

Rudolph F. Crew, Superintendent of Schools

**SUBJECT: RECOMMENDATION TO DEVELOP DISTRICT'S TECHNOLOGY
FIVE-YEAR PLAN**

COMMITTEE: BUSINESS AND FINANCIAL SERVICES

Technology is Essential to Student Learning

Business and industry have harnessed the power of technological advances to increase productivity by employing an enterprise-wide approach to the acquisition and implementation of technology resources. Schools, however, have typically acquired technology systems for specific functions in a fragmented and piecemeal way as budgets permit. As a result, "islands of information" that are difficult to integrate have proliferated throughout the Miami-Dade County School District at a time when the No Child Left Behind Act has increased the urgency to provide accurate and timely data about student learning to students, parents, teachers, and administrators. Schools, like business and industry, must recognize the need for careful planning to ensure effective and cost-efficient uses of technology for increased student learning and enhanced staff productivity.

Like other large organizations MDCPS has been using several "Legacy Systems" to manage large volumes of administrative data for the district since the late 1970's and 1980's. Typically, the systems centered on day-to-day core business functions. Never was there, nor is there currently, any functionality integrated to advance student performance, predictive analyses, teacher shortage areas, teacher allocation, budgetary planning, instructional planning and design, or integration of media tools into instruction. Each function can support and advance student learning and a growing body of research confirm that the **integration of technology into teaching and learning does improve student performance**. Indeed, data-driven decision making in education demand state of the art technology tools. Similarly, **cost reductions and operational efficiencies depend upon technology innovations to improve effectiveness**.

The opportunities for advancing student performance and enhancing operational efficiencies in the MDCPS by integrating technology into every aspect of our organization are numerous but are compromised by our outdated infrastructure. Examples include:

1. The ability to store, retrieve, analyze, and distribute student information on electronic learning systems are fundamental to teachers, students, and parents. In addition to being critical to constituents at the school site the same information is required by central administration for regulatory and reporting purposes. Currently, schools remain "data-rich and information-poor." Responsibilities such as IEP's, Academic Improvement Plans, Student

Progression Plans, tracking Limited English Proficient students, exception reports, progress monitoring of student performance, and performing unit cost analyses depend upon integrated technology tools. **Currently, there is no common platform or infrastructure in MDCPS that supports such functionality.**

2. Access to curriculum rich content requires students and teachers to have the Internet, software packages, communication tools, curriculum management applications, and student portfolio management tools integrated into instruction. Such tools extend teaching and learning beyond the classroom such that it can occur anytime, any place. Time consuming activities like attendance reporting, lesson planning and management, student report cards, homework review and recording, the home-school connection, and managing the school and classroom calendar are greatly enhanced with technology tools. The result is more time available for tasks associated with teaching and learning. **Currently, there is no instructional technology program that is common to all schools in the district resulting in a fragmented use of technology in instruction. Where there are some technology innovations technology support for teachers and the help desk are limited. This condition limits use and integration of technology and adversely impacts instructional time.**
3. In large organizations like MDCPS, speedy access to data is vital to producing reports, performing analyses critical to decision making, and informing continuous improvement efforts. **Antiquated legacy systems that house data in multiple locations make it difficult to perform necessary functions efficiently and effectively and backlogs and maintenance requirements make meeting demand cost prohibitive.**
4. In many organizations, centralized processing systems have been credited with reducing procurement costs and the total cost of ownership (TCO). A District wide procurement strategy would yield cost benefits that are currently elusive. This is so because **a variety of software, hardware, and network components reside on different computer systems and is not readily accessible to all who need them.**
5. The use of technology tools to streamline work processes and increase productivity is legendary. Human Resource Management, Financial Services, Budget Development and Monitoring, Facilities Management, and Transportation are vital operations where improved efficiencies could have significant consequences for our cost structure. **Each, like the District's financial computer system, is operating on a legacy system that is in dire need of replacement or updating.**

It is noteworthy that our external auditors noted the need to replace the Districts financial system in their audit management letter. Similarly, many of the recommendations of the Office of Program Policy Analysis and Government Accountability (OPPAGA) are only partially implemented because technology systems do not exist that can adequately record and track Key Performance Indicators.

In every instance, an improved technology infrastructure would support teaching and learning such that student performance would improve. To take advantage of the aforementioned opportunities it is proposed that the District's technology plan be aligned to support instruction and advance student achievement. To do so, the following approaches will be taken.

Teacher Paperwork Reduction

As a way to increase instructional time with students, it is imperative that the district reduce teacher paper workload. In 2002, all exceptional student education (ESE) forms were automated to reduce staffing time, improve accuracy and reduce ESE teacher paperwork. During 2003, the Academic Improvement Plan (AIP), a State mandated form, was automated in an effort to ensure district compliance and reduce workload on all classroom teachers. The success of these two projects has provided a foundation for future projects in this area. One project underway currently will centralize and automate all remaining student planning documents including those for limited English proficient students and behavioral interventions.

In another effort to reduce teacher workload, there will be an agenda item in January 2005 to recommend award for an RFP issued in February, 2004 for a district-wide electronic gradebook program. This product will provide every teacher with an electronic gradebook and enable parents and students to access performance, attendance, and homework assignments through the internet. It is estimated that teachers will save over two weeks per year of paperwork time by not having to calculate the grades for each grading period, work with bubble sheets for grade reporting and even more cumbersome, and create the multi-part interim progress reports manually.

Data Warehouse Technology

The district, in an effort to improve instructional and business performance, is relying to a greater degree on data driven decision-making. A data warehouse is the foundation for informed analysis and decision making. The district has been developing data warehouses for over two years, however, these warehouses are not integrated in a meaningful way and there are gaps in the information currently accessible, i.e. there is no financial data in the current warehouses.

Data warehouse technology also provides a method for extending the life of legacy systems as a short-term solution while they are being replaced. Once a warehouse is in place, its value is perpetual because it is independent of the source system which feeds its data. MCDPS must develop and implement a district-wide data dictionary to standardize all data elements, provide user-friendly data querying and reporting capabilities for both new and legacy administrative systems.

In the first quarter of 2005, the following items will be forwarded to the Board related to this area:

1. Data warehouse enhancement effort, with three month deliverables, in the areas of student and financial information.
2. Recommendation to award from an RFP issued in June 2004 for an Online Analytical Processing (OLAP) tool that will permit teachers and administrators to easily query information and instantly build reports from the data warehouse. Additionally, OLAP tools have built-in templates for NCLB, AYP, Business and Finance reporting.

Development of a Technology Five Year Plan

The Board approved the District's Information Technology Strategic Plan in January, 2004. This plan identified the district's information system needs through 2005-06 and a number of foundation projects. A new planning effort is recommended to align the essential student support programs, school operations, business functions, and information technology systems to maximize student learning as illustrated in Attachment A. We recognize the need for careful planning to ensure effective and cost-efficient use of technology for increased student performance and enhanced system productivity. A plan to integrate technology into the curriculum and technology usage in instructional practice needs to be developed. This planning effort will also complement the District-wide Strategic Planning initiative that will start in January, 2005.

The objectives of the proposed planning process are:

- Conduct a review of the existing technology resources and needs including:
 - Review of current and projected curriculum improvement activities
 - Perceptions of key stakeholder groups regarding existing and future technology needs
 - Review of legacy business systems and perform a needs assessment
- Identify strategies that support teaching and learning as well as opportunities for professional growth using technologies
- Design strategies for improving the efficiency of instructional management and decision support through technology applications
- Provide input to the development of a District-wide decision support system with integrated administrative, student and curriculum information that builds effectively on the District's current technology resources
- Provide a district-wide portal solution that integrates instructional and administrative systems thereby increasing the accessibility of information to teachers, parents, students and community

The culmination of this planning will be the development of a comprehensive information technology five-year plan using the seamless and continuous improvement model as outlined in Attachment B. The five-year technology plan will provide guidelines in such areas as curriculum integration, professional development, staffing, maintenance, implementation and funding.

A **Comprehensive Information Technology Plan** will serve as a roadmap for Miami-Dade in implementing an integrated technology infrastructure that: a) equips staff with the requisite data about student learning to make informed instructional decisions and meet stringent reporting and accountability mandates; b) provides equitable access, use, and support of information technology resources for all students; and, c) empowers students with the twenty-first century information literacy skills needed to compete in an information-based global economy. Today's knowledge workers must be able to think more critically, communicate more creatively, and problem solve more analytically in order to support Miami-Dade County's continuing economic viability. As new technologies emerge and new legislation is passed, a strategic technology plan will guide the design, development, procurement and implementation of a district-wide information technology system that supports Miami-Dade's strategic goals to:

- Enhance the quality of the teaching and learning environment for all students and staff (Effective Learning Environment).
- Ensure that school system operations will conform to the highest standards of efficiency, effectiveness, diversity and ethical and compassionate conduct (Efficient Management Practices).
- Prepare our diverse student population for graduation, employment, postsecondary education, and become responsible citizens and lifelong learners (School-to-Career).

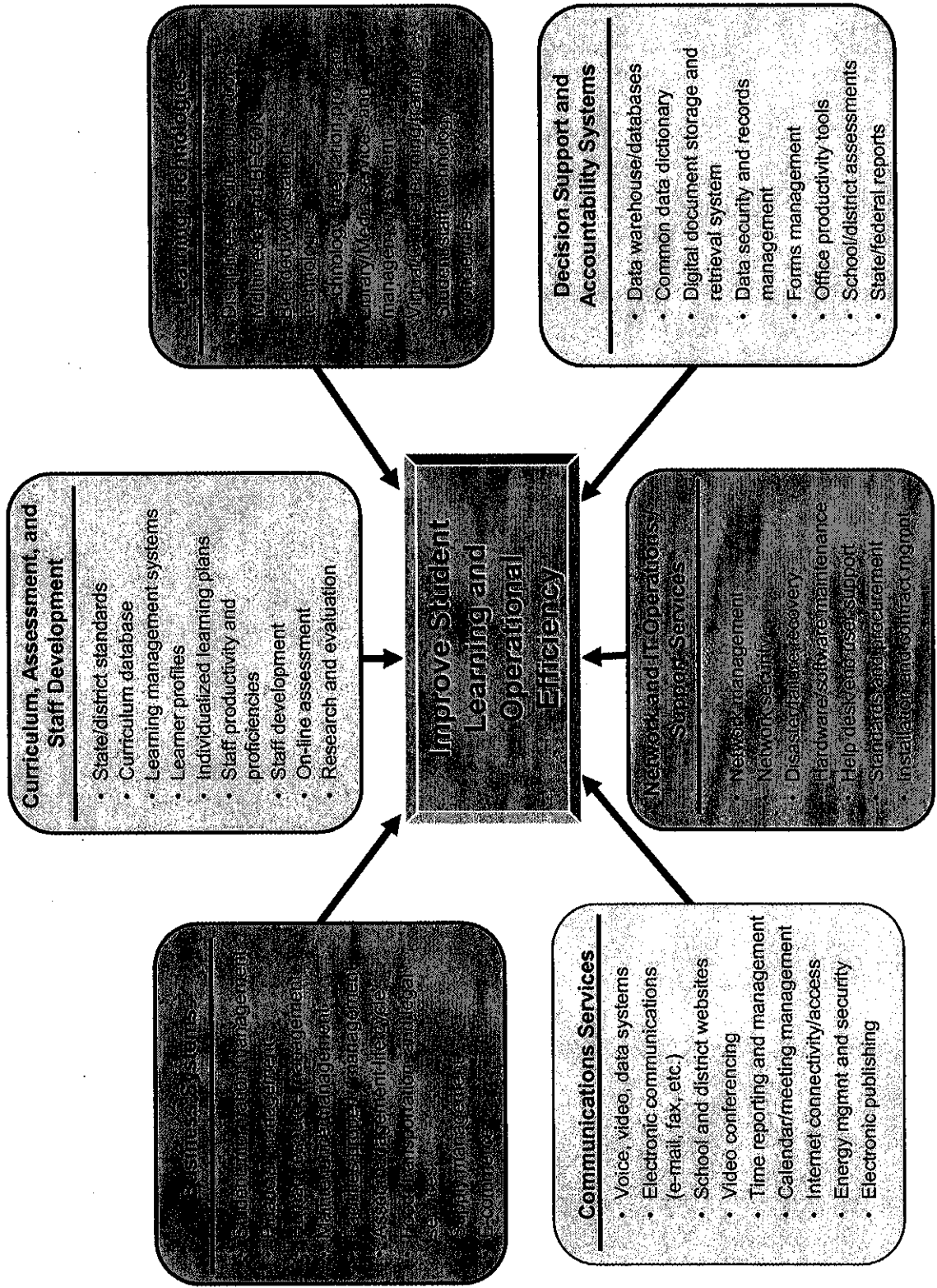
The Superintendent is seeking approval to engage consultants to assist the district in the preparation of this plan. In order to expedite this planning process, the Superintendent is requesting authorization to request quotations from the pre-approved technology firms in the software consultant bid (Bid Number 098-DD04 awarded at the October, 2004 Board meeting) to assist in the preparation of a Technology Five Year plan.

RECOMMENDED:

That The School Board of Miami-Dade County, Florida authorize the Superintendent to:

1. start the planning process to prepare a Five-Year Technology Plan for the District; and
2. to request quotations from the pre-approved technology firms in the software consultant bid to assist the District in the preparation of a Technology Five-year Plan

Attachment A Comprehensive IT Perspective



**Continuous Improvement Model
From Planning to Implementation to Results**

