ 20,291,000
Online Assessment Project	4,000,000				$ -
Instructional Technology for Schools Projects	12,648,021	12,648,021	12,648,021	12,648,021	$ 37,944,063
TOTAL CAPITAL COSTS	54,705,086	49,643,479	48,396,859	46,066,464	$144,106,802

Three-Year Technology Capital Budget Plan (Submitted for Final Adoption)					
	Current	---------- Projected ----------			
DESCRIPTION	FY07	FY08	FY09	FY10	TOTAL FY08-FY10
IT Operations - Data Center	1,445,923	1,445,923	1,445,923	1,445,923	$ 4,337,769
Print Shop Dept.	68,643	68,643	68,643	68,643	$ 205,929
IT Customer Service Dept.	996,025	996,025	996,025	996,025	$ 2,988,075
Security Dept.	345,661	345,661	345,661	345,661	$ 1,036,983
Information Technology	478,183	478,183	478,183	478,183	$ 1,434,549
Applications (CIP)	1,903,946	1,903,946	1,903,946	1,903,946	$ 5,711,838
County-wide Telephone	5,602,000	5,602,000	5,602,000	5,602,000	$ 16,806,000
Educational Technology Dept.	929,862	929,862	929,862	929,862	$ 2,789,586
TOTAL OPERATING COSTS	11,770,243	11,770,243	11,770,243	11,770,243	$ 35,310,729

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Educational Technology

Executive Overview

The Educational Technology department envisions the integration of digital instructional tools to enable our students, "digital natives," to learn and gain a competitive edge in the 21st Century.

Currently, the learning environment is in transition as most teachers and administrators are "digital immigrants" regarding technology. Our students, *digital natives*, from an early age have grown up with technology, including toys like Game Boy, XBOX and Nintendo. *Digital immigrants* are adults who are struggling to learn and incorporate technology in their daily life. The hardware, software, training, infrastructure, classroom design, communication tools, and pedagogical skills must reflect this new environment in which District students are now raised.

New technology tools will provide a vision of enhancing education by delivering curriculum and instruction through a digital web-based format. Students, teachers, and administrators must become proficient at utilizing hardware, software, and peripherals to engage students in instruction through multimedia presentations.

As we plan for standardized classroom technology integration, the District will incorporate International Society for Technology in Education (ISTE) standards for students, teachers and administrators.

A five-year computer replacement cycle has been initiated to move legacy computers, computers more than 5 years old, from the school centers. The five-year replacement cycle is based on data from the Department of Education STaR Survey and District fixed assets. To obtain the maximum degree of educational efficiency, effectiveness and economy, it is essential to utilize computers and peripherals that are in excellent condition. The replacement cycle will achieve a 4.8 students to one computer ratio in every school.

Another important part of the Educational Technology vision is to close the Digital Divide. Many students and families who attend our schools do not have access to computers and do not have Internet connectivity in their homes. We have started to close the digital divide by placing legacy

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computers that have been moved out of the school centers through the five-year replacement cycle to non-profit entities such as community centers, city recreation centers, and churches so students' families can have access to District software through the Internet.

The flexibility of mobile communication is becoming more important to the 21st Century School. To achieve mobility, wireless connectivity is essential. Utilizing wireless technology, students, teachers, and administrators will be able to access web-based software throughout the school campus.

Staff development is an integral part of teacher and administrator awareness, integration and utilization. These digital immigrants will require technology training to understand the benefits of technology and to incorporate curriculum with technology. The Tech Ambassador program brings us a step closer to realizing this vision. The ISTE NETS for teachers and students play an integral part in the planning of staff development content. Another source of information available to us is the *Inventory for Teacher Technology Skills,* recently developed by the Florida Department of Education. The *Student Tool for Technology Literacy* is nearing completion. These tools, which are aligned to the ISTE NETS, will tell us what skills are lacking in our teachers and students, and over time, will provide feedback on our progress toward making all teachers computer literate and preparing our students to enter the work force.

The Department of Educational Technology is deeply committed to providing equitable technology products and access to all students in Palm Beach County. The following recommendations portray the vision for our long-term goals and the evaluation milestones to ensure success for our students in the new global economy. Our recommendations are divided into four areas: 1) Equipping our schools and classrooms with educational technology, 2) Equipping our teachers and students with educational software, 3) Professional Development and Teacher Resources and 4) Connecting School, Home and the Community.

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Equipping Our Schools and Classrooms with Educational Technology

Recommendation 1: Computer Refresh Project

Provide every school center with a sufficient number of modern computers based on student enrollment and maintain a 4.8:1 ratio of students to modern computers. **District Tech Goals: 9, 11, 13, 16, 17**

Current Situation

In recent years there has been an inequity of modern and older computers throughout the District, perpetuated by new construction and the modernization of older schools. "Construction" schools are allocated FF&E (furniture, fixtures and equipment) dollars that are used to accelerate additional technology purchases at the discretion of the "construction" principal. Existing schools that have not been modernized do not have the same level of technology as new and modernized schools. During FY06 we implemented a 4.8:1 ratio of students to modern computers. Modern computers are defined as being five years old or newer. Each school was given enough computers to bring them up to this ratio. A number of schools had already achieved this ratio, and did not receive computers. The new computers were purchased with five year warranties. Computers older than five years cannot run the latest technology and operating systems. Because of this, instructional application programs process very slowly or not at all and replacement parts are too expensive, not readily available and require high labor repair costs.

Future Direction

The ratio of 4.8:1 was determined in large part due to budget allocation. Educational Technology believes that a much smaller ratio, eventually 1:1, must be achieved. We are pursuing alternative ways of working toward this goal. For FY07 we are continuing the 4.8:1 ratio project, again purchasing enough computers so that all of our schools will maintain this ratio. A detailed matrix by school has been developed utilizing data from the fixed asset management system. Computers are categorized by asset number and purchase date within school. AAA high needs schools will receive the highest distribution priority. All schools will have equity based on student enrollment.

Evaluation

Computer distribution is measured by using Capital Assets and school enrollment records to determine maintenance of a 4.8:1 ratio.

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Recommendation 2: Technology Tools Project

Provide all school centers with "technology tools" that enhance the students' ability to see and hear in the classroom, and that further engage students and teachers in their learning and teaching. **District Tech Goals: 9, 11, 13, 17**

Current Situation

The Department of Educational Technology firmly believes that learning improves when all students can hear and see what is going on in the classroom. Students who can hear and see are more likely to be engaged in their learning. Sound-field enhancement, LCD projectors and document cameras are being installed in all of our new and rebuilt schools. Our AAA schools have had sound-field enhancement installed. Unfortunately, most of our older schools have no sound-field enhancement or document cameras, and only a limited number of LCD projectors. Other devices such as digital cameras, digital video cameras and InterWrite Schoolpads help teachers create and deliver more engaging content. Typically, schools in the more affluent areas are able to purchase these items with help from fund raisers and parent/teacher organizations, while at other schools such technologies are unattainable. In FY06, Educational Technology began a Technology Tools Project, where each school was given a menu of "tools" along with the funds to purchase the "tools" they thought would best serve their needs. The formula used to determine each school's allocation was weighted to reflect the status of the school and its age, with more needy schools received more funding.

Future Direction

We are repeating the Technology Tools project in FY07, again allocating funds based on need. In addition to offering sound-field enhancement, LCD projectors, document cameras, digital cameras, digital video cameras, and InterWrite Schoolpads, we plan to offer printers, firewire cards, DVD-VCRs, external storage devices, projection screens and A/V carts. We also plan to modify our offerings each year based on feedback from schools, ongoing research into new technologies, and changes in current technologies. For example, in FY07 we plan on adding "clicker" technologies to our menu. This project provides all schools with a budget to purchase additional technology.

Evaluation

Successful implementation of this project will be documented by Purchase Orders issued during the school year.

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Recommendation 3: New School and Rebuild Plan Review

Provide assistance to SDPBC Program Management department, architects, principals, and the Academic Construction Liaison regarding the design and implementation of classroom and school instructional technologies. **District Tech Goals: 9, 11, 13, 17**

Current Situation

The Class Size Reduction (CSR) referendum and population growth has initiated a number of new and refurbished facilities projects requiring sophisticated technology implementations. An experienced implementation team is required to increase efficiency, effectiveness and economy. At the beginning of the FY05 school year the Educational Technology team spent a good part of 3 months assisting schools in deploying new computers, video projectors, increased audio presence and technology fixtures in the classroom. The process was delayed because the approved Educational Specifications were not conducive to a productive classroom environment. There were a number of ineffective designs and logistical problems. The Educational Technology department responded by facilitating the development of a new set of standards that ensured that all of the required wiring, network connections, and electrical components needed in a 21st Century classroom were included in all new construction projects. Educational Technology continues to review every set of plans as they are submitted to ensure that the technology standards are being properly incorporated into all new and rebuilt schools.

Future Direction

Ideally, an experienced technology specialist working with Facilities Management, the Academic Construction Liaison and the schools' appointed technology contacts during the initial design phase of construction would reduce change orders and increase efficiency. Educational Technology advocates the hiring of a new Educational Technology Program Specialist with experience in opening new or refurbished schools, to assist with the design and on through implementation of new school construction. This Specialist would work specifically with Facilities Management personnel to oversee and ensure technology components are implemented and functioning efficiently, effectively and economically. Teachers would have the integrated technology they need in the locations they need it. Until such time as funding becomes available for this additional position, other Educational Technology

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team members are working to ensure that our new and rebuilt schools are designed and built with instructional technology in mind.

Evaluation

The District will observe a decrease in the number of change orders relating to classroom technology in new or rebuild construction.

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Equipping Our Teachers and Students with Educational Software

Recommendation 4: Software Review Process

Educational Technology will be an integral part of the educational software review process. **District Tech Goals: 5, 12, 13, 14**

Current Situation

Over the years, schools and departments have been able to purchase software at their discretion. This practice has resulted in the acquisition of a large number of software packages that were not fully or successfully implemented and has resulted in software not functioning on current District technology infrastructure. This practice has also resulted in ineffective support for these non-standard programs.

Future Direction

Educational Technology realizes the need to assist schools and departments in their selection of software. It is important that IT, ET, Curriculum and Support, and others as appropriate, be involved in the software approval process to ensure that the software functions as promised, functions on current District technology and infrastructure, provides sound curricular instruction, and is not redundant. Toward this end, IT and ET have started a Software Review Committee, putting in place a methodology for schools and departments to follow when acquiring software, be it purchased, donated, or acquired through a grant. The appropriate curricular departments are invited to participate in the review process. If a program is approved, then IT will create a RIP (Rapid Install Package) for the program and support it from a technical perspective. If a program is not approved, the reasons for the rejection will be explained. Schools or departments choosing to purchase a program without the Committee's approval will be required to provide their own support for the software.

Evaluation

As schools and departments become aware of the software review process, the District will have a higher probability of successful software implementation and will save resources in both purchase and support costs.

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Recommendation 5: Access to Software and Resources through the Learning Tools Web Site

Educational Technology will provide teachers and students with high quality software and resources to meet their teaching and learning needs. **District Tech Goals: 11, 17, 18**

Current Situation

In the past, the District and individual schools have purchased many software titles that are standalone or server based. Modifications and improvements to these programs are very difficult and time consuming to make. In addition, many of these programs have databases that require constant maintenance as students transition to and from our schools. Additionally, as District and school web-sites have grown, it is difficult to find many of the resources, and many resources are duplicated.

Future Direction

Educational Technology will direct future software purchases to web-based software and services, either self-hosted or from Application Services Providers when applicable. There are many benefits using web-based instructional software: easy software updates, relational database, reduced database maintenance, disaster recovery data backups, and the ability to access the software through the Internet. Educational Technology has created the Learning Tools web site, where software and resources are organized for easy access by parents, teachers, students, and administrators. Educational Technology will continue to provide quality software to our teachers and students through subscriptions and purchases such as Riverdeep Destination Success, BrainPOP, and TumbleBooks. Resources acquired by other departments are also accessed through Learning Tools, including titles such as EBSCO and unitedstreaming, and a number of research products.

Evaluation

Use available software to record site metrics and analytics on the Learning Tools web site.

Examine usage statistics provided by District, subscription-based services.

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Professional Development & Teacher Resources

The need for professional development is great. If all the technology outlined above is to be used effectively, it is crucial that adequate time and funds be directed toward professional development and efficient access to resources. The SDPBC will use information from the Florida Department of Education's newly created on-line Inventory for Teacher Technology Skills to assist in planning professional development. This inventory is aligned to the ISTE National Educational Technology Standards for Teachers (NETS-T). Technology integration training is offered not only by Educational Technology, but also by the District's curriculum, ESOL, and ESE departments and by vendors under contract with the District. Though very little of the professional development offered is mandatory, incentives to attend are frequently offered. The NCLB project discussed later in this document offers laptops, digital cameras, and other tools to the schools of participating teachers. Other forms of incentives include additional pay, in-service, and vendor-provided items. We continue to look for creative ways to reward teachers for dedicating extra time to learning technology integration skills.

Recommendation 6: Learning Village

Learning Village is a Web based curriculum mapping tool to provide a single point of access to high quality, sequenced and standards-based curricular instructional resources to all teachers. Educational Technology will work cooperatively with K-12 Curriculum and Literacy departments as well as staff from ESE, Multicultural, IT, Safety and Learning Environment, and Instructional Materials to implement Riverdeep Learning Village. **District Tech Goals: 5, 6, 9, 11, 12**

Current Situation

Although many resources are already available through a variety of SDPBC sources, one must learn different protocols, formats and go to different sources. The intent of Learning Village is to bring all essential tools to one place providing a high level of integration and collaboration.

Currently, Educational Technology staff has worked cooperatively with the staff of the Instructional Materials Department to develop standards and guidelines for publisher adoptions to facilitate the acquisition of publishers' resources in digital format to facilitate delivery of these materials through Learning Village. In cooperation with Secondary Science, Learning Village has been implemented for middle school science and high school Environmental Science courses, providing equity of instructional resources across the District.

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The Elementary Learning Village project in The School District of Palm Beach County is in the initial stages of Development. The project is a collaborative effort across multiple departments and initiatives. The focus of this first phase is on developing a content literacy plan with correlation to all subject areas including information literacy. Participating teachers from the No Child Left Behind: Enhancing Education through Technology (NCLB: EETT) project Tech Ambassadors, which represent District elementary schools, will develop the content. Each group will develop content under the keystone of one of the language arts/reading clusters and also include NCLB: EETT criteria.

Future Direction

Educational Technology believes Learning Village will emerge as the single point of access for all adopted publisher content, District developed content as well as third-party resources. As future textbook adoptions occur, the new standards for publishers will enable the District to make these resources available and remove the barriers of distribution and installation. In addition, a single sign-on mechanism for third party applications will be developed no longer making it necessary for users to log in to an application when accessing it through Learning Village. Future initiatives will include integration of "just in time" professional development resources and student performance data to improve decision making and guide instruction. In addition, through the Learning Village statewide and national consortia, the District will exchange best practices and curricular content with school districts nationwide ensuring teachers' access to the highest quality instructional resources available.

Evaluation

The success of this project will be measured by the degree of interdepartmental participation, content development, delivery and integration as well as access to resources across multiple delivery systems via a single point of access to deliver lessons with engaging content.

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Recommendation 7: Online Professional Development

Provide teachers with opportunities for professional development via the Internet, including courses awarding in-service points, "just in time" learning, and informal online web meetings. **District Tech Goals: 1,5,11,12**

Current Situation

In a District the size of Palm Beach County, it is a constant challenge to provide appropriate and timely professional development to our 12,000+ teachers. Face to face workshops result in lost time traveling and can only handle a small number of teachers, not to mention the difficulty of providing substitute teachers to the schools. An alternative approach is necessary.

Future Direction

Educational Technology uses several approaches to meet the challenge of professional development. The Dapartment's major projects are:

- *Blackboard*, a web-based learning management system, which allows delivery of courses to our teachers on a variety of subjects including technology skills and curriculum content. Blackboard combines instruction, communication, and assessment in a single web-based tool.
- *Breeze* and *Breeze Presenter,* which allows us to hold online instructional or informational meetings that can be recorded for later viewing. Video conferencing via our *Palm Breeze Café,* a weekly online meeting, addresses a variety of topics that are open to all District employees. Breeze Presenter allows PowerPoint presentations to be converted to multimedia, on-demand training modules.
- *Just in Time Training,* video snippets that address individual skills, such as copy/paste, or duplicating a slide in PowerPoint. These items are available through the web to be accessed by anyone at anytime.
- *Educational* Technology will provide support to The *Education Network (T.E.N.)* by assisting with the development of televised courses, content, and shows that support educational initiatives. New digital equipment will provide a platform for continued expansion in services provided by the studio. T.E.N. also works with other departments in the District to create video used in training and to meet other needs such as marketing. T.E.N. also broadcasts on channel 19 with Comcast Cable to the Palm Beach County communities.

In addition, tools such as Captivate, Camtasia, and Breeze Presenter's interface to PowerPoint, are being used to create the content for *Blackboard*, *Palm Breeze Café,* and our training snippets.

Evaluation

The number of courses and the number of participants will increase each year.

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Recommendation 8: NCLB Initiatives

Create a cadre of technology integration mentors who will learn District standards, digital media, and foster a spirit of collaboration with their peers. These integration specialists will be the link from the District level to the school center level. **District Tech Goals: 1, 5, 6, 9, 11**

Current Situation

As more technology is available to our teachers, it becomes more apparent that our teachers need intensive training in the effective use of the technology in their instruction. Learning very different ways of teaching requires time - time that the school week does not provide. Additional time is needed to learn how to operate equipment, learn software, and more importantly, learn how to use the equipment and software in innovative ways. Simply replacing paper and pencil with word processing software is not enough.

Future Direction

Two projects are underway to provide the types of professional development needed to assist our "digital immigrant" teachers. The teachers involved in these projects learn District standard software, digital media, and true technology integration strategies.

Tech Ambassadors, who are supported by the MOD Squad (Media on Demand), represent elementary public, private, and charter schools. Project SMaRT/Lead Teachers (Science, Math, Reading, and Technology), who are supported by the SMaRT Ambassadors, represent secondary public, private, and charter schools.

The goals of these projects are to:

- Develop a collaboration environment to share with teachers in this District, as well as the State of Florida, to help teachers use technology to increase student learning.
- Provide an intensive training environment that utilizes the National Educational Technology Standards for Students, Teachers, and Administrators.

Evaluation

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These projects will use teachers from the training cadres to develop an evaluation that could include interviews, reflections, and case studies, in addition to Best Practices portfolios available in DVD or via T.E.N.

Recommendation 9: Technology Conference

Provide quality professional development opportunities for teachers, administrators and staff that meet both technical and curricular needs, and that equip them with the knowledge and skills necessary to increase productivity and effectively integrate technology into classroom instruction. **District Tech Goals: 1, 5, 9, 11**

Current Situation

The Educational Technology Department, in partnership with the Florida Educational Technology Corporation, sponsors an annual, one-day Technology Conference in which public and private school educators from Palm Beach, Hendry, Indian River, Martin, Okeechobee, and St. Lucie counties as well as local colleges and universities are invited to participate. The Technology Conference is made possible through the partnership, collaboration and support of the District's business community and features nationally-known keynote speakers, a wide variety of breakout sessions, a vendor exhibit hall, and a special leadership track for principals. Proceeds from the Conference enable the Educational Technology Department to award Student Technology Service Scholarships to outstanding high school seniors to recognize their service and support to their schools and communities in the area of technology.

Future Direction

The Technology Conference will continue to grow and evolve to keep pace with and reflect changes in the technologies available to support the teaching-learning process.

Evaluation

Planning, preparation, and delivery of this annual event will be overseen by the District's Technology In-service Steering Committee, which is comprised of both school-based and District-level personnel. Conference presenters, participants, and vendors use a web-based instrument to evaluate the event.

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Evaluative data is reviewed, analyzed, and shared with the Steering Committee for use in planning future events.

Recommendation 10: Face to Face Training

Provide teachers, administrators and staff with opportunities for quality professional development, awarding in-service points, in the integration of technology resources, both hardware and software, into their instruction and into student learning. **District Tech Goals: 1, 5, 9, 11**

Current Situation

As more technology is available to our teachers our teachers, need for intensive and specific training in the effective integration of educational technology into the curriculum becomes more apparent. By request, members of the Educational Technology team provide training at school centers during teacher planning time, Learning Team Meetings, and during faculty meetings. Additionally, members of the Educational Technology team schedule trainings where the "Train the Trainer" model is utilized, and where multiple schools are invited to send representatives. Also, other departments frequently call upon the members of the Educational Technology team to provide technology integration training that specifically supports their department's goals.

Future Direction

As the need for training increases with the addition of more technology tools, the Educational Technology team will continue to provide face-to-face training with increasing frequency. In addition, we would like to be able to provide monetary incentives to teachers who attend training outside of the regular school day. The creation of a 21st Century training classroom with hardware and software matching our District-standard classrooms would allow teachers to observe Best Practices and interact with each other to learn new skills that can be directly applied to their own classrooms. We will also work to develop a training program with the Education Departments of our local colleges and universities to train prospective teachers in the use of technology in our classrooms.

Evaluation

Maintain an attendance log of the face-to-face training sessions the Educational Technology Team has conducted. Documentation of follow-up activities required to award in-service points.

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Connecting School, Home and the Community

Recommendation 11: Digital Divide

Decrease the Digital Divide by increasing web-based applications and increasing opportunities for technology access for all students regardless of socioeconomic conditions. **District Tech Goals: 11, 13, 17**

Current Situation

Not all students have equal access to technology (Digital Divide) after school hours leaving some students and parents without access to District online resources. These students are at a disadvantage and cannot complete technology assignments at home, cannot access the Internet for research, and parents cannot receive communication from the school regarding student progress and activities.

Future Direction

The SDPBC has communicated with cities, municipalities, non-profit organizations and community groups to determine the needs and the most effective action to provide access to technology. If the technology is readily accessible, the probability for utilization by parents and students should increase. Communication, interaction and engagement between families and the District will be more effective.

To reduce the Digital Divide, Educational Technology will:

- Continue to purchase web-based applications that function and are processed though the Internet.
- Continue to work with outside agencies and non-profit organizations to host after hour access to District applications on the Internet.
- Provide legacy hardware to non-profit agencies though the 4.8:1 computer replacement program.
- Develop high school and middle school student programs to ensure that legacy computers are in working condition, and have Internet access, prior to leaving a school for placement in a non-profit organization.
- Continue to build capacity for distribution by increasing relationships and agreements with community based non-profit agencies to establish a distribution channel without increasing the burden of work on District staff.

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Evaluation

The success of this project will be measured by increased access in the community to technology through non-profit community based organizations. An increased number of students and parents will have access to District online resources as a result.

Recommendation 12: Language Divide

Supply curriculum support in native languages for students who speak little or no English allowing students to continue academic coursework while transitioning to the English language. **District Tech Goals: 2, 4, 13, 17**

Current Situation

Currently there is a high failure rate for limited English speaking students who are new to the United States. These students have difficulty understanding their teachers, academic curriculum, and fellow students.

Future Direction

Educational Technology is working with other countries to develop an agreement to use curriculum from their countries to assist our students while they learn English. Though not a complete list, some examples are:

- Telesecundaria from Mexico
- Plaza Comunataria from Mexico
- Dual Language programs partnering with Spain

The material may be used via the Internet, TEN networks, DVD's and printed material. Other methods of distributing and using the material will be explored in conjunction with the Multi-Cultural Department in the SDPBC.

Evaluation

After implementation, the following will be evaluated:

- the number of courses utilized
- the number of students utilizing the programs
- the student progress will be evaluated

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Recommendation 13: Edline – Student/Parent Communication

Develop and maintain a student/parent portal where progress reports, schedules, assignments, school news, policies and other information is readily accessible to parents and students. **District Tech Goals: 18**

Current Situation

SDPBC subscribes to the Edline student information portal from Edline Inc. to provide every school and teacher in the District with their own individual webpage. This provides teachers at all levels with an easy-to-use web publishing system where teachers can post assignments, send email to parents and students, post class assignments, and publish other web documents such as online reviews and tests. In addition, teachers can automatically generate a progress report from their electronic grade book and easily post the results to Edline. Parents who have subscribed to the service will then receive an email alert when a new report is ready to be viewed using their secure Edline login. Edline provides an extremely valuable connection between schools and parents at a time when parents are working more and not as available for traditional parent/teacher conferences.

Future Direction

SDPBC will continue to develop program functionality with Edline and enhance the services available for teachers, parents, and students. Future developments include single sign-on access for students for applications such as FCAT Explorer and online textbooks, as well as access to student cafeteria accounts, transcripts, and other information to strengthen the partnership between parents, the school, and teachers. SDPBC will continue to provide training to teachers on Best Practices for using Edline through a variety of means including face-to-face meetings, online virtual training, and online staff development courses

Evaluation

A number of statistics are available to help in determining the usage and effectiveness of Edline as a District student/parent portal: 1) Evaluate number of teacher, student, and parent accounts activated by school, 2) Each school will track teacher updates of their Edline pages, 3) Edline will provide annual usage statistics by school, and 4) Edline will develop additional administrative tools for tracking teacher and student usage at the school level.

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Recommendation 14: Marketing and Awareness

Develop a technology marketing and awareness program for teachers, parents, administrators, and the community. **District Tech Goals: 11, 13, 17, 18**

Current Situation

Marketing awareness is necessary to ensure all students, parents, staff and community members are aware of the instructional technology tools that are readily available. All of the District instructional technology software packages and resources have been consolidated on the www.palmbeachlearns.com website. The time required for teachers and administrators to research, recommend and develop technology pedagogy is scarce. Technology tools that could assist in instruction and remediation are difficult to consider due to underexposure. Teaching schedules do not permit casual Internet browsing to find web-based curriculum that meets sunshine state standards, District lexiling levels and correlation to District textbooks.

Future Direction

Create and distribute marketing materials (brochures, posters, announcements) to provide information about www.palmbeachlearns.com. Attend and present to community and instructional technology groups. Utilize the District's Educational Learning Network (TEN), Internet, bulletins and District technology forums to highlight the rich array of web-based applications available at no cost to the schools. Provide funding to teachers for training. Continue developing technology training resources to increase web-based teacher education and support.

Evaluation

Monitor the number of Palm Beach County users that visit the www.palmbeachlearns.com website.

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Exceptional Student Education

Recommendation 1: Assistive Technology

Provide ESE students with appropriate assistive technology and support for that technology.

Current situation

Technology in the world of special education means more than computers. In the special education world, technology is any assistive, adaptive or augmentative device that enables a student to access education. This can include any device except those implanted, e.g. cochlear implants.

Future Direction

In general, computers, assistive devices, and software will be provided to:

- ESE students
- ESE Contacts
- Psychologists, Speech Pathologists, TO/PTs

Items to be provided include:

- Laptops
- Desktop computers
- Eyegaze boards
- Dynavox
- Dynamo
- Dynamites
- Cheap Talk Communicators
- Scanners
- Printers

Evaluation

Success will be measured by increased access to education for our ESE students.

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INFORMATION TECHNOLOGY

Executive Summary

It is the vision of the Division of Information Technology (IT) to assure effective, equitable, and successful utilization of technology to improve student achievement and to gain higher levels of productivity. Technology will be integral to curriculum, instruction, and assessment to accommodate different learning styles and support teachers in individualized instructional processes. It is the belief of this division that appropriate use of technology with instruction can make a difference in academic performance, motivation, and dedication to learning. Educational technologies are powerful tools for change; not as ends in themselves, but as vehicles to extend and enhance the teaching and learning process.

The purpose of the IT organization is to bring cohesiveness to all aspects of technology resources that support increased student achievement. The new paradigm goes well beyond teaching students about devices and systems. It offers students new, more meaningful ways to learn, and it offers new, more effective methods with which to teach. The objective is to provide an environment where the use of technology serves as a catalyst to restructure the way students learn, the way employees work, and the way the District manages its resources.

It is essential to provide equal opportunities for our students as it becomes apparent that students without access to technology at either school or at home will be at a disadvantage in 21st Century society. Therefore, providing students with routine and regular access to technology both from school and home is a major challenge.

Without a robust, centrally managed technology and support infrastructure Wide Area Network (WAN) that provides adequate bandwidth, security, and anytime anywhere access, the District can not provide the environment required for our students. Information Technology's number one goal is the implementation of a WAN that will be the foundation for the delivery of technology to every child in every classroom.

The Division is comprised of four Departments: IT Application Services, IT Customer Services, IT Security and IT Operations. The following recommendations portray the vision for each department's long term goals and the evaluation milestones to ensure success.

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IT Application Services

Executive Overview

Application Services is responsible for the development, maintenance, and support of the District's key administrative applications (e.g., Student TERMS Information System).

This group provides services in computer programming, computer software systems analysis, computer software systems maintenance, database administration, and user support.

The District Webmaster is located in IT Application Services and is responsible for the design and maintenance of the District's website.

Application Services are those that are used by or affect the District as a whole, and often require teamwork across multiple divisions. Flexibility for schools and departments reflect a genuine desire to support all central services for specific customer needs.

The goal of Application Services is to keep software applications in line with the District's business and technical application requirements.

Application Services personnel are the keystones in providing services and support for the end users. As such, it is imperative that increased centralization and coordination coexist with appropriate departments in critical areas such as security, ERP and EDW. At the same time, Application Services will maintain and enhance distributed services as necessary.

The recommendations below include coordination and management of existing applications and standards, enhancement of systems, conversion to new technologies such as a new Student Information System and a future direction towards web-based systems.

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Recommendation 1: Student Information System.

Evaluate, purchase and implement a robust, web-based Student Information System to replace the current student system. **District Tech Goals: 1, 5, 7, 9, 11, 13**

Current Situation

The current student system was purchased in 1990, and is used by all schools (K-12 and Charter) to collect Federal, State and local student data, which include demographics, attendance/discipline, grading, testing, scheduling, health, special programs, busing and facilities use. Data is collected and maintained in the student system for three (3) years after the student leaves the District before archiving.

The following types of reports are generated from this system for accountability: report cards, class size, FTE earnings, FTE forecasting, student schedules, attendance, testing results, testing summaries, discipline, class and bus rosters, teacher certification and out-of-field reports, special program reports, school-based core team reports, transcripts, and various others. Data indicators from various systems that interface with the current student system are generated to comply with No Child Left Behind and DOE requirements. Data is downloaded on a regular basis to support the Educational Data Warehouse.

Federal and State reports are transmitted electronically on a Survey basis, as determined by the governing agencies. Interfaces are used to port data to other outside agencies with which the District has contracts and/or agreements, in keeping with student confidentiality laws, such as Florida Statutes, FERPA and HIPPA. Federal, State or local auditors gather audit information from this system as requested.

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Future Direction

The change to a web-based environment will facilitate ease of use. Staff will be able to enter data readily. Third party systems such as attendance collection devices and online assessment will integrate with the new Student Information System. A web-based system will provide 24X7 system availability. The Florida Department of Education (DOE) is developing systems all within a web-based environment. Electronic data transmission must conform to new DOE standards. A web-based

environment for student information will be seamlessly integrated with the District's Educational Data Warehouse and ERP initiatives.

Evaluation

Change control procedures and benchmarks will be used throughout the project life cycle to measure the effectiveness of the new Student Information System.

Recommendation 2: Data and Systems Integration

Implement a Service Oriented Architecture platform to communicate information between District software applications and external applications. **District Tech Goals: 4, 5, 7, 9, 12, 17, 18**

Current Situation

Information (data) is duplicated throughout the District electronically as input to other systems. Although very reliable, the current method of data transmission results in redundant data throughout the District that eventually becomes outdated.

Future Direction

As the District acquires more data collection systems, there is greater demand to provide a standard method of sharing data and integrating these systems. Application Services will evaluate ways to implement a Service Oriented Architecture (SOA) platform to integrate systems. Gartner states ***"By 2008, SOA will be a prevailing software engineering practice, ending the 40-year domination of monolithic software architecture. Through 2008, SOA and Web services will be implemented together in more than 75 percent of new SOA or Web services projects"***. A Web service essentially is a service that receives requests for data and provides the data in Xtensible Markup Language (XML) format. The request can originate internally within the District such as the EDW or possibly an external requestor. This platform will integrate seamlessly with the District's security architecture, EDW, Student Information System and ERP system.

Evaluation

The implementation of a Service Oriented Architecture provides a method of software reusability resulting in reduced software interface development costs over time.

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Recommendation 3: Web Portal

Develop and implement a District-wide Web Portal. **District Tech Goals: 1, 10, 11, 12, 13, 18**

Current Situation

Employees require access to information, resources and services within the District. These include Web content, email, online registration, online learning environments, library resources, events, personal calendars, search engines, ERP and EDW services. These resources are readily available but require multiple entry points or logins.

Future Direction

Develop a next generation secure single sign-on Web Portal where employees and individuals associated with the District will have personalized, integrated and web-based interfaces to data, applications and collaborative services. The Portal will provide a single interface to all necessary resources needed for an employee to do their job. The Portal will integrate seamlessly with the District's ERP, EDW and Student Information systems. The Web Portal provides an access point for teachers, administrators, community members, visitors, parents and students.

Evaluation

ROI will be achieved largely through increased user productivity and satisfaction. Increased productivity will be obtained by providing an efficient and personalized Web interface that enables employees to find the content they require more efficiently. The Portal will also improve productivity via collaborative capabilities that improve user communication and task management. Implementation of a Web Portal will result in more efficient use of staff, lower computing costs and reduced travel expenses.

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Recommendation 4: Computer-Aided Facilities Management System

Implement the integrated Computer-Aided Facilities Management System (CAFM) to support District Facilities, Real Estate, Project Management and Operations. **District Tech Goals: 2, 3, 5, 12, 13, 15, 16, 17, 18**

Current Situation

The management of the District's facilities (school sites) is a critical component to class size reduction. The Division of Facilities Management is comprised of Planning, Real Estate, Project Controls, Program Management, Building Construction, Maintenance and Plant Operations, Environmental Control and Continuous Improvement Departments. Documents, images and other critical information is collected and tracked in separate systems. Maintaining the data and reporting in separate systems is a labor intensive task.

Future Direction

Implement an integrated web-based solution for managing facilities, space, assets, inventory, Capital projects, maintenance work orders and other support services throughout the District's facilities.

The second largest expense for an organization, after human resources, is the Workplace. In addition to being costly, workplace management and support services are very labor-intensive. With an integrated workplace management solution, customers can drastically improve service delivery processes and realize compelling financial returns.

Gartner states that effectively deploying integrated workplace management systems will deliver compelling financial returns. Well-managed workplaces can lead to increased worker productivity, reduced employee turnover, higher employee satisfaction, and attraction and retention of superior employees. The District has taken the first step towards moving to an integrated solution by purchasing an Integrated Workplace Management System. An integrated solution provides the means to coordinate actions, reduce conflict and eliminate redundant efforts.

Evaluation

Implementation of the integrated Computer-Aided Facilities Management System will assist in reducing class size and help the District enhance service levels and reduce support labor costs.

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Recommendation 5: Mainframe Applications Support and Conversion

Continue to support remaining mainframe applications while they are converted and integrated within a web architecture. **District Tech Goals: 1, 5, 7, 9, 10, 13, 17, 18**

Current Situation

Application Services maintains standalone 3270 "green screen" systems to collect information separate and apart from the ERP and Student Information Systems. These systems were developed several decades ago and the technology used to develop them is old and in some cases unsupported.

Future Direction

Standalone database systems on single user(s) equipment do not support best practices for information processing. These remaining "silo" systems will be re-engineered in a web-based architecture and integrated with ERP, EDW and the Student Information System. Remaining 3270 applications will be web-enabled where appropriate.

Evaluation

Re-engineering the remaining "silo" mainframe applications to web-based systems and integrating with the enterprise systems will provide a significant cost savings in software maintenance.

Recommendation 6: Enhance Service Standards

Review our current Application Services service standards and revise to align with District's technology initiatives. **District Tech Goals: 1, 5, 7, 9, 10, 13, 17, 18**

Current Situation

Applications on systems within the District have grown exponentially due to local, state and federal regulations. Additionally, in order to comply with these, various departments/divisions have independently acquired applications. Some of these applications do not integrate with existing District software systems and standards.

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Future Direction

Application developers and technical staff will benefit from the use of additional application standards and technical review processes. These include standardized technical approaches, guidelines, and best practices for application development, implementation, deployment and maintenance. The enhancement of application standards will provide a technical foundation for current applications and one on which to build future applications.

Evaluation

A change control process will be used to measure the service standards and serve as a benchmark for future revisions.

Recommendation 7: Web-Based Applications

Continue to develop and support future web-based and mobile applications and integrate these applications with the District's ERP, EDW and Student Information Systems. **District Tech Goals: 5, 7, 9, 10, 13, 17, 18**

Current Situation

Application Services currently provides support for several web-based applications. Discussions with other Divisions provide a basis for development or support for District-wide initiatives.

Future Direction

The District's web-based future initiatives include, but are not limited to, employee self-service; PeopleSoft ERP; minority women's business enterprise (M/WBE) online enrollment; CAFM, gap applications, Facilities Management Division applications, online employee reappointment system; online teacher out of field system; electronic forms; and online enrollment for staff development. Utilizing web-based systems helps employees interact quickly and easily.

Evaluation

Implementing web-based applications have a direct positive impact on lowering costs, such as staffing requirements. Improved productivity will be realized with web-based applications.

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Recommendation 8: Web Content Management System

Implement a District-wide Intranet Content Management System. **District Tech Goals: 5, 7, 9, 10, 13, 17, 18**

Current Situation

District web pages are maintained in Application Services by two staff members. They manually update the HTML pages and other discrete self-publishing areas based on department requests. The increased demands for changes and updates to web pages have created a resource issue.

Future Direction

Evaluate and purchase a Content Management System (CMS) product that will allow individual staff members to be responsible for and maintain the content of their own department's site. Implementation of such a tool will allow Application Services staff to focus on other major projects.

Evaluation

The ability for a number of users to maintain the information on their sites will reduce the workload of the Application Services web team. It will provide greater flexibility in publishing information quickly for the benefit of the District.

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IT Customer Service

Executive Overview

Information Technology Customer Service (ITCS) is comprised of four teams that serve the District's Technology end-user. The Network Services team provides the devices, systems, and infrastructure necessary to access computer applications and telecommunications services throughout the District. The Helpdesk/Desktop team provides: a single point of contact to register all technology related problems, a means to resolve all PC related problems, and a conduit to link higher-level technical resources with end-users. The IT Training Team provides the knowledge and support required to ensure that the District's investment in IT is being effectively utilized. Finally, the Performance and Administration team manages all budget, contracts, reporting, and communication for the department, allowing the other teams to focus on their areas of expertise.

ITCS Mission

The Mission of ITCS is to provide quality IT customer service to all District computer users by supplying an available network infrastructure, usable computer platforms, and expert application support as measured by key IT performance metrics and customer feedback.

ITCS Objectives

The Department strives to achieve yearly updated goals in five specific areas.

- Maintain availability of voice and data network services while continuously improving infrastructure performance and capability by engineering and installing standards-based technology solutions.
- Decrease personal computer Total Cost of Ownership while increasing end-user satisfaction. Maintain an accurate modern computer inventory; effectively plan yearly computer replacements; and rectify problems within Service Level Agreement limits.
- Facilitate technical and functional training classes for all District staff. Develop a yearly training plan to address District IT training requirements, perform requisite administrative duties, and explore and develop alternative training mediums to increase the quality and availability of training District-wide.

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- Serve as a single point of contact for District IT customers and ensure that problem calls are entered into a Service Management System. Provide computer hardware and software problem determination and resolution. Interface with School-based Technical Staff and District Level II & III technical resources to resolve problems. Attain yearly goal for Closed on First Call resolution rate.
- Develop, track, and refine Critical Success Factors, Performance Metrics, and Service Level Agreements. Effectively manage ITCS budgets, contracts, and vendor relationships. Promote two-way District-wide communication using the ITCS web site, and customer satisfaction surveys.

Staffing

ITCS is staffed by over 60 people representing a wide range of IT skills. Establishing a challenging and rewarding work environment is a high priority. Many positions have career ladders that promote based on achievement. Recruitment from the population of school-based technical support personnel is encouraged to ensure the department is ever-conscious of the challenges and situations schools face. When necessary, the department will recruit from outside the District to acquire fresh ideas and perspectives. Evaluations of all department employees occur at least once per year in accordance with the policies of the District.

Funding

The fiduciary responsibility of managing all sources of funding is closely monitored and reported regularly. Funding for ITCS is derived from the following sources: Operating Budget, Capital Projects budget, Capital Maintenance budget, E-rate reimbursement, and grants. The District's fiscal year begins in July, with budget preparation beginning shortly after the beginning of the calendar year.

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Recommendation 1: Efficient Management of Budgets, Contracts, and Purchases

Improving the management of the ITCS department budgets, contracts, and purchases by centralizing administrative activities will allow operational and technical teams to focus on their areas of expertise. **District Tech Goals: 9, 10, 12, 15, 17**

Current Situation

Management of the department's budgets, contracts, and purchases is difficult due to decentralized financial activities, complicated budgets with multiple funds, and time consuming procurement processes. This distracts from the operational efficiency of IT Customer Service technical teams. Not only do teams have to master the technical and operation aspects of their areas, but they also need to master the District's procedures and administrative requirements.

Future Direction

Create a streamlined approach to purchase hardware, software, outsourced and other services by allowing ITCS teams to focus on their projects and staff. Specific activities include:

- Process budgeted projects and miscellaneous purchases from capital and operating funds
- Provide support services for department acquisitions
- Reconcile billing for outsourced hardware repair
- Work with vendors on quotes, processing, billing and delivery
- Develop work flows for order processing and continuously improve process efficiency
- Assist in the development of RFI/RFP/ITN bids for new technologies with Customer Support, Purchasing, and Legal departments
- Participate in committee review of bids
- Assist in vendor negotiation for technical purchases
- Manage the budget, purchase and maintenance of items purchased under contract

Evaluation

This team will evaluate its success based upon error-free reconciliation, timely payment processing, and minimized budget roll-over to following years.

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Recommendation 2: Expand Network Architecture

The District's network architecture needs to be expanded to accommodate increased usage by instructional and administrative-driven requirements for network-based technology. **District Tech Goals: 4, 7, 9, 10, 11, 12, 13, 15, 17, 18**

Current Situation

The District has over 110,000 networked devices in more than 230 locations throughout the county. An available network infrastructure is required for all of them to function properly. The District is in the first year of a 3-year IP Convergence (IPC) project. The IPC project will centralize specific network administrative functions, combine voice and data networks, and convert our WAN from 800+ T1 circuits to 200+ Metro Ethernet lines while reducing cost and increasing network speeds. This and other projects will dramatically improve performance, availability, and functionality of the network to serve all District stakeholders.

Future Direction

The network architecture of the District will provide increased bandwidth, support additional network enabled services, and extend farther using wireless and cellular services. Centralization of administrative functions, simplification of network architecture, increased network speeds and a wireless point of presence at all locations will position the District to take full advantage of technological advances while providing a sound fiscal road map. Network configuration changes enabled by the IP Convergence project will position the District to take full advantage of the government of Palm Beach County's extensive high-speed fiber-optic networks.

To accomplish this, the school District will:

- Continue to install enhanced services as part of the IPC project
- Upgrade existing Middle Schools, High Schools and administrative PBX's to IP compatible voice servers as part of the IPC project
- Install IP voice servers in all elementary schools as part of the IPC project
- Install wireless point of presence in appropriate District locations
- Upgrade core and edge devices (routers, switches, other network appliances)

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- Install standardized classroom network and peripheral wiring based upon technology requirements
- Install standardized equipment in Intermediate Distribution Facilities (IDFs) as required to support District technology and prescribed by industry standards organizations like BICSI (racks, wire management, power management, patch cables, and monitoring equipment)
- Install standardized equipment in Main Distribution Facilities (MDFs) as required to support District technology and prescribed by industry standards organizations like BICSI (racks, wire management, power management, patch cables, and monitoring equipment)
- Install E911 emergency management notification at all District locations
- Support T1 WAN links as the District converts to best available high-speed networking technology over time
- Install County ISS and IST fiber as available
- Continue network support, enhancements, and availability of mass notification services
- Develop standards for the implementation of IP based video conferencing technology for administrative and instructional uses

Additionally, the District will extend the reach of networked services for multiple purposes. The District will continue to offer cellular telephone and Push-to-Talk services to approved employees. Email and networked application support will be provided where required. Wireless networking will be extended to classrooms, administrative offices, service compounds, and selected vehicles. Both wireless and cellular services will be considered when addressing projects like student tracking, asset management, and other projects where mobility enhances efficiency. All these technologies will enable the District to achieve its educational and operational goals.

Evaluation

This effort will be evaluated by the realization of cost savings, availability of sufficient network services, and satisfaction of District technology stakeholders.

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Recommendation 3: Increase Technical Efficacy and Training

The District's dependence on technology requires that employees know how to use the tools provided.

District Tech Goals: 1, 9, 10, 12, 13, 15, 17

Current Situation

The School District of Palm Beach County reorganized the Information Technology (IT) department to provide added emphasize on customer support. Within this area, Technical Training is the unit that provides, manages and coordinates all technical (computer related) training.

Future Direction

- Develop, tailor and administer training programs for District employees based on accepted practices, procedures, standards and guidelines
- Work with the Department of Staff Development, Division of Human Resources to coordinate scheduling, in-service components and training resources
- Conduct needs assessments through a variety of means to determine technology training requirements for professional and personal growth
- Develop technology training courses based on predetermined criteria
- Communicate training opportunities by advertising courses for employees' access to technology training
- Administer District-wide technology registration system, and provide pertinent reports to management
- Coordinate use of Subject Matter Experts to conduct training classes when necessary
- Provide regularly scheduled classes for School District employees as warranted
- Conduct classes at various locations depending upon scope of training requests
- Perform program evaluation of training classes and transfer of learning to the respective employees' worksites
- Provide on-going support through Level 2 Help Desk assistance and online learning management systems
- Expand continuing knowledge base for trainers
- Coordinate use of District-wide technical training facilities

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- Deliver technical training by means of, but not limited to: on-site training; training labs; computer based training; District and commercially developed training documentation; webinars; interactive discussion groups; and interactive video instruction

Evaluation

All courses/workshops have an accompanying evaluation that is administered at the end of the session(s). Participants are assessed based on completion of the evaluation and follow-up course elements, and are credited with course/workshop completion upon participation and satisfactory evaluation and follow-up assignment(s). Trainers will use both rosters and follow-up activities to verify participation and content knowledge. Upon verification of completion of follow-up activities, in-service points are awarded to non-instructional staff, and supplemental pay may be awarded. This provides incentive for many staff members to participate in training initiatives.

All courses/workshops are evaluated by participants upon completion of sessions. These evaluations assess course organization, materials, subject matter, and trainers. Course evaluations are used by the training staff to identify potential improvements. It also provides feedback to the trainers on their presentation of the material.

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Recommendation 4: Improve Analysis, Communication, and Participation

The activities of ITCS impact all District stakeholders. As such, it is vital that we collect, analyze, and distribute information. **District Tech Goals: 1, 9, 10, 12, 13, 15, 17**

Current Situation

Most activities of ITCS can be quantified, reported, communicated, and acted upon. All of these statistics must be organized so that intelligent decisions can be made. The Helpdesk collects vast amounts of information pertaining to the support of computer and communications technology. Network monitoring systems generate performance and availability statistics. Technical Training tracks the number of classes and surveys for satisfaction. Finally, Performance and Reporting tracks the fiscal management of the department. Every team has metrics that can be analyzed.

Future Direction

To continuously improve, it is important that the right metrics are identified, analyzed, and communicated. To accomplish this ITCS will commit to:

- Regularly Report to District Leadership:
  - Helpdesk Statistics
  - Network Availability and Performance
  - Training Plans
  - Fiscal and Project Status
- Actively Participate in:
  - Principal's Technology Committee
  - District Software Approval Committee
  - State and National Organizations (FETC, BICSI, PMI, etc.)
- Manage Help Desk system software for hardware and software repairs and installations, telecommunication issues, new service requests and enterprise level reporting of such issues.
- Enhance ITCS Web Site to more effectively communicate with stakeholders
- Standardize and publish project management processes
- Introduce appropriate ITIL and services portfolio standards

Evaluation

This recommendation is based upon evaluation, and the results will be self-evident.

Recommendation 5: Manage District Personal Computing Resources

The District invests and relies heavily on personal computer resources for instructional and administrative systems. Effectively managing these resources is vital. **District Tech Goals: 4, 7, 10, 11, 12, 13, 15, 17, 18**

Current Situation

ITCS provides technical support to the District in the areas of computer hardware, networks, District supported software, and technical training. It serves as a liaison to District schools and departments to

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increase communication, provide in-depth knowledge of supported systems, and improve overall customer satisfaction. The Help Desk is a single point of contact for District users, and it provides problem determination and resolution assistance for technical issues. If telephone resolution is not successful, calls are escalated to the appropriate technical resource for resolution. Help Desk personnel utilize a work order tracking system to enter, manage, and report support calls. Reports assist in developing proactive procedures for identifying training needs, and equipment repair, upgrade, or replacement.

Future Direction

Decrease personal computer Total Cost of Ownership (TCO) while increasing end-user satisfaction. Maintain an accurate modern computer inventory. Effectively plan yearly computer replacements. Rectify problems within Service Level Agreement limits.

Specific recommendations

- Improve Help Desk training
- Employ advanced tools to centralize support activities
- Outsource break/fix activities
- Standardize PC hardware and software throughout the District
- Improve system status communications
- Develop structured approach for development, test, and distribution of PC images, software deployment, and patches

Evaluation

The following measures will be tracked to ensure continuous improvement:

- Increase work orders closed on first call
- Continually reduce TCO
- Update images, software sets, and patches regularly
- Increase customer satisfaction as measured by the annual Principals' Department Survey

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IT Operations

Executive Overview

The Department of IT Operations is functionally responsible for the data center, disaster recovery, IT change and configuration control, IT mainframe and AIX infrastructure systems support, records management, forms management including electronic forms, document imaging systems, and printing services.

The Data Center is responsible for scheduling and coordinating the processing of District-wide applications. It provides processing support 24x7 for schools and departments and performs daily backups of the District's centralized mission critical systems. Processing includes, but is not limited to, student scheduling, report cards, District-wide specialized printing, and reports. The roles and responsibilities of the Data Center are changing and evolving with the implementation of PeopleSoft and other technology initiatives.

Disaster Management is the process that mitigates the risk of catastrophic IT failures while assuring the timely recovery for all District technologies, its processes and systems. Change Management is the controlling process for IT system changes affecting IT operations and users. The Operational Systems team supports the District's mainframe and AIX data infrastructure by providing integrity services through Data Center technical support, disaster recovery technical support and 24 x 7 x 365 availability for users, mainframe connectivity to the District and outside agencies, and technical support for all production student systems, business systems and Educational Data Warehouse data updates.

The Records Management section coordinates the District's (1) records management program including records retention/disposal compliance, inactive records storage/retrieval, and inactive student records/transcript requests; (2) forms management program including forms design, electronic form web site maintenance, Forms Review Committee, and training and technical support for OmniForm Filler; and (3) document imaging system for the storage/retrieval of millions of mission critical documents such as personnel files, school construction project files, architectural drawings, and student records.

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Printing Services offers full-service print and copy services to all schools and departments utilizing high-speed digital copiers, which print, collate, fold and staple. The latest color copiers are used to create high quality brochures and booklets in one step.

Recommendation 1: IT Governance

Adopt and implement ITIL standards and methodology in development of the enterprise architecture. Apply the governances stemming from Board policy that focus on all District technologies and their alignment with District goals. **District Tech Goals: 12, 14, 15, 17**

Current Situation

An IT governance process has not been defined. Schools, departments, and District-level technology implementations may occur without review for alignment with District goals, or impact on infrastructure, capacity, or interoperability. There has been movement to help with these issues through the formation of the Software Review Committee. This effort and others like it must continue and expand. District-wide communication is the catalyst for accomplishing the understanding of the use of technology and how it can be used to accomplish District goals.

According to Gartner, the three major reasons for IT governance implementation breakdown are:

- Inadequate participation by leaders
- A lack of clearly articulated goals
- A lack of clearly defined governance processes

Future Direction

With the extensive use of technology throughout the District, emphasis must be placed on the technology being purchased, designed, implemented, supported, and used in fashions to be aligned with District goals. To assure maximum alignment with District goals, IT Governance will be implemented with special focus on the three areas noted by Gartner as possible trouble areas.

Governance clearly designed and institutionalized will put in place operational controls for technology implementations assuring the following:

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Project Charter: All IT District-wide projects will have a formal project charter and be approved by District leadership before resources are used. Major projects of a smaller scale and or scope must also comply.

Project Management: Develop a project management methodology for the coordination and implementation of all technology.

Enhanced Purchasing and Interoperability Controls: All technology should be reviewed by the CTO prior to purchase for compliance with the District's goals.

Design Review Process: All IT related projects will be coordinated among the IT directors and a formal project plan produced and funded before resources are allocated. Users, Auditors and the Security group should be involved at appropriate points in the process.

Configuration Change Control: All changes must be documented and brought before the change control group for coordination prior to any changes.

Security Controls: Assist in centralizing all security (network and data) and implement enhanced change control processes.

Enhance Communications: Develop, enhance, and strengthen the communication process between and with applications groups, network groups, phone groups, construction groups, and most importantly, schools and users, to avoid reactive wastes of time.

Policies and Procedures: Create policies and procedures that clearly articulate and operationalize District goals.

Evaluation

This recommendation will be evaluated and tracked through its completion using percent completed and other best practices for project management.

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Recommendation 2: Develop a Local Disaster Recovery Site

Design and implement a District disaster recovery site at a local District school. **District Tech Goal: 10**

Current Situation

The implementation of PeopleSoft, Exchange Email, Active Directory, and many of the newer and distributed technologies, demand a different strategy for District Disaster Recovery (DDR) and Ed-business continuity. The District's legacy mainframe system requires less hardware and fewer

integrated software components and therefore Disaster Recovery (DR) for it was hosted by SunGard in Philadelphia, Pennsylvania at an annual cost of less than $50,000. The same strategy for the new Enterprise Resource Planning (ERP) system was quoted at nearly the same amount monthly.

Cost and new technology such as distant disk mirroring, remote control and management, and high speed connectivity have set the stage for a new in-county DR approach. Since Palm Beach County is geographically the largest county east of the Mississippi River (larger that the State of Delaware) and includes schools geographically spread across this vast expanse, it is ideal for a co-located secondary disaster data center. With these factors at play, the implementation of a secondary DDR site in an outlying area within the county is primed for development.

Future Direction

The impact of system outages is ever increasing as the District continues to embrace the power of technology for supporting its instruction and Ed-business requirements. This recommendation is to assure that the District is prepared for continued operations should a disaster occur causing the loss of the primary Data Center in the Fulton Holland Educational Service Center (FHESC). The Data Center is housed on the top floor of the FHESC, which adds to the risk should there be roof and ceiling failure. Finding a District owned site where a secondary DDR data center could be developed and subsequently paid for through cost avoidance is the goal. Cost avoidance is stopping the perpetual monthly charges that would be incurred using the current strategy of an off-site hosting vendor. The initial capital investment (FY07 capital fund) for this first DDR site would be repaid within 18 months by not having to pay the approximate $50,000 monthly. It should be noted that the SunGard DR site for the mainframe system will stay in place to protect the Student TERMS system and other systems, until the mainframe is completely retired. The annual cost for this DR is approximately $50,000 annually.

This recommendation is sponsored by the Department of IT Operations, its director, and staff, under the auspices of the Chief Technology Officer (CTO), and has received the Chief Operating Officer's (COO) approval to pursue the research, planning, and development of these alternative strategies subject to final approval.

Hurricanes pose the greatest disaster risk for the Palm Beach County School District, because of its coastal location. This fact has come clearly into public view during the past few years. However, it

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must be noted, risks also exist from other natural and man-made disasters. Therefore, DR planning and preparation is a must, and simply a "best business practice."

This recommended project fits into a longer range vision of Data and Technology Protection. Additionally, it follows the Continual Continuity Improvement Model (CCIM) assuring continual improvements. This vision provides for three redundantly connected sites containing the District Data and Technologies strategically placed around the District to reduce the risk of losing all of them to one catastrophe. Each of these sites would serve slightly different but overlapping functions. Each would contain equipment that would not be idle waiting for a disaster, rather would be working for the District in one of the three technical environments required by best practices: Production, Test and Quality Assurance, or Development. By having all equipment standardized, any of the machines can run any of the environments because they are all interchangeable. Thus, during recovery from a disaster, the Test or Development equipment could easily run Production. Production is the environment that end users see and use on a daily basis and contains the most current and accurate data. It is where the tried and proven applications run assuring a secure, stable, and solid application. By strategically and appropriately designing the District's systems, best business practices can be followed, disaster recovery protection can be accomplished with little additional expense and with a very high probability of success.

The overall implementation philosophy of this project is to use the "Crawl, Walk, Run" approach in its development, with tight financial analysis to closely control Total Cost of Ownership (TCO), while mitigating the District's exposure to risks during recovery from a catastrophe. The financial and pedagogical impact due to lost time from a disaster is extremely difficult to measure. The District's ability to quickly recover from a disaster has major positive impact on all the communities within the District as well as assisting its economical and social well-being after a disaster.

The "Crawl, Walk, Run" implementation model allows for solid protection now and the evolution of the systems during the long term. The base system required to function will be implemented with scalability, allowing for future growth and changes. This methodology allows staff to learn the process and adjust as technology advances and matures over the long term.

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Evaluation

This recommendation will be evaluated and tracked through its completion using percent completed and other best practices for project management.

Recommendation 3: Change/Configuration Management

Implement a comprehensive change/configuration management process to control, manage and communicate all IT system and infrastructure changes and outages. **District Tech Goals: 10, 12**

Current Situation

A change control process is currently in effect which provides a forum for IT staff to coordinate technical changes which could affect end users. A change control meeting is held every Wednesday where changes are submitted on a standard form, discussed, scheduled, and reviewed for impacts to end users, schools, and business processes. Outages are also tracked and discussed at this weekly meeting.

Undocumented changes cause outages and inefficiencies. The lack of representation by all IT areas limits effective communication by the group. Some changes are made without notifying the IT organization or the users who are affected. Coordination continues to be a challenge in driving horizontal project planning through the IT organization. Greater effort will be made to ensure due diligence regarding the scope of any changes, their effects and what back-out plans are in place. Adopting an operational change management environment requires active dialogue between business and technological views of IT. Better communication among all appropriate stakeholders will result in a greater understanding of each other's needs and priorities. Stakeholder participation in the governance of operational change management will entail collaboration and the cooperation of a variety of participants from the business units and the IT organization (for example, project managers, help desk staff, business unit/end users, and senior management).

Future Direction

To establish formalized operational change management, IT senior management must take the first steps and focus on leadership and vision. The vision must include how to improve the predictability of the computing environment by minimizing the negative effects of change on the District's business

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operations. Business culture and work habits are often big obstacles to change. There is a role for a team leader to help educate IT project analysts and other technical staff. Senior executives must be consistent in committing staff and financial resources, as well as supporting new IT processes and enforcement. Without the commitment of a dedicated manager to lead the committee meetings and develop policy, change management focus will likely atrophy.

Business unit/end-user participation will deliver consistent and continuous reporting on IT service demand and business dynamics that might alter future service needs. This level of collaboration by the business units improves the capabilities in change design and prioritization by the project management personnel. Help desk team participation provides refinement regarding the impact of change implementations to end users via better preplanning analysis, resulting in improved end-user support during large change initiatives.

Committee meetings offer a forum where processes can be agreed to and documented. They also provide a consistent environment where communication and coordination can be accomplished. Part of the committee's charter should include project priorities. With line-of Ed-business input, a committee can better prioritize changes to meet business needs and monitor any effects on key IT services. Another important responsibility of the governing community is the development of an authorization system under which various people or groups coordinate their efforts and take on specialized roles and functions. Weekly review meetings with key IT stakeholders should be used to coordinate a network of appropriate dependencies based on a realistic appraisal of what IT personnel and others can provide. These meetings can provide a forum to analyze the overall effect of a proposed change to a system, component, or application and collectively approve or reject the request. Most importantly, these meetings can formalize governance and provide a mandate for cross-departmental collaboration.

Specific change/configuration management recommendations include:

- Create a common repository to track the registration, status, and history of change activity. This will provide an audit system on security controls to limit access, record baselines for back-out policies, and establish appropriate measurement criteria. This level of change-activity capture gives the committee a solid data source for reporting performance to senior management. Fundamentally, this governance affords a forum to support the management review of infrastructure investment. Hardware and software acquisitions must be reviewed within the context of change management.

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- Create a technology change procedure to provide a set of guidelines for the IT organization's change management process.
- Create a comprehensive change management workflow process to illustrate rules, responsibilities, and areas of interaction, which can be translated into a list of criteria for organizational structure, staffing needs, outsourcing possibilities, and peer-support integration.
- Establish policies for approvals and notifications based on the size of any risk, the category and the type of change.
- Document change processes so they are linked to other process areas, such as problem, configuration and asset management.
- Create a method of coordinating change projects and tasks to provide adequate lead time and sufficient prior notification to supporting or affected groups.
- Determine the scope of the effects of the change, as well as categories, types and risks so they are well defined and documented.
- Define metrics to provide performance analysis data for management reporting and organizational benchmarking.
- Create a method of capturing and documenting outages and linking them back to change management.

Evaluation

Change/configuration management will be evaluated based on the reduction of IT outages as a result of improved coordination and planning of changes.

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Recommendation 4: Data Backup/Recovery Plan

Create a strategic plan for back up architecture with modern technology across all platforms. **District Tech Goals: 10, 12**

Current Situation

A centralized mainframe containing the District's core systems is backed up to disk and tape with built-in archiving, data deletion and data recall facilities. This data is sent to a protected offsite storage facility daily, for retrieval in case of a disaster. A "Hot Site" contract with SunGard in Philadelphia ensures that the proper infrastructure is available to rebuild the mainframe systems from those offsite

backups if the Data Center becomes damaged. Recommendation 2 addresses the other systems' recovery. With the addition of a data warehouse and the ERP systems, District data is distributed over several new hardware and software platforms making backup and recovery more complex and more expensive. Tivoli Storage Manager (TSM) was chosen as the District backup product and is used to back up AIX and Windows systems including the ERP, school data, critical servers, etc. to the SAN and to tape. This data is sent to an offsite storage facility. Some distributed data is still being backed up by Veritas software.

Future Direction

The current centralized Data Center is moving toward a distributed model for critical District core systems and their data. This increases the need for a well-coordinated backup and recovery plan and a backup architecture that will support these distributed systems into the future.

Gartner Group predicts that local and remote replication, along with disk-based backup, will increasingly be used for recovery, with tape used primarily for archiving. The primary differentiator between a replication product and a backup product is the catalog and support for a robust set of backup recovery options, including support for all the common tape drives and libraries. An enterprise backup product must distinguish itself from the overall market by providing a robust and scalable catalog for tracking recovery options. It must also be heterogeneous in application and operating system support, including the common Unix platforms and Windows, at a minimum. The catalog must support backup from tape and disk backups and, increasingly, leading third-party replication products.

An alternate site for distributive systems disaster recovery is planned at a local school that will house redundant infrastructure to ensure business continuity of the ERP and other critical systems in case of a failure at the primary site. A test ERP system will run at the alternate site and will be kept in synch with the production ERP system so that it can be used as a failover system in an emergency. This synchronization will be accomplished through technology connected between the two sites.

Specific data back up recommendations include:

- Consider replication and backup as the two core technology components of recovery and design combined recovery strategies that incorporate both technologies to address planned and unplanned downtime.

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- Continue to expand TSM to provide the central recovery catalog that provides a view into all available recovery technologies used, including tape, disk, CDP (continuous data propagation) and replication options.
- Implement Tivoli CDP technology to provide backup services for critical District desktops and laptops (i.e., Treasurer).
- Install backup/recovery technology at an alternate site which will interface with backup/recovery technology at FHESC in order to support rapid synchronization of data and data recovery between the sites.
- Continue to implement backup of all critical systems through TSM.
- Create a redundant TSM server to reside at an alternate site for backup/recovery and failover.

Evaluation

The data backup plan will be evaluated based on the:

- Successful backup of all critical District systems by TSM
- Seamless rapid refresh of the production ERP system at the alternate site from the production at the FHESC Data Center

Recommendation 5: Data Center Redesign

Create a state-of-the-art Data Center to align with the growing trends of technology over the next 10 years. **District Tech Goals: 10, 15**

Current Situation

The District has moved its human resources, payroll, accounting, and purchasing application systems from a mainframe operating system to a PeopleSoft ERP, a web-based distributive system. The application runs on AIX operating system utilizing IBM P570 hardware. The backups for PeopleSoft and other applications are backed up by TSM software using a SAN and a STK tape library system. In addition, the District is upgrading servers to blade technology and VMWARE.

In the near future, the current tape SILO, a large automatic tape library system, will not be utilized in this evolving distributed technology and it must be replaced.

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Future Direction

Redesigning the Data Center will be necessary to accommodate the changes and technology evolution and growth. The purpose of this recommendation is to prepare the Data Center for future growth and to be a true machine/equipment room, utilizing the entire raised floor area for equipment and not personnel.

In addition, an enhanced tape library system suitable for the future will be integrated with the evolving state-of-the-art technologies.

Specific Data Center redesign recommendations include:

- Align the Data Center to utilize the maximum amount of raised floor space for future equipment growth
- Only essential personnel would remain in the Data Center
- Open the data control area and use that space for equipment
- Align server racks as recommended to get the volume of air required for cooling
- Align server racks as recommended for power distribution units that supply metered power to the cabinets
- Replace the current SILO tape library system

Evaluation

This recommendation will be evaluated and tracked through its completion using percent completed and other best practices for project management.

Recommendation 6: Data Center/Printing Services Consolidation

Provide one point-of-contact service for District-wide printing. **District Tech Goals: 2, 5, 7, 12, 17**

Current Situation

District printing needs are currently handled in two locations; the Data Center and Printing Services. The Data Center is in the FHESC, with pick up occurring from the loading dock. Printing Services is located at the McKesson building located off Florida Mango Road, north of the airport. This model requires schools and departments to separate their printing needs using two points of contact and two different sets of procedures.

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Future Direction

Consolidation of printing functions will provide a one-point, one-stop printing service for the District. This will allow for consolidated, cost effective, and user-friendly printing procedures, while giving the schools and departments:

- One-stop printing service
- A Will Call pickup center for all printed materials

Evaluation

This recommendation will be evaluated and tracked through its completion using percent completed and other best practices for project management.

Recommendation 7: Web Forms

Implement a District-wide web-based electronic forms application, providing true electronic forms functionality and completely replacing OmniForm Filler. **District Tech Goals: 10, 12, 15, 18**

Current Situation

OmniForm Filler was implemented in 1998, with the software being installed on three computers in each school or department. The initial 500 users were able to utilize OmniForm Filler to electronically "fill out" 13 different District forms. Today, the District owns a 7,000-user license of OmniForm Filler and it is used extensively throughout the District to complete over 500 different forms.

An electronic forms website exists (www.palmbeach.k12.fl.us/Records/FormSearch) where users access and download any of the over 500 forms for use with OmniForm Filler software. The electronic forms web site is one of the most visited of all District websites. Forms that go home to a parent are translated into Spanish, Haitian Creole and Portuguese. The translated forms are available in the same OmniForm Filler file as the English version of the form.

Basic and advanced OmniForm Filler training classes are held on a regular basis. Thousands of users have received the software training since the initial 1998 implementation.

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Future Direction

Despite its popularity and extensive use, OmniForm Filler has four significant limitations:

1. OmniForm forms are not "web-enabled."
2. Each user's form data is de-centralized in its own small database within that single OmniForm file on that user's computer or on a network directory. Centralized management of form data is not possible.
3. OmniForm's electronic signature capabilities are limited.
4. The company that develops and markets OmniForm Filler, Nuance, has discontinued development and upgrades of their OmniForm product line.

The change to a web-based forms environment will facilitate ease of use and overcome the four limitations listed above. Staff will be able to enter and retrieve form data readily. District form data will be able to be centrally managed. All new Florida Department of Education (DOE) systems are being developed within a web-based environment. A web-based environment for form data will integrate with the District's Educational Data Warehouse, ERP, Student Information Systems, CAFM initiatives, and other systems where applicable.

Specific web forms recommendations include:

- Complete web-based form software Proof of Concept project.
- Analyze Proof of Concept and compare it with web-based electronic forms products from several other leading companies.
- Choose the software product and company and purchase the system.
- Plan a phased implementation.
- Design all new forms in the newly purchased software product.
- Coordinate with IT Applications staff when and where programming assistance is necessary.
- Implement hardware and software.
- Train users.
- Integrate the application with the EDW, ERP, and CAFM where appropriate.

Evaluation

This recommendation will be evaluated and tracked through its completion using percent completed and other best practices for project management.

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Recommendation 8: Enterprise Content Management

Evolve the District's current legacy document imaging system into an enterprise content management (ECM) system integrated with the District's ERP and CAFM systems. **District Tech Goals: 10, 12, 15, 17, 18**

Current Situation

The document imaging system (Stellent IBPM) stores and manages the District's most mission critical documents including inactive student records, personnel files, employee benefits, employment applicant documents, architectural drawings, school construction project files, and litigation case files. The system currently houses over 8 million documents and handles over 6,000 retrievals of documents each day by District staff. The document imaging system is available to users through a software viewer interface. In addition, off-site users requiring access to documents at home or at an off-site location with a laptop retrieve documents through a web-enabled document imaging application.

The document imaging system was integrated in one specific area with the District ERP. Principals/Directors hiring teachers and administrative staff are able to retrieve applicants' employment reference documents from within the PeopleSoft application.

Expansion of the document imaging system is constant with new applications currently being developed for Legal Services, Environmental Control, Treasury, and Real Estate. The Division of Facilities Management considers Stellent to be their primary document repository for all of their many areas of responsibility.

Stellent IBPM training classes are held on a regular basis. Hundreds of users have received the software training.

Future Direction

Throughout the IT industry and in many large companies, document imaging systems are evolving into ECM (enterprise content management) systems. These systems no longer house only paper documents scanned into the system. ECM systems house and manage a wide variety of "objects" to

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allow users quick and simultaneous access to all types of information related to a single topic, project, or transaction. "Objects" can be:

- Scanned paper documents
- Webpage content
- Emails
- Photographs
- Adobe Acrobat (pdf) documents
- Word files and spreadsheets
- CAD (computer assisted design) drawings

In addition, workflow software can be included in the ECM system to electronically "route" documents and "objects" through a business process to enable an entirely paperless operation.

Specific ECM recommendations include:

- Coordinate with IT Applications staff to implement one ECM system for all District content.
- Choose one area or business process to implement workflow.
- Design the paperless workflow.
- Plan a phased implementation.
- Test the system.
- Implement hardware and software.
- Train users.
- Integrate the system with the ERP and CAFM where appropriate.

Evaluation

This recommendation will be evaluated and tracked through its completion using percent completed and other best practices for project management.

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IT Security Administration and Server Infrastructure

Executive Overview

Security administration has become one of the greatest challenges facing every organization. While the desire is to provide greater access to data, the threats of viruses, worms, and hackers continue to increase. Our primary goal is to help the students achieve the finest level of education we can provide. However, in today's complex distributed environment, if users, especially our students, cannot get to their mission-critical applications, the result is they cannot perform their jobs or acquire an education. As we provide District data to teachers, students, parents, and community agencies, security becomes paramount.

Security should be designed into the network architecture so that it does not have to be added after the architecture is deployed. This architecture will provide a framework for the SDPBC to make security decisions based on business needs as well as local, state, and federal regulations during the architecture and design phases of network projects as well as during the requirement phases of future infrastructure and application developments and implementations.

The Security Architecture will be customized to emphasize the control of threats and implement countermeasures associated with SDPBC's planned network architecture. It will set forth the technology, management, and process principles that the SDPBC will be able to use to secure its network infrastructure as it is deployed. In addition the Security Architecture Plan will identify the security policies, standards and processes that the SDPBC will need to continue to enhance or institute.

The Security Team will have the responsibility of developing, implementing, and maintaining the Security Architecture Plan and includes developing a security awareness program and on-going development of policies, access methods and procedures, and standards for data security.

Our new addition, the Server Infrastructure Team, will ensure that all servers throughout the District are current devices with the latest technology available. The goal of this team will be the centralized support which includes patches, backups, and capacity planning. All outdated servers will be replaced for all server platforms including Windows and AIX. This will enable students and teachers to access, in

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a secure manner, all educational tools and applications necessary to achieve the highest possible level of instruction and learning.

Recommendation 1: Install, Support, and Enhance Software Management System

Provide computer asset control, inventory, program updates, operating system (OS) patching and program installation for all computers in classrooms and administrative offices throughout the District. This includes the removal of unauthorized programs and applications. **District Tech Goals: 9, 11, 13**

Current Situation

The District currently does not have procedures or programs in place to automatically track, inventory and update the computers on the District's network. Recent proliferation of network malware (malicious software) requires that all computers on the District's network run with current software and only software that has been approved by the District. Failure to do this will cause many computers on the network to become security risks and prone to operating incorrectly or not at all, resulting in the loss of the computer for its intended educational or administrative use.

Future Direction

The District will implement a software maintenance system that will: 1) maintain the software on the District's networked PCs, 2) inventory all software used in the District's network, 3) report on its use and the frequency that it is being used. This will help detect malware in the system and identify unused software that could be discontinued and uninstalled. OS patching will keep vulnerabilities out of the network and improve the availability and reliability of the PCs for teacher and student use.

Evaluation

This recommendation can be evaluated by tracking the number of malware incidents and outages associated with these incidents. A successful implementation will result in a lower number of incidents and outages.

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Recommendation 2: Install, Support, and Enhance a User Identity Management System

A user identity management system is required to manage the provisioning of teacher and student network accounts and to provide a self-service password reset function to network users. **District Tech Goals: 4, 9, 10, 11, 13**

Current Situation

All user account maintenance is done manually by IT security, this includes provisioning of new user accounts, account maintenance due to employee moves and terminations, and password resets. The manual procedures result in delays for network users, including teachers, which result in network resources being unavailable for the user until the manual procedures are completed. The District is unable to provide student personal network accounts as long as these procedures remain manual.

Future Direction

The District will implement a user identity management system in three phases as shown in the table below.

Password Reset	Immediate Password self-reset capabilities for 30,000 internal non-student users accessing both Windows Security (Active Directory) and RACF accounts.
Enterprise Single Sign- On	Reduced sign-on for 200,000 internal student and non-student users and external users. Users will be accessing either web-based, server-based, or both types of applications. Enterprise Single Sign-On functionality will simplify and expedite log-on procedures for users, as well as decrease the administration cost for providing these capabilities by automating the function.
Provisioning Solution	The addition of provisioning will further facilitate data security, application access and cost reductions in maintaining access and security for applications across the District by automating the process of adding and removing users from access to the system and/or to specific groups of applications based on roles, titles, groups they belong to, or other criteria as defined by the District.

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Evaluation

This recommendation can be evaluated by tracking the number of calls to the Help Desk for password resets and the number of network user accounts that have been provisioned. A successful implementation will result in fewer calls to the Help Desk for password resets and a greater number of network user accounts being created.

Recommendation 3: Install, Support, and Enhance Caching Appliances at all School Locations

Provide caching services at the school level. **District Tech Goals: 10, 11, 13, 15**

Current Situation

Caching services are currently provided at the network hub located at the District headquarters.

Future Direction

The District will install a caching appliance at every school location. This will provide caching services to reduce the amount of network access request time and District network bandwidth utilization. This will result in increased network performance for educational network resources.

Evaluation

Caching can be evaluated by measuring network access response times and network bandwidth utilization on the links from school centers to the District headquarters. A successful implementation will result in lower network access response times and lower network bandwidth utilization.

Recommendation 4: Install, Support, and Enhance Dual Authentication System

Provide a dual authentication method for all network system administrators to decrease the opportunity of comprised access. **District Tech Goals: 4, 9, 10, 11, 13**

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Current Situation

Users authenticate using only Windows Active Directory authentication which can be compromised by readily available software on the Internet.

Future Direction

The District will implement a dual authentication system for network system administrators to reduce the likelihood of the system administrator IDs being compromised. Additionally, all users with elevated privileges will require two forms of identification to make system compromise more difficult. This will provide a secure network for teachers and students to access education technologies that are available over the District networking resources.

Evaluation

Dual authentication can be evaluated by tracking the number of incidents caused by a system administrator ID being compromised and the amount of time that educational resources are not available due to the compromise. A successful implementation will see a decrease in the number of incidents and a increase in the amount of time that educational resources are available for teacher and student use.

Recommendation 5: Consolidate Servers Using Virtualization

Provide additional instructional, administrative and system servers to run new applications in the District without using more floor space in the computer room and convert existing servers to virtualized servers.
District Tech Goals: 10,11,13

Current Situation

The number of servers required to support new applications throughout the District is increasing rapidly while the available floor space needed for these servers is remaining constant.

Future Direction

The District will implement server virtualization using the latest technology in blade servers. This will physically reduce the footprint currently required for large floor and rack mounted servers and decrease

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the amount of time to bring a new server online. The existing physical servers that are virtualized will be redeployed to school centers to provide additional network services at the school centers.

Evaluation

Server virtualization can be evaluated by measuring the increase in the number of servers that are providing services and the reduction of the footprint required to support these servers.

Recommendation 6: Install, Support, Administer and Enhance Additional SAN (Storage Area Network)

More disk space is needed to provide teachers, students, administrators, enterprise systems, server back ups, and business departments with adequate disk storage in a secure and reliable environment. **District Tech Goals: 10, 11, 13**

Current Situation

The District's current SAN has reached capacity. There is no disk storage available to teachers and students to allow them to save their electronic work. The District is unable to give all students network IDs because there is no disk storage available for their required personal directories.

Future Direction

Install an additional storage area network (SAN). This will allow all student and teacher files to be centrally located in one mass storage environment. This enables support, backups and monitoring from one central location to address all student, teacher, and staff space allocation needs and allows for the creation of student network IDs.

Evaluation

The SAN implementation can be evaluated by the successful consolidation of files in one centralized location and by providing adequate potential for growth, scalability and performance.

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Recommendation 7: Implement, Support and Enhance Email Archive

Provide an email archive system that will reduce the disk space needed on local PCs and servers to store emails. This system will reduce the amount of time that school-based personnel spend managing local email repositories while complying with email retention requirements. **District Tech Goals: 10, 11, 13**

Current Situation

Email repository maintenance is currently the responsibility of each user which requires a user to be aware of retention rules and disk space availability. This situation creates a strain on local disk resources and the amount of time required to properly manage mailboxes. Users are unaware of the retention requirements specified by law which may result in emails not being properly retained.

Future Direction

Implement an email archiving system that will have the ability to automatically remove all large local mail files from the PCs and network servers and archive them on centrally located storage. This will free up a significant amount of space for more student applications and reduce the users' input to manage and retain files for safe keeping and regulatory requirements.

Evaluation

Email archiving can be evaluated by measuring the reduction of local PC and server disk space needed for email storage and the fulfillment of email retention requirements.

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Performance Accountability

Executive Summary

The mission of the Division of Performance Accountability (PA) is to further embed standards- and data-driven practices in the school system by providing (1) student and system performance standards; (2) a comprehensive set of quality assessments that are aligned to the Sunshine State Standards; (3) an effective and efficient method to administer the assessments; (4) instantly accessible, understandable and actionable leading and lagging indicator reports, graphs, and dashboards about student and system performance to teachers, administrators, families, and the community; (5) a data-driven method for determining successful and unsuccessful programs and practices; (6) professional development in developing quality assessment practices, in interpreting and using data, and in producing quality school improvement plans; and (7) sufficient support and technical assistance to eligible schools to successfully implement the Federal No Child Left Behind Act of 2001.

PA relies extensively on a variety of technology tools to accomplish our mission. PA uses our locally developed software to create the items, build the tests, and store the tests. PA uses SAS to analyze the tests and to evaluate District programs and practices. PA uses computers, scanners, or clickers to administer, score, and report the tests. PA is responsible for creating, developing, and maintaining the District's educational data warehouse, which is the District's primary tool for providing the leading and lagging indicator reports, graphs, and dashboards. The reports are used in the development of quality school improvement plans and to monitor the performance of the NCLB groups during the school year.

Our division is comprised of five departments: Educational Data Warehouse, NCLB/Federal Grants, Research and Evaluation, School Improvement, and Student Assessment. The following recommendations portray the technology needs of the Educational Data Warehouse and Research and Evaluation as the technology needs of our other departments are addressed in other parts of this document.

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Research and Evaluation

Executive Overview

The Department of Research and Evaluation serves students, families, school District personnel, and the community by (1) coordinating the administration, analysis, and reporting of State and District survey and testing programs, (2) ensuring assessments are accurate and can be used to predict FCAT performance, (3) coordinating program evaluations to determine the District's return on investment based on increase of student achievement, and (4) assisting District and school-based personnel to interpret data and reports.

The Department of Research and Evaluation envisions the integration of a stronger toolset to further empower our ability to provide the necessary accurate information in the most flexible and time-sensitive way.

Currently we provide a steady stream of much needed statistical data that determines the course of action of teachers and administrators regarding quality of education for District students. We gather and analyze data from many sources such as State reports, data reported by schools, and scanned test results. We continue to improve our processes and evolve as new challenges arise as a result of our growing consumer base.

Our goal is to enhance our already growing capability to gather data with more quality assurance and to provide information in ways that are more and more accessible to our consumers in the District at large. Our job is to work hand-in-hand with the Educational Data Warehouse (EDW), to not only to provide information, but to make the information available, accessible and comprehensible to those who may not have a strong background in statistical analysis.

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Improving Communications with Consumers

Recommendation 1: Increased Access to State Educational Data Warehouse

The Division of Performance Accountability in the SDPBC will need increased access to the Florida Department of Education K-20 Educational Data Warehouse for the purpose of analyzing educational programs and changes in the SDPBC compared to State average performance and trends. **District Tech Goals 2, 3, 5, 7**

Current Situation

The DRE currently has access to anonymous detailed FCAT SSS reading and mathematics data from the State EDW.

Future Direction

The Division of Performance Accountability DRE will acquire access to FCAT NRT, FCAT SSS Science, FCAT Writing and other available data.

Evaluation

Success will be measured by the inclusion of more global data in our reports.

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Educational Data Warehouse (EDW)

Executive Overview

The Department of Educational Data Warehouse (EDW) serves District, area and school personnel with a reporting solution that allows users to access student assessment, demographic, and academic status information. EDW also supports our business partners by providing files to meet their data requirements.

The EDW Team will continue to assimilate data into reports that consist of Student Listings, Graphs, Summary Tables, management matrices and Data Panels to allow the users to make decisions at the District, area, administrative and teacher levels to accomplish the key results.

Currently EDW utilizes data from various sources, including the student and personnel systems and the state testing data base. The EDW Team provides technical support for hardware and applications software utilized by EDW as well as the Performance Accountability Division, including leadership in data-driven decision-making.

The continued success of the EDW project is highly contingent upon the awareness of users, not only in navigating through the system, but in analyzing the data to assist with making decisions to provide research-based strategies for improvement.

The goal of the EDW Team is to continue to anticipate and meet the data needs of the District, areas, schools, and business partners. Our data warehouse will continue to be the central repository for data while maintaining quality and ease of use. Our job is to work closely with all the Division Departments to verify accuracy of our reports and to provide reports to all users in an expeditious timeframe.

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Providing Reporting Solution to Classroom Teachers through Educational Data Warehouse (EDW)

Recommendation 1: Teacher Access to Student Data

Provide student assessment, demographic and academic status information to classroom teachers through the EDW. **District Tech Goals: 2, 3, 4, 6, 7, 13, 15, 18**

Current Situation

EDW currently supports access to student assessment, demographic and academic status information by District Departments, Area Support Staff, and School Administration and Support Staff. Classroom teachers currently rely on designees at the school center to identify, filter and run reports for students they teach. This can delay, restrict access, and limit information required by teachers to make timely and meaningful instructional decisions on a daily basis in the classroom.

Future Direction

EDW will provide a centralized reporting solution for classroom teachers that will allow access to their students' data. A variety of reports will be developed that will allow teachers real-time information about their students' progress and will provide alerts when changes occur. EDW will also provide links for teachers that allow access to a variety of instructional assessment sources.

Evaluation

The success of this teachers' reporting solution will be measured by the increased access of EDW Reports by classroom teachers.

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Providing Dashboard Status on Defined District Key Results through Educational Data Warehouse (EDW)

Recommendation 2: Dashboard

Provide a quick reference to District, Area and School Personnel to identify strengths and weaknesses related to the District's Key Results. **District Tech Goals: 2, 3, 6, 7, 12, 13, 15, 18**

Current Situation

Users of EDW currently must analyze several reports to determine compliance with the District's Key Results. This is a time-consuming process and allows the possibility of discrepancies in analysis.

Future Direction

EDW will provide a centralized reporting solution (color-coded dashboard) that will provide the user a quick, consistent, visual, time-sensitive indicator of Key Result compliance.

Evaluation

The success of this reporting solution will be measured by the ability of users to access the EDW dashboard.

Recommendation 3: Hardware Platforms

Provide the Division of Performance Accountability with a hardware platform(s) that meet the District's technology platform direction. **District Tech Goals: 7, 10, 11, 13**

Current Situation

Currently we are faced with outdated servers with limited storage capacity and processing power. This impacts the ability to produce complex projects because of the limits of the software and hardware infrastructure.

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Future Direction

The new platforms will incorporate the latest technologies, faster CPUs and larger storage capacity. Additionally, they will require less physical space to house the servers.

Evaluation

Success will be evaluated by implementation of applications on the new platform.

Recommendation 4: SAS

Provide SAS license(s) for a minimum of 10 additional Division of Performance Accountability users.
District Tech Goals: 2, 3, 6, 7, 12, 15

Current Situation

Currently as we face an increased demand from an increasing numbers of clients for statistical analyses, we are constrained by the limits of the software and hardware infrastructure. The shortage of SAS processing capability has repeatedly extended turn-around on time-sensitive projects due to lengthy program processing.

Future Direction

The additional SAS license(s) will allow for improved processing efficiency for increased multitasking and organizational effectiveness.

Evaluation

Success will be evaluated by measurement of increased output of data and reports.

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Recommendation 5: Provide Awareness Sessions for Accessing and Utilizing EDW Reports

EDW will provide District, area and school-based users with continued awareness sessions highlighting updates on navigation and analysis of EDW reports. **District Tech Goals: 1, 2, 3, 6, 7, 11, 15**

Current Situation

The EDW Team is currently providing Awareness Sessions for District, area, and school administration and support staff on the current EDW reports.

Future Direction

With the changing dynamics of District and State requirements, EDW continues to evolve to meet these requirements. It is essential that users stay current with navigating and analyzing the reports to meet compliance needs. The EDW Team will provide Awareness Sessions to provide support to users.

Evaluation

Awareness Sessions on teachers' access, the dashboard, and other requirements are given to users.

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Department of Assessment

Executive Overview

The Department of Assessment provides District, area and school personnel with an online assessment program through which users can access common assessments, mini benchmark assessments, supplemental resources and reports that outline student progress.

The Department of Assessment utilizes the Internet to provide users with information on federal and state accountability rules; FCAT assessment guidelines including item style and format; aligning instruction to assessment, and student assessment literacy. Currently, the Department of Assessment utilizes computers, clicker technology, scanning solutions and breeze web vignettes to ensure proper usage, just in time data and immediate feedback for student assessments.

Recommendation 1: Platform for Administering and Reporting Formative Assessments

Provide a platform for administering and reporting formative assessments to students, parents, teachers and principals. **District Tech Goals: 2, 3, 6,**

Current Situation

The Department of Assessment is currently providing 48 AAA schools and 1 non-AAA school with access to the Online Assessment Center.

Future Direction

The Department of Assessment will provide more schools with access to the Online Assessment Center. In addition, the Department of Assessment will provide additional online tests.

Evaluation

Success will be measured by increased access to the online assessment program.

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