Determining State and Local Education Technology Needs

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East Ballroom

National Forum on Education Statistics

National Forum on Education Statistics

Mission: To plan, recommend, and develop education data resources that will support local, state, and national efforts to improve public and private education throughout the United States.

Members

- Representatives of state and local education agencies (SEAs and LEAs)
- Representatives of offices of the U.S. Department of Education and other federal agencies
- Associate members from U.S. territories, Regional Educational Laboratories (RELs), and national education associations

Working Group Motivation

- At the 2017 Forum meeting, the Forum's Technology Committee discussed the need for information to help LEAs select and evaluate technology tools.
- Many of the topics were covered in the 2005 Forum publication *Forum Unified Education Technology Suite.*
- The Forum formed a new Education Technology Working Group to review the 2005 document and determine whether a new resource was needed.

Outcome → **Develop a new resource or resources**

Purpose and Audience

Purpose:

- Assist SEAs and LEAs in identifying best practices for selecting and implementing technology.
- Address the widespread use and integration of technology in SEAs and LEAs, including administration (such as human resources and finances), reporting, infrastructure, and student information systems.

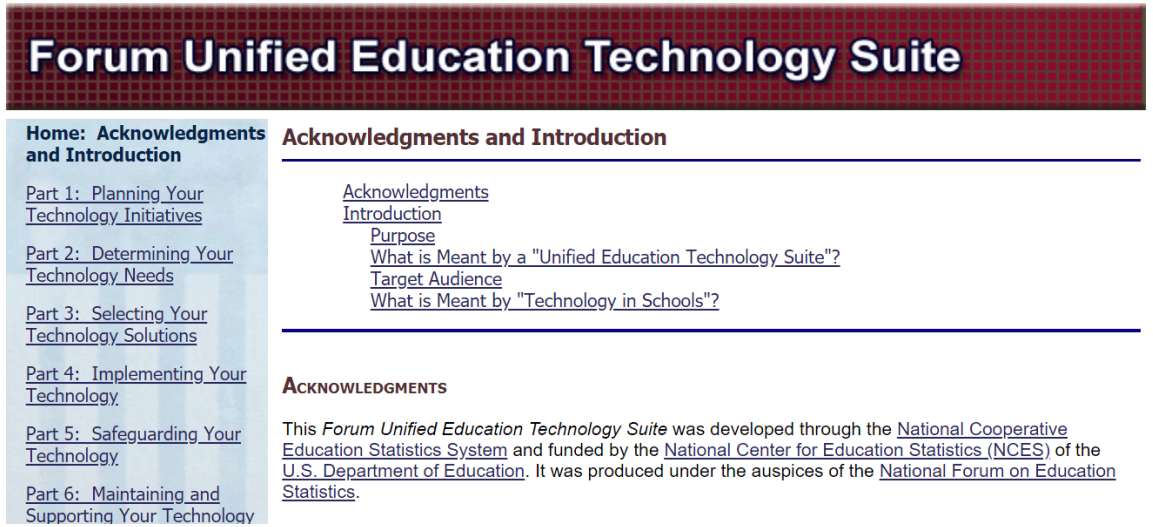
Focus → **The overall goal of technology is supporting teaching and learning.**

Audience: SEA and LEA staff who are involved in technology decisionmaking

Useful Concepts From the 2005 Guide

The new resource will keep the structure and many of the concepts from the 2005 document, including these:

- How to do a technology needs assessment
- The importance of planning, including technology plans
- Best practices for the following:
  - Reviewing technology options
  - Implementing and integrating technology
  - Maintaining and supporting technology
  - Providing professional development



Forum Unified Education Technology Suite

Home: Acknowledgments and Introduction

Part 1: Planning Your Technology Initiatives

Part 2: Determining Your Technology Needs

Part 3: Selecting Your Technology Solutions

Part 4: Implementing Your Technology

Part 5: Safeguarding Your Technology

Part 6: Maintaining and Supporting Your Technology

Acknowledgments and Introduction

Acknowledgments
Introduction
Purpose
What is Meant by a "Unified Education Technology Suite"?
Target Audience
What is Meant by "Technology in Schools"?

ACKNOWLEDGMENTS

This *Forum Unified Education Technology Suite* was developed through the National Cooperative Education Statistics System and funded by the National Center for Education Statistics (NCES) of the U.S. Department of Education. It was produced under the auspices of the National Forum on Education Statistics.

New and Expanded Content

- Real-world examples of technology plans
- New information on technology governance
- Additional information on technology expectations by role
- Examples of needs assessments in practice
- Expanded information when thinking through technology options
- Expanded information for analyzing costs and establishing a budget
- Expanded information on evaluating technology

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VII. Privacy and Security

Stock photo

I. Introduction

Technology in Education

- There is a full range of technology that supports overall SEA and LEA goals related to teaching and learning.
- This includes a wide range of devices, systems, and networks.
- Systems are increasingly integrated.

Engaging With Technology in Education

- Parents … use an online portal to know when their child's assignments are due.
- Principals … use student information systems.
- Technology staff … understand the system criticality to create disaster recovery plans.
- Teachers … understand how their selection/use of technologies may enhance student learning.
- Students … are aware of and understand acceptable use policies.

I. Introduction

This resource is designed to assist SEAs and LEAs with best practices for selecting and implementing technology to support teaching and learning in the classroom. It addresses the widespread use and integration of technology in SEAs and LEAs, including administration (such as human resources and finances), reporting, infrastructure, and student information systems, all of which serve the overall goal of supporting teaching and learning.

II. Technology Governance and Planning

Technology Governance: The process that agencies use to make decisions about current and future uses of technology *(International Standards Organization)*

Practices for effective governance:

- Encourage close collaboration between technology, contracts, procurement, and other specialists.
- Involve technology staff in decisionmaking.
- Allow enough flexibility in planning and implementation for systems to evolve.

Washington State Policy: Managing Information Technology Portfolios
https://ocio.wa.gov/policy/managing-information-technology-portfolios

Creighton University Information Technology Governance Model:
https://doit.creighton.edu/services-provided-doit/project-management-office/project-governance/it-governance-model

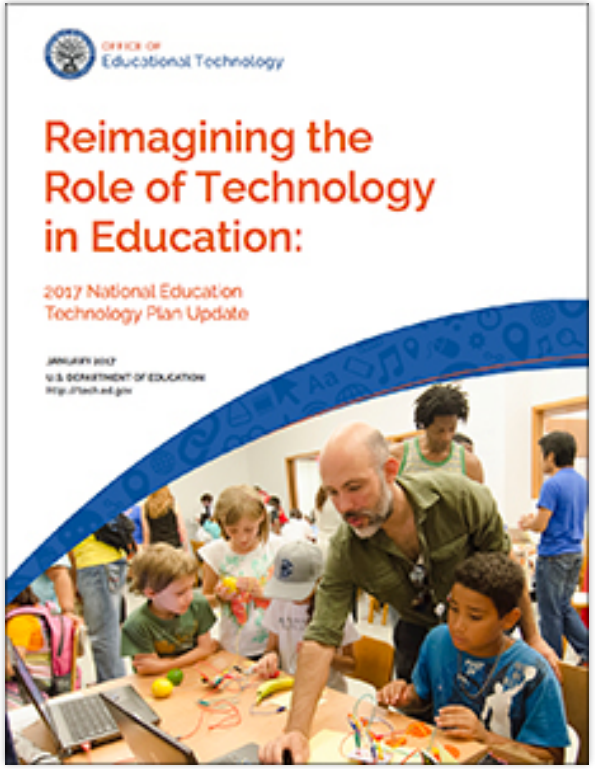
II. Technology Governance and Planning

Technology Plans help establish goals for technology use.

Characteristics of good plans:

- Aligned with the agency's vision
- Specify how technology will be used to support the agency's strategic goals
- Demonstrate that planners have considered long-range funding issues
- Provide timelines and milestones
- Address technology integration
- Include measures for evaluation

II. Technology Governance and Planning



National Education Technology Plan

The National Education Technology Plan is regularly updated by the U.S. Department of Education Office of Educational Technology. The 2017 plan, available at https://tech.ed.gov/netp/, sets a national vision and plan for learning enabled by technology and focuses on five major areas:

1. Learning—Engaging and Empowering Learning through Technology
2. Teaching—Teaching with Technology
3. Leadership—Creating a Culture and Conditions for Innovation and Change
4. Assessment—Measuring for Learning
5. Infrastructure—Enabling Access and Effective Use

II. Technology Governance and Planning

The Technology Needs Assessment

- focuses on the organization's current capabilities;
- identifies capabilities that are needed; and
- determines how additional or newer technology can best meet those needs.

Technology Needs Assessment Steps:

- Gathering needs-related information
- Reviewing and prioritizing needs
- Documenting results

II. Technology Governance and Planning

Needs Assessments in Practice

A technology needs assessment can be a large endeavor aimed at addressing widespread needs within an organization, or it can be a targeted endeavor aimed at addressing specific areas of need.

Scenario 1: The “Big Bang”: An Agency Needs to Replace a Large, Integral System

Scenario 2: A Teacher Needs a New App for Classroom Use

Scenario 3: An Agency Receives a Directive to Implement a New Initiative

Scenario 4: An SEA Decides to Pilot a New Initiative

II. Technology Governance and Planning

Table 2.1 - Needs Assessment Information Gathering Techniques			
Technique	**Definition**	**Advantages**	**Disadvantages**
Personal Interview	Face-to-face meeting with individual technology users to determine "needs" using a prepared set of questions.	Good for details about needs and related issues. Individual sessions encourage open and honest assessment of need.	Time consuming. Findings may not always be comparable when participants have opportunities for open-ended responses.
Group Interview	Face-to-face meeting with multiple technology users to determine "needs" using a prepared set of questions.	Time efficient because it collects opinions from several participants at once. Can lead to "consensus" opinions.	Multiple participant approach may stifle individual input. May be difficult to reconcile conflicting opinions that arise.
Written Questionnaire	Written questions sent to multiple technology users with instructions for completing and returning the survey.	Consistent set of questions for all respondents. Can be administered to a geographically dispersed group of users.	Response rates can be low. Time consuming to review responses unless process is automated, which usually requires additional expense.
Focus Group	Facilitated discussion of job-related needs and possible technology responses in an open forum.	Time efficient because it collects opinions from several participants at once. Can lead to "consensus" opinions.	Multiple participant approach may stifle individual input. May be difficult to reconcile conflicting opinions that arise.

II. Technology Governance and Planning

Project Planning: The work of identifying, acquiring (or updating), implementing, and maintaining technology systems is done via projects.

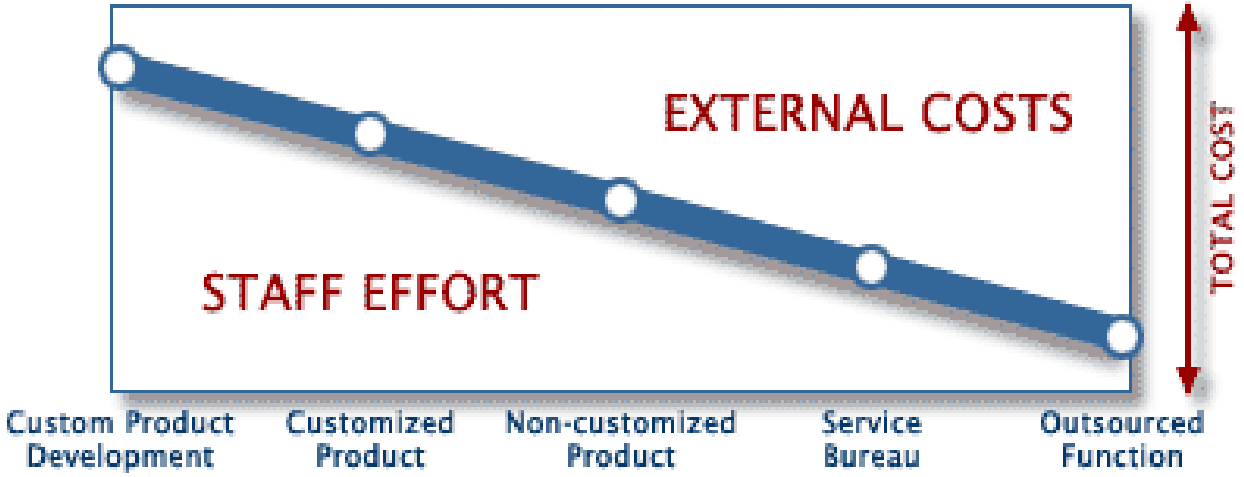
The document discusses several aspects of project planning as they relate to technology:

- Identifying a project manager, team leader, or co-leader
- Identifying the project sponsor
- Establishing a project team
- Appointing a steering committee
- Developing a project management plan
- Establishing a schedule and handling schedule slippage

III. Reviewing Your Technology Options

Thinking Through Options

- Agency Guidelines and Procedures
- Build Versus Buy
- Cloud Versus On-premises
  (note privacy considerations)
- Purchasing Versus Leasing
- Common Software for Classroom
- Human Resources
- Engaging Users in the Selection Process
- Interoperability/Standards
- Documentation



III. Reviewing Your Technology Options

Selecting Software for Classrooms:

School districts should decide on specific sets of software that each classroom will have based on grade level and subjects taught. Using an economy of scale, a district can then negotiate "site licenses" with the software vendors in order to reduce costs. This approach may not be possible when different schools (or even different teachers) want different software packages.

III. Reviewing Your Technology Options

Interoperability:

Whenever possible, new technologies should be able to work seamlessly with the agency's existing technologies. Sometimes, technology systems or solutions may need to be customized to make them work well together. For instance, needs might necessitate the selection of a student information system package, a personnel information system package, and an accounting package from three different companies. Sharing information between two or more of these packages might require special programming to create an interface and the incorporation of data standards to ensure interoperability.

III. Reviewing Your Technology Options

- Analyzing Costs and Establishing a Budget

  Assessing expenditures for technology is not only about purchase price. . . . It is about the Total Cost of Ownership (TCO). TCO is a concept from the business world that is applied to the lifecycle costs. It can help decisionmakers better understand the actual costs associated with successfully implementing educational technology over time.

- Making a Final Decision
- Contracting
- Documenting the Decision
- Communicating the Decision to Stakeholders

IV. Implementing and Integrating Your Technology

Organizational Change Management:

Regardless of how seamless a new technology is integrated, there is often a period of time when staff must learn how to use the new technology.

Strategies for Successful Organizational Change Management:

- Invite volunteers to implement a new technology first and then serve as mentors to other staff.
- Create sandboxes, or test sites, for hands-on learning.
- Implement pilot programs.
- Identify and work with early adopters.

IV. Implementing and Integrating Your Technology

- Converting From Old Information Systems

  Conversion is the process of moving information from an existing system to a new system. Conversions should be well planned and implemented to avoid costly delays and loss of productivity.

- Quality Control

  New systems should be extensively tested prior to delivery to verify that they are functioning properly.

- Arranging for System Handover

  Handover is the point in time at which the organization deems that the technology system is complete and ready for routine usage.

IV. Implementing and Integrating Your Technology

Measures of Implementation Success:

- Does the project align with the agency's strategic plan?
- Is the new technology integrated with existing systems?
- Have agency leaders communicated the benefits to stakeholders and addressed any disadvantages or drawbacks to the new system?
- Is the new technology allowable under all federal, state, and local laws and regulations?
- Was the problem solved?
- Are users trained and using the system successfully?
- What unexpected costs occurred?

V. Maintaining and Supporting Your Technology

- Considering Maintenance Services
- Establishing Support Services
- Sustainability
- Upgrades and Enhancements
- Evaluating Your Technology

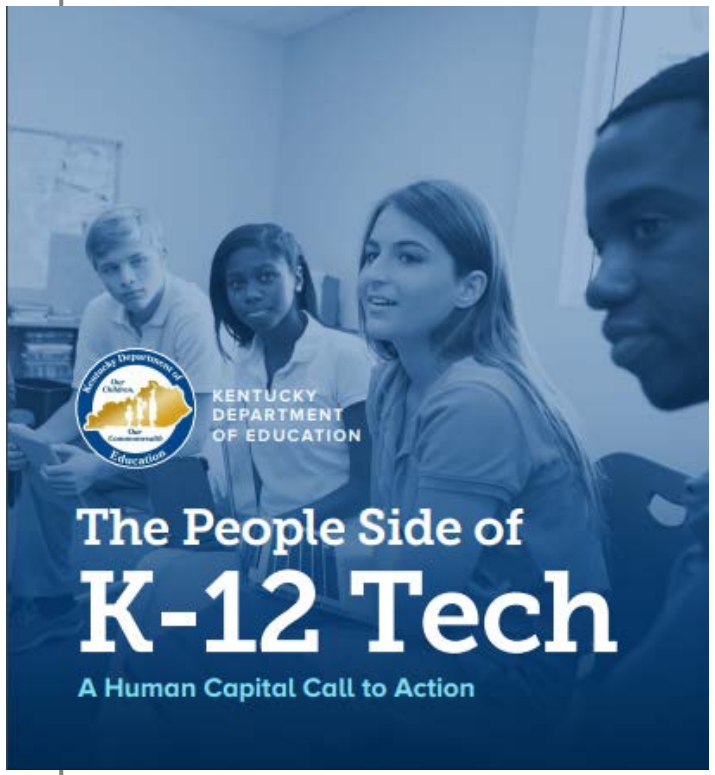
Sustainability: The ability to keep systems running effectively over time

- *Funding*
- *Staffing*
- *Refresh Cycles*
- *Vendor Changes*

V. Maintaining and Supporting Your Technology

Staffing Models

The Kentucky Department of Education published *The People Side of K-12 Tech: A Human Capital Call to Action* to address the finding that the demand for access to digital content and subsequent growth in technology investments continues to outpace the growth rate of the human capital or staffing required.



VI. Training for Your Technology

- What Are Your Professional Development Goals?
- Who Should Receive Professional Development?
- What Types of Professional Development Are Needed?
- What Format Is Best?
- When Should Professional Development Be Provided?
- Who Should Deliver Professional Development?
- When Is Additional Training Needed?
- How Will You Evaluate Professional Development Programs?

VII. Privacy and Security

Privacy focuses on adhering to the legal and ethical requirements for protecting the confidentiality of data:

- Defining data that need to be protected
- Developing policies that define acceptable uses for the data
- Identifying authorized data users
- Protecting data released in public reports
- Destroying data when they are no longer needed

Security focuses on technical aspects of protecting the data within the information technology infrastructure and user applications and tools.

VII. Privacy and Security

The U.S. Department of Education Privacy Technical Assistance Center (PTAC) has published a number of resources that can assist SEAs and LEAs with understanding federal privacy and security requirements and implementing best practices:

- Online training modules
- Videos
- Webinars
- Frequently asked questions
- Resources tailored to specific audiences

https://studentprivacy.ed.gov/

Education Technology Working Group

Chair

Steve Smith, Cambridge Public Schools (MA)

Members

Mary Barkley, Clayton County Public Schools (GA)

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Questions?

Forum Guide to Supporting Data Access for Researchers
Forum Guide to Elementary/Secondary Virtual Education Data
Forum Guide to College and Career Ready
Forum Guide to Ensuring Equal Access to Education Websites
Introduction to Electronic Information Accessibility Standards
Forum Guide to REPORTING CIVIL RIGHTS DATA
TRAVELING THROUGH TIME
The Forum Guide to Longitudinal Data Systems
What is an LDS?
Forum Guide to Collecting and Using Attendance Data
Forum Guide to Education Data Privacy
Forum Guide To Facility Information Management:
A Resource for State and Local Education Agencies
Forum Guide to Data Visualization:
A Resource for Education Agencies
Forum Guide to Taking Action with Education Data
Forum Guide to Collecting and Using Disaggregated Data on Racial/Ethnic Subgroups
FORUM GUIDE TO Alternative Measures of Socioeconomic Status in Education Data Systems
Forum Guide to Collecting and Using Disaggregated Data on Racial/Ethnic Subgroups
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Forum Resources

- For more information about the Forum, please visit https://nces.ed.gov/forum/index.asp
- Download free Forum resources at http://nces.ed.gov/forum/publications.asp