

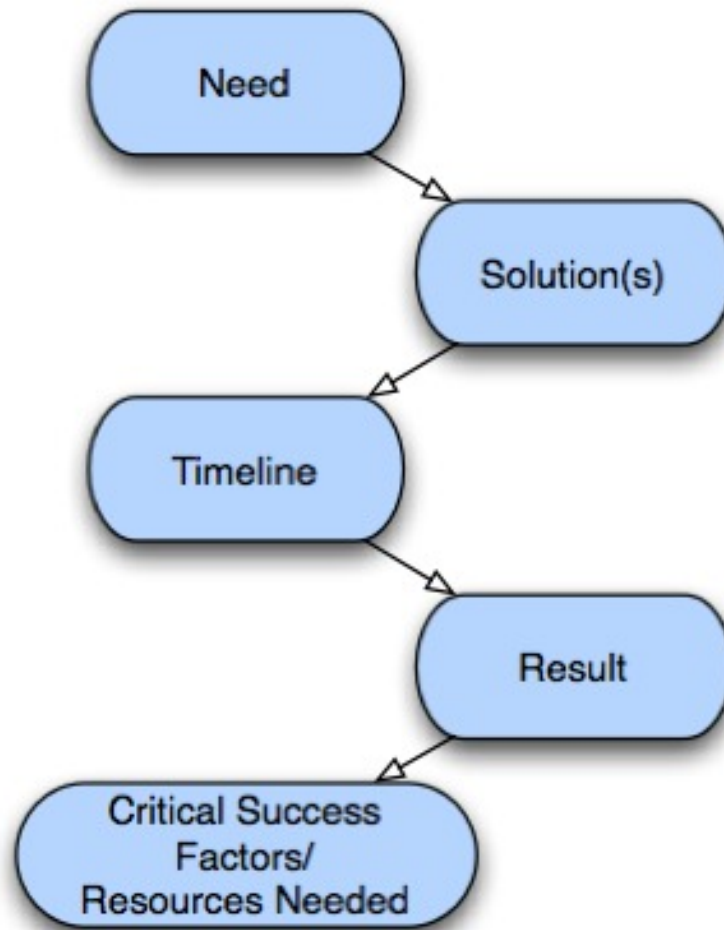
3 Executive Summary

3.1 Enabling Academic Efficiency with Technology

This *Long-Range Strategic Plan for Technology 2006-2011* builds upon the direction and priorities established in past plans and becomes a living document to guide and measure HISD's technology efforts. Technology is positioned to elevate instruction by teachers for students to a level of success that will close achievement gaps and meet the academic goals established by the Board of Trustees.

HISD's technology environment parallels the overall school environment—that being one of a leading urban school system that has a history of major innovations and investments in support of academic excellence. The technology plan describes this context and the challenges HISD faces to implement the technology projects that are aligned with HISD's goals and Board Monitoring System objectives. A five-year timeframe is envisioned for the strategies defined in this plan. Each technology project has been aligned with HISD's goals, positioned to meet specific measurable objectives, and matched with the estimated required funding.

Figure 1 – The Enabling Process



A detailed description of the plan is provided later in this document. Above, Figure 1 – The Enabling Process is an overview of the process of creating and implementing the *Long-Range Strategic Plan for Technology 2006-2011*. Following is an explanation of each of the five major steps of the planning and implementation process.

Need - The planning process identified needs of HISD stakeholders by interviewing executives, administrators, managers, and teachers. These needs are expressed as findings below.

Solution(s) - Needs are addressed by creating and implementing solutions. The solutions are represented in this plan as initiatives. Programs to address the initiatives are recommended.

Timeline - The initiatives and projects that are planned and implemented will follow the timeline created for each solution.

Result - This plan identifies the objective of each initiative. Progress toward the success of each initiative is monitored.

Critical Success Factors/Resources Needed - Each initiative or solution is put into action by one or more projects that support the solution. The creation of projects includes the identification of resources and the critical success factors for each solution.

Plan Highlights

- *An **Instructional Technology Department** and an **Instructional Materials Clearinghouse** are recommended as part of the new **Learning Support and Planning** program.*
- *A new **Technology Equity Initiative** will focus on the equitable distribution of technology resources.*
- *A **Unified Student Record Program** will support the new **Student Information Initiative**.*
- *An **Emerging Technologies Initiative** will seek to apply new technology to teaching and learning.*
- *A **Central Support Organization Initiative** will seek to improve technical support and help desk functions in the District.*

3.2 Creating the Plan

The District has positioned technology in a significant support role for its core learning activities. Technology in HISD is not itself a priority. Technology is a function that operates in clear support of each of the five HISD strategic goals (G). These goals are:

- G1: Increase student achievement.
- G2: Increase management efficiency.
- G3: Improve public support and confidence in schools.
- G4: Create a positive district culture.
- G5: Provide facilities-to-standard program.

HISD has developed a series of long-range technology plans, of which this one is the most recent. The *Long-Range Strategic Plan for Technology 2006-2011* was developed to be more comprehensive and more strategic than the others. To be strategic, it must be aligned with HISD's vision and goals as well as the recently published Board Monitoring System strategic objectives. As a result of this alignment and combined with stakeholder input, the plan can establish technology's role in support of each of the priority actions (or projects) that HISD may target for implementation.

ESP Solutions Group worked closely with staff from the Technology Department to gather comments and recommendations from a full range of HISD staff. From August through October of 2005, 84 interviews were conducted. The process that guided these interviews followed the sequence of establishing the District's expectations for technology, then validating those expectations with the users of technology, and finally documenting how technology supports the activities of all staff as they work to meet HISD's strategic goals.

These interviews, conducted at the central office, satellite offices, regional offices, and schools, involved 365 HISD staff members.

- 116 participants in 54 executive, regional, and manager interviews.
- 249 participants in 30 campus interviews.

The *Long-Range Strategic Plan for Technology 2006-2011* covers a five-year timeframe. The year one through year five periods are listed below.

- **Year 1:** February 2006 to June 2007
- **Year 2:** July 2007 to June 2008
- **Year 3:** July 2008 to June 2009
- **Year 4:** July 2009 to June 2010
- **Year 5:** July 2010 to June 2011

3.3 Findings

Findings from the planning process have been analyzed within the context of five programs, as described below, and translated into 49 specific projects to be targeted for implementation. The findings are divided into those that describe the current state of the District and those that describe needs identified in the district. The general findings (F) are:

What HISD is Doing Now

F1: The five HISD strategic goals are known by staff and do influence their planning and decision making.

F2: A Program Management Office is being planned. This initiative needs to be fully implemented.

F3: Major applications (SAP for finance, PeopleSoft for HR/payroll, and Chancery SMS for student information) have been adopted and are in various stages of implementation. Each provides features and functions that have not yet been activated; therefore, there is greater potential for benefits from each.

F4: CLEAR Online (online curriculum management) and PASS (online student data analysis system), the major instructional management applications, were designed and developed by HISD staff as part of a teacher tools project. There is a need to enhance the usability and functionality of these applications from the user perspective in order to better meet instructional needs.

F5: The HISD Portal is a good tool for enhancing communication and collaboration desired by staff. Implementation of the Portal has created a demand for a higher level of services from the tool. Continued development of the portals is in line with the needs described by users at all levels.

Needs Identified

F6: Information-Sharing Community

HISD information systems are stovepipes that operate independently. They have been developed over time outside of an overall context of standards and project management. Integration of data in these systems is done mostly using exchange of extracts among the systems. The design and implementation of different information systems need to be better coordinated or consolidated.

Interviews of HISD managers of information systems yielded the conclusion that customer service provided to consumers of information (administrators, teachers, students, and others) could be improved with better coordination of information systems.

Need

The District needs to break down the barriers between individual departments' information systems to create a district-wide information-sharing community.

Solution(s)

An overarching design and implementation strategy is needed to create communication lines among departments and establish a network for sharing data.

Implement the following Technology Initiatives: Instructional Information (TI-1), Accountability Information (TI-3), Data Governance (TI-6), Technology Standards (TI-11).

Timeline

Year 1 – Planning/Implementation

Year 2 – Planning/Implementation

Year 3 – Planning/Implementation

Year 4 – Maintenance

Year 5 – Maintenance and Evaluation

Result

Customer service will be improved, data will be collected once and shared among all users, the burden on schools and individuals to report data will be reduced, and the resources to access data will be minimized.

Critical Success Factors/Resources Needed

As access across departments is established, the use of data needs to be increased.

Resources are needed to upgrade or enhance current systems to conform to standards and interoperate with each other.

F7: Data Exchange

These information systems need to interoperate. This means that they need to be linked to share data electronically without extracts or re-keying. Some of the major HISD applications have SIF (Schools Interoperability Framework) agents available from the vendor for horizontal interoperability. See section 5 for more information concerning the SIF specification.

HISD Teachers:

"I would like to have access to transcripts of students entering my school from other districts as well as other schools in the District. I only need to see what classes the students have taken and maybe their discipline records and any other information that will tell me about the student."

"We do double work looking up information twice."

"We repeat data collection at the school level for transfer students."

District administrators and managers expressed a need for information systems to exchange information more easily. Teachers and school-based administrators expressed a desire for access to more consolidated and coordinated information (see section 4).

Need

The District needs to improve the exchange of data between individual software applications to reduce the duplication of effort and the re-keying of the same data.

Solution(s)

A data exchange standard such as the Schools Interoperability Framework is needed to standardize the contents of disparate systems and establish a protocol (format) for moving data from one to another.

Implement the following Technology Initiatives: Instructional Information (TI-1), Accountability Information (TI-3), Administrative Information (TI-4), Technology Infrastructure (TI-5), Data Governance (TI-6), Cross Department Collaboration (TI-9), Technology Standards (TI-11).

Timeline

Year 1 – Planning

Year 2 – Feasibility Study and Planning

Year 3 – Planning/Implementation

Year 4 – Maintenance

Year 5 – Maintenance

Result

Access to data and reports by teachers, administrators, and all other users will be improved. Teachers, administrators, and others will have access to timely data for decision making. The costs and time for sharing data in one software application with another will be reduced.

Critical Success Factors/Resources Needed

Resources will be needed to enhance current information systems and to implement the tools needed to support users.

F8: Unified Student Record

There is an identified need for a unified student record that provides access to all of the data about students in a consolidated process.

HISD Teachers:

"We need a well-integrated system for grades, attendance, discipline, etc. and it needs to be simple to use"

In interviews, teachers and school-based administrators expressed the view that the new District student information system is a positive step forward. However, they also expressed the desire for student information that "includes all aspects of student information," or information that is a "Gestalt" of available information about students (section 5).

Need

The District needs to bring all the data about individual students into a single place or system.

Solution(s)

A unified student record will be created to consolidate crucial data about individual students into a single resource for data driven decision making.

Implement the following Technology Initiatives: Instructional Information (TI-1), Student Information (TI-2), Accountability Information (TI-3).

Timeline

Year 1 – Planning/Implementation

Year 2 – Implementation

Year 3 – Implementation

Year 4 – Assessment/Planning

Year 5 – Redesign

Result

When a teacher, administrator, or other person supporting a student's education needs data about that student, they will have appropriate access to a single source with tools for viewing or printing necessary information. The time and effort required to achieve a comprehensive understanding of a student's educational needs will be reduced.

Critical Success Factors/Resources Needed

Access to confidential data about individual students will need to be controlled appropriately. Resources will be needed to consolidate data sources and to implement the tools needed to support users.

F9: Technology Support

The Help Desk uses industry standard management techniques and success metrics. However, user support in general needs to be enhanced in order to meet the expectations of users. Not all campuses have budgeted and filled the technology support positions that provide on-site support.

HISD Teachers:

"We need access to a network of resources: local resources to call on, other teachers who do what I do, help desk resources that understand my needs on a functional basis, a directory of help resources based upon what my particular help need is, and remote access to my desktop by support staff to help fix problems."

Many of the needs expressed in interviews of campus-based staff dealt with the issue of support for implementing and using technology. These comments addressed the Help Desk but also included technology funding, training, on-site support, help with integrating technology into the curriculum, and other topics.

Need

The District needs to support users of data in their implementation and use of technology.

Solution(s)

The Help Desk needs to be expanded to provide broader support for technology implementations and use. The technology support position and funding sources for on-site support needs to be reconsidered.

Implement the following Technology Initiatives: Central Support Organization (TI-7), Cross Department Collaboration (TI-9).

Timeline

Year 1 – Ongoing Implementation

Year 2 – Ongoing Implementation

Year 3 – Assessment/Redesign

Year 4 – Implementation

Year 5 – Ongoing Implementation

Result

When a teacher, administrator, or other person has a question or need related to technology, there will be an enhanced help-desk function that will provide support and answers.

Campuses will understand the benefits provided by the technology support positions.

Critical Success Factors/Resources Needed

The Help Desk must provide expanded levels of support for a broader scope of applications and functions.

F10: Effective Data Management

HISD needs a comprehensive and consolidated data management plan to guide all aspects of technology and information use.

HISD Teachers:

"I need to know if the student absent from my class has been absent all day or is just skipping class."

HISD Administrator:

"We need real-time grading. Parents should be able to see grades without waiting a long time."

HISD staff at all levels expressed the need for teachers to have the information to make informed decisions and the technology-based tools needed to support the learning process. For example, teachers need robust analytical tools to speed the remediation of student performance. A comprehensive data management plan will focus the effort to put information efficiently into the hands of teachers and other decision makers.

Need

Effective data management requires policies, standards, advisory groups, infrastructure, and applications to be aligned and coordinated.

Solution(s)

HISD will follow best practices for data management to create a document and process that guide all data collectors and users.

Implement the following Technology Initiatives: Technology Infrastructure (TI-5), Data Governance (TI-6), Technology Standards (TI-11), Technology Equity (TI-12).

Timeline

Year 1 – Planning/Implementation

Year 2 – Planning/Implementation

Year 3 – Maintenance

Year 4 – Maintenance

Year 5 – Maintenance

Result

When a question arises about what is allowed by policy, how confidentiality is maintained, who has access to data, which standards are to be followed, or what requirements must be met by new software applications, the data management plan will provide the answers. Teachers and other data users will see a clear improvement in the clarity of communications related to technology.

Critical Success Factors/Resources Needed

Policies, governance groups, standards, and other guidance necessary for managing data must be documented and available within the data management plan.

F11: Technology Refresh

A technology refresh plan should be put in place to manage obsolescence of technology resources. Technology resources are acquired in waves; therefore, obsolescence does not occur in an even manner. A technology obsolescence plan manages the equitable distribution of old and new technology.

HISD Teachers:

"There is a disconnect [with technology] between where the teachers are and where the students are."

"Our school is always a step or two behind in technology."

Some school-based administrators and teachers reported that their software and hardware is often outdated or unreliable. This causes more need for technical support and distracts from serving students. School-based staff also reported that students and parents often have higher expectations for computers at school than what is available. Students and parents often have more

modern equipment at home than is available at school.

Need

Technology ages; therefore, upgrades and replacements need to be in place before hardware, software, and network components become dysfunctional.

Solution(s)

HISD will implement a technology refresh process to replace or upgrade aging components as necessary.

Implement the following Technology Initiatives: Technology Infrastructure (TI-5), Data Governance (TI-6), Emerging Technologies (TI-10), Technology Standards (TI-11), Technology Equity (TI-12).

Timeline

- Year 1 – Planning/Implementation
- Year 2 – Planning/Implementation
- Year 3 – Planning/Implementation
- Year 4 – Planning/Implementation
- Year 5 – Planning/Implementation

Result

When a technology user in HISD relies upon hardware, software, or a network, the technology in place will be current enough to deliver adequate functionality. Teachers and other users of technology will not experience excessive down time caused by aging hardware, software, or networks.

Critical Success Factors/Resources Needed

Resources will need to be provided to meet the technology refreshment schedules developed.

F12: District-Wide Standards

The Technology Department should be in a governance role to set district-wide technology policy not related to local business or instructional operations. The policies include district-wide technology standards. The policies also set standards for key technology processes such as program management, help desk, development methodology, data management, and data standards.

HISD Teachers:

"We don't have the time to research software purchases."

"Some of our software is completely useless. They need to pilot software and ask teachers before making software purchases."

For example, interviews with managers and executives revealed that redundant software purchases

are sometimes being made. One department will purchase a software package to do something that a software package already owned by the District could perform. Departments and schools should retain the ability to make choices. However, the District should set standards such that technology products and services are delivered in an efficient and useful manner.

Need

District-wide policies and standards are needed for technology products, services, and information systems.

Solution(s)

The Technology Department will identify district-wide standards that eliminate lost resources and wasted time.

Implement the following Technology Initiatives: Technology Infrastructure (TI-5), Data Governance (TI-6), Cross Department Collaboration (TI-9), Emerging Technologies (TI-10), Technology Standards (TI-11), Technology Equity (TI-12).

Timeline

- Year 1 – Analysis and Planning
- Year 2 – Implementation
- Year 3 – Implementation
- Year 4 – Maintenance
- Year 5 – Maintenance

Result

Technology products and services are delivered in an efficient and reliable manner.

Critical Success Factors/Resources Needed

Campus departments need to make appropriate local choices of technology. Stakeholders must be involved in the setting of district-wide standards. Staff resources will need to be assigned to the maintenance and enforcement of standards.

3.4 Recommendations

These findings were translated into recommendations (R).

Recommendation:

*HISD should organize technology resources around the **five program areas** and implement projects within each program area.*

R1. Organize HISD technology resources around the following five technology program (TP) areas and implement projects within each technology program area.

- TP-A: Strategic Management and Accountability
- TP-B: Learning Support and Planning
- TP-C: Unified Student Record
- TP-D: Administrative Systems
- TP-E: Technology Systems

R2. Implement projects to address the following Technology Initiatives (TI).

TI-1: Instructional Information. R1. (Findings Addressed: F-2, F-4, F-5, F-6, F-7, F-8) Contribute to learning support and planning by providing timely access to information in a format that facilitates use for instruction and instructional planning.

TI-2: Student Information. (Findings Addressed: F-3, F-8) Support student data management by managing and delivering the software systems used to enroll, schedule, grade, and document academic progress.

TI-3: Accountability Information. (Findings Addressed: F-2, F-3, F-4, F-6, F-7, F-8) Support accountability reporting by providing automated information systems that assist in collecting, analyzing, and reporting information for data driven decision making in a timely and trustworthy manner.

TI-4: Administrative Information. (Findings Addressed: F-2, F-3, F-6, F-7) Automate the administrative systems for efficiency and reliability.

TI-5: Technology Infrastructure. (Findings Addressed: F-7, F-10, F-11, F-12) Provide infrastructure that connects teachers, students, support staff, and parents to the information they need.

TI-6: Data Governance. (Findings Addressed: F-6, F-7, F-10, F-11, F-12) Implement a data management process driven by a vision for a common data architecture and policy for data integrity, quality, and security.

TI-7: Central Support Organization. (Finding Addressed: F-9) Continue the implementation of best practices for the technical support Help Desk. Use the Help Desk as a model of how to provide services to the rest of HISD (use of help desk software, continuous improvement, trend analysis, and proactive measures to foresee and head-off call volumes, customer satisfaction surveys, use of data to make decisions).

TI-8: Portal. (Finding Addressed: F-5, F-6, F10) Continue the implementation of the employee and community portals. Implement a parent portal to provide timely and accurate information about classroom assignments, grades, formative assessments, and attendance.

TI-9: Cross Department Collaboration. (Findings Addressed: F-2, F-4, F-7, F-9, F-12) Establish a model of cross departmental collaboration and teamwork by further solidifying and refining the program manager structure. Establish a pool of project managers for use in projects across all programs and throughout the District.

TI-10: Emerging Technologies. (Findings Addressed: F-4, F-11, F-12) Monitor emerging technologies that can be applied to teaching, learning, and the operation of the District. Implement these technologies where appropriate.

TI-11: Technology Standards. (Findings Addressed: F-2, F-6, F-7, F-10, F-11, F-12) Establish baseline standards for instructional and administrative technology for all

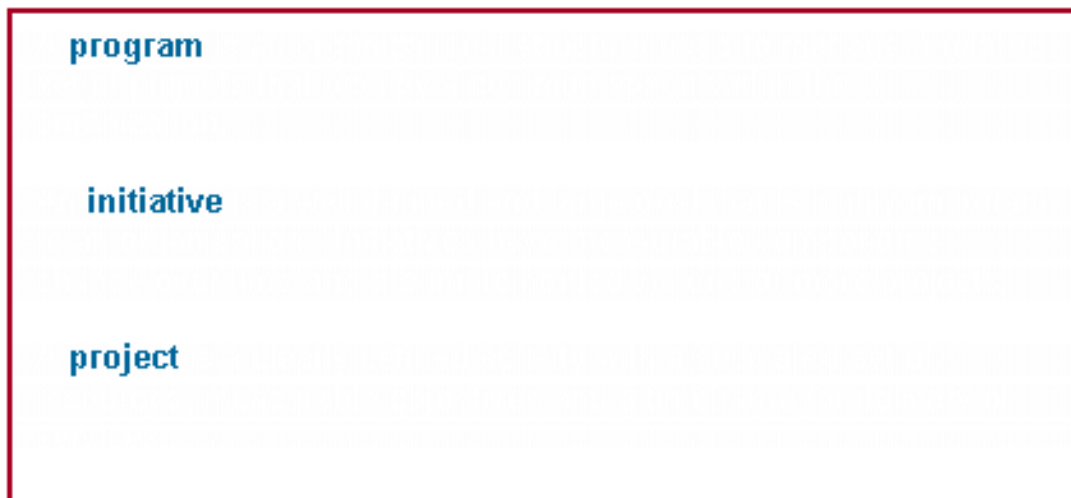
schools and departments. Ensure new and renovated facilities meet or exceed the established set of technology standards.

TI-12: Technology Equity. (Findings Addressed: F-10, F-11, F-12) Establish a technology equity process that prioritizes technology dollars to bring all schools and offices to standard, in order of greatest need.

3.5 Technology Programs: Focus and Organization

The programs defined by this plan provide for the focus of effort and the organization of resources upon the goal of student achievement and the other goals of the District. The description below illustrates how the programs proposed by the *Long-Range Strategic Plan for Technology 2006-2011* meet the goals of the District.

The Houston Independent School District is a large urban organization serving a diverse population of students. Guiding the delivery of its services are HISD's strategic management and accountability functions. Parallel to and in support of, the district-wide strategic management and accountability functions is the technology strategic management and accountability function. This is the first of five "programs" that categorize the individual "projects" and support the "initiatives" that define how HISD and the Technology Department deliver its services to students.



Academic success for students in HISD is driven by the Board of Trustees' vision of success and the clear goals adopted first in 1990 and reaffirmed periodically thereafter. The first of five programs supported in the Long-Range Strategic Plan for Technology 2006-2011 is **Strategic Management and Accountability (TP-A)**. Technology Strategic Management and Accountability takes into account district-wide strategic management such as the governance of the Board of Trustees, leadership of top management and advice from stakeholder groups. It provides automation support for information related to district-wide strategic management and accountability. The program also manages technology-specific strategic management and the relation of technology strategy to overall District strategy. The projects under this program include strategic plans for technology, support for campus and district improvement plans, support for responses to TEA accountability reports (AYP, accreditation, AEIS, PBMAS, etc.), and other plans that provide goals and objectives to the other four technology programs.

Technology supports District strategic management and accountability by developing automated information solutions for data driven decision making, analysis and reporting in a timely and trustworthy manner.

With the direction and targets set by the Strategic Management and Accountability (TP-A) Program, the crucial business of educating the students can proceed. **Learning Support and Planning (TP-B)** is the second program. This includes the activities directly focused on the mission of HISD to educate students. Projects include instructional management systems; diagnostic assessments; web portals for access to information by teachers, principals, support staff, and parents; and all instructional technology support for teachers and schools.

Technology contributes to teaching and learning by providing timely access to information in a format that facilitates use for instruction and instructional planning purposes.

The many decisions that must be made by teachers and staff to plan and deliver learning activities need to be informed by data. In a school system, data about students are the fundamental information source for decision making. Student data management, also known as the **Unified Student Record (TP-C)**, is the centerpiece of information management in a school district. Data about students drive decision making within both the Strategic Management and Accountability (TP-A) Program and the Learning Support (TP-B) Program. HISD's student information system application is the authoritative data source for enrollment and personal data about each student.

Technology supports student data management by providing the software systems that enroll, schedule, grade, and document academic progress.

HISD is one of the biggest businesses in one of the Nation's biggest cities. **Administrative Systems (TP-D)** support the overall operations of HISD. HISD is one of Houston's largest providers of transportation, meals, health services, library services, facilities, employment, and other services. These services ensure that students and teachers meet in an environment that is most supportive of learning.

Technology automates these administrative systems for efficiency and reliability.

Now, in addition to the other programs are defined, technology plays its own significant role. **Technology Systems (TP-E)** support the other technology programs in HISD. These systems provide network connectivity, interoperability for sharing data across software applications, security, disaster recovery, hardware, and other infrastructure components.

Technology provides the nearly invisible infrastructure that connects teachers, students, support staff, and parents to the information they need.

The technology programs just described show how data driven decision making is made possible by the timely access to quality data in a format that facilitates appropriate use. The Strategic Management and Accountability (TP-A) Program ensures the vision and goals of the organization are met. This guidance ensures the success of the Learning Support and Planning (TP-B) Program that delivers instructional services to students. Both of these programs depend upon the data provided by the Unified Student Record (TP-C) Program. Meanwhile, the lights burn, the buses run, and people get paid because the Administrative Systems (TP-D) Program is efficiently managing the business side of the organization. Underlying these four programs is the Technology Systems (TP-E) Program. In this plan, technology is a vital partner in HISD's success.

3.6 The Plan

This strategic plan for technology details programs, initiatives, and projects which will move HISD toward its goals through the application and use of technology. The plan takes into account the expectations of HISD leadership, the needs of technology users, and best practices in education information systems. In addition, it is aligned with District goals and the Board Monitoring Systems strategic objectives and measures.

Some parts of this plan will remain unchanged for a long period of time while other parts of the plan will need to be revised and updated. The programs created to manage projects will be a relatively static organizational structure. The initiatives defined in this plan should be examined every two or three years in order to keep them relevant. The projects defined in this plan will go in and out of existence and should be monitored and revised constantly.

For example, the Emerging Technologies initiative deals with implementing the latest available technology. No plan would be able to completely reflect the near future with respect to such a highly volatile domain. Therefore, the Emerging Technologies initiative should be updated at least within three years.