Standard Program Evaluation
Technology Plan Implementation
(Board of Education Approved on June 1, 2004)

Questions:
1. How did/does the Tech Plan implementation committee operate?
2. What are the strengths/weaknesses of the Tech Plan implementation?
3. What impact does the Tech Plan implementation have on student achievement?

I. Program/Service Information

Name of Program or Services:
Technology Plan

Personnel Responsible for Evaluation (list):
Daniel Burrus, Director of Management Information Systems

Date of Evaluation (Year/Duration):
September 2004 – January 2005

Goal/Objective of Program/Services:
To provide a goal oriented plan for the implementation of technology in SSD

Brief description of relationship between program goals, CSIP and MSIP Standards:

Technology Plan CSIP Goal:
Implement 90% of the Technology Plan by the end of FY 06

MSIP Standard:
Under the Missouri School Improvement Program (MSIP) Process Standard III, Instructional Design and Practices, the expectation that “instructional resources and equipment that support and extend the curriculum are readily available to teachers and students” is established. Technology is specifically addressed in regards to schools’ census of technology, formal training in technological programs or software available to students and teachers, and ways in which technology is integrated into instructional programs. The SSD Technology Plan contains action plans in five focus areas (Student Learning, Teacher Preparation, Administration, Management and Communication, Resource Distribution and Use, and Technical Support) to support the goals of MSIP.

Demographic Description of Program:

Location(s)
Technology Plan covers all of SSD’s Instructional and Administrative areas
Number of staff
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Participants
Technology Plan implementation committee

**Length of program/service:**
Technology Plan is updated every 3 yrs.

II. Description of Stakeholders Engagement in Program Evaluation (check stakeholders utilized):

<table>
<thead>
<tr>
<th>SSD staff</th>
<th>Val Whitney</th>
<th>Randy Barnes</th>
<th>Shane Trafton</th>
<th>Rob Emerson</th>
<th>Chris Ingram</th>
<th>Paul Donnelly</th>
<th>Kathy Lalk</th>
<th>Daniel Burrus</th>
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III. Evaluation Criteria for Programs/Services Offered (check type utilized)

- [ ] Committee survey/strengths and weaknesses
- [ ] Technology Plan implementation statistics
- [ ] Perception data

IV. Data Collection Methodology (examples)

- Document review

V. Results

Question 1

How did/does the Tech Plan implementation committee operate?

**Technology Plan Committee**
The Tech Plan implementation committee contains members from the original committee that developed the current Tech Plan. Each action plan was assigned to committee member(s) to report back the status of action plan(s) during the first meeting of the committee. The committee meets on a monthly basis during the school year. Each meeting the committee reviews the status of the action plans from one section of the five sections (Student Learning, Teacher Preparation, Administration, Management and Communication, Resource Distribution and Use and Technical Support) of the Technology Plan. Status and progress of each action plan are discussed and suggestions made to resolve any
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issues. The progress, if any and status are updated in the Tech Plan implementation document for each action plan reviewed at the meeting.

Question 2

What are the strengths/weaknesses of the Tech Plan implementation?

Strengths of Tech Plan Implementation
- Ability to look at technology being implemented across the district by using the Tech Plan or the Tech Plan Implementation status document.
- Broad representation across the district
- Communication and collaboration between different areas of technology
- Monthly meetings to discuss progress and issues
- Tracking of progress of each action plan within Technology Plan

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<th>Action Plans</th>
<th>100% completed</th>
<th>25% - 95% completed</th>
<th>20% or less</th>
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<tr>
<td></td>
<td>21</td>
<td>26</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>43%</td>
<td>53%</td>
<td>4%</td>
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Weaknesses of Tech Plan Implementation
- Although the committee does have a broad representation it needs to involve a larger group of shareholders, shareholders defined as members of the Tech Plan development committee
- Some individuals responsible for creating the Action Plans within the Technology Plan are not represented on the Technology Plan Implementation Committee. Those individuals responsible for implementing some of the action plans did not have a stake in creation of the action plans and do not have the means to assure completion of the action plans
- The divisions of technology across SSD (Vocational, Instructional/Assistive, and Management Information Systems) remain a challenge in the cooperative implementation of the SSD Technology Plan
- Lack of ownership of Tech Plan, no one is responsible for bringing all technology together at SSD. At SSD there are 4 areas of technology, Instructional, Assistive Tech, Vocational, and Management Information Systems with each area reporting to a different set of supervisors with some areas having a larger stake in the technology plan than others.
- Lack of funding and personnel for implementation of Tech Plan
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Question 3

What impact does the Tech Plan implementation have on student achievement?

Impact of Tech Plan Implementation on student achievement
- MAP scores show less than 5% movement of scores from the bottom 3 levels to the upper two levels of proficient or advanced in Communication Arts (administered in grades 3, 7 and 11) and math administered in grades 4, 8 and 10 when comparing scores from 2002 to scores from 2003 testing. In the Technical High Schools, the same occurrence (less than 5% movement) is reported for students taking MAP - mathematics in grade 10 and MAP Communication Arts in grade 11. Technology Plan Action Plan Objective: 1.1.1-Improve math and literacy skills
- During school year 02-3, 83% of students grades K-8 in the Special Ed Schools demonstrated progress in reading. During school year 03-04, 92% of students demonstrated reading progress. During school year 03-04, 35% of Title I students in the Special Ed schools (exception Southview, Lakeside and JDS) achieved at expectancy on the Woodcock-Johnson, Broad Range Reading Scores. (data added fall '04) Technology Plan Action Plan Objective: 1.1.1-Improve math and literacy skills
- Tech school students are using the computer/internet to determine skills needed for various jobs, e.g., need a high school diploma to attend barber/beauty school. Students are searching internet for jobs of interest. Students are using the internet to develop resumes, job searches, etc. Select students are developing portfolios via computer and internet as well as applying on-line for jobs. Technology Plan Action Plan Objective: 2.3.1-Making choices and problem solving
- For Tech schools Passkeys™ and KeyTrain™ software develops problem solving skills. Technology Plan Action Plan Objective: 2.3.1-Making choices and problem solving
- From '04 MAP-A results for students in the special education schools, 86.8% of student portfolios were judged as meeting requirements for making choices. Technology Plan Action Plan Objective: 2.3.1-Making choices and problem solving
- Tech schools have implemented ISDN interactive video conferencing for classes, staff meetings and virtual instructional experience, e.g. dissections, environmental testing etc. Technology Plan Action Plan Objective: 4.5.1-Distance learning initiative
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- AGS/iLearn distance learning initiative for students. Students at Southview School are using the curriculum project at this time as a result of this training. (Neuwoehner and Northview Schools are already participating) Technology Plan Action Plan Objective: 4.5.1-Distance learning initiative

Recommendations regarding program/service
- Include larger population from Technology Plan committee in next Tech Plan implementation committee. By including these members, action plans will have individuals who wrote the action plans responsible for the action plan and reporting of results/progress.
- Due to the fragmented structure of the management of technology in SSD review technology organizational structure in SSD and in other districts for alternative ways to organize and manage technology more effectively. (See Technology Management for Schools, Chp.11, Information Technology Management, Steven C. Pereus, attachment #1)

Time Spent on evaluation
35 hours

VI. Action Plan for Recommendations as A Result of Program Evaluation
- Develop plan to review/research technology management in school districts. Based on this review make recommendations for changes to technology management for SSD.
- Review make up of Technology Plan implementation committee with current members and revise membership to more accurately reflect Technology Plan development committee and those responsible for implementation and budget.

Person responsible to champion action plan
Daniel Burrus

Timeframe for reporting updates to Board of Education
- Tech Plan implementation committee continues to report back results to the Rolling Plan committee annually
- New Tech Plan needs approval from Board of Education every three years
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Attachments
Attachment #1  Technology Management for Schools, Chp.11, Information Technology Management, Steven C. Pereus
Attachment #2  Responses from Technology Plan implementation committee members on Technology Plan implementation, strengths and weaknesses and recommendations

__________________________  Date:________________
Signature of Administrator Responsible for Chairing Evaluation
Attachment # 1

State & Local Government
Technology Management for Schools
Steven C. Pereus

Chapter 11
Information Technology Management
Chapter 11
Information Technology Management

Information technology (IT) management in schools is increasing in complexity. Information needs are rising, and new software systems and technologies are being implemented at a pace that is unprecedented in the history of schools. Schools can expect to see the number of users increase from as few as 200 in a school district with 40,000 students and 5,000 employees to as many as 45,000 if all students and teachers have access to the Internet, e-mail, and a variety of applications. The level of support needed to keep up with the maintenance of the machines, networks, software, and user questions alone will be a major challenge. Therefore, solid information technology planning will not be enough. Superior management of the information systems and technology will be imperative if technology is to achieve its full impact in schools.

Information technology plans must take into consideration the management and organizational infrastructure that will be used to manage technology in the district. An effective management and organizational structure will determine the degree of success or failure of information and educational technology and systems. Unfortunately, this is one element most districts rarely plan for. An effective information and educational technology management organization is high performance, results oriented, and focused on achieving district goals in the most efficient manner possible.

Organizational Structure

The unique challenge of designing and managing a technology department lies in bringing together the educational and business areas. Most school district officials will agree that these two areas are treated very differently. Information technology, however, requires a unique set of management and technical skills that are not always found in traditional school staff. Effective integration and management of the educational and business side of technology are absolutely essential to the effective implementation and management of the technology itself. Business and technology managers will focus on:
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- Efficient use of district dollars for all technology investments
- Creating technology standards for all computers throughout the district
- Standardized network layouts in each room
- Standardized software products
- Assuring that technology support can be provided to all users
- Investments that reduce network management costs
- Maintaining all technology support within the technology department
- Standardized approach to problem solving and technology protocol

Educational leaders and professionals will bring a focus that may include:

- A high degree of individual choice of each teacher
- Customization of network and furniture layout
- Desire to allow teachers responsibility for repair
- More creative approach to software use
- Allowing parents to maintain and repair computers
- Educational technology before administrative technology
- A heavy emphasis on basic skill training
- Giving teachers as much time as needed to learn how to use the computer
- Allowing teachers to decide how to use the technology

These are just some of the issues that will increase the complexity of managing the information technology function in schools. The district superintendent, boards, and senior management teams must design an organizational structure that will balance the needs and visions of these two perspectives. Educational leaders must be given the resources needed to use the technology to improve education. Once the infrastructure is in place, however, district leaders should also realize that information technology can reduce the costs of doing business and improve the effectiveness of the entire organization if proper investments are made.

Possible Approaches

Technology organizations in schools are designed around a number of different approaches. The advantages and disadvantages of each are discussed below:

- All district technology staff reports to an educator.
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- **Advantages**
  
  - Technology will be assured to maintain an educational focus.
  - Teachers will feel well represented.

- **Disadvantages**
  
  - Technology that supports operations and business functions may not be provided.
  - There may be a lack of business focus on management and fiscal efficiency.
  - The business and operations side may be underfunded and lack support.

- All district technology staff reports to a technology manager.

  - **Advantages**

  - Technology programs would be well rounded, with a focus on hardware and software functions.

  - **Disadvantages**

  - If the leader is a strict technologist, he or she may not be an effective manager or may not establish effective relationships with other administrators.
  - Focus could be on technology and not on human resources management.

- All district technology staff reports to a business manager.

  - **Advantages**

  - Business managers with technology backgrounds can provide some of the best information systems and technology leadership if they focus on optimal use of resources to help reach district goals.
  - Business managers often have control and influence over all of the resources needed to implement technology, including facilities staff,
purchasing, building operations, budgeting, and even possibly the information technology group.

- **Disadvantages**
  - A business manager may be perceived as not supportive of educational technology.
  - A business manager may not focus on educational technology.

- Educational technology staff reports to an educational leader; information systems staff report to a technology or business manager.
  - **Advantages**
    - Each area can focus on the functions that are most important and best understood.
    - Balancing interests assures equitable distribution of resources.
  - **Disadvantages**
    - There could be overlap of resources and potential waste.
    - Two administrative and support organizations will be created.
    - There will potentially be conflicting goals.
    - There may be poor project implementation.

- Financial systems report to a treasurer; business systems report to a business manager; educational systems report to an educator.
  - **Advantages**
    - Each area controls its own resources.
  - **Disadvantages**
    - Technology may be poorly integrated.
    - One side may serve as a barrier to new technologies.
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- There could be poor coordination between projects and technology initiatives.
- There could be poor business coordination.
- There will be multiple standards.

Recommendations

Given all of the options that a district has, those responsible for designing technology service organizations should consider the following:

- The most effective design places responsibility for information systems and technology under one individual.
- The individual in charge must be able to integrate educational, business, operations, financial, and management systems and processes without overemphasizing any one area inappropriately. This person must be a pragmatic risk-taker who understands how technology can benefit the district.
- Key skills needed at the highest level include:
  - A strong business focus with an ability to achieve results in the most economical way possible
  - Ability to provide a strong vision and leadership
  - Ability to translate a vision into results
  - A nonpolitical stance
  - Excellent leadership skills that focus on collaboration, high expectations, business sense, and sense of urgency
  - A solid understanding of technology without being a technologist
  - Skilled planner and negotiator

- Do not allow individuals who are not technology leaders to play a leadership role in the destiny of any district systems. The author has observed situations where a high-level individual who had responsibility for functional systems held the district back for years and caused many system integration problems and great inefficiencies due to an unwillingness to use new technology.

- Do not allow individuals who do not have responsibility for technology to set policies affecting access to information. The author has observed high-level
individuals severely limit access to information that managers needed, without any accountability for the results. District information access policies should be established by a management information systems (MIS) steering committee and approved by the board.

- Assure that the executive director reports to an individual who has experience with information systems and technology, or at least a basic understanding of the fundamentals, and has a vision for the use of technology in the district.

- Avoid allowing one individual to take control of all technology and systems in the district. Autocratic managers will attempt to gain excessive control and therefore inhibit the effective use of technology in each department.

- Assure that a strategic information technology plan is in place that sets priorities and projects that are approved by the superintendent and board. After high-level approval of a plan is gained, the primary duties of those responsible become implementation and not control.

- Give schools and division and department heads some latitude in their search for the use of technology that will make them more efficient and effective. Give them the authority to make decisions that fit in the framework of a strategic information technology plan.

- Assure that the staff in the educational and information systems groups are an innovative team willing to take the lead in applying educational and information systems and technology to improve the district.

- Team building and cooperation can overcome even the most disjointed structure. An educational technology department and a business department can be managed effectively with cooperation, planning, and effective project management.
Attachment # 2

Responses from Technology Plan Implementation committee members
Strengths, Weaknesses, Recommendations
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The Technology Plan was hammered out in two months. It suffers from a certain amount of haste that was forced on the committees. However, it has some strengths that flow from the process the state established, particularly in the area of broad representation. The Committee inherits some of the same strengths and weaknesses as might be expected.

Weaknesses of the Plan
As mentioned above the Technology Plan was written in some haste. This haste limited the ability of the committees to communicate at length with technology stakeholders in the district. In particular there was no time to do much needs assessment. A lot of time was spent looking at other examples of school district plans and trying to adapt other districts’ plans to our own. Written in some haste, there was no time to accompany the plan with any explanatory documents that could give unofficial, yet helpful, guidance to interpret what was written into the plan. Some record of the discussion that led to a particular wording would be helpful as we try to interpret the document.

From the outset of the process of writing the plan it was made clear that if we did not pass the state review we stood to lose a considerable amount of money. We looked very carefully at the rubric that the state sent and wrote the plan to adhere as closely as possible to those guidelines. We were very successful in meeting the state guidelines. Unfortunately, since it is so closely shaped to state guidelines, in some ways it does not reflect our unique needs as a district. With more time we would have been able to align our needs with state guidelines, but the time was not there. Our Technology plan should be guided first by our mandate and responsibility of educating the students who are sent to us. Obviously, the state guidelines agree with this goal, but the plan should be shaped by our local needs first.

To correct this weakness a “grass roots” needs assessment should be undertaken to examine the needs of the teachers directly in contact with the students. It is an almost unavoidable temptation to adapt plans to the convenience of the planners rather than the needs of the users. When we listen to the teachers and students we also get the benefit of buy in and empowerment that comes to listening to those needs. We are in the learning business. Any time we forget to focus on the students we become an inefficient bureaucracy that has lost its way. This temptation is particularly dangerous in the realm of technology which is so easy to control from the top down. Technology is a good servant, but a hard master.

Strengths of the Plan
DESE implemented guidelines for the plan that have some intrinsic strengths. One of these key strengths, one of the strengths that make the Plan and the Committee viable, is the emphasis on broad representation. Those who wrote the plan were from each area of the district and the Implementation Committee is broadly representative also. With better communication of the plan
to the stakeholders in the district, even more teachers would feel that the plan was designed to help them and would cooperate more enthusiastically with district technology activities.

Weaknesses of the Implementation Committee
The most obvious flaw with the committee is lack of communication and, to some extent, cooperation. It is probably unavoidable that there be some protection of “turf” in a district of this size. Each of the members has a particular view of the needs of the district based on the needs that they see in their daily work. I have been encouraged by the sense that learning what other people are doing and the reasons they are doing things that way helps me to understand and see that we are all working together for the overarching district goal of student learning. As I talk about the needs of the tech schools and the activities that we are undertaking there I see that some misperceptions about the tech schools also disappear. I am not saying that we all agree on everything, but at the end of the day I believe we see that we are all on the same district team. Ironically, although there is a flaw of lack of cooperation, the extent to which it does take place, is its greatest strength.

Another weakness of the committee is that each of the members is overworked with the demands of their own jobs. We do not have time to work specifically on the action plans that are outlined in the plan. If we could have time to establish more links between our job tasks and the technology plan it would help facilitate implementation of the plan. As time goes on and we work through the plan as we are doing now I am sure that these links will become more obvious.

Strengths of the Committee
All of the areas of our rather complex district are represented in this committee. Everyone has a seat at the table. This broad representation and the communication that takes place in this committee is a towering strength that should not be ignored. Needs that are identified within each of the wings of the district can flow from the creative grassroots where learning is taking place up to the strategic decision making conversation. This committee is an excellent clearinghouse for ideas and plans for implementing technology in the district.

The possibility of establishing a technology department to govern implementation of technology in the district has been mentioned. I think it would be a grave error to move that decision-making conversation away from this representative body to a technology “czar” who made decisions based on the conveniences of technology and imposed decisions by edict. My only recommendation would be to add a representative from purchasing, such as Ron Wooley, to help us coordinate better with district fiscal policy.

In conclusion neither this plan nor this committee are perfect. The plan needs to be clearer in some of the recommendations that it makes. However, the communication that took place in building the plan and the communication that takes place as we implement the plan make the district stronger. We need more communication. We need more voluntary cooperation, not less.
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Attributes

Diversity of the group
Ability to look at the technology provided across the district
Monthly meetings to discuss progress and road bumps
Overall picture of technology needs/plans

Barriers

Not enough financial support behind the ideas
Still issues across the district related to old technology, we haven’t made great changes in this
I think it needs to involve a larger group of shareholders
I would like a bigger focus on educational use of the tech available
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Strengths:
- We are a diverse group with varying views of the needs of technology in regard to our unique district.
- There are people who have strong expertise in specific areas of technology on the committee.
- This is a more cohesive plan than we have had before.
- There is communication and collaboration between the different areas of technology (MIS, Instructional Technology, Assistive Technology, Tech. Schools, Student Instruction).
- I feel that after having been through this process one time, we can write an even better and tighter plan the next time.
- We have regularly scheduled meetings.

Weaknesses:
- We need at least two members of the original Technology Plan Committee from each of the goal areas on the implementation committee. This will help us better interpret and evaluate the plan.
- We need a more complete technology inventory (what technology is where).
- We need a better system built into the Technology Plan for gathering the information necessary for assessment.
- We need to have a dotted line between funding and implementation for each goal/objective.
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Strengths:

- The plan provides a comprehensive approach to planning for SSD and student's needs
- Challenges encountered in development and implementation of the plan can be addressed and resolved to improve development and implementation of the forthcoming plan.
- SSD has witnessed a dramatic increase in use of technology to support administration/management and student learning over the past two years

Concerns:

- The Technology Plan Implementation Committee (TPIC) only serves as a mechanism for reporting progress on the Tech Plan. It has greater potential that has not been tapped: ie a mechanism for discussion and making recommendations regarding technology
- When the plan was developed, original committee members created actions plans for which they had no control over implementation. Members of the TPIC do not necessarily have the authority to affect implementation of many of the action plans.
- When the plan was developed, baseline data was not maintained in some areas which created obstacles in reporting progress.
- Inadequate time was planned for development of the SSD Technology Plan
- Regarding equity, a disparity exists between resources and support devoted to administration/management compared to that devoted to student learning. This is inconsistent with the Technology Mission Statement.