IES PRS

Application Profile

Application Number: R372A05083

Competition: 84.372A05 **Date Entered:** 6/30/2005

Organization Information

Organization Name: Pennsylvania State Dept of Education

Organization Unit: Bureau of Educational Technology

Organization Address: 333 Market Street

Harrisburg, PA 17126-0333 **Country:** United States of America

Project Director Name and Information

PD Name: Mr. Robert E McGrath

PD Address: PA Department of Education

333 Market Street

Harrisburg, PA 17126-0333 **PI Country:** United States of America

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Application Title

Pennsylvania Information Management System

State Identifier PIMS

Period of Performance **Project Begin Date:** 09/01/2005 **Project End Date:** 09/01/2005

Abstract

d. Project Abstract
Title: Pennsylvania Information Management System (PIMS)

Pennsylvania faces greater data needs and challenges in reaching NCLB and state objectives than most, if not all, other states. In the 2004 PBDMI site visits, only four states were evaluated below Pennsylvania for readiness to participate in EDEN, none of which had a population of similar size to Pennsylvania.

· PA does not currently have a state student ID.
· PA relies on a mix of stovepipe, paper and electronic collections of aggregate student and other data from districts.
· PA has relied on costly third party services rather than developing statewide capacity for educational data analysis.
· Despite best intentions, PA has not successfully produced Priority 2 or Priority 3 EDEN files.
· PA SEA and LEAs do not have data of sufficient quality and timeliness or systems of adequate robustness to provide educators with tools and policymakers with knowledge to undertake initiatives to help all students succeed.

The Pennsylvania Pathways to Performance strategic plan created a vision and roadmap to improve the situation. Central to this plan is the establishment of the Pennsylvania Information Management System (PIMS) to address substantial gaps in Pennsylvania Department of Education's capacity to harness data to support NCLB and state priorities.

PIMS will include two main sub-systems:
1. A Vertical Reporting System that will:
o complete the state student ID assignment process;
o strengthen all existing PDE data collections from LEAs; and
o fully enable SIF for districts that are ready to benefit from it, but not rely on SIF for districts not yet ready.
2. A Longitudinal Data Management System that will include:
o an initial, agency-wide data warehouse;
o a set of four data marts optimized for key user types;
o a learning resource exchange to provide careful alignment of standards, assessments, eligible content, curriculum, instructional practices and resources; and
o a common student level pK-16 identifier and initial participation in the National Transcript Center.

With the aid of an IES Longitudinal Data System grant, PDE will build on its foundation and significant investment over the past 24 months and put in place a statewide, SIF-enabled, unique pK-16 student record management and vertical reporting system through which quality data and a state-of-the-art learning resource exchange can be available to educators, students, parents, policymakers and other stakeholders for timely use in supporting teaching and learning, eliminating performance gaps between subgroups of students, and contributing to improving achievement of all students.

Human Subjects:	No	Exempt from Regulations:	No	Exemption #:		Assurance #:	

Exempt Narrative:

Non-Exempt Narrative:

Estimated Funding

Federal:	$4,428,875.00	Local:	$0.00		
Applicant:	$0.00	Other:	$0.00	Total:	$4,428,875.00
State:	$0.00	Program Income:	$0.00		

Federal Budget

Budget Categories	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1. Personnel	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2. Fringe Benefits	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
3. Travel	$14,125.00	$14,125.00	$14,125.00	$0.00	$0.00	$42,375.00
4. Equipment	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
5. Supplies	$15,500.00	$5,500.00	$5,500.00	$0.00	$0.00	$26,500.00
6. Contractual	$1,900,000.00	$1,200,000.00	$1,200,000.00	$0.00	$0.00	$4,300,000.00
7. Construction	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
8. Other	$20,000.00	$20,000.00	$20,000.00	$0.00	$0.00	$60,000.00
9. Total Direct Costs	$1,949,625.00	$1,239,625.00	$1,239,625.00	$0.00	$0.00	$4,428,875.00
10. Indirect Costs	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
11. Training Stipends	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
12. Total Costs	$1,949,625.00	$1,239,625.00	$1,239,625.00	$0.00	$0.00	$4,428,875.00

Non-Federal Budget

Budget Categories	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1. Personnel	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2. Fringe Benefits	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
3. Travel	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
4. Equipment	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
5. Supplies	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
6. Contractual	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
7. Construction	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
8. Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
9. Total Direct Costs	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
10. Indirect Costs	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
11. Training Stipends	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

12. Total Costs	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Application Details

D-U-N-S Number:	(b)(2)	T-I-N:	236003115	Duration (years):	3
Any Federal Debt:	No	Specify:			
Type of Applicant:	State	If Other, Specify:			

Authorized Representative Information

AR Name	AR Address	AR Phone	AR Fax	AR E-mail	Primary:
Mr. Robert E McGrath	PA Department of Education 333 Market Street Harrisburg, PA 17126-0333 United States of America	717-783-4414	717-783-5420	rmcgrath@state.pa.us	Yes
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e. Project Narrative (25 pages)

> *"Data is our best management tool. I often say that what gets measured, gets done. If we know the contours of the problem, and who is affected, we can put forward a solution. Teachers can adjust lesson plans. Administrators can evaluate curricula. Data can inform decision-making."*
>
> *U.S. Secretary of Education Margaret Spellings*
>
> *June 14, 2005, Indianapolis, IN*

Current Context for Pennsylvania's Longitudinal Data analysis Initiative:

In January 2003, Ed Rendell took office as Governor of Pennsylvania with an agenda focused on education and economic development. His first appointment was his Secretary of Education to lead the Pennsylvania Department of Education (PDE); symbolically reinforcing the importance he placed on improving education throughout the Commonwealth. That Secretary recruited a new leadership team and immediately embarked on a rigorous standards-based reform agenda to bring high expectations and strong accountability to the educational enterprise in Pennsylvania in order to close one of the greatest achievement gaps in the country and help all students reach proficiency.

The first steps were focused on creating high demand and high supports. These early reforms included enacting early childhood initiatives, robust tutoring, research-based practices, supports for math and literacy, careful alignment of standards, assessments, eligible content, curriculum, instructional practices and resources, and professional development. PDE also enlisted the various educational stakeholders across the state to join forces in collaboration to address the significant challenges facing schools. As a result of this shared leadership, schools began to make student performance gains toward Adequate Yearly Progress.

At the same time, PDE established a strategic plan, *Pathways to Performance*, to increase efficiency and effectiveness throughout the educational enterprise, which calls for establishing streamlined, comprehensive systems to improve planning, operations and reporting. At the heart of this effort is the belief that in every school a clear focus must be maintained on creating a culture of teaching and learning that is student centered, data informed, personalized with differentiated instruction, and results focused, and seamlessly supported by data systems, resources, technology and shared leadership. Only with improved data quality and timeliness that these systems will deliver will educators have the tools and policymakers have the knowledge to undertake initiatives to help all students succeed. Central to this plan is the establishment of the Pennsylvania Information Management System (PIMS) to address the substantial gaps in PDE's capacity to harness data in support of No Child Left Behind and our own state priorities.

With the *Pathways to Performance* vision and roadmap in hand (see Appendix B), PDE began to build widespread support and collaboration toward accomplishing it. First steps included the establishment of a Data Council comprised of representatives from all bureaus and divisions within PDE to document the plans and reports required for both state or federal compliance,

assessment and curricular purposes and the development of a data dictionary with common element definitions. Data quality was another early priority as was the encouraged migration from paper to electronic reporting. In each case, these data initiatives were undertaken with standards-based reform and improved teacher quality and student achievement as the goals, not simply for their own sake, in an effort to maximize the validity, reliability, and accessibility of statewide cross-sectional and longitudinal data.

In 2004, PDE convened a statewide advisory council of education and government stakeholders to move PIMS development ahead based on the growing foundation of data integrity and with the recognition that only with widespread support and involvement, an appreciation of how all of the locally-developed solutions will interact and an understanding of the range in capacity and capability across LEAs would the implementation succeed. In addition, PDE contracted with CCSSO's Decision Support Architecture Consortium (DSAC) to undertake a review of all information systems and suggest a potential enterprise architecture solution. Three key immediate priorities emerged:

1. recognition that wholly inadequate existing systems require major overhaul and integration;

2. the need for an enterprise directory and portal/security framework; and

3. the need for a unique student record management system

Also, in 2004, in recognition of the vital importance information, systems and technology play in supporting and furthering the work of the Department, PDE established a new Office of Information and Educational Technology and named Michael Golden its first Deputy Secretary. Not only does this organizational change demonstrate PDE's commitment to prioritize the establishment of a state-wide infrastructure to assist educators across Pennsylvania in blending technology and information effectively in schools to improve student performance, it will facilitate analysis and rigorous research to evaluate the effectiveness of programs, improve student learning and academic achievement, and close Pennsylvania's achievement gap. In addition, the Pennsylvania Legislature passed and the Governor signed into law Act 183, a new telecommunications law that will provide funding to LEAs to increase broadband connectivity to their schools and build out the enhanced infrastructure over which these data will travel.

Since that time, PDE leaders have been actively developing a strategy, management and implementation plan for PIMS by actively engaging in national and regional summits, seminars and collaboratives to learn from the experiences of other states that have undertaken this work, taking note of model practices and successful implementations as well as paths to be avoided. Discussions are actively underway with other states to determine the feasibility of leveraging some of these model practices in Pennsylvania. PDE purchased memberships in Schools Interoperability Framework Association (SIFA) for all LEAs in an effort to begin building awareness and capacity across the Commonwealth personnel to ably address the data collection, management and reporting requirements and systems and development responsibilities that will be placed on them as Pennsylvania builds out its statewide systems. Pennsylvania was the second state to make such a commitment.

PDE also began to explore ways in which it can create synergy across its Office of Elementary and Secondary Education and its Office of Postsecondary and Higher Education by developing a common student identification system to be used across both, ultimately giving Pennsylvania the ability to garner longitudinal data on students from early intervention and preK-16, through college and into the workforce. Such a system will finally provide the data necessary to meet reporting requirements; support decision-making at State, district, school, and classroom levels; and facilitate research needed to eliminate achievement gaps and improve learning of all students. It would also promote linkages across States to allow sharing of historical data on individual students, especially when students move between States, which happens not only at the basic education level but even more frequently in higher education.

In July 2005, PDE will launch its web-based, metadata facility, another key building block of its decision support system solution. The facility tool, which will be made available to all Pennsylvania LEAs and to other states, is based on tying the NCES's Data Handbook's elements to the list of data elements currently collected by PDE. Once launched, this web-based tool will enable PDE to manage and publish metadata standards for all its vertical reporting collections from LEAs and resulting repositories. A set of metadata will be designated as the standard data dictionary both for PDE and for PA LEAs. The PDE metadata facility is also establishing links between NCES elements and SIF objects, which will advance interoperability across the nation.

PDE has recently agreed to contract for all identity management and presentation services from COSSA, the Commonwealth Shared Services Architecture provided by the state's Office of Administration (OA). This relationship will enable PDE to utilize the vast proficiencies of personnel and systems from all Pennsylvania governmental agencies without incurring the financial burden of replicating their expertise or infrastructure.

PDE plans to negotiate a contract during the summer of 2005, for the immediate deployment of a system to assign unique, consistent state IDs to pK-12 students and collect additional information to support pre-coding answer sheets for the March 2006 state assessment. Based on the result of this grant application, PDE will release a second RFP in Fall 2005 that will enable Pennsylvania to fulfill the full vision of Recommendation 7 of the National Education Technology Plan, which specifically recommends states to:

- Establish a plan to integrate data systems so that administrators and educators have the information they need to increase efficiency and improve student learning.
- Use data from both administrative and instructional systems to understand relationships between decisions, allocation of resources and student achievement.
- Ensure interoperability, particularly utilizing School Interoperability Framework (SIF)
- Use assessment results to inform and differentiate instruction for every child.

What has prevented PDE from making further progress on PIMS is a lack of critical funding to develop the systems beyond the crucial groundwork laid. With the aid of a US Department of Education IES Statewide Longitudinal Data System grant, PDE will be able to build on its work to date, put in place a statewide, SIF-enabled, unique student record management and vertical reporting system and transcend the existing stovepipe, paper and electronic collections of aggregate student and other data collection systems in Pennsylvania so that quality data can be

available in a manner in which they can be accessed by authorized educators, students, parents and other stakeholders for timely use in supporting teaching and learning. Taking these huge strides forward will help enable PDE, districts, and schools to identify the most cost effective solutions; lead to eliminating performance gaps between subgroups of students; and contribute substantially to improving achievement of all students. Such a system can also be shared across states to support the efficiency and effectiveness of education throughout the nation.
The value of PIMS shared resources will be manifested in providing information and tools for:

1) teachers and administrators to assess performance in the context of longitudinal student records, differentiate instruction to each student's needs and learning styles, offer complementary and supplementary courses and materials and distance learning, improve student achievement and teacher quality, and communicate with one another, tearing down the walls of the black box on the classroom and school to promote sharing of model practices and resources across basic and higher education;

2) LEAs to leverage their purchasing power and improve management productivity, share best practices and eliminate redundant efforts, so that more time can be dedicated to helping students;

3) students and parents to access increased information and communication capabilities, course and supplemental material offerings, extending the school day to become 24/7 and supporting after-school programs and parental involvement;

4) PDE to disseminate, receive and share information and communications statewide, facilitate interaction, harness limited resources and time, methodically evaluate program effectiveness, and ultimately, build capacity system-wide to further educational reform; and

5) other states to share and collaborate both on the longitudinal needs of all students as they move from one state to another and to improve the sharing of evidence-based practices across states to improve achievement for all students.

(1) Need for the Project

Below is a summary of the current status, need and the potential impact of the Longitudinal Data Grant broken down by each of the five required systems components and the six required policy and implementation components set forth in the Requirements section of the RFA.

Systems Components

SC-I. UNIQUE STATE ID		
Current Status	Need	Grant Impact
PA stakeholders have been working through the PIMS Advisory Council to establish requirements for and	PDE does not currently have a state assigned student ID (SASID). Separate stovepipe systems collect, manage and generate reports on overlapping silos of aggregate	This grant will enable PDE to build off a first rudimentary and voluntary assignment year with a statewide roll of record level student data collection. The

implications of SASID, including developing a draft RFP. PDE leadership has committed funds for initial SASID assignment and assessment pre-code. Project Oversight Committee ready to be convened.	student data.	scope of functionality enabled by this grant would be expanded from simple SASID assignment to include un-registration (withdrawal) of students, and manage and resolve cases related to the claiming process. Having a SASID in PA will be the fundamental building block to enable the state to establish a longitudinal record for each individual student and provide teachers AND administrators the information to help that student reach proficiency in all areas of learning, whether they move, withdraw or get promoted.
SC-II. ENTERPRISE DATA ARCHITECTURE		
Current Status	Need	Grant Impact
PA is one of the nation's leaders in enterprise metadata management and alignment with both NCES and SIF. PDE has used much of the past two years to establish a coherent and integrated architectural plan.	PA needs to put in place the unique student record management system that would enable PIMS. Otherwise, the metadata facility, DSAC development work, and data dictionary are more theoretical than practical.	This grant will enable PDE to put in place a state-of-the-art, statewide unique student record management system that will fulfill the data standards managed in the metadata facility The metadata facility will also establish links between NCES elements and SIF objects, which will advance interoperability across the nation.
SC-III. SECURITY AND PERSONALIZATION		
Current Status	Need	Grant Impact
PDE relies on an antiquated relational database with a primitive interface to an even more primitive security framework.	PDE has documented requirements and agreed to contract from our Office of Administration for the Commonwealth Shared Services Architecture (CoSSA) including: enterprise directory, identity management, security framework, and integrated portal/communications/collaboration services.	This grant will enable PDE to develop a SIF-enabled learning resource exchange. Assessment results will be managed in the data warehouse with reliable links to the state's academic standards and will enable future exchange of learning objects. This will ensure careful alignment of standards, assessments, eligible content, curriculum, instructional practices and resources so

		teachers can quickly and accurately address each student's proficiencies and needs, all within a secure environment of authentication and personalization.
SC-IV. VERTICAL REPORTING		
Current Status	Need	Grant Impact
PDE currently collects student data through various stovepipe collections of mostly aggregate data. While pockets of innovation continue to demonstrate PDE's strong potential to lead, lack of systemic capacity has extended an unacceptable status quo. A Program Management Office (PMO) RFQ is being released to establish oversight and integration.	PDE needs to completely overhaul its systems and protocols for collecting data from school districts; implement extensive data collection, maintenance and reporting reforms; and execute a rigorous agenda of change management and capacity building.	This grant will enable PDE to build off cutting-edge capacity put in place through the PMO, COSSA, metadata facility, SIF VR pilots, and initial SASID assignment project to deploy a state-of-the-art vertical reporting system that would replace virtually all current data collections. The PDE data management model enabled through this grant addresses the full lifecycle of data creation and use from LEA operational systems to SEA analytical systems to serve the needs of all educational stakeholders.
SC-V DATA WAREHOUSE/MARTS		
Current Status	Need	Grant Impact
Although PDE has mapped program data to NCES elements and created standard definitions, it does not currently have a data warehouse or data marts.	PDE is wholly lacking any capabilities in this area. It needs an enterprise data warehouse and data marts capable of supporting four main types of users: 1) USDoE and EDEN; 2) Educational Stakeholders; 3) Researchers and Analysts; and (4) Legislators and General Public.	This grant will enable PDE to design and develop an initial data warehouse with data marts optimized to the four target audiences. PDE has a comprehensive view of data warehousing, which includes student, educator, financial and other educationally relevant information, and this grant will establish the fundamental capability for data informed decision-making to improve educational efficiency and effectiveness, improved policy making and systemic accountability for student learning.

POLICY AND IMPLEMENTATION COMPONENTS

PIC-I. SUPPORT RESEARCH TO IMPROVE STUDENT ACHIEVEMENT		
Current Status	Need	Grant Impact
PDE currently has relatively limited capacity to support the extensive educational and research community who need access to PA education data.	PDE's need is vast and fundamental. Data is in silos of aggregate data. Because of the aggregate data and silo collections, there is little ability to "slice" the data in multiple ways. A lack of a SASID and record level student data severely hampers statewide efforts to harness the power of data to improve student achievement.	This grant will enable PDE to create a secure repository of unidentifiable longitudinal, record-level student data in a data warehouse to support authenticated access by policy makers, researchers and educators. Armed with this data warehouse, Pennsylvania can begin to mine the extensive and effective evidence-based practices, monitor the needs and progress being made to close the Achievement Gap and enlist these practices to address these needs.
PIC-II. SUPPORT EXCHANGE OF DATA K-12 - HE		
Current Status	Need	Grant Impact
PA currently has no ability to facilitate exchange of data among LEAs or between pK-12 and higher education. PDE has begun conversations to address this need in hopes of establishing a student level pK-16 identifier.	PDE needs an infrastructure to support the exchange of student transcript data. A SASID is a key component of this functionality. Conversations on a student level pK-16 identifier are only in very early stages.	PDE will create synergy across its Office of Elementary and Secondary Education and its Office of Postsecondary and Higher Education by developing a common student level pK-16 identifier, giving Pennsylvania the ability to garner longitudinal data on students from early intervention and pK-16, through college and into the workforce. PDE plans to share this system with other states, the implications of which are essential to understanding basic ed, higher ed and workforce alignment. PDE also intends to participate in a multi-state effort to create a national transcript exchange.
PIC-III. REPORTS TO STAKEHOLDERS		
Current Status	Need	Grant Impact
PDE has outsourced	PDE needs to develop a robust	This grant will enable PDE to

basic PSSA (state assessments) report generation to the Grow Network and is rolling out a comprehensive system to support district-wide planning. PDE also supports various statewide and regional data report and analysis initiatives such as PVAAS (value added). PDE is also developing a personalized, secure, information delivery system.	capacity to manage record level data and produce reports to support key stakeholders and policy makers	create a data warehouse and set of data marts to support four critical constituencies: 1) USED and EDEN; 2) Educational Stakeholders; 3) Researchers and Analysts; and (4) Legislators and General Public. Coupled with the personalized, secure information delivery system, information will be available to all stakeholders based on their roles, needs and authorization.
PIC-IV. CAPACITY TO SUSTAIN		
Current Status	Need	Grant Impact
PDE is putting in place a contract to bring in outside resources to develop and train PDE staff in project management methodology and is outsourcing all identity, portal and hosting common services to CoSSA. PDE provided SIFA memberships to all LEAs to build awareness and capacity statewide.	PDE and LEAs lack capacity to manage enterprise-scale information systems across the Commonwealth.	This grant will provide critical funding PDE will use as the tipping point to leverage this investment as a catalyst of change. PDE will continue to expand its data systems awareness and capacity building initiatives, put in place the building blocks for LEA systems horizontal and vertical integration, and establish comprehensive communications, marketing and implementation plans, the total sum of which will build the capacity to sustain and operationalize the work to continue beyond the grant funding.
PIC-V. FERPA		
The only PDE record level student data is managed by outside contractors, who manage FERPA compliance.	PDE needs an enterprise approach to collecting, managing and reporting student data to ensure that FERPA requirements are rigorously applied.	This grant will enable PDE to build on the security infrastructure that will be provided by COSSA and ensure all appropriate data is available only to authorized, authenticated

		users. PDE's Chief Counsel will review all federal requirements for both basic and higher education to ensure compliance.
PIC-VI. EVALUATION CRITERIA		
PDE has documented technology and business specifications and requirements to support procurement and implementation of PIMS. PDE is putting project management methodology and RFP contractual requirements in place to ensure that PIMS delivers on these requirements.	PDE needs critical funding to develop PIMS.	Evaluation criteria will be established against the documented technology and business specifications and requirements to support procurement and implementation of PIMS. Project management, contractual performance, and service delivery oversight will ensure PIMS meets these requirements on time and within budget. Performance metrics and milestones tied to systems development and alignment, data quality and timeliness, teacher and administrator capacity building, stakeholder engagement and satisfaction, improved policy and decision making, and, ultimately, student performance will ensure the comprehensive communications, marketing and implementation plans have been effectively deployed.

(2) Project Design

With this grant, PDE will have the critical funding it needs to complete the development of an enterprise-wide system to manage information on 1.8 million students. More importantly, Pennsylvania will have systems and tools to assist the educational leaders in every school to create a culture of teaching and learning that is student centered, data informed, personalized with differentiated instruction, and results focused.

PIMS will neither begin nor end Pennsylvania's commitment to becoming a good steward of its education data. With this grant, Pennsylvania will complete the development of its data collection tools and build a data warehouse and set of data marts designed to address the ongoing requests for information. A description of each of these data views is provided later in this section. By focusing initial engineering resources related to the data warehouse/marts on the four structured views (of dynamic data) in the data marts, PDE intends to address data needs in order of increasing complexity, thus mitigating risks and controlling costs. PDE will also deliver

compelling and carefully aligned applications at every stage of development so that the educational enterprise can take advantage of these solutions and resources while the entire system build-out takes place. Continued development and refinement in concert with other states, sharing of model practices, and integration across systems will help elevate PIMS and other states' counterparts into a national system of educational solutions to meet the decision support needs of all key stakeholders as they work to improve academic achievement for all students and close all achievement gaps.

In addition, PIMS will build off a sizable commitment of matching state resources that have resulted in a solid foundation of well-architected extensible components:

1. **Commonwealth Shared Services Architecture (CoSSA),** including
   - identity management services
   - portal/presentation services
   - communication/collaboration tools
   - enterprise-class hosting and back-up
2. A **State Assigned Student ID (SASID)** and Assessment Pre-Code
3. A web-based **Meta Data Facility**
4. A statewide **Data Dictionary** aligned to NCES and SIF
5. Rigorous **Project Management Methodology** and cross-agency governance.

Of the components listed above, only #3 and #4 have been deployed at this time. However, funding, procurement, and executive support are in place for the others, and they will begin rolling out this summer, in advance of PIMS. A summary of these initiatives is included in Appendix B to provide a context for PIMS.

PIMS will produce two main sub-systems:

(1) A **Vertical Reporting** System that will:
   - complete the state student ID assignment process;
   - strengthen all existing PDE data collections from LEAs; and
   - fully enable SIF for districts that are ready to benefit from it, but not rely on SIF for districts not yet ready.

(2) A **Longitudinal Data Management System** that will include:
   - an initial, agency-wide data warehouse;
   - a set of four data marts optimized for key user types;
   - a learning resource exchange to provide careful alignment of standards, assessments, eligible content, curriculum, instructional practices and resources; and
   - a common student level pK-16 identifier and initial participation in the National Transcript Center

PIMS Component 1: Vertical Reporting

PDE plans to implement a limited functionality state assigned student ID (SASID) system over the 2005-06 school year, designed to assign unique, consistent IDs to students in grades 3-8 prior to the state assessment, PSSA, which will be administered in Spring 2006.

Although, by Spring 2006, PDE does not expect to assign IDs to every student, the IDs that are assigned will be designed to meet the two most important characteristics:

1. **The IDs will be unique.** No two students will have the same ID. A random, ten digit number will be used. Leading and trailing zeros will not be allowed.
2. **The IDs will be consistent.** If the same student leaves one district and some time in the future enrolls in a different district, the same ID will be re-assigned.

PDE knows that this design is a possible and practical objective for a one year, limited scope project. Discussions with other states have provided PDE with insight into lessons learned, best practices, and challenges they have faced. Most relevantly, PDE met with Missouri to discuss their project MOSIS, a project with the exact same scope as that planned for PA. Their assurance of the ease of implementation has given PDE the confidence to proceed immediately.

The main value of pulling the initial assignment of IDs out of PIMS is that the ability to include next year's state assessment (PSSA) data in the data warehouse PDE is planning for PIMS will not be lost. By capturing next year's PSSA data linked to the SASID, it will be able to be matched with future year data to begin creating a growth model and other essential analytical and longitudinal frameworks.

With that said, the SASID project is only a beginning. PIMS will enable PDE to build off this ID system to develop a comprehensive approach to Unique Student Record Management (USRM). In addition to extending SASID <u>assignment</u> to every Pennsylvania student, pre-K-12, USRM will be designed to manage <u>withdrawal</u> information and resolve cases of duplicate enrollment.

Whenever a student is withdrawn from a district, the district will be expected to use USRM to free that student up to be assigned to another district and the proper withdrawal code data will be captured to generate drop out and graduation reports. In working with other states, PDE has learned that managing the withdrawal process in the state and LEA systems is critical to data integrity, accurate and current SASID assignment, and the longitudinal data analysis that depends on those two factors. PDE has focused heavily on this key process and system design issue in planning for PIMS.

As with the other three components of PIMS, Pennsylvania plans on relying extensively on SIF to automate interoperability, reduce data entry burdens and increase data quality by creating a single source for each element. Pennsylvania plans to use SIF's Student Locator object to enable districts to create an automated interface between their SIS(s) and the state's USRM system. Pennsylvania is monitoring similar projects in SC, VA and WY to learn from their successes and failures.

The Unique Student Record Management component of PIMS ensures that:

- all 1.8+ million pK-12 public education students have a unique, consistent, state assigned student ID;
- each student is registered by the state to be enrolled in only one district as their primary membership; and
- every student that withdraws from a district is counted either as a drop out, transfer, graduate or other appropriate NCES code.

The system will be designed to enable districts to maintain accurate student location information within their district when students move from school to school as well. Although this is not necessary for most state reporting, real-time accurate school-based locations are necessary for on-line formative assessment and other "student-facing" applications envisioned by the Pathways to Performance plan.

PDE will replace dozens of existing antiquated PDE data collections with a single set of applications designed to collect record level data on students, staff and programs. When launched, districts will be able to log onto the PDE Education Portal and receive access (appropriate to their role) to an application that will enable them to either pull data from their systems with SIF or manage the consolidation and initial error checking of files exported from source systems.

PIMS Component 2: A Longitudinal Data Management System

Although the data warehouse will be designed to store all PDE longitudinal data, enterprise-wide, initial engineering resources will be focused on producing four data marts each optimized for a critical type of user.

Audience Focus	**DataMart**
USED	PBDMI/EDEN
Researchers and Analysts	Un-Masked Student Records w/o Names
Educational stakeholders	Student-Class Rostering, Class View, and Student Profile View
Legislators/General Public	State/LEA/School/Sub-Group Dashboard

The primary structural component of the data warehouse will be the core table designs. The design process will start with a conceptual model. The conceptual model will lay out the data domains and some of the core data elements and relationships that will be present.

The logical model will define the table layouts, content, and the keys that define the relationships and multiplicity between tables. From the logical model a database developer will build the physical table structure. Critical tables to be included, in addition to the content tables (those tables which contain the raw educational content being stored), are the audit and event tables:

- The audit tables contain the detailed technical data about the structure of the database and any modifications to the database structure. It will be possible to audit the data structures as far back as necessary.

- The event tables include any events, changes in the content of the database, that involve adds, deletes, updates, and even views. It records what user took the action, what the data was before the change, and what the data was after the modification.

A critical piece of the project will be to build a data mapping component in the Extraction, Transformation & Loading (ETL) tool, between the operational databases, that sits behind the data collections/applications and the data warehouse. This piece will be implemented once the logical model is complete.

Other key table(s) will contain the directory information at each pre-determined snapshot date. The operational directory will be in a many-view structure, much like an LDAP database. The data warehouse will store the directory information in a series of tables related to a particular period or categorization.

The four data marts are the final "destination" for the data. The data marts will be the vehicle through which most of the reports are generated. In some instances, they will populate specialty tables that feed certain reports faster and more efficiently. The data marts will provide the ultimate value derived by PIMS by delivering targeted, personalized information that can inform educators and impact student performance. The core components of the data marts are the presentation modules. These are the modules that allow the users to either call up fixed reports, or perform dynamic queries on sub-sets of the data, or browse the available data.

Data Marts

A Data Mart will be deployed for each of the four key user types.

DM1: Org Profiles.
DM2: Class/Student Profiles.
DM3: Research Access.
DM4: EDEN Federal Report.

A high level description of each data mart follows:

Data Mart 1: Organizational (Org) Dashboard & Teacher Profile (General Audience)

Org Dashboard View

The single view that will get the most use is the general audience organizational dashboard. So long as low-N data is masked, no security is needed for this data, optimizing accessibility. Graphical excellence is paramount for this general audience. Some of the key information to be displayed in this view includes:

- Directory Information
- PSSA Summary Graph
- Value Add/Individual Growth Model Graphs
- Sub-Group Pie Charts.

In addition, the user will be able to quickly navigate between organizations and filter the information presented by pulling down:

- statewide and alphabetical list of districts,
- all schools or a pick list of schools within a district selected above; and
- all sub-groups or a specific sub-group from the school, district, or statewide selected above

When a new org (or sub-group) is selected, the entire dashboard is regenerated with assessment, value-add, and pie charts appropriate to the new group. If, for example, low-income was selected, that pie chart would show 100% low income and the rest of the charts would all change, even assessment and value add, to show data on the low-income sub-group.

Data Mart 2: Class and Student Data (LEA Authenticated Users)

After a set of administrative screens has been utilized to establish one or more unique "Class" groupings in the directory, a set of students and a teacher (or educators) can be associated with that class.

Class Roster View

Authenticated teachers would open up a view that would contain a list of students, sorted initially by last name, with the history of their PSSA results, scrolling in reverse chronology, to the right (most current by the name). Stop light coloring is used to help the human eye process a huge amount of data.

Class Test View

Selecting a particular sub-test should expand the data from that sub-test. The student list is sorted by performance on that sub-test. The strands and concepts can be clicked open. Stop light color-coding would help reveal to the teacher patterns of performance, such as high and low performing students. Concepts and strands that need the most attention are clear and unambiguous.

Individual Student View

Selecting a specific student off the list on the right of either of the class views takes the user to a summary page for the student. A student's data is shown with directory data on the top right, an expanding assessment results window on the top right (similar navigation to the class views), and a rolling history of information on the student running down the bottom of the page.

Data Mart 3: SEA Designated Program Management and Research Analyst View

While the first two View Types are designed to be strictly confined to address security requirements and facilitate user navigation, the third view type is meant to be expansive.
The Longitudinal Data Management System will provide users designated and authenticated as Research Analysts with full table level access to key tables stripped of name and other identifiable data.

With the number of users in this category strictly limited and name type data removed, no masking is necessary for low-N reports.

For the initial phase of the PIMS DW, Research Analysts will be able to use the database tools to extract data for analysis in another tool set. Analysts typically have access to SPSS, Cognos, VIPER or other data analysis and visualization tools of their choice.

Data Mart 4: USED EDEN Report
PBDMI is a collaborative effort among the USED, SEAs, and industry partners to improve the quality and timeliness of education information. This initiative will produce the Education Data Exchange Network (EDEN), providing SEAs and the federal government with the capacity to transfer and analyze information about education programs.
PIMS will be designed to produce all sixty-four Priority 1-3 Reports in the EDEN format.

Learning Resource Exchange (LRX)

While this addition is by far the most limited in terms of resource commitment within the grant application, it is, perhaps, the most far reaching in impact.

PDE has recently been doing some pioneering work related to the design of our enterprise directory. PDE has been collaborating with the CT State Department of Education on the initial design or a Learning Resource Exchange (LRX). The LRX makes use of the two main characteristics of Lightweight Directory Access Protocol (LDAP) to create an optimized storage structure for PDE's Academic Standards:

1. LDAP structures are based on a strict hierarchy. Child objects can easily inherit characteristics of its parent.
2. LDAP structures are extremely efficient, when data is infrequently updated and frequently accessed as is the case with our planned Learning Resource Exchange.

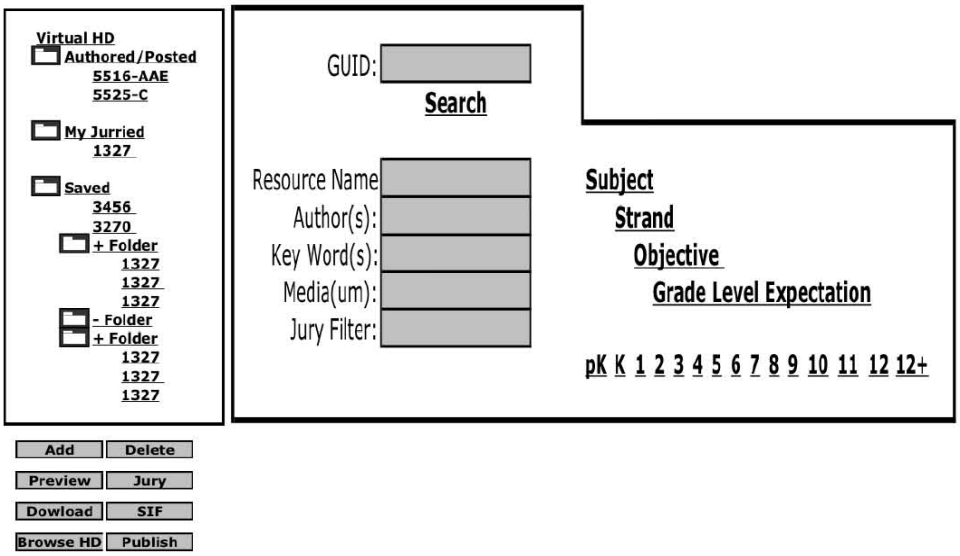
Like most states, PDE maintains the most current version of its academic standards in a combination of word documents and .pdf files. Since the data that PIMS seeks to model is, at its core, the relationship between students (and groups of students) and academic standards, this data structure is much too important to be left in such inaccessible formats.

This LRX will result in the deployment of a first-in-the-nation repository of SIF LearningStandardItem objects maintained in an LDAP structure. Most relevant to this grant, the LRX will enable the PIMS data warehouse to maintain a systemic relationship with Pennsylvania Academic Standards and alignment of standards, assessments, eligible content, curriculum, instructional practices and resources. Later, outside the scope of this grant, the LRX will be expanded to enable Pennsylvania educators to develop, access, customize, evaluate, and share all types of learning objects aligned to Pennsylvania Academic Standards, assessment anchors and curriculum.

In essence, this LRX will tear down the walls of the black box on the classroom and school to promote sharing of model practices and resources across basic and higher education to:

- enable teachers and administrators to assess performance in the context of longitudinal student records through the optimum and effective utilization of information,
- engage students in learner-centered classrooms that are inquiry-based,
- differentiate instruction to each student's needs, learning styles and socio-cultural background,
- offer complementary and supplementary courses and materials and distance learning,
- improve teacher quality through rigorous professional development and improved communication, and
- increase student achievement.

"Wireframe" Prototype of Pennsylvania Learning Resource Exchange:



PK-16 Record Level Student Identifier and national electronic transcripts

PDE has begun to explore ways in which it can create synergy across its Office of Elementary and Secondary Education and its Office of Postsecondary and Higher Education by developing a common student identification system to be used across both, ultimately giving Pennsylvania the ability to garner longitudinal data on students from early intervention and preK-16, through college and into the workforce. Such a system will finally provide the data necessary to meet reporting requirements; support decision-making at State, district, school, and classroom levels; and facilitate research needed to eliminate achievement gaps and improve learning of all students. It would also promote linkages across States to allow sharing of historical data on individual students, especially when students move between States, which happens not only at the basic education level but even more frequently in higher education.

Student transcripts are the quintessential longitudinal student record. The electronic transcript exchange provides an opportunity to influence the creation of quality and timely longitudinal records which can be sampled to document program participation, course taking patterns, mobility, and other key trends.

Student transcripts receive the ultimate attention by schools, IT professionals, students, and parents. Everything that goes into a student transcript must be standardized, authenticated, kept confidential, exchanged securely, and processed in a timely manner. The production and exchange of a student transcript requires the creation and maintenance of longitudinal records within school and district information systems. PDE realizes that by supporting schools and districts in the creation and exchange of electronic transcripts within our state, across states, and from secondary to postsecondary institutions, PDE addresses its own need to improve the quality and timeliness of the education data collected for state funding formulas, PDE's public reports, No Child Left Behind's adequate yearly progress determinations, and submissions to EDEN.

The student transcript is by far the most valued and most frequently exchanged education record across states and from elementary secondary education to postsecondary institutions. So much depends upon the integrity and timeliness of the student transcript, that it is the perfect point of emphasis when improvements in longitudinal records are being sought.

Schools and districts cannot build an intrastate and interstate process for exchanging electronic student records on their own. There are too many differences in local student information systems, too many ways an education record can be exchanged (e.g., paper, fax, ASCII file, ANSI EDI X12 SPEEDE/ExPRESS, PESC XML, FASTER, etc.), and too many differences in the layout of data within the same electronic standard. A school or district today must choose among these standards and typically defer to paper for the majority of the transcripts they send and receive.

PDE has received a letter of support for this application from ESP's National Transcript Center (NTC). NTC is a multi-state hosted service that facilitates transcript exchanges between K12, higher education, and SEAs. The National Transcript Center is a collaborative of states interested in deploying a highly secure, FERPA compliant, and very cost effective e-Transcript portal for their LEA's. Our state's EdPort would not only facilitate intrastate record exchange among the districts in our state, but it would also facilitate *interstate* exchange to other/neighboring states (easing our pain with student mobility) and to postsecondary institutions. It also will provide excellent means for longitudinal analysis. The NTC hub will accept and translate into any of the major standards (SIF, PESC, SPEEDY) from any of these standards.

PDE, through its Office of Postsecondary/Higher Education, is in discussions with the Pennsylvania Higher Education Assistance Agency (PHEAA) to ensure that PA's higher education community is prepared to accept PESC-conforming eTranscript objects as part of the financial aid and admissions process. PDE will fund this imitative and is not including a request for federal funding in this grant application.

Mapping PIMS Design to RFA Requirements

PIMS Data Structure

PDE is mapping to NCES and SIF the elements it plans to collect in PIMS in eight categories:

1. Identity
2. Demographics
3. English Language Learners
4. Location and Attribution
5. Drop-Out and Graduation
6. Exceptional Children
7. Disciplined
8. Career Technical Education (Perkins)

PDE is committed to using the following standards and guidelines, established or identified by the National Center for Education Statistics (NCES):

1. Data element definitions in the NCES data handbooks:
    a. NCES Handbooks Online; and

b. Financial Accounting for Local and State School Systems: 2003 Edition;
2. Schools Interoperability Framework (SIF) standards;
3. Recommendation 7 (Integrating Data Systems) of the U.S. Department of Education's National Educational Technology Plan;
4. Data confidentiality guide of the National Forum on Education (*Forum Guide to Protecting the Privacy of Student Information: State and Local Education Agencies* (2004);
5. Technology security standards of the National Forum on Education (*Weaving a Secure Web Around Education: A Guide to Technology Standards and Security* (2003); and
6. *Map of Core Elements for Establishing a Statewide Longitudinal Data System* (Attachment to this RFA).

Addressing the Needs of All Stakeholders

Each PIMS Data mart will be designed to focus on a particular type of user.

User Type 1: General Audience. The first user type to consider is the most general type. What type of information can PIMS produce that displays no confidential data, therefore requires no authentication, and is of general interest to all users. It is important to start with this use case type because all others can make use of this common set of views.

User Type 2: Authenticated Educators. PDE will have the ability of distributing user provisioning of teachers, administrators, and paraprofessionals at the district or school level. Educators designated with the appropriate role(s) will get access to individual and class level student data.

User Type 3: PDE Designated Researchers. Users designated by PDE as official researchers will be provided access to a stripped-down data mart that will produce raw data, stripped of all identifying (name and SASID) data. They will be able to download files to make use of whatever analytic tools they are most comfortable with.

User Type 4: USED. The PIMS data warehouse will be designed to produce a data mart with summary view and one button transmission to EDEN of all Priority 1, 2 and 3 data.

Training and Technical Assistance for LEAs

PDE intends to include support for LEAs as a major focus of the procurement. PDE recognizes that we do not have that capacity within the agency now; however we expect to develop significant resources to ensure that districts receive the broadest possible support. PIMS represents a major change in processes at both the SEA and LEA level, but managing that change in over 500 LEA's in Pennsylvania will be the larger challenge and the critical success factor.

Note that the PIMS Project Team includes an experienced full-time PIMS Implementation and LEA Support Manager in Bernadette McGinnis.

Where appropriate, the Intermediate Unit (IU) network provides an outstanding set of partners to reach local educators and administrators in all districts across the state.

How PIMS will improve local capacity to monitor and improve teaching and student achievement.

PIMS will provide authenticated educators with:

1. access to historical data on individual and groups of students maintained in the central data warehouse and
2. the ability to exchange eTranscripts of additional data maintained from previous districts.

How PIMS will enhance SEA's reporting accuracy and timeliness.

PIMS will dramatically increase the accuracy and timeliness of data transmitted from LEAs to PDE, and from PDE to USED.

How PIMS will enable data analysis and research, understanding of educational issues and effective strategies to address them.

PIMS will maintain longitudinal assessment (PSSA), demographic, program participation and other key data on each individual student in a central repository.

PIMS will enable researches, designated by PDE, to access raw tables of student data stripped of name, SASID and all other identifying data (with out masking for low-N).

Component – Element Map

	PA Match	PDE LDG Application
RFA Systems Components		
SC-I. Unique State ID	SASID Assignment	PIMS Unique Student Record Management System
SC-II. Enterprise Data Architecture	DSAC Metadata Facility/Dictionary PDE Data Council PIMS Advisory SIF State Membership PVAAS	
SC-III. Security and Personalization	COSSA	PIMS Learning Resource Exchange
SC-IV. Vertical Reporting	SIF VR Pioneering Pilots Act 183/eFund	PIMS Vertical Reporting
SC-V. Data Warehouse/Marts	Enterprise Strategic Planning Grow Network	PIMS Data Warehouse and Data Marts
RFA Policy and Implementation Components		
PIC-I. Support Research	PVAAS Grow Network ESP School Improvement List Regional Data Initiatives	
PIC-II. Exchange of data k12-k12-HE	Act 183/eFund SIF – Pioneering Pilots & Statewide Membership National Transcript Center	PIMS Vertical Reporting

	PA Match	PDE LDG Application
RFA Systems Components		
PIC-III. Reports to Stakeholders	CoSSA	This is the focus of PIMS - Data marts
PIC-IV. Capacity to Sustain	Program Management Office	
PIC-V. FERPA	Metadata Facility National Transcript Center – ongoing annual costs	National Transcript Center – initial year match only
PIC-VI. Measurable Objectives	Program Management Office	
RFA Core Elements		
CE-1. Analysis of Business Needs	CCSSO Decision Support Architecture Consortium	
CE-2. Data Collection Inventory	Data Council Metadata Facility	
CE-3. Target Architecture & Data Dictionary	CCSSO Decision Support Architecture Consortium	
CE-4. SASID + eTranscript	SASID Assignment National Transcript Center	PIMS Unique Student Record Management System
CE-5. Vertical Reporting		PIMS Vertical Reporting
CE-6. Data Warehouse		PIMS Data Warehouse
CE-7. Data Marts and BI Tools		PIMS Data marts
CE-8. Operations	Program Management Office CoSSA	

(3) Project Personnel

PDE recognizes that it has extremely limited capacity to manage projects of the scale and complexity called for in PIMS and intends to use its PMO contract to provide immediate capacity and develop long-term internal capacity. For this reason, PDE will outsource what it can and focus its key staff on those project components associated with initial system design and long-term business process design. Specifically, PDE intends to make use of the following management structure:

Secretary - PDE
Role: PIMS Executive Sponsor **Leadership and Oversight**
Responsibility: The Secretary of Education has ultimate authority and accountability over all PDE activities, including PIMS.

Deputy Secretary Michael Golden
Role: PIMS Project Sponsor **% Time Devoted to PIMS: 10**
Responsibility: Dept Secretary Golden has authority and accountability for all information technology initiatives undertaken by PDE.

Bob McGrath
Role: PIMS Project Director **% Time Devoted to PIMS: 50**
Responsibility: Oversight and direction of PIMS, coordination between PIMS and other projects in the PMO.

Dave Sanek
Role: PIMS Project Coordinator **% Time Devoted to PIMS: 100**
Responsibility: Daily coordination of the PIMS project plan.

Elbie Yaworsky
Role: PIMS Technology Integration Manager **% Time Devoted to PIMS: 50**
Responsibility: Provide solutions integration and strategic technology planning consulting services

Sharon Clark
Role: PIMS Application Development Manager **% Time Devoted to PIMS: 35**
Responsibility: Daily coordination of PIMS application development and integration plans.

Bernadette McGinnis
Role: PIMS Implementation and LEA Support Manager **% Time Devoted to PIMS: 100**
Responsibility: Daily coordination of the PIMS Implementation and LEA Support project plans.

Gerald W. Hottinger
Role: PIMS Data Architect **% Time Devoted to PIMS: 50**
Responsibility: Manage the transition from current to PIMS data collection and reporting

Ken Sochats
Role: PIMS MetaData Consultant **% Time Devoted to PIMS: 20**
Responsibility: Daily coordination of the PIMS application development and integration project plans.

Michael Scott Freyman
Role: PIMS Shared Services Architecture Provider **% Time Devoted to PIMS: 20**
Responsibility: Provide PIMS with a robust Shared Services Architectural environment including infrastructure, network, telecommunications and data center components. Provide complete security, identity management, web services, directory, and portal functionality based upon a service-oriented architecture (SOA) approach.

Jeanette A. Gang **% Time Devoted to PIMS: 10**
Role: Project Liaison with Commonwealth Communities of Practice

Richard Kesner
Role: Interstate Collaboration Coordinator **% Time Devoted to PIMS: 5**
Responsibility: Ensure the leveraging and sharing of all project work for the benefit of all CCSSO DSAC member and other interested states.

In addition, PDE will convene a PMO Governance Council quarterly to ensure coordination and support from senior executive at PDE and OA. The membership in this group will include:

PDE	OA
Secretary of Education Dr. Gerald Zahorchak, Deputy Secretary James Gearity, Deputy Secretary Thomas Winters, Deputy Secretary Michael Golden, Deputy Secretary	Art Stevens, CIO Jem Pagan, Enterprise Architecture Michael Freyman, CoSSA Jeanette Gang, Communities of Practice CIO

A second group will be convened monthly to coordinate all projects identified by the PMO:

Co-Chair: Sharon Clark Co-Chair: Bob McGrath Jeanette Gang, OA Liaison Bernadette McGinnis	Jerry Hottinger Kathleen Brautigam Amy Munro Ken Sochats Dave Sanek

The PIMS Advisory Group and PDE Data Council will continue to operate as described earlier in this application to involve all key stakeholders within and outside of PDE.

(4) Resources

Resources Devoted to PIMS

The bulk of resources devoted to PIMS will be contracted through Requests for Proposals.

PDE's existing Bureau of Information Systems will be involved every step of the way, but will not be depended upon for more than subject matter expertise. BIS staff is overtaxed and rely heavily on a statewide Staff Augmentation contract to supplement the capacity of PDE staff.

PIMS will draw heavily on the Commonwealth's resources for hosting and common services (CoSSA). The PIMS initiative will also embrace and utilize the Commonwealth's Program Management Office and Enterprise Project Management Methodology. PDE's PMO is being developed in total alignment with the Commonwealth's proven model for project management methodology and oversight.

Collaboration with other States

PA has a long and deepening history of collaboration with other states. PDE intends to continue as an active member of six main inter-state Collaboratives:

1. The NCES Forum
2. CCSSO's Education Information Management Advisory Consortium (EIMAC)
3. CCSSO's Decision Support Architecture Consortium (DSAC)
4. The State Education Technology Directors Association (SETDA)

5. The SIF Education Advisory Panel (EAP)
6. The US Open e-Learning Consortium (OeC)

(5) Management Plan

By some estimates, as much as 90% of all large-scale government IT projects fail to achieve their primary objectives. PDE is aware of these risks and has taken the following steps to mitigate:

1. Studying best and worst practices from other states.
2. Substantial time and resources expended on enterprise architecture and standards awareness.
3. Coordination and reliance on the largest scale approach to hosting and common shared services.
4. Devotion of distinct resources in anticipation of this project to put in place a professional Program Management Office.
5. Establishment of a separate project to assign an initial set of IDs during the 2005-06 school year, which will enable the PIMS project supported by this grant to move forward rapidly, with that major hurdle behind us.

PDE intends to employ the most rigorous and proven project methodology to ensure successful management of PIMS. Once the RFP has been awarded, PDE will work with the selected contractor to proceed through a well-planned project life cycle:

Stage 1: Project Initiation

- Initial contract and terms signed
- Project charter created
- Project communications infrastructure established

Stage 2: Document Discovery

- All key stakeholders contribute existing documents to a team site
- Interviews document additional information from key stakeholders

Stage 3: Project Planning

- Work breakdown by task and resource assignment
- Task sequencing, summary and presentation
- System design
- Resource reporting plan

Stage 4: Project Management

- Weekly project meeting
- Weekly and monthly documented reporting
- Project plan update protocol
- Issue tracking, resolution and escalation protocols
- Milestone sign-off

Stage 5: Project Completion

- Project punch list
- Knowledge transfer

The PIMS initiative will follow the proven implementation plan utilized by the Pennsylvania Value-Added Assessment System (PVAAS), which has been working with schools and districts across Pennsylvania to collect and clean data for a statewide longitudinal data system. This implementation framework is currently employed statewide and includes three major stages:

Level 1: Information Stage:

Goal: Generate an overall understanding of PIMS and its benefits.

Method: Webinar, live meetings at I.U.s and districts.

Outcomes: Baseline understanding of PIMS; informed decision to move forward with PIMS and begin planning

Level 2: Implementation Stage

Goal: Detail understanding of PIMS; begin district and community rollout; analyze local PIMS data and introduce awareness of other data in a data informed decision making process.

Method: Small regional, IU or district level interactive sessions for planning local rollout and analysis of local PIMS data.

Outcomes: Develop functional knowledge of PIMS; ability to comprehend and use PIMS data at district and building level and benefits of the PIMS data experience lead to decision to move to integration stage.

Level 3: Integration Stage

Goal: Development of data informed decision-making culture. Integration of PIMS and other data sources

Method: Team driven, interactive, problem solving. High level of technical assistance provided to local team for a brief period.

Outcomes: Institutionalizing of data informed decision-making process permeates district, school, grade and teacher decisions.

f. Résumés of Key Staff (3 Pages Each)

The following résumés of brief biographies are provided for those personnel who have key project roles and will be dedicating a significant amount of time to the PIMS project.

MICHAEL GOLDEN
DEPUTY SECRETARY OF THE OFFICE OF INFORMATION AND EDUCATIONAL TECHNOLOGY
PENNSYLVANIA DEPARTMENT OF EDUCATION

EDUCATION

Doctoral Candidate, University of Pennsylvania
MBA, Harvard Business School
BA, Williams College

RANGE OF EXPERIENCE

Michael Golden is Deputy Secretary of the Office of Information and Educational Technology in the Pennsylvania Department of Education, where he leads efforts to utilize educational technology as a tool to help students learn. He is also responsible for statewide initiatives to increase management productivity and effectiveness throughout the Pennsylvania educational enterprise by establishing centralized, streamlined, comprehensive systems, processes and oversight that improve planning, operations and reporting and enhance information and communications that drive data based decision making as the basis for policy making, assessment and, ultimately, student achievement.

PROFESSIONAL AND BUSINESS EXPERIENCE

Mr. Golden brings to this position corporate and entrepreneurial experience, most recently as Chief Executive Officer of a "bricks and clicks" technology company. His expertise includes strategic planning, business development and marketing. He has worked in executive positions at Pepsi-Cola Company and JP Morgan and as a consultant to media and new media corporations, including educational technology companies.

Based on his work in educational technology and management, Mr. Golden has organized conferences and presented on Rethinking Schools as a Business, bringing best practices of business, technology and education together to promote organizational and operational efficiency and learning effectiveness.

BOB MCGRATH
PROGRAM OFFICE MANAGER
PENNSYLVANIA DEPARTMENT OF EDUCATION

EDUCATION

Bachelor of Arts (B.A.) in Economics, St. Anselm College, Manchester, New Hampshire

RANGE OF EXPERIENCE

Mr. McGrath is an experienced Director in Information Systems / CIO, accomplished in defining and applying complex strategies; and a leader in organizational development and system change. In his current position with the Pennsylvania Department of Education, Mr. McGrath is leading major statewide enterprise technology initiatives to improve productivity, planning, operations and reporting throughout the PA educational enterprise with the ultimate goal of improving student achievement.

RECENT PROFESSIONAL AND BUSINESS EXPERIENCE

PENNSYLVANIA DEPARTMENT OF EDUCATION

Program Office Manager – 2003 – present

Leading major statewide enterprise technology initiatives to improve productivity, planning, operations and reporting throughout the PA educational enterprise with the ultimate goal of improving student achievement.

PA student-level data and information system.

PA Educational Portal.

State-level, standards-based educational data model.

Statewide broadband expansion to all PA school buildings

Educational consolidated planning process and enabling technical tool

Department of Labor & Industry, Commonwealth Of Pennsylvania

Executive Director, Office of Information Technology / C.I.O. 1999 – 2003

Leading all aspects of Information Technology: planning, design, engineering, systems development, operations, architectural standards, policy, customer support and organizational development.

Implemented high capacity Wide Area Network enabling electronic communications across agency and commonwealth, previously not possible with our many disparate program networks.

Implemented numerous e-gov services, including highly recognized web based systems such as CareerLink; UC Internet Initial & Continued Claims; and Employer Internet Tax Filing.

PROFESSIONAL AND BUSINESS EXPERIENCE (Continued)

Lead restructuring of all technology resources from nineteen independent organizations to a single shared-service OIT able to successfully implement both program and enterprise initiatives.

Gained support from executive management and union leadership to restructure all IT resources.

Managed transition of people, systems and processes to eliminate redundancies, fill gaps, leverage scarce resources with minimal disruption to staff and customer service levels.

Managed multi-million dollar technology projects supporting business re-engineering processes.

Directed design & implementation of Enterprise System Management processes (Help Desk; Asset and Change Management, Security) supporting our totally networked environment.

Directed L&I's implementation of Commonwealth Connect bringing a standard desktop, email, calendaring and software distribution system to more than 5,000 users in 150 facilities.

Developed and implemented an enterprise network and application server deployment strategy to provide highly dependable, highly available systems to L&I operations and their customers.

Collaborated with agency program management to develop the capacity to implement large enterprise technology initiatives. Previously, L&I's diverse programs and decentralized IT resources made implementing enterprise technology difficult. L&I is now recognized as a leader in all major commonwealth technology initiatives.

AMP INCORPORATED, Harrisburg, Pennsylvania, (now Tyco Electronics)

(AMP division is a world leader in the design and manufacture of electronic connectors)

Program Office Manager, Global Enterprise Resource Planning (ERP) 1998 – 1999

Successfully managed the Global ERP Project: a $250 M design and implementation of SAP, combining all processes and transactions to run the AMP global enterprise.

Coordinated planning and recommended action for fourteen teams totaling 140 professionals.

Managed change integration, communications, stakeholder programs.

Met budget projections and project milestones.

Achieved all critical functionality identified during project initiation.

WOOLWORTH CORPORATION, New York, New York, Director - Information Systems Administration 1991 – 1998

Directed centralization of I.S. functions, including: Strategic Planning; annual budgets $64 M; IT capital plan $150 M; asset management; development support and contracts administration.

PROFESSIONAL AND BUSINESS EXPERIENCE (Continued)

Reduced operating budget by $32 M or 33%.

Maintained the cost-to-sell ratio during period of declining revenues.

Held expenses under budget seven years while we met goals and objectives.

Designed and Implemented a Budgeting system which was key to cost control.

Automated Capital Planning / Project Tracking controlling $150 M investment in systems, infrastructure and Year 2000 projects.

Designed / implemented a cost allocation methodology that improved resource utilization and reduced costs.

Designed and implemented a single System Development Life Cycle for all projects, including an improved time tracking methodology enabling development of more precise metrics.

Organized Training Administration from new hire orientation to a skills' database resulting in early availability of new employees and an improved skills pool.

Implemented Technical Asset Management System that generated annual savings of $500 K.

Director - Human Resource Information Systems, 1985-1990

Reporting to CIO, directed first phase of Woolworth's systems standardization initiative.

Converted 51 payroll systems (80,000 employees) to one and standardizing all processes.

Produced hard dollar expense reductions of $1.2 M annually.

Centralized and consolidated Human Resources systems support and operations.

Standardized Human Resources processes and procedures throughout the corporation.

Assistant Controller, 1975-1985

Financial executive, managed dramatic growth of the Kinney Shoe division from 600 to 3,000 stores.

DAVE SANEK
CONSULTANT, TECHNICAL PROJECT MANAGER
ESG CONSULTING INC – ATLANTA, GA

EDUCATION

MA, Performance Pedagogy, Duquesne University, Pittsburgh, PA
Business Administration Coursework, John Tyler Community College, Chester VA
Mini Master's, Software Design, St. Thomas University, Minneapolis, MN

RANGE OF EXPERIENCE

Mr. Sanek is a highly accomplished leader with an extensive background in establishing, launching, and managing information systems and associated activities. He is able to ensure all aspects of customer deployment are adequately planned, executed, and closed within defined deployment standards. Mr. Sanek possesses strong communication skills applied in all interactions with senior management, vendors, clients, and team members. He has demonstrated performance in developing, implementing, and ensuring adherence to processes, standards, procedures, and tools. He is a proactive leader who implements a management style built on guidance, mentoring, and support.

Mr Sanek's core competencies include:

- Business Process Design & Implementation
- Pre- and Post-Sale Client Support
- PMO Activity Establishment & Leadership
- Application Design & Implementation
- N-tier Client Server Design & Implementation
- Recruiting, Hiring, & Training
- Web site Implementation
- Staff Leadership, Development, & Management
- Strategic Planning & Execution
- New Business Development & Needs Analysis
- Corporate Management Training
- Vendor Negotiation & Relationship Management
- P&L Management & Profit Growth
- E-Commerce Solutions

PROFESSIONAL AND BUSINESS EXPERIENCE

Consultant, Technical Project Manager, 2003-present
ESG Consulting Inc – Atlanta, GA
Georgia Department of Education

Lead and manage the day-to-day project responsibilities associated with the development of a $14.5M state-wide data warehouse and Decision Support System. Primary oversight of the project implementation vendor and all sub-contractors. Position requires daily contract with high level officials of the State government and, as needed, meetings with Federal officials.

PROFESSIONAL AND BUSINESS EXPERIENCE (Continued)

Director of Client Engagements, 2002 - 2003
ACS State Healthcare, LLC – Atlanta, GA

Managed the day-to-day responsibilities associated with new business development and project activities of the Decision Support Services group for a provider of solutions focused on health-care program administration and information technology. Oversight of 125 technical, operations, and customer service employees providing Data Warehouse, data mining, fraud and abuse, and OLTP analytical solutions to State Medicaid and Medicare agencies throughout the nation. Administered and monitored project budgets in excess of $35 million. Developed and executed departmental operating budget in excess of $10 million annually. Reviewed project proposals to determine scheduling, funding, procedures, staffing, and allotment of available resources throughout various phases of project life cycle.

Senior Program Manager, 2001 – 2002
State of Maryland Driver's License/Point-of-Sale Project
Compaq Computer Corporation – Alpharetta, GA

Maintained accountability for proposal preparation, client presentations, contract negotiation, and leadership of 125 employees responsible for a $40 million DLS/POS integration project through leading provider of computers and hardware/software solutions. The DLS/POS system services the State of Maryland and was deployed in 27 remote offices statewide. Contracted and managed third-party vendors. Managed customer and vendor communications. Oversaw planning and procurement of all hardware.

Vice President of Operations, 1999 - 2001
Oneweb Systems – Atlanta, GA

Directed all activities associated with the development and implementation of strategic and tactical operation plans to enable provider of software solutions to meet the challenges of a highly dynamic e-business arena. Directed Client Services staff throughout all phases of full-project delivery. Performed responsibilities to include establishing and staffing PMO, development, design, quality assurance, training, internal information systems, systems integration, customer satisfaction, and account management. Rendered guidance and made recommendations to Senior Management team with regard to operational policies and procedures.

Vice President of Project Management, 1999
IXL, Inc. – Atlanta, GA

Planned and directed the strategic direction, professional development, and growth of the Project Management division for provider of e-business applications and solutions. Oversaw delivery responsibility for approximately $35 million in annual revenue-generating projects in the areas of e-commerce, multimedia, and video for clients ranging from start-up ventures to Fortune 500 companies. Maintained full P&L responsibility for $28 million. Established PMP enterprise-wide and directed associated efforts and standardization. Led multiple teams responsible for

creating complex Web applications. Supported Proof of Concept project and implemented RUP development environment.

Director of North American Operations, 1997 - 1999
Renaissance Worldwide, Inc. – Atlanta, GA

Led the IS infrastructure for Southeast, Central, and Western regions making up more than 80% of the offices and personnel of a leading provider of technology services. The regions span from San Francisco to Fort Lauderdale and include 50 offices and approximately 2000 employees. Planned and directed all IS activity related to data centers, telecom, networking, and remote connectivity. Oversaw hardware/software procurement and implementation. Participated in budget planning and administration.

Director of Systems Development, 1995 - 1997
Carlson Marketing Group – Minneapolis, MN

Spearheaded activities associated with the development and implementation of strategies and objectives for three lines of business across the entire spectrum of diverse enterprise technologies for a relationship marketing company helping Fortune 1000 companies build brands, drive sales, and boost profits. Established long-range strategic research and development directions in accordance with corporate objectives and technological developments. Maintained complete P&L responsibility. Fostered and maintained effective relationships with vendors and managed all negotiations. Managed contracts, client relationships, budget, and resources.

Application Development Manager, 1992 - 1995
Northrup King Company (NOVARTIS) – Golden Valley, MN

Carried out full-scope responsibilities for a staff consisting of nine developers supporting Order Fulfillment, Production, Human Resources, and Finance for a world leader in the research and development of products to protect and improve well-being. Maintained responsibility for prioritizing, estimating, scheduling, and tracking all projects.

CERTIFICATIONS

Project Management Professional (PMP), 1995

ELBERT N. YAWORSKY
PRESIDENT
FRAMEWORKS INFORMATION TECHNOLOGY, INC.

EDUCATION

BS, Business Administration, Robert Morris College, Coraopolis, PA

Graduate Study, School of Library and Information Science, University of Pittsburgh

RANGE OF EXPERIENCE

Mr. Yaworsky brings an extensive and successful career of significant technology-driven contributions, improvements and innovations, demonstrating both technological and business ability to:

Embrace complex challenges that address future information infrastructure needs while also providing new ways to support existing systems.

Plan theoretical information systems to meet organizational and solution driven needs by viewing product and architectural limitations as challenges to be overcome.

Apply logic and intuition to discover models for change while providing compelling reasons to support a conceptual framework for organizational and technology transformation.

PROFESSIONAL AND BUSINESS EXPERIENCE

1997- Present – President – Frameworks Information Technology, Inc.
Provide solutions integration and strategic technology planning consulting services for the Public Sector Vertical Market including the Education (K-12, Community College, and Small College) and Library (School and Public) markets segments.

Selected as the systems integrator for the $4 million Pennsylvania Department of Education (PDE) Digital School District (DSD) project for the Quaker Valley School District.

Delivered technology assessment plans for the Mt. Lebanon School District

Created the technology plan for the York County Library System that supports the strategic goals of the public library system to become the physical and virtual environment of choice.

Developed a comprehensive strategy for the Philadelphia Free Public Library to deploy desktop devices and peripherals for the visually impaired (low to no vision) community.

Served as CTO for the Pittsburgh Public Schools and the Director of the eiNetwork for the Carnegie Library of Pittsburgh

2002- 2005 – Chief Technology Officer (CTO) – Pittsburgh Public Schools (PPS)
Coordinate the infusion of technology with content specific curriculum goals; secure ongoing funding to transition from capital to operational and eventually utility based technology financial structure. Market technology solutions to the greater academic and foundation communities as a K-12 regional asset and determine technology frameworks that enhance the academic value of each individual student.

PROFESSIONAL AND BUSINESS EXPERIENCE (Continued)

Created the Real Time Information (RTI) application solution and data warehouse architecture that incorporates a PPS developed middleware (Xinterface) for six levels of data integration.

Launched the RTI data warehouse with annual and informal student assessment from PSSA, Tera Nova, and New Standards to enable a three tier K-12 ASP enterprise regional platform.

Deliver a digital divide program to 8000 households as PPS moves to a Seamless Educational Environment (SEE) to support an AnyWhere, AnyTime, AnyPerson, and AnyDevice culture.

1997-2001 - Director of eiNetwork - Carnegie Library of Pittsburgh
Advance regional information technology collaboration to support the seamless integration of public libraries in Allegheny County and the City of Pittsburgh.

Restructured an $11 million capital project for the Electronic Information Network (eiNetwork) to support the complex technical information infrastructure.

Managed the operating budgets within a 1% budget variance for four (4) consecutive years from 1998 to 2001.

Developed an asset tracking system to control and monitor $15 M worth of 7,000 technology assets, reducing physical losses from 3% to less than .4%.

1996-1997 - Director of Advanced Technology - CISCORP
Lead major solution integration sales efforts across multiple vendor hardware and software platforms.

Developed solutions integration sale strategy for a complex $5.3 million project for Greenwood Pharmacy (Eckerd) over a nine month project life cycle.

Provided a solution for complex Windows NT product and marketing challenges including technology consulting for Atalla (a leading encryption company).

Delivered architectural assessments for technologies such as clustering, middle-ware, and data warehouse for Wells Fargo and Raymond James.

1995-1996 - Vice President of Solutions Integration - TriLogic Corporation Created Network & Application Solutions organization.

Developed a new Network Integration division for TriLogic with over thirty new employees which became the cornerstone of the Solutions Integration business.

Secured $6,500,000 of multiple year sales for network and application integration for the City of Cleveland, US Department of Interior and Bureau of Mines.

1993-1994 - Chief Operating Officer - Applied Health Physics, Inc.
Re-engineer technical service divisions into a consulting solution focused business.

Restructured the sales, marketing, and service divisions into a customer driven solutions organization that delivered complex materials handling projects.

Provided a total solution for the radioactive cleanup of nuclear waste that was dumped into iron ore barges that arrived in New Orleans from Russia.

PROFESSIONAL AND BUSINESS EXPERIENCE (Continued)

Completed a $2 M radioactive materials cleanup for Hawker Siddley Aircraft in Toronto, Canada which included Canadian and US customs clearances.

1990-1992 - Operations Manager - Digital Equipment Corporation
Directed $160 million of revenue for Products, Consulting and Services for the Allegheny District and Westinghouse Corporate Account.

Increased Digital's product revenues beyond 100% of goal for 1991 and 1992 which moved the district from 13th to 2nd place (1992-$42M) for the Central Region.

Provided leadership in extensive customer sales situations including contractual for Westinghouse, CMU, UPMC, Federated Investors, RPS and Mellon Bank.

Modified the refurbished equipment accounting procedure that incorrectly overstated the cost of goods and increased US Digital profitability by $22M.

1987-1989 - US Channels Support Manager - Digital Equipment Corporation
Planned capital budgets for the Colorado and Atlanta support centers. Managed over 100 support specialists.

Managed the US Channels Sales Support expense budgets within a 1% budget variance for five (5) consecutive years from 1985 to 1989.

Developed the channels training program to support systems, chips, and cards integration techniques for the international channels sales support team.

Generated a three fold increase in U.S. network solutions sales as a result of delivering network concepts channels training in a hands-on course environment.

1984-1986 - Systems Consultant Manager - Digital Equipment Corporation
Identified and implemented Technical OEM training and sales support plans for US, Europe and Asia.

Technical Consulting - 1976-1983

1978-1984 – Senior Software Engineer - Digital Equipment Corporation

SHARON CLARK
TECHNOLOGY MANAGEMENT DIVISION CHIEF
BUREAU OF INFORMATION SYSTEMS, PA DEPARTMENT OF EDUCATION

EDUCATION

B.S. Secondary Education Mathematics, Lock Haven University, Lock Haven, PA

Graduate of the Leadership Development Institute for Women in State Government

RANGE OF EXPERIENCE

Ms. Clark has over twenty years of experience in managing the development and implementation of database applications for the Pennsylvania Department of Education; currently leading the Department's initiative to transform its mainframe-based applications to web-based applications.

PROFESSIONAL AND BUSINESS EXPERIENCE

Technology Management Division Chief
Bureau of Information Systems, PA Department of Education, 1986 to Present

Oversaw ePDE project to convert legacy mainframe systems to web-based ones

Wrote requests for proposals and evaluated contractors to assist with ePDE

Prioritized, allocated, and monitored the work of the contractors and agency information technology staff assigned to ePDE

Managed database administrators responsible for the design, implementation, monitoring, and security of the Department's databases (first IDMS, then SQL Server)

Led various teams of application developers in the analysis, design, and implementation of major database systems to support and improve key Department operations

Managed operating systems programmers prior to the outsourcing of the mainframe

Coordinated with the network administration staff on server capacity and performance, security, implementation schedules, and other issues related to the deployment and operation of systems

Directly supervised a division of ten persons, planning major goals and objectives, setting priorities, determining required resources, evaluating performance, and interviewing prospective employees

Organized and led the Department's Innovation Team to encourage new ideas for improved customer service, efficiency, cost-effectiveness, and communications through employee-driven change

Database Administration Section Chief
Bureau of Information Systems, PA Department of Education, 1982 – 1986

Gathered and analyzed user requirements for data and processes

Directed the design and implementation of databases and their associated applications

PROFESSIONAL AND BUSINESS EXPERIENCE (Continued)

Oversaw database security and data dictionary activities

Database Design Analyst
Bureau of Information Systems, PA Department of Education, 1980 – 1982
Designed database applications and assisted programmers implementing them

Systems Designer/Programmer
Lancaster-Lebanon Intermediate Unit, 1978 – 1980
Programmed computer applications

Mathematics Teacher
Dauphin County Technical School, 1978
Taught algebra II and advanced algebra to senior high students

AWARDS

Management/Supervisory Employee of the Year, PA Department of Education, 1998

BERNADETTE MCGINNIS
CSIS DIRECTOR OF LEA PROJECTS
CALIFORNIA SCHOOL INFORMATION SERVICES

EDUCATION

B.S., Journalism, West Virginia University

RANGE OF EXPERIENCE

Ms. McGinnis has extensive experience in both the public education and private sector in hands-on project leadership and project management; experienced project management presentation speaker; subject matter expert in project management best practices, developing project management infrastructure in organizations, project cost and schedule management, project life-cycle processes, business process re-engineering, organizational change, continuous process improvement, and scalable project management process methodologies.

PROFESSIONAL AND BUSINESS EXPERIENCE

1998 - Present, California School Information Services, Sacramento, CA
CSIS Director of LEA Projects, formerly Project Manager

Established and maintained effective relationships with LEA project fiscal agents, participants, vendors and state-level agencies;

Developed and directed program and project-level communications to all internal and external stakeholders, including project charters, strategic and management implementation plans;

Developed and managed CSIS Project Awards, Requests for Information (RFI), and Requests for Proposal (RFP), including contract administration;

Conducted LEA project oversight and performance reviews and mentored LEA project managers to ensure the implementation of "best practices" for project schedule and cost control for 22 projects awards totaling over $35M;

Identified and managed program and project level risks;

Forecasted budget and resource requirements for operational and LEA project activities;

Supervised CSIS Project Management staff in all aspects of administrative duties and responsibilities.

Implemented and maintained program level management best practices such as project scheduling and tracking, project coordination and reporting, risk analysis reporting, and program communications to the Chief Operations Officer and key stakeholders of CSIS, a statewide educational technology program.

Acted as liaison to local education agencies (LEA), California Department of Education, California Department of Education, Legislative Analyst Office, CSIS Advisory Group (CAG), and KCSOS Business Services Division, as well as other outside agencies and associations on program management activities.

PROFESSIONAL AND BUSINESS EXPERIENCE (Continued)

Managed the ongoing distribution of program-related documentation, communication and contract agreements to various key participants in the CSIS Program.

1995-96 Fleming Foods, Corporate Headquarters, Oklahoma, OK
Procurement Specialist

Provided project coordination for $20 million corporate-wide PC and network re-engineering project.

Managed on-site/off-site employees and contractors including technical engineers and resellers.

Effectively negotiated long-term hardware and software purchases with leading computer companies to save $800K in two years for multi-million dollar re-engineering project.

Reassigned existing systems throughout company to save $130,000 in three months.

Designed and managed spreadsheet tracking system to control logistics of purchase, configuration and installation of over 1700 computer systems to more than 40 locations.

Coordinated communications with corporate officers and remote directors of technology to ensure a seamless transition to new platforms and technology that would result in increased productivity throughout the company.

Previous work assignments:
Special Assistant to Executive Director, Cystic Fibrosis Foundation, Chicago, IL

Assistant Food and Beverage Director, Chicago Board Options Exchange, Chicago, IL

Graphics Manager, Sterling Novelty Company, Chicago, IL

Assistant Broadcast Media Buyer, BBDO Advertising, Chicago, IL

CERTIFICATIONS

Project Management Professional (PMP) Certification, Project Management Institute, Newtown, PA.

MEMBERSHIPS

Member, International and Local Chapter: Project Management Institute
Member, California Educational Technology Professionals Association

GERALD W. HOTTINGER
CHIEF
DIVISION OF DATA SERVICES, PENNSYLVANIA DEPARTMENT OF EDUCATION

EDUCATION

B.A., Mathematics, Millersville University, Millersville, PA

RANGE OF EXPERIENCE

Mr. Hottinger is a career state employee with 30 years of service, all within the Department of Education. Duties included progressive levels of authority in data collection, analysis, and supervision/management.

PROFESSIONAL AND BUSINESS EXPERIENCE

Currently, and for the past five years, have served as the Division of Data Services director. Manage all facets of data collection and reporting in the areas of public elementary/secondary school non-fiscal data, private and nonpublic school enrollment and graduate data, career and technical program student data and follow-up, and college and university fiscal and non-fiscal data. As such, serve as coordinator for the USED Common Core of Data and the EDEN project of the USED. Co-manage the PDE Data Council and reach consensus on data and technology issues. Serve as the state representative to national organizations that include the National Forum on Education Statistics, and the Education Information Management Advisory Consortium of the Council of Chief State School Officers.

For the 14 prior years, served as an educational statistics supervisor. This involved supervising staff responsible for collecting and reporting non-fiscal data from public, private, and nonpublic elementary/secondary schools as well as most data from colleges and universities. At the national level, served as the state coordinator for college and university data and issues; the state coordinator for public elementary/secondary data and issues; state representative to the National Forum on Education Statistics; and state representative to the national Education Information Advisory Committee. Represented the state on the National Postsecondary Education Cooperative as well as at other national focus groups dealing with improving data collection at all education levels.

Seven years were spent as an educational statistics associate focusing on higher education data issues and data collection/reporting.

Prior to that, responsible for developing a system to catalog all surveys and data elements collected by Department staff from local education agencies and institutions. This was a first effort to identify and reduce duplicate data reporting.

KEN SOCHATS
DIRECTOR OF THE VISUAL INFORMATION SYSTEMS CENTER
ASSISTANT PROFESSOR OF INFORMATION SCIENCE AND TELECOMMUNICATIONS
UNIVERSITY OF PITTSBURGH

RANGE OF EXPERIENCE

Ken Sochats is the 2005 GIS Service Award winner from the Central Appalachian Region Geo-Spatial conference and the Carnegie Science Center 2002 award winner for IT excellence. He has over thirty years of experience in the Computer and Telecommunications industries. He holds advanced degrees in Electrical Engineering and Business Administration. After spending several years at Westinghouse Electric Corporation where his work resulted in several inventions and patents, he accepted a faculty position at the University of Pittsburgh. He is currently the Director of the Visual Information Systems Center and Assistant Professor of Information Science and Telecommunications. He has taught over twenty-five different courses in telecommunications, computing, systems and business.

While on leave, he helped co-found BroadStreet Communications Corporation a next-generation telecommunications company. BroadStreet has attracted over $180 million in startup capital. He served as Vice President of Information Systems.

He served as the manager of the Link To Learn Project out of The Governor's Office of Information Technology. This group annually produced the Pennsylvania Technology Atlas. The Progress and Freedom Foundation named the Link To Learn Project their 1998 Best Practice in the Educational Technology category.

Ken served on the Telecommunications advisory panel of Governor Ridge's Pennsylvania Regional Development Committee and as a consultant to the Keystone Telecommunications Project and the Governor's Policy Committee. He served on the Governor's Year 2000 Technical Outreach Committee, which was responsible for helping Pennsylvanians prepare for the Y2K computer problem. His group at the Joint State/Federal Y2K Conference was awarded the University Continuing Education Association's Award of Excellence.

He has served as a consultant to over 35 organizations of all types. Government/agencies at the federal, state and local levels include Commonwealth of Pennsylvania, State of New York, Westmoreland County, US Departments of Defense, Agriculture and Energy and NASA. Private firms include ALCOA, USAirways, Penn Access, Hyperion, Brightline, American Hytech and numerous smaller companies.

Ken was principal investigator of the group that performed the preliminary design and analysis work that resulted in the establishment of the Penn Access CAP network in Pittsburgh.

His publications include three books and over 30 Journal papers and conference proceeding papers.

PROFESSIONAL AND BUSINESS EXPERIENCE

Ken Sochats is an internationally recognized researcher in the areas of electronic recordkeeping and metadata. His papers on electronic recordkeeping and metadata have been translated into fourteen languages and are in use in over forty-two nations.

The government of Australia cites Metadata Requirements for Evidence by Bearman and Sochats as a significant source for their Recordkeeping Metadata Standard for Commonwealth Agencies. See www.naa.gov.au/recordkeeping/control/rkms/rkms_pt1_2.pdf.

His papers have been listed as recommended background reading for both International Standards Organization (ISO) meetings hosted by Mitre Corporation for the National Aeronautics and Space Administration (NASA). See http://ssdoo.gsfc.nasa.gov/nost/isoas/us/overview.html and http://ssdoo.gsfc.nasa.gov/nost/isoas/us02/ws.html.

His papers are widely used as readings for courses on electronic records at universities ranging from the prestigious Max Planck Institute in Berlin (www.stsci.edu/stsci/meetings/lisa3/ruschfejad.html), to the University of Michigan (http://china.si.umich.edu/spp/courses/744/misc.hyper/0091.html), to the University of California at Los Angeles (http://is.gseis.ucla.edu/us-interpares/bib_meta.htm), Indiana University (www.slis.indiana.edu/syllabi/bantin/L597_spr01_ercoursesyll3.htm), to Monash University in Australia (www.monash.edu.au).

Ken has served as a consultant on electronic recordkeeping to numerous corporate and government organizations including the State Archives and Records Administration (SARA) of New York, the Department of Defense, The National Association of Government Archivists and Records Administrators (NAGARA) and the Commonwealth of Pennsylvania.

Other references to his work can be found at:

Research Libraries Group (RLG) http://www.rlg.ac.uk
The UK Office for Library and Information Networking (UKOLN) http://www.ukoln.ac.uk/
On-Line College Library Center (OCLC) www.oclc.org
Dublin Core http://dublincore.org/workshops/dc1/resources.shtml
International Federation of Library Associations (IFLA) www.ifla.org
The Library of Congress www.loc.gov
The Coalition for Networked Information (CNI) www.cni.org

MICHAEL SCOTT FREYMAN
PROJECT MANAGER
COMMONWEALTH OF PENNSYLVANIA, OFFICE OF ADMINISTRATION, OFFICE FOR INFORMATION TECHNOLOGY

EDUCATION

Master of Science Degree – Software Engineering, Loyola College, Baltimore MD

Bachelor of Science Degree – Computer Science, Loyola College, Baltimore MD

RANGE OF EXPERIENCE

Six years experience managing the design, development and implementation of diverse information and communication systems, broad distribution networks and new territory expansion for public and private organizations.

Developed and deployed a wide range of technologies, including: fault tolerant client/server systems; TCP/IP, Windows 2000/2003 and Linux enterprise environments; distributed systems and applications: client/server and Web-based, email and data management solutions.

Managed performance analysis, capacity planning and simulation modeling of business process reengineering and system enhancement for information technology and communication systems.

Developed training curriculum and conducted demonstrations, instruction and/or training sessions for small or large groups with diverse backgrounds and levels of technical expertise.

Developed strategic plans, proposals and partnerships to acquire and increase information technology resources.

PROFESSIONAL AND BUSINESS EXPERIENCE

Project Manager: Commonwealth of Pennsylvania, Office of Administration, Office for Information Technology. April 2005 – Present
Commonwealth Shared Services Architecture Project Manager:

Facilitate the development of the Shared Services IT framework that will serve as the blueprint / vision for Pennsylvania.

Responsible for helping to architect, deliver and manage the shared service offerings

Coordinate with agencies CIO's and Chief Architects on shared service offerings to ensure that these services align with the critical needs of the agencies and make recommendations when they do not

Plan, Design, Direct and deliver enterprise-wide projects that are deemed to be shared services

Advise the Deputy Secretary for Information Technology and the Secretary of Administration on key shared services projects

PROFESSIONAL AND BUSINESS EXPERIENCE (Continued)

Develop, implement and manage a governance structure comprised of agency representation that will provide oversight and decision making functions for shared services projects

Develop approaches and plans for shared services projects and offerings and align with OIT, agency and contractor staff to the plans

Determine which organizational entity is best prepared to provide a shared service on behalf of the Commonwealth

Develop a chargeback mechanism with the Office of the Budget to address the transfer of funds to facilitate shared services

Develop outcome measures and service level agreements for shared services and transition monitoring of those outcomes to Services and Solutions

Identify issues and make recommendations to ensure that Shared Services projects achieve the expected outcomes

Ensure that all Shared Services offerings and implementations are consistent with Commonwealth IT standards

Communicate effectively and persuasively in a variety of ways, including but not limited to, speeches, presentations, position papers, correspondence, reports, briefing papers, interviews, newsletters, discussion groups and online collaboration

Stay abreast of developments in the field of project management, information technology, and other related disciplines so daily activities reflect the most advanced thinking and solutions in the field and add value to projects

Work collaboratively with agencies and other OIT bureaus to develop service offerings

Represent the Office for Information Technology at meetings and in communications with agency staff, and at seminars, conferences and other public events

Participate in intra-agency work groups and teams in OIT to advance enterprise and agency policies, processes and technologies

Perform general staff work for the supervisor and senior managers of the bureau and the Office for Information Technology

An executive position for directing the implementation and management of significant Commonwealth Enterprise-Wide Information Technology Projects

Establishing the governance structure and process for Shared services projects

Determining the approach for managing Shared services projects

Provide recommendations on technology direction for Shared services projects

Make decisions to minimize project risk (personnel, cost, timeframe, policy, scope and quality)

Evaluate agency requests or OIT issues, policies and practices to determine if an enterprise or inter-agency project is necessary to achieve a desired outcome. Make recommendations to the supervisor or director based on the determination

Determine the scope and methodology for a project, and makes recommendations to the supervisor or director based on the determination

Manage enterprise or inter-agency projects independently within the context of the Commonwealth enterprise project management framework and under the general supervision of the bureau director

Decide what participants, tools, solutions and resources should be part of a project and manages them with a high degree of independence

PROFESSIONAL AND BUSINESS EXPERIENCE (Continued)

Engage in problem resolution as required in projects. Escalates issues that involve a need to clarify enterprise policy or significantly affect the outcome of a project

Division Manager: Commonwealth of Pennsylvania, Office of Administration, Office for Information Technology. June 2004 – Present
Technology Engineering Division Manager:

Facilitate the development of the Shared Services IT framework that will serve as the blueprint / vision for Pennsylvania.

Responsible for helping to architect, deliver and manage the Enterprise Architecture (EA) Technology activities that include supporting the EA Bureau Director in providing technology and system engineering guidance for new and existing IT projects and initiatives

Conduct research and provide consultation and guidance to other EA divisions, OIT, Agency technical personnel and IT Managers on Enterprise technical issues

Actively participate in the EA standards process and Domain Teams as a Subject Matter Expert and will work collaboratively with the EA team to establish all enterprise technology standards, best practices and technical solutions

Assist with the technical/systems engineering aspect of major enterprise IT initiatives to include: ERP, GIS, Network, and telecommunications, Server Farm deployment, and others in accordance with Enterprise Architecture standards and solutions

Interface with OIT Bureaus and Agency OIT managers as required promoting EA from a technical/system engineering perspective and to establish and maintain effective channels of communication with agency technical staffs, vendors and other subject matter experts

Work with Agency and Contractual Project Managers and IT professionals on major enterprise or Agency specific projects requiring technical/system engineering expertise

Participate in the enterprise standards process to assist in the development of standards and policy in support of Enterprise business initiatives

Lead selected Enterprise Architecture Domain Teams and/or work groups

Maintain and promote a customer service and business driven focus in support of the agencies

Foster and maintain effective and collaborative working relationships with agency personnel, private sector business partners, educational institutions, IT subject matter experts and IT vendors

Support the EA Technical Engineering Manager in providing technical/system engineering support.

JEANETTE A. GANG
PRESIDENT
JAG CONSULTANCY, INC.

EDUCATION

M.S. Computer Science, Shippensburg University

B.A. Economics, Susquehanna University

RANGE OF EXPERIENCE

Ms. McGinnis has extensive experience in both the public education and private sector in hands-on project leadership and project management; experienced project management presentation speaker; subject matter expert in project management best practices, developing project management infrastructure in organizations, project cost and schedule management, project life-cycle processes, business process re-engineering, organizational change, continuous process improvement, and scalable project management process methodologies.

PROFESSIONAL AND BUSINESS EXPERIENCE

President, JAG Consultancy, Inc., Camp Hill, PA (Aug 2004 –present)

Provided a variety of management and information technology consulting services to private and public sector clients.

Representative Engagements:

Deputy CIO for the Commonwealth of Pennsylvania with responsibility for the ten Health and Human Services agencies.

Under a retainer arrangement with a major political party's National Committee, supported the assessment of automated voting machines in the 2004 Presidential election

Business development support to a number of consulting and IT quality assurance companies.

Managing Director, BearingPoint, Harrisburg, PA (Jul 1997-Aug 2004)

Managed successful accounts in various geographic locations (Pennsylvania, Arizona/New Mexico, and Montana/North Dakota). Provided functional support across public services in areas related to justice & public safety and health & human services.

Representative Accomplishments:

Managed all engagements meeting or exceeding company standards for profitability

Established strong client relationships across multiple state agencies

Reestablished the viability of a struggling state account

Managed projects in multi-cultural environments

PROFESSIONAL AND BUSINESS EXPERIENCE (Continued)

Led the development and promulgation of a key public services offering

Represented the company through several public speaking engagements

Built strong teams of extremely well-qualified, talented individuals

Representative Projects:
Justice and Public Safety

Pennsylvania Justice Network (JNET) - a large multi-agency information integration project. This project made use of the web-based and messaging technology, allowing 23 state agencies, 67 counties, 200 municipalities, more than 500 district justices' offices, and 12 federal agencies to share critical information in a secure and timely manner. This project was identified by Secretary Ridge as a model for information sharing in support of homeland security.

Youth Development Facility Case Management System Design for the Pennsylvania Department of Pubic Welfare Office of Children, Youths, and Families

Thin Client District Justices' Solution for the Administrative Office of Pennsylvania Courts

Case Management System Design and Implementation for the Pennsylvania Board of Pardons

Driver's Licensing Business Process Improvement for the Montana Department of Justice

Health and Human Services

Enterprise Data Warehouse Design and Deployment for the Pennsylvania Department of Public Welfare

HIPAA Facility Assessment for several Pennsylvania Agencies, including Health, Public Welfare, Aging, Corrections, and Veterans Affairs

Total Quality Improvement Project for the CIO of Pennsylvania Department of Public Welfare

TANF Administration Consulting for the Hopi and Confederated Tribes of the Grand Ronde

Director of Information Systems, Pennsylvania Blue Shield, Camp Hill, PA
(Jul 1986-Jun 1997)

Directed five Information Technology Departments: Data Administration, IMS Database Management, Relational Database Management, Application Development Services, and Quality Assurance & Staff Development

PROFESSIONAL AND BUSINESS EXPERIENCE (Continued)

Consultant, McDonnell Douglas Corporation, Harrisburg, PA (Nov 1985-Jul 1986)

Team Leader in the development the Bridge Management System (BMS) for the Pennsylvania Department of Transportation.

PROFESSIONAL AND BUSINESS EXPERIENCE (Continued)

Systems Analyst, U.S. Navy, Mechanicsburg, PA (Sep 1974- Nov 1985)

Lead Analyst in the development of a series of administrative on-line systems for the Kuwait Air Force.

Developer of training programs in project management and technical IT subjects.

Professional level deputy to the civilian Personnel Officer.

Training and experience in all facets of personnel management including staffing, promotion, position classification, training and development, and employee and labor relations

OTHER PERTINENT EXPERIENCE

As a member of the Board of Directors of the local Chapter of the American Red Cross, led the Chapter in designing and deploying its first local area network (LAN). This included the acquisition of hardware and software to support development and deployment of the LAN.

Adjunct professor at Lebanon Valley College. Taught a 300-level course in Data Management and Database Design

RICHARD KESNER
EXECUTIVE PARTNER
THE CELT CORPORATION

EDUCATION

Stanford University, Masters Degree and PhD in History (focus on process design and analysis)

Oberlin College, Bachelor's Degree in History (Quantitative Methods); Bachelor's Degree in Music

Wharton School, University of Pennsylvania, Management Certificates in Planning and Finance

American College, Management Certificates in Risk Management and Financial Planning

RANGE OF EXPERIENCE

Business Transformation:

- implemented an "enrollment management" function and reengineered other key business processes to more effectively address student needs and to ensure the best use and leverage of faculty and staff resources.
- rapidly moved institutions from traditional to eBusiness models for community service delivery.
- successfully implemented institutional resource planning systems (ERP's) for development, registration, human resource and financial management, and admissions.
- developed, implemented, and managed institution-wide planning processes that aligned IT investments with the business needs of the institution.
- streamlined business operations to improve performance and student, faculty, and staff satisfaction while reducing overhead costs.
- introduced new, technology-focused program offerings to increase institutional revenues and to enhance the learning experience.
- established and enforced comprehensive and auditable performance metrics and reporting systems, tying staff rewards and recognition to the delivery of satisfaction to the constituencies served.

Financial Achievements:

- established and maintained rigorous, institution-wide financial management systems governing day-to-day operations and the acquisition, use, and retirement of IT assets and services.
- developed and sustained strategic partnerships with external institutional partners, leveraging these relationships to reduce expenditures and enhancing the purchasing power of the organization.

- raised millions of dollars in grants, awards, and in-kind grants from external agencies and partner providers to fund academic programs and related information technology investments.
- rationalized business and IT operations to achieve annual cost savings and to moderate/cap the growth in operating costs.

Operational Achievements:

- worked closely with executive management colleagues, boards of directors, internal and external advisory boards, and internal and external auditors to achieved desired institutional results.
- managed large, complex, multi-location departments ranging upwards to several hundred professionals and external partner providers, and annual budgets in excess of $50 million.
- formulated and delivered curricula for both traditional and non-traditional students.
- streamlined operations to redirect personnel and technology assets to where they will have the greatest impact in increasing student satisfaction and reducing institutional operating costs.
- managed over one million square feet of facilities construction, delivered on time and within budget.
- introduced and managed financial and human resource management, information security, quality assurance, contingency planning, and disaster recovery programs.

Technology Leadership:

- envisioned and delivered business transforming Web-enabled services on time and within budget.
- developed and delivered multi-year technology strategy plans and implemented the corresponding acquisition and financial/asset management tools to control costs.
- developed and maintained institution technology architecture processes that promoted more effective use of existing IT assets and informed future corporate IT investment practices.
- designed and delivered institution-wide data and identity management services, enabling both executive decision support systems and administrative systems integration.
- designed and established project offices, technical training programs, and knowledge management capabilities to enable the reuse and re-purposing of knowledge across the institution and its programs.

PROFESSIONAL AND BUSINESS EXPERIENCE

Executive Partner (formerly President and Chief Operating Officer), The CELT Corporation, 2004-present.

Director of Enterprise Operations (COO for IS Division), Northeastern University, 2001-2003.

Chief Information Office, Babson College, 1990-1997.

Director of the Archives of Appalachia, East Tennessee State University, 1978-1981.

Staff Archivist and Researcher, Wayne State University, 1977-1978.

TEACHING EXPERIENCES

Executive Professor MIS and Operations, Northeastern University, 2004-present.

Lecturer and Executive Seminar/Workshop Leader in Strategic Planning, MIS and Project Management, U.S., Canada, Europe, 1978-present. 1990-present.

Presenter in Information Resource Management and Strategic Planning, Babson College's Center for Information Management Studies, 1990-present.

Lecturer and Seminar Leader in Strategic Planning and Information Technology, Babson College Center for Executive Education, and the Babson Olin School of Graduate Business Administration, 1990-1998.

Adjunct Professor of Archival Administration and Records Management, East Tennessee State University, 1978-1981.

Instructor in Archival Administration and Records Management, Wayne State University, 1977-1978.

Instructor in History, Stanford University, 1976-1977.

OTHER EMPLOYMENT EXPERIENCE

Chief Information Officer and CKO, The Hurwitz Group, 2000.

Vice President for eCommerce and Knowledge Management, MetLife, 1997-2000

Vice President for Development and Systems (COO), The Parkman Companies, 1988-1989.

Vice President for General Services and MIS, Multibank Financial Corporation, 1985-1988.

Proposal Evaluator, The National Endowments for the Humanities and the Arts, 1979-1998.

g. Budget Justification

GRANT FUNDS REQUESTED IN THIS APPLICATION:

Budget 2005-2006

Personnel		**$ 0**
Fringe Benefits		**0**
Travel		**14,125**
Project Directors' meetings (2) x 2 staff x 2 days	4,500	
SIF Nat'l conference 2 staff x 3 days	4,000	
Local travel @ state rates (.375) x 15,000 miles	5,625	
Equipment		**0**
Supplies		**15,500**
Consumable office and meeting supplies	2,000	
Training supplies $5 x 500 participants	2,500	
Resources (reference reports, etc.)	1,000	
Upgrade desktop technology x 4 staff	10,000	
Contractual		**1,900,000**
Vertical Reporting		
Student Enrollment/Withdrawal	350,000	
State Report Manager	800,000	
Longitudinal Data Management System		
Data Warehouse + Marts	500,000	
Learning Resource Exchange	50,000	
PM + Integration	150,000	
Interstate Collaboration	50,000	
Other		**20,000**
Advisory group members travel, per diem, etc. (20 x 5 days x $200)	20,000	
TOTAL 2005-2006		**$1,949,625**

Budget 2006-2007

Personnel		**$ 0**
Fringe Benefits		**0**
Travel		**14,125**
Project Directors' meetings (2) x 2 staff x 2 days	4,500	
SIF Nat'l conference 2 staff x 3 days	4,000	
Local travel @ state rates (.375) x 15,000 miles	5,625	
Equipment		**0**
Supplies		**5,500**
Consumable office and meeting supplies	2,000	
Training supplies $5 x 300 participants	2,500	
Resources (reference reports, etc.)	1,000	
Contractual		**1,200,000**
Vertical Reporting		
Student Enrollment/Withdrawal	50,000	
State Report Manager	200,000	
Longitudinal Data Management System		
Data Warehouse + Marts	500,000	
Learning Resource Exchange	250,000	
PM + Integration	150,000	
Interstate Collaboration	50,000	
Other		**20,000**
Advisory group members travel, per diem, etc. (20 x 5 days x $200)	20,000	
TOTAL 2006-2007		**$1,239,625**

Budget 2007-2008

Personnel		**$ 0**
Fringe Benefits		**0**
Travel		**14,125**
Project Directors' meetings (2) x 2 staff x 2 days	4,500	
SIF Nat'l conference 2 staff x 3 days	4,000	
Local travel @ state rates (.375) x 15,000 miles	5,625	
Equipment		**0**
Supplies		**5,500**
Consumable office and meeting supplies	2,000	
Training supplies $5 x 500 participants	2,500	
Resources (reference reports, etc.)	1,000	
Contractual		**1,200,000**
Vertical Reporting		
Student Enrollment/Withdrawal	50,000	
State Report Manager	200,000	
Longitudinal Data Management System		
Data Warehouse + Marts	500,000	
Learning Resource Exchange	250,000	
PM + Integration	150,000	
Interstate Collaboration	50,000	
Other		**20,000**
Advisory group members travel, per diem, etc. (20 x 5 days x $200)	20,000	
TOTAL 2007-2008		**$1,239,625**

TOTAL 2005-2006	**$1,949,625**
TOTAL 2006-2007	**$1,239,625**
TOTAL 2007-2008	**$1,239,625**
TOTAL GRANT FUNDS APPLICATION	**$4,428,875**

Budget Narrative 2004-2005

Personnel

No personnel costs will be charged to this grant.

Fringe Benefits

No fringe benefits will be charged to this grant.

Travel

Funds are requested for attending the required project director's meetings for two staff and for travel to the School Interoperability Framework national conference. Local travel for staff related with the project will be statewide for the purpose of consultation, training and monitoring of implementation. All travel will follow established Commonwealth procedures and will be reimbursed at prevailing state rates.

Equipment

No Equipment will be purchased with this grant. Pennsylvania's investment in the Commonwealth Shared Services Architecture covers all equipment requirements.

Supplies

Funds are being requested for office and meeting supplies, for training supplies for workshop participants, including commercial software, if necessary. Reference material will provide further insight into effective practices related to project development items. As this grant focuses on technology, minor upgrades to staff desktops are required.

Contractual

The majority of the funds will be used for expansion of existing contractual relationships and development of new ones. The Commonwealth/PDE is committed to the PIMS and SIF to improve services to children. Funds requested will enable expansion of data collection and management across agencies. Tasks are explained more clearly in the narrative, but the following are the major items:

- Vertical Reporting
  - Student Enrollment/Withdrawal
  - State Report Manager
- Longitudinal Data Management System
  - Data Warehouse + Marts
  - Learning Resource Exchange
- PM + Integration
- Interstate Collaboration

Additionally, we will be contracting with Intermediate Units for the development and delivery of professional training on a regional basis. We will be utilizing the services of an evaluator to assist with the ongoing project development via formative and summative project evaluation, and to assess satisfaction of project participants and end users.

Other

One of the critical pieces in the development of any project of this magnitude is the inclusion of persons involved in the day-to-day use of the systems that are developed. It is also important to have input from experts in the different areas – content and technology – that are being brought together. For those reasons we have established advisory groups for the projects. Funds are being requested for reimbursement of travel, per diem and costs related to advisory committee activities at established state rates.

Budget Narratives 2006-07, 2007-08

With few exceptions, the narratives for the years 2 and 3 are not projected to change significantly from the above. In submission of request for years 2 and 3 we will provide any additional information necessary.

SUMMARY OF PENSYLVANIA DATA INITIATIVES MATCHING CONTRIBUTIONS

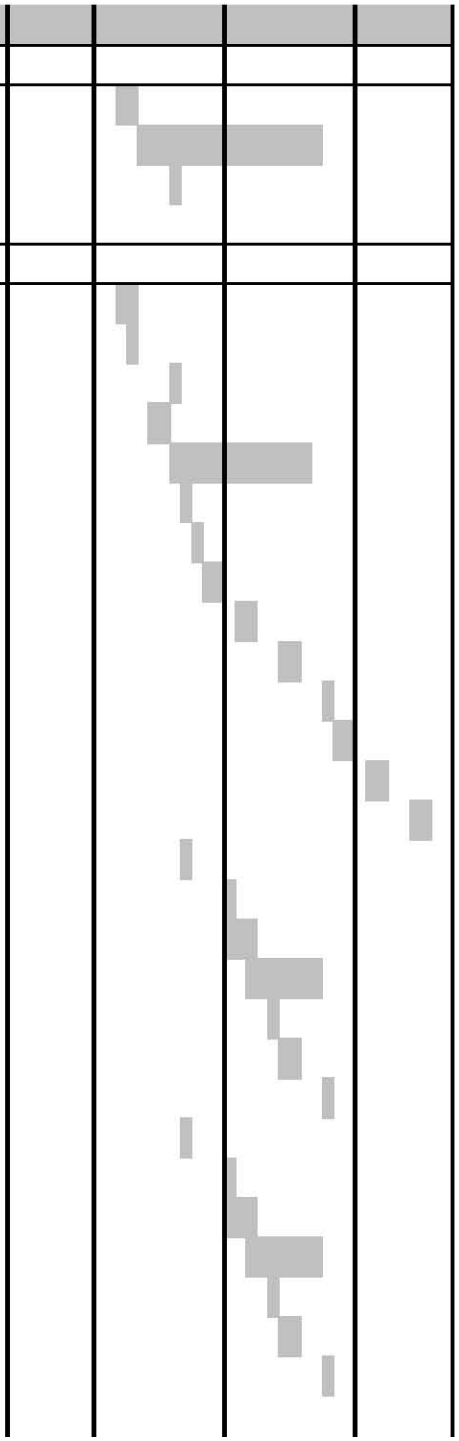
Other PA Data Projects: Matching State Commitment to PIMS

	2004-05	2005-06	2006-07	2007-08	Totals
DSAC Collaborative Architecture	$ 120,000	$ 45,000	$ -	$ -	**$ 165,000**
PMO	$ -	$ 500,000	$ 100,000	$ 100,000	**$ 700,000**
Meta Data Facility & SIF Pilots	$ 230,000	$ 150,000	$ -	$ -	**$ 380,000**
CoSSA - Common Services	$ 460,000	$ 1,115,800	$ 538,800	$ 538,800	**$ 2,653,400**
ESP	$ 434,443	$ 405,000	$ 405,000	$ 400,500	**$ 1,644,943**
PVAAS	$ 900,000	$ 900,000	$3,600,000	$ -	**$ 5,400,000**
Grow Network	$2,975,000	$ 2,563,385	$1,455,000	$1,455,000	**$ 8,448,385**
SASID	$ -	$ 1,500,000	$ -	$ -	**$ 1,500,000**
Totals	**$5,119,443**	**$ 7,179,185**	**$6,098,800**	**$2,494,300**	**$20,891,728**

h. Appendix A – Timeline (5 pages)

	Start Date	End Date	2005	2006	2007	2008
Longitudinal Data Grant						
Request for Applications						
Letter of Intent submitted	May-05	May-05				
Application submitted	Jun-05	Jun-05				
Drafting team convened	May-05	May-05				
1st draft of narrative complete	May-05	Jun-05				
1st review session	Jun-05	Jun-05				
2nd review session	Jun-05	Jun-05				
3rd review session	Jun-05	Jun-05				
2nd draft of narrative complete	Jun-05	Jun-05				
Executive review	Jun-05	Jun-05				
3rd draft w/ budget complete	Jun-05	Jun-05				
Final draft complete	Jun-05	Jun-05				
Application finalized	Jun-05	Jun-05				
Application Review and Potential Funding Commitment						
Peer review	Jul-05	Aug-05				
Expected notification date	Aug-05	Aug-05				
Expected fund availability (if approved)	Oct-05	Sep-08				
PIMS RFP						
RFP Development						
Procurment committee convened	Sep-05	Sep-05				
PIMS RFP Drafted	Aug-05	Oct-05				
Senior Staff Reviews RFP	Oct-05	Nov-05				
OA Reviews RFP	Oct-05	Nov-05				
RFP Released	Nov-05	Nov-05				
Vender Selected	Jan-06	Jan-06				
Contract Duration	Feb-06	Sep-08				
Great Year 1	Oct-05	Sep-06				
Great Year 2	Oct-06	Sep-07				
Great Year 3	Oct-07	Sep-08				
Contract Project Plan	Feb-06	Mar-06				

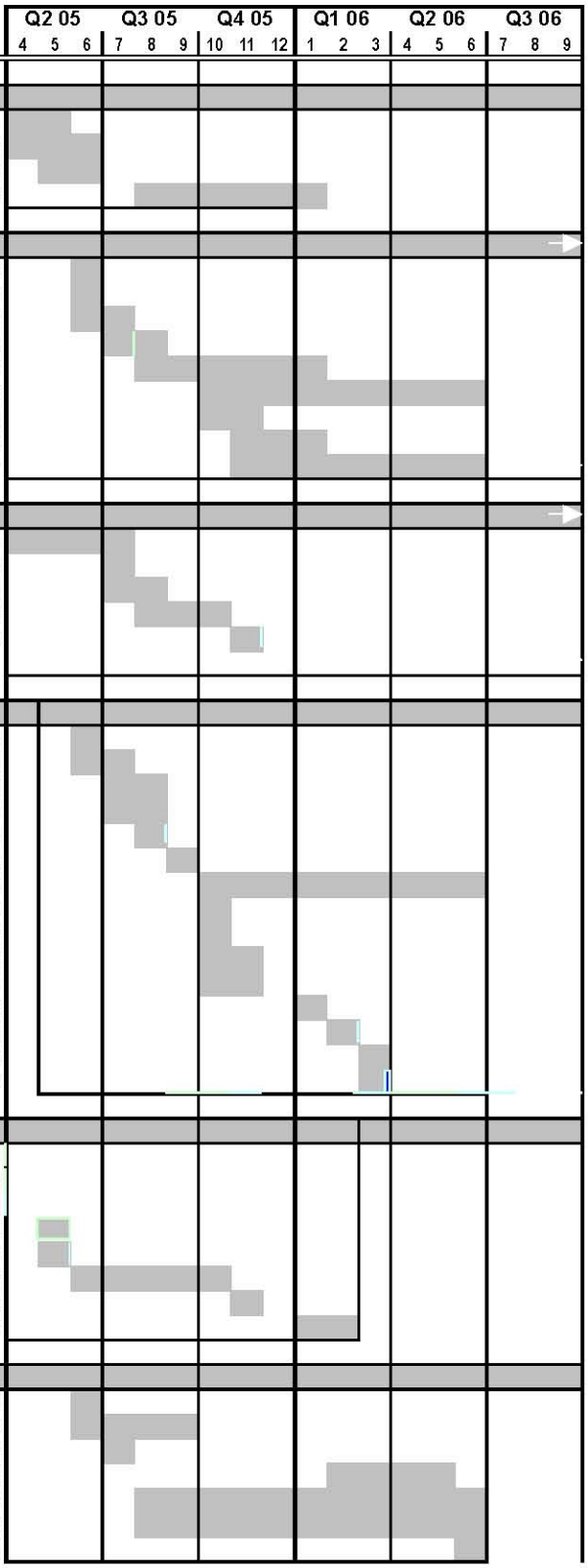
Strand 1: Vertical Reporting		
Student Enrollment/Withdrawal		
Sub-Project discovery, design, and plan.	Mar-06	Apr-06
Complete statewide SASID assignment	May-06	Sep-07
Deploy un-reg/withdrawal/case mgmt	Aug-06	Aug-06
State Report Manager		
Sub-Project discovery, design, and plan.	Mar-06	Apr-06
Student record element guidelines releas	Apr-06	Apr-06
Student reporting module deployed	Aug-06	Aug-06
Pilot	Jun-06	Jul-06
District Training	Aug-06	Aug-07
Statewide production launch	Sep-06	Sep-06
Statewide trial Oct 1 collection	Oct-06	Oct-06
Statewide trial Dec 1 collection	Nov-06	Dec-06
Statewide trial PSSA pre-code collectio	Feb-07	Mar-07
Statewide trial ADA/M collection	Jun-07	Jul-07
Statewide mandatory Oct 1 collection	Oct-07	Oct-07
Statewide mandatory Dec 1 collection	Nov-07	Dec-07
Statewide mandatory PSSA pre-code co	Feb-08	Mar-08
Statewide mandatory ADA/M collection	Jun-08	Jul-08
Staff record element guidelines released	Sep-06	Sep-06
Staff reporting modules deployed	Jan-07	Jan-07
Pilot	Jan-07	Mar-07
District Training	Mar-07	Sep-07
Statewide production launch	May-07	May-07
Statewide trial staff collection	Jun-07	Jul-07
Statewide mandatory staff collection	Oct-07	Oct-07
Program element guidelines released	Sep-06	Sep-06
Program reporting modules deployed	Jan-07	Jan-07
Pilot	Jan-07	Mar-07
District Training	Mar-07	Sep-07
Statewide production launch	May-07	May-07
Statewide trial collection	Jun-07	Jul-07
Statewide mandatory collection	Oct-07	Oct-07



Strand 2: Longitudinal Data Management System		
Data Warehouse + Marts		
Sub-Project discovery, design, and plan.	Mar-06	Apr-06
Data inventory	Apr-06	Jul-06
Data Access and Use policy	Mar-06	Jul-06
Data access rules by element	May-06	Sep-06
DW Conceptual Model	May-06	Sep-06
DW Logical Model	Jul-06	Sep-06
Datamarts Prog Req/High Level Design	May-06	Jul-06
Datamarts Detailed Specifications	Jun-06	Nov-06
DW Physical Model	Oct-06	Feb-07
Data loading plan	Oct-06	Feb-07
Initial data load	Feb-07	Aug-07
PIMS data load tools complete	Sep-08	Sep-08
Datamart pilot launch	Aug-07	Aug-07
District training	Aug-07	May-08
Datamart v1.0 production launch	Aug-08	Aug-08
District training	Aug-08	Sep-08
Learning Resource Exchange		
Sub-Project discovery, design, and plan.	Mar-06	Apr-06
Program Requirements	Apr-06	Jun-06
High Level Design	Apr-06	Jun-06
Detailed Specifications	Jun-06	Aug-06
Technical Specificaitons	Jul-06	Sep-06
Prototype	Jul-06	Sep-06
Pilot	Sep-06	Nov-06
Production Deployment v1.0	May-07	May-07
District training	May-07	Jul-07
Production Deployment v2.0	Aug-07	Aug-07
District training	Aug-07	May-08
Production Deployment v3.0	Aug-08	Aug-08
District training	Aug-08	Sep-08

The chart on the following page is not part of the Grant Request. It is provided as a presentation of the supporting activities by Pennsylvania Department of Education.

Project Summary Task	start	end
Data Dictionary		
PDE 44 Core Elements	May-04	Jun-04
Metadata Facility	Apr-04	Jun-05
PDE Core Reports (PSSA, etc)	May-05	Jun-05
Ongoing data dictionary development	**Aug-05**	**Jan-06**
Program Management Office		
RFQ to PDE Senior Staff	Jun-05	Jun-05
RFQ to OA	Jun-05	**Jun-05**
RFQ Released	Jun-05	**Jul-05**
Vender Selected	Jul-05	Aug-05
PDE PMO dev & implementation	**Aug-05**	Jan-06
SASID-DRC Oversight Coordination	Oct-05	Jun-06
PIMS RFP Drafted & Final	Oct-05	Nov-05
PIMS Procurement	Nov-05	Jan-06
Ongoing PMO Operations	Nov-05	Jun-07
Security/Portal (COSSA)		
PDE and OA Drafts MOU-SLA	Apr-05	Jul-05
MOU-SLA to PDE Senior Staff	Jul-05	Jul-05
MOU-SLA Enacted	Jul-05	Aug-05
Directory/Portal Development	Aug-05	Nov-05
Directory Portal Launch	Nov-05	Nov-05
Content, Design & Functionality		
SASID		
RFP Committee Convened	Jun-05	Jun-05
RFP developed by Committee	Jun-05	Jul-05
RFP reviewed by senior staff	Jul-05	Aug-05
RFP reviewed by OA	Jul-05	Aug-05
RFP Released	Aug-05	Aug-05
Evaluate Proposals/Select Vender	Sep-05	Sep-05
Contract Duration	Oct-05	Jun-06
Contract Project Plan	Oct-05	Oct-05
PDE-DRC-OA Interface Design	Oct-05	Oct-05
Systems Set Up	Oct-05	Nov-05
Pilot	Nov-05	Dec-05
Non-Mandatory Roll Out of ID	Jan-06	Jan-06
Optional PSSA Pre-Code Collection	Feb-06	Feb-06
Transfer pre-code data to DRC	Mar-06	Mar-06
DRC generates pre-coded labels	Mar-06	Mar-06
Act 183		
Release RFI	Jan-05	Jan-05
Analyze RFI	Feb-05	Feb-05
Release RFQ	Mar-05	Mar-05
Develop Grant Guidelines and Application	May-05	May-05
Release Grant Guidelines and Application	May-05	May-05
Assess Telecommunications for eFund	Jun-05	Oct-05
Grant Applications Due	Nov-05	Nov-05
Grants Awarded	Jan-06	Feb-06
eSP		
Beta Test	Jun-05	Jun-05
Train the Trainer Introduction	Jun-05	Sep-05
Tool Launch	Jul-05	Jul-05
Train the Trainer 2006 Plans	Feb-06	May-06
Virtual Training Sessions	Aug-05	Jun-06
Regional Training Phase I	Aug-05	Jun-06
Regional Training Phase II	Jun-06	Jun-06



j. Appendix B – Optional Attachments (15 pages)

Existing PA Systems Components

PIMS Advisory Group

PDE convened a statewide advisory group to provide input on the design of PIMS in early 2004. The PIMS Advisory Group brought together a geographic, organizational and job-type diversity of stakeholders together several times throughout 2004 to gave input on the documented Program Requirements and High Level Design. Participants are listed below:

Gary Adams, Palisades SD	Nancy Olenik, IU3- Allegheny
Joe Bard, Assoc. of Rural and Small Schools	Brenda Orth, OA. OIT portal
Dr Francis Barnes, PDE - Secretary	Kyle L. Peck, Ph.D., PSU, AECT
Judi Barnett, CSIU	Curt Pegg, PA OA, OIT
Carol Bingaman, PA OA, OIT	Glen Ponas, University of Pitt
Sharon Clark, PDE / BIS	Charlie Reisinger, Penn Manor SD
Brad Cressman, N.W. Lehigh S.D	Pat Renzulli, SD of Philadelphia
Pat Dilella, Phil SD	Chris Rosing, PDE, BIS portal
Stanley Durtan, Wissahickon SD	Jennifer Ross, IU3- Allegheny
Michael Golden, PDE / OET	Sheri Rowe, PDE
Al Harding, IU13 Lanc./Leb	Bob Schoch, Reading S.D.
Roy Herrold, IU16 -CSIU	Joe Schwoebel, IU 3- Allegheny
Jay Himes, Assoc.of School Business Officers	Timothy Shrom, PRSBA, Solanco SD
Jerry Hottinger, Data Services	Ken Sochats, Univ of Pitt.
Roger Hummel, IU16 -CSIU	Art Stephens, Governors Office
Gil Iacono, Pitt Pub Schools	Stinson Stroup, Assoc of School Admin
Holly Jobe,	Lenny Sweeney, PDE / Career + Tech Ed
Susan Keck, IU21CarbonLehigh	John Tommasini, PDE, Sp. Ed.
Charlotte Kordek, WilkesBarre SD	Ray Tranguch, IU 3- Allegheny IU
Kristen Lewald, IU13 Lanc/Leb-PVAAS	Melanie Trevethan, SD of Philadelphia
Bob McGrath, PDE / OET	Steve Unis, IU21 CarbonLehigh
Amy Munro, PDE / OET	Elbie Yaworsky,
Barbara Nelson, PDE	Dr. Gerald Zahorchak, PDE Deputy Sec. Elementary / Secondary
James Gearity, PDE Deputy Sec. Post Secondary	

One of the first tasks of the new PDE Project Management Office will be to engage the PIMS Advisory Group as an integral part of the new agency governance and project management model.

PDE Data Council

In Spring 2003, PDE convened an internal group of 23 representatives from all of the major K12 programs in the agency to coordinate data issues and develop agency policies.

-

The group meets monthly and also convenes in ad hoc sub-groups as necessary. As a first set of tasks, the group identified elements in the student domain utilized by each program area and agreed to adopt NCES data handbook definitions, where appropriate. The resulting map of NCES data handbook elements to PDE programs formed the foundation for PDE's data dictionary.

More recently, the group has bee focusing on data related to violence and drug incidences and discipline history.

PDE Metadata Facility

In April 2004, PDE contracted with the University of Pittsburgh to take PDE's data dictionary (based on the NCES Data Handbooks) and build a web-based metadata facility. The effort produced an initial prototype in June 2004 and a report with a development roadmap for the Meta Data Facility and for PDE in managing enterprise data moving forward.

Significantly, the Metadata Facility was designed from the beginning to incorporate elements and views intended to accommodate LEA needs, not just PDE's needs.
The PDE Metadata Facility (PMF) carries the concept of a data dictionary to new levels. The Facility collects, integrates and manages metadata not only on data elements but also on other components such as: actors, roles, reports, facilities, systems, standards, business rules, organizations and any other related entities. The Facility, in one sense, serves as comprehensive documentation for PIMS. The Facility also plays several active roles in PIMS, facilitating the management, exchange, integrity, security, and privacy of PIMS data. Some of the features of the Metadata Facility include:

Archives – The PMF has a self archiving function that maintains change of data specification information. This function is tied to the PIMS data store such that data specification is associated with the actual data. Multi-year data can thus be converted to a common standard for true longitudinal comparisons.

Warrant – Each component of the PMF is tied to an authority (legal, administrative, standard, best practice, etc.) that describes the genesis and rationale for the component. Proposed or actual changes in law, for example, can quickly or easily be traced through the PMF to determine their impact and strategies for implementation can be established.

Communication – As a web-based service, the PMF provides to districts, schools, vendors and other stakeholders a real-time, single, authoritative source for current and historical system metadata. The working version of the PMF can be found at: http://visc.sis.pitt.edu/pde.

Standards – The PMF currently contains a complete description of the last two years of NCES handbook. The Facility provides an interface that allows easy navigation and highlights changes, additions and deletions. A related project is providing a definition of SIF elements and objects for the Facility. The SIF specifications are directly mapped to their NCES counterparts. The PMF has a robust metadata description mechanism. Essentially any standard can be described and mapped through the Facility. Using the

same descriptive mechanism, the features of SIS products and other systems can be described and mapped.

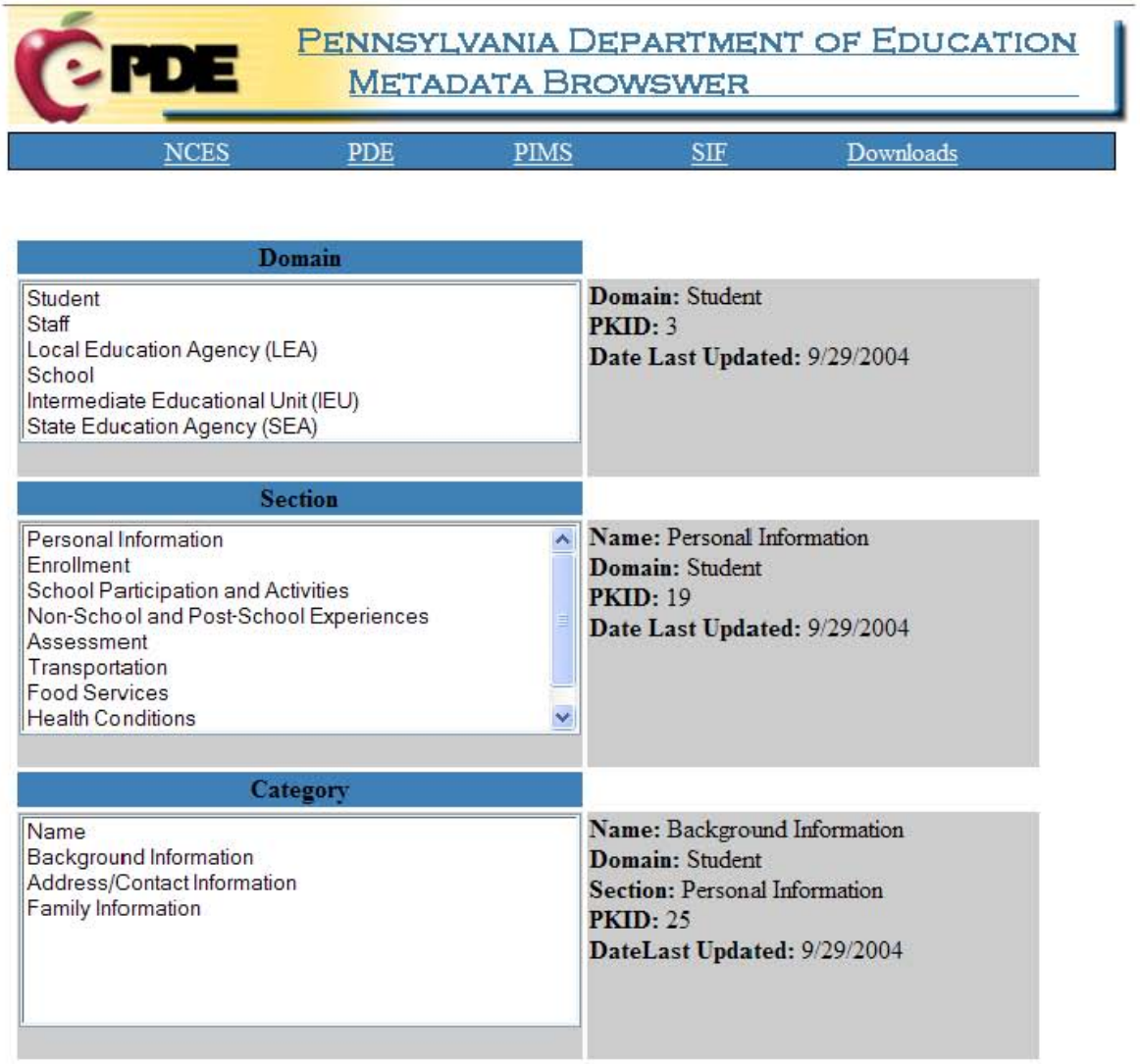
System Specification - Work is under way to define and incorporate into Facility the components (elements, reports, users, etc.) of the 150 current PDE aggregate data reports involving 4500 aggregate element instances. In parallel, we are defining PIMS elements (reflecting the NCES specifications as closely as possible) and structures that specify individual student reporting (600 element instances). Through individual student reporting, PIMS will greatly reduce the redundancy brought about by the aggregative nature of the current PDE system. The current PDE and PIMS specifications are mapped to insure PIMS provides at a minimum the same collection of data as the current system.

Security and Privacy – The PMF contains information about system and data access permissions and mechanisms. With the Facility's user and role information, issues related to HIPPA, FERPA, best practices and other requirements are addressed.

Interoperability – The Metadata Facility provides capabilities for the exchange of information between entities. The Facility has the capability for an LEA to create a merged data description that would allow them to merge local data with data at other levels.

Tools – As part of the PMF a set of standardized tools operating on the metadata has been constructed to facilitate data quality, integrity and interoperability. Some of these are basic, such as tools to validate data. Other tools are more comprehensive and provide data auditing capabilities, data conversion tools and data management tools.

The PMF will, through its extensive system definitions and related tools, provide ubiquitous, timely, high quality, reliable and authoritative information to users throughout the Commonwealth. The open nature of the Facility holds prospects for the use of the Facility by other states or as a mechanism to foster communications between states.



In April 2004, PDE contracted with the University of Pittsburgh to take PDE's data dictionary (based on the NCES Data Handbooks) and build a web-based metadata facility. The effort produced an initial prototype in June 2004 and a report with a development roadmap for the Meta Data Facility and for PDE in managing enterprise data moving forward. Significantly, the Metadata Facility was designed from the beginning to incorporate elements and views intended to accommodate LEA needs, not just PDE's needs.

The prototype was presented at both the NCES 2004 Summer-Stat conference and winter NCES MIS conference. As part of PA's general commitment to collaboration with other states, it was announced that the metadata facility could be used by any other state.

A second phase of contracted work will conclude on June 30, 2005 with a thorough analysis of elements needed to support SASID assignment and PSSA pre-coding.

Pioneering SIF Pilots

Pennsylvania has been and continues to be a leading force in the development and support of the SIF specification. In 2000, through a collaborative effort with the Central Susquehanna Intermediate Unit (CSIU), the Upper Dauphin Area School District was selected as a SIF Showcase Site, an honor awarded to only four school districts in the US. The Upper Dauphin implementation was the very first district-wide SIF deployment, and was the first to involve a partnership between a district and a regional educational service agency. In addition, it was the first SIF implementation to deploy a remote Zone Integration Server (ZIS) using encrypted messages over the public network.

Building on the pioneering efforts of the CSIU and Upper Dauphin, PDE was awarded three competitive grants from NCES. The first project in 2002 was designed to test the idea that SIF could be used to move data from school districts to state departments of education. Based on the 1.1 version of the SIF specification, the project successfully collected data from four school districts. Two districts participated directly in the collection using established SIF methods. Two districts without SIF deployments used a SIF agent designed to translate files into SIF messages and interact with the state ZIS. This groundbreaking project was the origin of the notion that SIF could be used outside of a local deployment, and fueled the design of a method for state data collection released in version 1.5 of the SIF Specification, now known as "Vertical Reporting."

The second project built upon the success of the first, and involved the development of multiple SIF data objects covering the human resources and financial realms. The objects were designed to share data both within local SIF deployments and vertically to state departments of education.

The third project is currently underway, and will provide a crosswalk between the PDE data dictionary and both the NCES Handbook and SIF data objects and elements. In the process, the data dictionary is being refined, and multiple SIF objects needed by PDE for data collection are being designed and marshaled through the SIF object development process towards approval for inclusion in the next release of the SIF Specification. A complementary project also underway will provide a metadata facility for web-based delivery of the data dictionary and crosswalk information to school districts across Pennsylvania.

A separate PDE-funded project was conducted in the summer of 2004 to test the Vertical Reporting methodology described in the newly-released SIF Specification version 1.5. Data from two school districts were collected using new objects designed for state data collection and the suggested messaging choreography was tested.

PDE continues to promote SIF as an effective solution for school districts to eliminate the inefficiencies caused by software applications that don't communicate with one another, allowing districts the independence to choose best-of-breed applications without sacrificing interoperability. In an effort to support its districts, PDE purchased SIF Association (SIFA) memberships for all 29 Intermediate Units (IUs). The memberships will allow the IUs to work within SIFA to promote the interests of their member districts, while expanding their knowledge base to build a support structure for district implementations. PDE will also incorporate a SIF

interface in their new longitudinal data collection system to provide local education agencies with an option to use SIF as a data submission method.

CoSSA

The Commonwealth of Pennsylvania has made a significant investment in a robust, enterprise-scale, data center. More recently, under Governor Ed Rendell's leadership, the Office of Administration (OA) has recognized that there are a significant number of state agencies looking for a robust, highly available, services-oriented architecture hosted in a hardened facility with back-up and disaster recovery systems. It was agreed that the OA would establish the Commonwealth Shared Service Architecture (CoSSA) offering to provide agencies with a common infrastructure as well as an enterprise service and application layer.

PDE was one of two lead agencies (along with the Office of Information Technology's Justice Network) that described the requirements for such a service. The Departments of Welfare, Health and Labor have also agreed to participate in this massive offering.

The CoSSA service offering has established a federated enterprise model that has three separate architectural layers that include the infrastructure, enterprise and agency layers. The infrastructure layer includes the network, telecommunications, call center, print shop and data center components. The enterprise layer includes established best practices and shared services for items such as security (identity management and web services), directory, and portal (J2EE, .NET and XML web services) functionality based upon a service-oriented architecture (SOA) approach.

The CoSSA federated enterprise model is standards driven, and not technology based, so that the architecture can link to the highest level business drivers and not to the lowest level engineering specifications. CoSSA will also embrace cross-industry proven best practices and will leverage service model and delivery improvements found in automated tool efficiencies and resource-based knowledge management. The CoSSA governance structure will mandate a long term architectural decision that will be leveraged by the PDE and all other participating agencies. All resources that historically have been expended in both the infrastructure and enterprise layers can be reallocated to the PDE agency specific solutions in support of the PIMS initiative.

PDE will be able to leverage the new CoSSA enterprise directory to develop virtual interfaces that will access existing repositories and establish a new base line of portal services to provide shared authentication and session control with encrypted desktop device cookies. The enterprise creation and management of user identity is critical to the roll out of PIMS and is provided within the framework of CoSSA. PDE will not have to apply grant requested resources towards any identity management or disaster recovery services that have been seriously lacking in the current PDE legacy systems environment.

PDE, as a participating CoSSA agency, will be able to leverage technology investments and focus on the specific functions and mission critical applications that have been identified within the PDE agency layer and fully described within this grant application.

Act 183/eFund

The Pennsylvania legislature passed, and the Governor signed into law Act 183 on November 30, 2004. This law will help to speed broadband deployment to Pennsylvania's schools, by providing discounts on rates provided by incumbent carriers, and creating an annual $10 million E-Fund to assist schools with purchasing services, hardware, technical assistance and distance education over the next six years.

Through competitive grants administered through PDE, this E-Fund will support deploying broadband services to enhance capabilities at the local and regional level, including the technology required to allow schools to make connections, as well as fostering interschool networks, other technology, distance learning and content. Overall, this E-Fund will serve as a catalyst to enable Pennsylvania schools to take advantage of learning opportunities facilitated through broadband connectivity and the Internet.

ESP:

In response to the ever-increasing administrative burden placed upon educational entities to create and submit multiple strategic plans, PDE worked with state and local stakeholders to design a unified planning framework, incorporating components required under both Commonwealth and Federal legislation, which would enable PDE to streamline compliance oversight and focus on providing timely technical assistance to the field. To provide a vehicle for the development, delivery, and most importantly management of a systemic strategic plan, PDE has licensed an existing web-based educational strategic planning tool for all PA LEA's to use. PDE, with the support of our Intermediate Units and partnered with MGT of America, is customizing the ePlan application (utilized in California, Washington, and Michigan) to support, Pennsylvania's Leading for Learning eStrategic Planning process, which promotes communication and collaboration across diverse planning groups at the local and state levels to assist in leveraging resources efficiently and in sharing effective practices.

While already conducive to strong strategic planning, the eSP framework and tool will be greatly enhanced as the student record level data of PIMS becomes available. A single real-time data mart would not only negate the existing data issues, but would expand upon the capacity for accurate and timely data-driven decision-making at both the local and the state levels by affording the opportunity to continuously access quality data and to create ad-hoc contextual snapshots to further refine strategies to support educational and organizational goals.

Currently, PDE is working with the Intermediate Units to establish and implement a training model for Phase One of three annual phases of local educational entities to access the eStrategic Plan. Phase One entities, due to submit strategic plans in 2006, will begin utilizing the web-based eStrategic Planning process Fall 2005.

PDE Program Management Office (PMO)

PDE recognizes that it needs to develop a Project Management Office (PMO) to inventory current and proposed processes, analyze their resource requirements, work with an IT Resource Governance group to vet and prioritize them, ensure resources are allocated in relation to priority and manage their fulfillment.

In August 2005, PDE will initiate a project to develop and resource a PMO at PDE. This PMO will establish the capacity within PDE to manage both current and new initiatives successfully, while mitigating risks and maximizing end-user satisfaction. This engagement includes knowledge transfer to PDE staff.

The PMO development phase will be from July 2005 through January 2006 and accomplish the following tasks:

A. Project Management Office and IT Governance Board

1. Establish a governance structure of agency managers to approve, prioritize, and resource projects. They must have the authority to allocate and redirect resources to fund the projects.
2. Establish an agency-wide internal PMO to coordinate all PDE IT projects consistent with the:
    a. Commonwealth of Pennsylvania Enterprise Project Management Methodology and other relevant emerging standards being set by the Office of Information Technology. Reference the web site at: http://www.oit.state.pa.us/oaoit/cwp/view.asp?a=671&q=189122&oaoitNav=|1910|
    b. PDE's application development methodology

    The selected service provider **must** leverage these existing methodologies and any associated software that the Commonwealth has set as a standard.
3. Develop and execute a communication strategy and plan for educating PDE staff members on the new project management process. Include all agency stakeholders in the educational sessions.

B. Project Oversight, Coordination, and Implementation Support

1. Implement a methodology to consistently evaluate current and proposed systems against PDE's strategic plan that can be used by the IT Governance Board to vet and prioritize the systems and ensure resources are allocated in relation to priorities.
   Evaluate current and proposed systems
2. Coordinate execution of project management methodology for at least the top three priority systems as identified by the IT Governance Board.
3. Support the procurement process for identified projects.

C. Knowledge Transfer and Capacity Building within PDE

1. Develop a comprehensive plan to transfer PMO responsibility to PDE staff.
2. Develop a staffing plan containing specific resource requirements to staff the PMO.
3. Train PDE PMO staff.

PSSA Data Reporting Initiatives

PDE has traditionally outsourced all student assessment data management to third party entities. Three, inter-related, but not yet inter-connected, initiatives have been launched:

Pennsylvania Value-Added Assessment System (PVAAS): Functions as a statistical analysis system that studies a school's own historical assessment information to demonstrate measures of the school's influence on indicators of student learning. PVAAS uses a highly sophisticated, statistical-mixed model to analyze score changes from year-to-year on standardized assessments, with the inclusion and influence of many other factors. In this process, it provides unbiased estimates of the effects of schooling on individual and group academic progress.

Pennsylvania Academic Achievement Reports by GROW: Provides Customized reports for teachers, parents, administrators, and students. Provides web tools that offer guidance based on test results, instructional materials designed to target student needs and professional development resources that build skills and enhance meaningful instruction.

PSSA Data Interaction: Designed to provide quick, easy and secured access to student performance results on the Pennsylvania System of School Assessment (PSSA). Create your own reports in tables, graphs, or external files, at the summary or individual student level, by selecting content, statistics, aggregation levels, disaggregated groups or subgroups, and/or score variables.

	PVAAS **evaas.sas.com**	**Grow Network** **www.grownetwork.com**	**eMetric** **solutions.emetric.net/pssa**
Levels of User Access	Multiple Levels Of User Access-district, building, groups of students	School and District	Two levels of user access-district and building
Querying/ Custom Reporting Capabilities	Yes	No	Yes
Data Presentation	Charts Graphs	Charts Graphs	Charts Graphs
Exportability	Cut And Paste No built-in export feature	Not Available	Built-In Export Feature
Demo Site Available for Preview of Tool	https://evaas.sas.com/evaas/login.jsp UN: PVAAS.Training Password - PVAAS	No demo site available Information on GROW: http://www.grownetwork.com	https://solutions.emetric.net/PSSA User Name: b99998 Password: emetric

	PVAAS evaas.sas.com	Grow Network www.grownetwork.com	eMetric solutions.emetric.net/pssa
Types of Data	Achievement/ Proficiency Status Demographics Progress/Growth Projections For Future Performance On PSSA	Achievement/ Proficiency Status Demographics Points Achieved Open-ended scores	Achievement/ Proficiency Status Demographics
Years of Data Available	Multiple Years Statewide Implementation Year Will Start With 05-06 Reporting In Fall 06	Publishes longitudinal data up to three years of PSSA data (beginning with 2003) on school print reports and online reports	Currently One Year (SY03-04) Potential For Additional In Future
Levels of Data	District School Subgroup Student	District School Subgroup Student	District School Subgroup Student
Content Areas	Math, Reading	Math, Reading, Writing Links to Instructional Materials	Math, Reading
Grades Levels	3-8; Projections On Grade 11 PSSA	3,5,8 11	3,5,8 11
Data By Standards/ Reporting Category	No	Yes	Yes
Assessment Data Available	PSSA	PSSA	PSSA

Pathways to Performance

This PDE enterprise-wide initiative is designed to increase management productivity throughout the Pennsylvania educational enterprise by establishing streamlined, comprehensive systems that improve planning, operations and reporting. In addition, establishment of these systems will enhance information and communications that drive data based decision making as the basis for assessment and, ultimately, student achievement.

The program is comprised of three major components, each of which is discussed separately below. Together, they will form the basis of the statewide infrastructure and architecture that provides the Pennsylvania Department of Education (PDE) and 700+ Local Education Agencies (LEAs) with the opportunity to share information more efficiently, to communicate more effectively and to administer the instructional and management sides of schools more successfully. They will dovetail with Administration-wide initiatives to establish a high speed, low cost network connecting all schools in PA and LEA-level efforts to increase the interactivity of disparate databases

Positive Outcomes:

- Reducing and streamlining the heavy reporting and planning burden on LEAs/ schools
- Shifting time spent by LEA staff from administrative burdens to analyzing data to assess student needs and providing direct services to students,
- Leveraging plan preparation into a concerted LEA effort, which focuses its energy and integrates its efforts
- Shifting time spent by PDE staff from repeated plan requests and collection to policy formulation and field support
- Establishing a process that enables an LEA strategic plan to be a living document and tool with which the LEA can implement growth and change
- Reducing PDE time and travel costs by coordinating monitoring visits
- Centralizing and sharing best practices statewide that lead to improved student achievement and teacher quality
- Focusing information and communications on assessing student performance and providing tools and supports to improve it
- Leveraging statewide solution to reduce "reinventing" by individual LEAs
- Realizing cost savings for all LEAs by aggregating purchasing power and negotiating volume discounts
- Fundamentally improving data quality and timeliness to improve needs assessment
- Increasing systemic and management productivity
- Capitalizing on the statewide broadband system supported by Governor's Office
- Supporting Plan for a New PA's focus on education and student achievement
- Enhancing student performance through improved teacher resources and standards-based lesson plans and supplemental instructional materials
- Increasing teacher quality through instructional resources and best practices
- Expanding LEA leadership capacity and performance
- Massively reducing paperwork facilitated by electronic submissions and streamlined reporting burdens
- Enabling longitudinal studies leading to improved policy recommendations
- Focusing on strategic priorities and long-term outcomes

PA Information Management System (PIMS)

The purpose of this component is establish a statewide education information management system that will enable the Pennsylvania Department of Education (PDE) and 700+ Local

Education Agencies (LEAs) to meet increasing state and federal reporting requirements, reduce the tremendous LEA and school reporting burden through streamlined information collection and processing, improve information and data quality and timeliness, increase accountability of those responsible for educating our children and enable stakeholders at all levels of education to make more informed educational decisions based on this accurate and timely information. At the current time, PDE cannot respond to the Governor's Office, Legislators or other policy makers with consistent, timely, high quality student information.

PDE, in partnership with school entities, has worked over several years to:

1) create a data dictionary with consistent definitions,
2) identify common data elements collected at the LEA and SEA level through a plethora of reports to eliminate redundant and irrelevant data collections and improve quality, timeliness and consistency of information with a focus on performance rather than compliance, and
3) migrate PDE legacy systems to web based servers.

This work is in harmony with efforts by other states and at the federal level (Performance-Based Data Management Initiative-PBDMI).

We are now poised to move ahead to establish a statewide information management system. The solution will leverage Pennsylvania's existing investment in information systems and infrastructure at both the state and local levels, but calls for one significant new requirement. With the "No Child Left Behind Act of 2001" and the consequent PA Accountability Plan placing increased accountability and reporting requirements regarding teacher quality and student achievement and participation by subgroup populations, a student-level monitoring and participation system is required. Such a statewide student-level system will allow for longitudinal studies, improved policy-making and more effective decision-making by LEA-level teachers and administrators, SEA-level leaders and staff, and lawmakers.

The proposed PIMS will be based on open Internet technologies and standards that enable sharing among diverse, seemingly incompatible systems and will include:

- utilizing the School Interoperability Framework (SIF) to integrate the disparate databases at the LEA level into Zone Integrator Servers,
- establishing a Student-level Information System,
- ensuring safeguarding of personal information,
- disseminating the data dictionary and common core of data to LEAs with associated training and data handbook,
- completing the migration of PDE legacy systems to web based servers,
- enabling LEAs to share information without affecting their independent operating environments or control of data,
- incorporating the PDE eGrant system,
- building an education repository and data warehouse,
- incorporating the existing and proposed reporting and assessment systems and including learning from a statewide value-added assessment pilot program,
- integrating the required state and federal plans and reports, including NCLB, PBDMI, PA Accountability Plan and ESP (see separate project summary),

- enabling access via the PA EdPort portal (see separate project summary),
- tying the PIMS to the statewide education network (part of the statewide broadband system), and
- working with educational partners in developing a successful system.

PA Education Portal (PA EdPort)

This component is designed to establish, develop and continually upgrade an education portal for the Commonwealth of Pennsylvania. In the spirit of PA PowerPort, the centralized portal for government in PA, PA EdPort will become the comprehensive "one stop shop" source for Basic Education, Higher Education, lifelong learning, workforce development, PDE information, continuing education and all other educational information and communications statewide.

The solution will utilize Pennsylvania's existing investment in information systems and infrastructure at the state and local levels. PA PowerPort, the existing PDE website, and various LEA solutions will begin to form the basis for the PA EdPort, but the anticipated solution will dwarf existing infrastructure, information and communications capabilities. This will be further enhanced with the completion of the statewide education network (part of the statewide broadband system) by year-end 2004. At that time, this PA EdPort portal will act like an intranet on the PA statewide broadband system, linking the 700+ LEAs to each other and PDE, and enabling them to share resources and information, improve communications, access best practices and leverage their collective purchasing power. Such a centralized solution will eliminate redundant efforts taking place throughout Pennsylvania as LEAs develop solutions to similar needs in their districts, thereby ensuring limited resources and time are better coordinated and utilized.
The value of the shared resources will be manifested in providing information and tools for:

1) teachers and administrators to assess performance, refocus instruction, offer complementary and supplementary courses and materials, improve student achievement and teacher quality, and communicate with one another,
2) LEAs to leverage their purchasing power and improve back office management productivity, share best practices and eliminate redundant efforts,
3) students and parents to access increased information and communication capabilities, course and supplemental material offerings, and
4) PDE to disseminate, receive and share information and communications statewide, facilitate interaction, harness limited resources and time, and ultimately, build capacity system-wide to further educational reform.

Features of this web-based portal will include:

- linking to existing resources, including the PIMS system described above and the PDE website,
- establishing a distance learning platform,
- sharing libraries of digital curriculum,
- licensing software solutions statewide,
- building a procurement platform to aggregate demand and purchasing power across the SEA and all LEAs throughout the Commonwealth,
- increasing dissemination capabilities for State Standards, policies, Basic Education Circulars,

- developing robust instructional lesson plans, best practices, supplemental exercises and applications tied to each PA standard,
- adding assessment software to identify standards and concepts not mastered and providing supports for increasing that mastery,
- including professional development and Act 48 continuing education courses as web-based offerings,
- linking by teachers, administrators, students and parents to secure student information systems
- setting up local communities for teachers, administrators, students to interact,
- integrating PA ESP submissions (see separate project summary) and other reporting requirements and compliance measures,
- incorporating the PDE eGrants system,
- establishing an improved, more robust communication system than PENNLink, and
- working with educational partners in developing a successful system.

PA Education Strategic Planning Process/ Tool (ESP)

State and Federal Governments currently place a larger burden on LEAs to develop and submit plans every year to respond to various reporting requirements. Currently, LEAs are required to complete hundreds of reports and over thirty different plans, half of which are comprehensive submissions. PDE is in the process of streamlining and consolidating these disparate plans into one comprehensive strategic plan. The purpose of the ESP project is to develop a technological tool to be used by LEAs as a template in conjunction with this coordinated strategic planning effort.

The ESP will be developed based on current plans, such as the Chapter 4 Curriculum Plan and the eTech Planner Technology Plan, to ease the transition for LEAs. It will be a web-based tool that enables LEAs to construct a strategic plan that:

- delineates mission and vision, entity description, partnerships and community involvement, and other common elements,
- becomes a living document, accessible by the entire community, so LEA leadership can assess and adjust its direction in response to a changing environment,
- creates a roadmap for the LEA to follow by intentionally setting goals and developing an approach to achieving those goals,
- helps each LEA do a better job to focus its energy and integrate its efforts,
- ensures that administrators and staff of the LEA are working toward the same goals, and that initiatives can be undertaken with consistency of purpose and priority,
- compiles components as subassemblies and then integrates them into a comprehensive plan with internal links and interrelationships to reinforce plan priorities and strategies,
- integrates with the PIMS system by pre-populating the template with data collected through the reporting process, which becomes the basis of the needs assessment driving the goals, consequent strategies and implementations
- provides the capacity to integrate site monitoring visits.

HOOLS
PERABILITY
MEWORK

6/25/05

Institute for Educational Sciences,

This letter is being written in support of the Statewide Longitudinal Data System Program grant submission for the state of Pennsylvania. The Schools Interoperability Framework Association (SIFA) feels that this member grant submission supports the goal of the IES grant program to "… enable agencies to design, develop, and implement statewide longitudinal data systems to efficiently and accurately manage, analyze, disaggregate, and use individual student data, consistent with the Elementary and Secondary Education Act of 1965".

The SIF Association's vision is that schools will be enabled to better utilize data by implementing technology in a manner that leverages the promise and capabilities of interoperability between disparate applications. The Association is a unique non-profit collaboration of over 300 schools, districts, states, the U.S. Department of Education, software vendors and consultants collectively defining the rules and regulations for educational software data interoperability. SIFA enables diverse applications to interact and share data efficiently, reliably and securely regardless of the platform hosting the applications allowing for local "best of breed" approaches. It has united these education technology end users and providers in an unprecedented effort to give teachers more time to do what they do best: teach.

This proposal is focused on the real need to address data interoperability in the construction of a statewide system to enable the measurement of educational success of ALL students, teachers, schools and serve as a useful implementation model for others. As outlined in the USED release of the National Educational Technology Plan, *Toward A New Golden Age In American Education*, "Integrated, interoperable data systems are the key to better allocation of resources, greater management efficiency, and online and technology-based assessments of student performance that empower educators to transform teaching and personalize instruction". We feel this proposal supports the identified need for data interoperability and access for all stakeholders to better the "system" of education.

The SIF Association requests that the Institute for Educational Sciences give this grant submission the highest consideration for funding and implementation.

Larry L. Fruth II, PhD
Executive Director
Schools Interoperability Framework Association

GLOSSARY	
CCSSO	Council of Chief State School Officers
CSIU	Central Susquehanna Intermediate Unit
Data Dictionary	A metadata dictionary containing characteristics of data such as data type, length, format, and valid selection lists.
Data Warehousing	Persistent (or stable, as opposed to dynamic or transactional) data, stored in the most granular format, with aggregation structures built into the storage to facilitate access and reporting.
DSAC	Decision Support Architecture Consortium
EAP	Education Advisory Panel
EDEN	Education Data Exchange Network
EIMAC	Education Information Management Advisory Consortium
EST	Education Strategic Planning
ETL Tool	Extract, Transform, and Load - a tool that extracts data from one data store, and transforms it so that it can be loaded into another data store.
FERPA	Family Educational Rights and Privacy Act.
HIPPA	Health Information Portability and Privacy Act
IDEA	Individuals with Disabilities Education Act – Law that guarantees all children with disabilities access to a free an appropriate public education.
Intermediate Unit	Intermediate Units are educational service agencies created to provide support to local school districts, to expand educational services and to provide cost savings to taxpayers.
LDAP	Light-weight Directory Access Protocol
LRX	Learning Resource Exchange
MOSIS	Missouri Student Information System
NCES	National Center for Educational Statistics
NTC	National Transcript Center
OA	Pennsylvania - Office of Administration
OeC	Open e-Learning Consortium
PBDMI	Performance-Based Data Management Initiative
PESC	Postsecondary Electronic Standards Council -- An XML Postsecondary electronic transcript standard.
PHEAA	Pennsylvania Higher Education Assistance Agency
PIMS	Pennsylvania Information Management System
PMF	PDE MetaData Facility
PMO	Project Management Office
PSSA	Pennsylvania System of School Assessment
PVAAS	Pennsylvania Value Added Assessment System
RFP / RFQ	Request for Proposal / Quote
SASID	State Assigned Student ID – Student identification number that is randomly generated by PIMS and linked to a student name only at the district level. This number is anonymous at all other levels.
SETDA	State Education Technology Directors Association

SIF	School Interoperability Framework – standards for the exchange of education data across software applications
SIS	Student Information System – A transactional application for schools that includes functions such as scheduling, grade reporting, attendance accounting.
SOA	Services Oriented Architecture
SPSS	Statistical Package for Social Services – A software application for extracting and analyzing data.
USED	United Stated Education Department
USRM	Unique Student Record Management
VIPER	Visualizing Information for PPS Evaluation and Research
ZIS	Zone Integration Server.