



Broward County Public Schools

**Review, Analysis, and Upgrade of SBBC's
Strategic Information Technology Planning Blueprint**

Background and Executive Summary

*Prepared for the School Board of Broward County's
Audit Committee*

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1.0 Background and Rationale

During the spring/summer of 2003, the School Board of Broward County (SBBC) became increasingly concerned about the leadership and learner/ customer-centered focus of its "Educational Technology Services Department." The district leadership was also concerned that ETS was functioning and attempting to maintain SBBC's "Digital Infrastructure" without a well-developed IT strategy and blueprint. In August of 2003, the school approved the recommendation to hire the Center for Educational Leadership and Technology (CELT) to conduct an extensive analysis of SBBC's information technology needs, assess current information technology initiatives, and provide specific recommendations with clearly focused action plans and corresponding benefits/results. The final web-based report/blueprint was presented to and accepted by the SBBC in June of 2004. This document aligned the successful implementation of the school district's vision, mission, and goals and contemporary education reforms to a comprehensive and cost-effective information technology system. Without seamless and reliable implementation of SBBC's information technology blueprint, many of SBBC's current and future educational initiatives will be marginalized or may fail altogether.

As stated, it has been nearly two years since the School Board of Broward County completed an extensive review of its contemporary educational reforms/improvements and aligned them to an enterprise-wide information technology system. To date, there has not been an evaluation of SBBC's implementation of the IT Blueprint. Also, during this timeframe, the vast majority of hardware, software, and network components within SBBC have been covered under some type of maintenance/upgrade program. Today, technology planning, IT architecture, and systems integration services are just as critical to the successful implementation of information technology as other related technology components. As a result of SBBC's past financial and human resources investment in technology, development of a strategic *Information Technology Blueprint/Plan*, and ongoing public stewardship, the following steps were taken:

1. Review SBBC's implementation of the strategic *Information Technology Blueprint/Plan*.
2. Analysis of SBBC's current and emerging teaching, learning, and leadership development initiatives.
3. Upgrade - SBBC's strategic *Information Technology Blueprint/Plan*.



In addition, this review included a detailed analysis of these other areas:

1. Assess the budget impact and cost effectiveness of all recent and currently proposed IT RFPs and IT contracts within SBBC.
2. Review the cost benefit analysis, return on investment, and Total Cost of Ownership models used by the district/ETS to make informed procurement decisions.
3. Identify current/emerging needs and educational initiatives with SBBC and assess the capacity of the IT Blueprint implementation activities and district/ETS staff to support their successful implementation.
4. Read and report the status of previous audit requests, exceptions, and observations of ETS from January 2005 to October 2006.
5. Assess how effectively the district/ETS staff uses "Service Level Agreement" contracts for payment of major information technology vendors based upon performance level.



2.0 Executive Summary

Background

In the Fall of 2004, the newly appointed CIO and Education Technology Services (ETS) management staff accepted all of the CELT *Information Technology Blueprint* recommendations and submitted the plan to the School Board of Broward County on September 21, 2004 for approval. This decision was impressive and bold because the IT Blueprint involved launching eighty-four (84) projects.

The IT projects assessed and reviewed cover improvements in all aspects of BCPS' use of technology from curriculum/staff development, business applications, and infrastructure to community access. An assessment of each of these projects is provided in detail in the body of the full report which is available on the web site <https://customers.celtcorp.com/bets> by clicking the report in the left column titled 'SBBC - IT Blueprint Review, Analysis, and Upgrade.

The current list (as of October 2006) of major ETS technology projects identified an additional 31 projects. The process by which additional projects were added is:

- 14 were Board approved
- 10 were Senior Management / Capital Review Committee approved
- 3 were established to meet state requirements
- 4 were ETS management approved

The overall process for adding/cancelling IT projects needs to be improved since some departments within BCPS did not know that projects had been added that directly affected them. It should be noted that several BCPS School Board members and members of Senior Management view the current situation as a list of projects and not a strategic plan.

Each of the 100 projects reviewed was rated on status and effectiveness. The status was defined as completed, active, on hold, cancelled, or combined. The effectiveness ratings ranged from not effective to very effective. The IT Blueprint Review, Analysis, and Upgrade Report contains specific recommendations for improving each of the IT projects assessed.



Budget Tracking. The only budget data that exists are the original budget projections, by project, and the specific cost projections on capital projects. There has been no actual tracking of project costs except for the capital projects. It should be noted that the financial system cannot do project-based budgeting/tracking or cost center management.

Schedule Tracking. The schedule/milestone tracking is accomplished through the current ETS project management office (PMO). The system can accommodate a detailed plan by task, timeline, resource, and milestones with concurrent/dependent tasks for each project. It should be noted that some projects did not have a project plan so there is a recording of actuals only; some of the data is inaccurate.

Summative Assessment. As of February 2006, the status for the 100 projects is as follows:

- A. 56% or 56 of the 100 projects have been completed; 20% or 11 of the completed projects were delivered late; and, 9% or 5 of the completed projects were rated as "not effective" or "minimally effective".
- B. 33% (33) of the 100 projects have not been completed and remain active; 63% (21) of the remaining active projects have missed their scheduled milestones; and, 45% (15) of the currently active projects have been judged to be "not effective" or "minimally effective".
- C. 11% (11) of the projects are on hold, cancelled or combined with another project although several of the projects on hold are considered core/foundational IT initiatives.

The complete/detailed assessment report outlines the review/analysis process, specific findings, and recommendations/commendations.

Further, from CELT's point of view, since there was limited funding, the focus could/should have been on projects that would significantly improve teaching and learning across the district even at the expense of other projects. When the 15 most important/foundational projects from a teaching and learning perspective are examined, the summary becomes:

- 40% (6) of the key/foundational projects were completed, with 50% (3) of these most significant projects judged to be "not effective" or "minimally effective"
- 60% (9) of the key/foundational projects are either active, on hold or cancelled, with 90% (8) of these judged to be "not effective" or "minimally effective" at this time

A discussion of the most important projects for teaching and learning follows.



Overarching/General

Eliminate the 'crisis of confidence' that exists between the district staff and ETS

Status: Active - 10% Complete

Rating: Not Effective

Projects with issues at the start of the current school year that contributed to the ongoing lack of confidence in ETS included the time management system (Kronos), the gradebook system (Pinnacle), the central help desk system (Customer Resource Management - CRM), and the instability of the email system (CAB). The detailed report offers 8 recommendations to consider for improving this situation.

Curriculum and Assessment

1. CTA-1. Develop a holistic approach for building a CD/IM system that incorporates the tools that link critical data for teaching, learning, administration and staff development.

Status: Active - 80% complete

Rating: Very Effective

This project directly impacts every teacher and student within BCPS. The recent implementation of the teacher portal was very successful. Broward Virtual University is now operational and functioning. Technology tutorials delivered through Atomic Learning have been a key piece of this effort. Broward has published more than 7,000 lesson plans and aligned them to the curriculum. Overall, Broward County Public Schools is among the national leaders in this area.

2. C&A-4. Procure and implement a Web-based, district-wide online assessment system with valid and reliable test item banks aligned to district curriculum, state standards and FCAT.

Status: Active - 18% Complete

Rating: Minimally Effective

An RFP for an online assessment system has been developed. However, based on budget limitations and other competing priorities, the RFP has not been released and no date for release has been set.



In the interim, BCPS has developed mini-benchmark assessment tests that are administered in the classroom on a weekly basis. A printer/scanner is located in each school to allow teachers to garner immediate feedback from these paper-based tests. The test data are transferred automatically into Virtual Counselor for review and planning.

Teaching and Learning Technologies

3. TLT-2. Transition the school library/media centers into Information and Technology Resource Centers.

Status: Active – 20% Complete

Rating: Minimally Effective

At this time, most schools still have both library and media personnel as well as school-based technology support staff. Their individual roles and/or efforts have not been fully coordinated within the framework of an Information and Technology Resource Center. It should be noted that this project was on hold until a new library/media director was named in the fall of 2006.

School Facilities and Learning Environments

4. TLE-3. Develop a framework for the development/implementation of Virtual Community Learning Centers that will provide Broward County with on line courses, training programs, independent/community study opportunities, and staff development programs.

Status: 100% Complete

Rating: Very Effective

The first phase of this effort consisted of a distance learning pilot in order to determine ancillary costs and benefits as well as develop policies that support and encourage the use of video conferencing and distance learning in daily practice.

The second phase of this effort involved the identification and implementation of an online learning management tool to assist with the delivery and monitoring of eLearning courses. Approximately 20 teachers have been trained to date on the selected tool (Blackboard for course creation) and an additional 50 teachers are on the waiting list for this training.



The third phase focused on the upgrade of district-wide video and audio conferencing, bridging, scheduling, and management systems along with the placement of video conferencing units in all schools and departments.

With the completion of this project, it is believed that BCPS now operates the largest video conferencing network in the nation. These resources are used for providing direct instruction for students and conducting meetings among administrators across the district. Approximately 8,000 students per week attend classes that are delivered over this conferencing network.

5. TLE-5. Implement Technology Infrastructure Enhancements, Upgrade and Refresh

Status: 100% Complete

Rating: Very Effective

The first phase of this comprehensive technology refresh effort consisted of funding and initiating replacement of equipment as required by existing technology standards. Equipment that has been identified as reaching the end of its useful life has been replaced and/or removed. The district's upgraded technology standards were used to govern the procurement of replacement equipment. There is a standard classroom configuration for all new and renovated classrooms and funds have been allocated over the next 5 years to retrofit existing classrooms. Although this project is officially closed, it continues annually throughout the district.

Organizational Development and Staffing

6. ODS-1. Improve School Based and Department Level Technology Support

Status: Active - 15% complete

Rating: Minimally Effective

This project continues to be a significant problem. It has been reviewed many times. There have been several recommendations and scenarios proposed. Most have never been acted upon. This area will require bold and courageous leadership at the district level. Solving this problem is not easy and most districts in the U.S. struggle with this concern. However, with more technology being put into BCPS' schools, this only compounds the problem.



Based upon a principal's survey, this project was viewed as the most important IT topic for improvement. The principals often fund the IT support position(s) themselves. Since there are no standards for equitable support, some high schools have 3 positions and others have only one. Approximately half of the elementary schools have at least one on-site person and the others have none or a teacher does this job as a part-time assignment.

There is a continuum of options available to solve the IT support problems. There are many models where the central IT organization can significantly help the school-based technical support staff. Many of these are listed in the full assessment report.

Finally, the current implementation of the "improved" central help desk system has been judged to be minimally effective. It cost \$1.5M and does not provide the needed function/value.

7. SDT-1. Develop specifications and procure a web-based staff development planning and management system to support a proficiency-based approach to staff development planning and management. This approach will align and manage staff proficiencies and staff development initiatives with student learning needs and organizational improvement goals.

Status: Cancelled

Rating: Not Effective

This project was designed to assist school district personnel in managing their most important and expensive resource – staff. The alignment of staff proficiencies with learner needs and the correlation of staff development programs with required staff proficiencies are essential to high-performing and results-oriented learning organizations. The project was cancelled by the former Associate Superintendent, Human Resources.



Standards, Procurement, and Maintenance

8. SPMI-2. Develop and consistently implement a detailed Total Cost of Ownership (TCO) model for use when costing out all BCPS' information technology projects.

Status: 100% Complete

Rating: Not Effective

While the original research was done well, there was only one real result—base-lining ETS costs with other similar size school districts. The concept of TCO was not embedded into BCPS' ongoing IT procurements as stated in the original goal. The concept of identifying savings to calculate payback, cost redirects, and/or rate of return need to be added to the TCO project.

Policies and Procedures

9. P&P-2. Implement a flexible policy at the school level to ensure a minimum level of equity for access, use and support of information technology resources throughout the Broward County Public Schools.

Status: On Hold

Rating: Not Effective

Currently, the district only considers "access" when updating and implementing its IT equity policy. It is important to note that although "access" to technology is equitable in most schools, technology "use" varies greatly from drill and practice to tutorials and simulations. In addition, technical "support" and systems reliability differ greatly from school to school.

District, School, and Program-Level Planning

10. DSSP-2. Implement a web-based template for school and program improvement planning that facilitates efficient development, storage, query, monitoring, and evaluation process utilizing information from the district's data warehouse.

Status: 100% Complete

Rating: Minimally Effective



SBBC has a process for aligning and coordinating all major district plans (strategic plan, technology plan) with the district goals. The Sterling process is used for the continuous improvement model. These activities are events – viewed as something to be done at a certain time. They are not referred to or used on a daily basis as part of the instructionally focused decision making process.

The School Improvement Plans are generated, but there is not an automatic update of the information in real time from the data warehouse in order to provide the initial or ongoing reporting for status against goals. Primarily, this effort is a manual one.

Administrative and Decision Support Systems

11. ADSS-4. Development of specifications and procurement of a web-based contemporary student information system that supports integrated on-line attendance, gradebook, auto dialer, and related components.

Status: On Hold

Rating: Not Effective

The project is on hold due to the lack of funding, compelling business case, or need for the project as perceived by ETS staff. The district hosted a series of Student Information System vendor presentations in 2004. While this project would be a major undertaking, the district needs to undergo a major transition to a web-based student system in order to meet the needs of the school principals, staff, and students.

The current system is over 20 years old and requires costly application program interfaces (API) with many other more independent solutions, such as the Gradebook, the autodialer (Parentlink), independent scheduling systems, etc. There is potential to make this a joint project with other large Florida districts in order to minimize costs.

12. ADSS-3. Implement a consolidated/enterprise-wide document management system that includes imaging, faxing, copying, storage, dissemination and retrieval of all district documents.

Status: On Hold

Rating: Not Effective

A district-wide document management system has significant cost savings potential. BCPS must consider a strategy/project scope that encompasses creating, printing, copying, storing, distributing, retrieving, archiving, and viewing documents. This



would include bundling the copiers, faxes, printers, imaging, scanners, portable devices, and consumables into a master bid instead of treating each one as a separate procurement. Such a system would accommodate all BCPS documents such as agendas, reports, meeting minutes, contracts, policy manuals, and reference documents (including construction documents). Currently, there are multiple efforts in the district to acquire independent document management systems (facilities, management audits, and ETS for example). BCPS should consider using the model developed and implemented by the Dallas Independent School District.

13. ADSS-6. Expand the BCPS award winning data warehouse to include improved/simpler access tools and additional data from student and business/support systems.

Status: 100% Complete

Rating: Minimally Effective

The data warehouse access software upgrade was completed in 2005 with the acquisition of data mining tools from Hyperion. Most users found the tools/data structures too difficult to use so they did not build their own custom reports. Instead, they relied on ETS to build their reports. Presently, there are approximately 100 pre-defined queries built from the central relational database. The original intent was to minimize the standalone databases being built at the school level using File Maker Pro. Most school-based operational reports continue to be done locally at the school level requiring access to data that is stored centrally. Although this may be a workable way for the school to operate, it is not efficient.

Communications and Network Infrastructure

14. Implement a method for establishing and monitoring quality of service metrics and payments based upon a standard service level agreement for all major IT procurements.

Status: Active - 80% Complete

Rating: Effective

The capacity and the proactive management of the network has been continuously expanding and made more reliable with well-defined monitoring processes. However, the systemic use of service level agreements has not been undertaken. There are no service level agreements with IT vendors for the major IT initiatives within BCPS. Without performance measures, BCPS payments are based upon time – not on the quality and reliability of service provided.



The major steps in a service level agreement process are:

1. Define a catalog of services for the organization.
2. Commit to a service level agreement for each of the services in the catalog. This would be a written agreement with the customer.
3. Monitor the service level agreement with specific measurements.
4. Publish/meet with the customer on regular status.
5. Provide continuous improvement on the service level agreement year after year.
6. Link the customer service levels to the vendor service levels needed to support the committed customer service levels.
7. Include a payment clause based on service level agreement performance with the vendor.

BCPS' focus has been primarily on step 3, (monitor the service level agreement with specific measurements). The organization should now undertake the remaining items (1-2 and 4-7) in the process.

Monitoring and Evaluation

15. M&E-3. Establish a technology project management office within ETS initially focused on the efficient/effective management of IT projects and then migrated to support the management of district projects.

Status: 100% Complete

Rating: Minimally Effective

The current implementation of the Project Management Office (PMO) within ETS only records the status of projects based upon information from the various project managers. There is no interpretation of results, independent validation, or data integrity. Currently, the PMO only has recording and reporting responsibility. The PMO does not consistently insist on detailed project plans from project managers and only records status as reported by the project managers. For the major issues of the time management project (Kronos), the principal portal (Knexus), and the gradebook (Pinnacle), the project status reports showed that the projects were progressing as planned, when in fact there were major issues with these initiatives throughout the district. Generally, there were no entries for technology projects outside of ETS. Such projects were discovered late in the process and were added occasionally, such as the security tracking system (STAR). There are projects, such as the sub-central system upgrade, which were not included in the PMO system, even though there is an ETS component.



Summary

The following summary observations of ETS were made from interviews with ETS Directors and Senior Management members:

1. There is not enough interaction between ETS and its customers. ETS is still surprised by projects that require their help after the project has been approved by a grant or by management, but with no prior involvement by ETS. In general, ETS customers want more interaction and participation. Further, ETS staff wants more interaction with other BCPS departments on all Technology Projects.
2. Senior Managers and many principals believe technology needs to be a productivity tool, but instead it is often viewed as a detractor at this time. They note that there are too many technology projects with implementation problems that are plaguing the district.
3. At the same time, as noted in the detailed report and this executive summary, there are two BCPS IT initiatives that are exemplary and serve as national models.