U.S. Department of Education

Washington, D.C. 20202-5335

APPLICATION FOR GRANTS UNDER THE

STATEWIDE LONGITUDINAL DATA SYSTEM RECOVERY ACT GRANTS
CFDA # 84.384A
PR/Award # R384A100060

Closing Date: NOV 19, 2009

Table of Contents

Forms

1. *Application for Federal Assistance (SF-424)* e1
2. *Standard Budget Sheet (ED 524)* e5
3. *SF 424B - Assurances Non-Construction Programs* e7
4. *Disclosure of Lobbying Activities* e9
5. *ED 80-0013 Certification* e10
6. *Dept of Education Supplemental Information for SF-424* e11

Narratives

1. *Project Narrative - (Project Narrative - Project Abstract...)* e12

   Project Narrative_Project Abstract e13
2. *Project Narrative - (Project Narrative - Project Narrative...)* e14

   Project Narrative e15
3. *Project Narrative - (Project Narrative - Appendix A, Optional Attach.....)* e45

   Project Narrative_Appendix A Optional Attachments e46
4. *Project Narrative - (Project Narrative - Appendix B Resumes of Key P.....)* e60

   Project Narrative_Appendix B Resumes e61
5. *Project Narrative - (Project Narrative - Appendix C Current Status o.....)* e64

   Project Narrative - Appendix C e65
6. *Project Narrative - (Project Narrative - Appendix D Letters of Support...)* e67

   Project Narrative_Appendix D Letters of Support e68
7. *Budget Narrative - (Budget Narrative - Budget Justification...)* e83

   AZ-SLDS-Budget Justification FINAL e84
8. *Budget Narrative - (Budget Narrative - ED 524 Section C Spreadsheet...)* e93

   AZ Budget Narrative Section C e94

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OMB No.4040-0004 Exp.01/31/2012

Application for Federal Assistance SF-424		Version 02
* 1. Type of Submission [ ] Preapplication [X] Application [ ] Changed/Corrected Application	* 2. Type of Application: [X] New [ ] Continuation [ ] Revision	* If Revision, select appropriate letter(s): * Other (Specify)
* 3. Date Received: 12/4/2009	4. Applicant Identifier:	
5a. Federal Entity Identifier:	* 5b. Federal Award Identifier: NA	
State Use Only:		
6. Date Received by State:	7. State Application Identifier:	
8. APPLICANT INFORMATION:		
* a. Legal Name: Arizona Department of Education		
* b. Employer/Taxpayer Identification Number (EIN/TIN): 866004791	* c. Organizational DUNS: 804746097	
d. Address:		
* Street1: Street2:	1535 West Jefferson	
* City: County:	Phoenix	
State:	AZ	
Province:		
* Country:	USA	
* Zip / Postal Code:	85007	
e. Organizational Unit:		
Department Name: Arizona Department of Education	Division Name: Information Technology	
f. Name and contact information of person to be contacted on matters involving this application:		
Prefix: Middle Name:	* First Name:	Donald

* Last Name:	Houde
Suffix:	
Title:	Chief Information Officer
Organizational Affiliation:	
Arizona Department of Education	
* Telephone Number:	(602)364-1368 Fax Number:
* Email:	DONALD.HOUDE@AZED.GOV

Application for Federal Assistance SF-424 Version 02

9. Type of Applicant 1: Select Applicant Type:

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

10. Name of Federal Agency:

U.S. Department of Education

11. Catalog of Federal Domestic Assistance Number:

84.384A

CFDA Title:

Statewide Longitudinal Data System Recovery Act Grants

*** 12. Funding Opportunity Number:**

ED-GRANTS-072909-001

Title:

Institute of Education Sciences;(IES) Grant Program for Statewide Longitudinal Data Systems Recovery Act Program (ARRA) CFDA 84.384A

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

*** 15. Descriptive Title of Applicant's Project:**

Arizona Education Data Warehouse (AEDW)

Attach supporting documents as specified in agency instructions.

Attachment:
Title :
File :

Attachment:
Title :
File :

Attachment:
Title :
File :

Application for Federal Assistance SF-424 Version 02

16. Congressional Districts Of:
* a. Applicant: AZ-ALL * b. Program/Project: AZ-ALL

Attach an additional list of Program/Project Congressional Districts if needed.
Attachment:
Title :
File :

17. Proposed Project:
* a. Start Date: 5/1/2010 * b. End Date: 4/30/2013

18. Estimated Funding ($):

a. Federal	**$ 20000000**
b. Applicant	**$**
c. State	**$**
d. Local	**$**
e. Other	**$**
f. Program Income	**$**
g. TOTAL	**$ 20000000**

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

[ ] a. This application was made available to the State under the Executive Order 12372 Process for review on .
[ ] b. Program is subject to E.O. 12372 but has not been selected by the State for review.
[X] c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)**

[ ] Yes [X] No

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

[X] ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix:	* First Name:	Margaret
Middle Name:		
* Last Name:	Dugan	
Suffix:		

Title:	Deputy Superintendent of Public Instruction
* Telephone Number:	(602)364-2339 Fax Number:
* Email:	MARGARET.DUGAN@AZED.GOV
* Signature of Authorized Representative:	* Date Signed:

Application for Federal Assistance SF-424 Version 02

*** Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

U.S. DEPARTMENT OF EDUCATION

BUDGET INFORMATION

NON-CONSTRUCTION PROGRAMS

OMB Control Number: 1894-0008

Expiration Date: 02/28/2011

Name of Institution/Organization:
Arizona Department of Education

Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.

SECTION A - BUDGET SUMMARY

U.S. DEPARTMENT OF EDUCATION FUNDS

Budget Categories	Project Year 1(a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	$ 6	$ 0	$ 0	$ 0	$ 0	$ 6
2. Fringe Benefits	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
3. Travel	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
4. Equipment	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
5. Supplies	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
6. Contractual	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
7. Construction	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
8. Other	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
9. Total Direct Costs (lines 1-8)	$ 6	$ 0	$ 0	$ 0	$ 0	$ 6
10. Indirect Costs*	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
11. Training Stipends	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
12. Total Costs (lines 9-11)	$ 6	$ 0	$ 0	$ 0	$ 0	$ 6

Indirect Cost Information** ***(To Be Completed by Your Business Office)**:**

If you are requesting reimbursement for indirect costs on line 10, please answer the following questions:

(1) Do you have an Indirect Cost Rate Agreement approved by the Federal government? [X] Yes [ ] No

(2) If yes, please provide the following information:

Period Covered by the Indirect Cost Rate Agreement: From: 7/1/2009 To: 6/30/2010 (mm/dd/yyyy)

Approving Federal agency: [X] ED [ ] Other (please specify): _____ The Indirect Cost Rate is 13.5%

(3) For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:

[X] Is included in your approved Indirect Cost Rate Agreement? or, [ ] Complies with 34 CFR 76.564(c)(2)? The Restricted Indirect Cost Rate is 0%

ED Form No. 524

U.S. DEPARTMENT OF EDUCATION

BUDGET INFORMATION

NON-CONSTRUCTION PROGRAMS

OMB Control Number: 1894-0008

Expiration Date: 02/28/2011

Name of Institution/Organization:
Arizona Department of Education

Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.

SECTION B - BUDGET SUMMARY

NON-FEDERAL FUNDS

Budget Categories	Project Year 1(a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
2. Fringe Benefits	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
3. Travel	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
4. Equipment	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
5. Supplies	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
6. Contractual	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
7. Construction	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
8. Other	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
9. Total Direct Costs (lines 1-8)	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
10. Indirect Costs	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
11. Training Stipends	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
12. Total Costs (lines 9-11)	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Standard Form 424B (Rev.7-97)

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management, and completion of the project described in this application.

2. Will give the awarding agency, the Comptroller General of the United States, and if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.

3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.

5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. "4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).

6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. "1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. '794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. "276a to 276a-7), the Copeland Act (40 U.S.C. '276c and 18 U.S.C. "874) and the Contract Work Hours and Safety Standards Act (40 U.S.C. " 327-333), regarding labor standards for federally assisted construction sub-agreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. "1451 et seq.); (f) conformity of Federal actions to State (Clear Air) Implementation Plans under Section 176(c) of the Clear Air Act of 1955, as amended (42 U.S.C. "7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended, (P.L. 93-523); and (h) protection of endangered species under the Endangered Species Act of 1973, as amended, (P.L. 93-205).

12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. "1721 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

13. Will assist the awarding agency in assuring compliance

of 1975, as amended (42 U.S.C. " 6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) " 523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. " 290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. ' 3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Titles II and III of the uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

8. Will comply, as applicable, with the provisions of the Hatch Act (5 U.S.C. "1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. '470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. "469a-1 et seq.).

14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.

15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. "2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.

16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. "4801 et seq.) which prohibits the use of lead- based paint in construction or rehabilitation of residence structures.

17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations and policies governing this program.

Signature of Authorized Certifying Representative:
Name of Authorized Certifying Representative: Margaret Dugan
Title: Deputy Superintendent of Public Instruct
Date Submitted: 10/28/2009

Approved by OMB 0348-0046 Exp.

Disclosure of Lobbying Activities

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

1. Type of Federal Action:	**2. Status of Federal Action:**	**3. Report Type:**
[ ] Contract [X] Grant [ ] Cooperative Agreement [ ] Loan [ ] Loan Guarantee [ ] Loan Insurance	[ ] Bid/Offer/Application [X] Initial Award [ ] Post-Award	[X] Initial Filing [ ] Material Change **For Material Change only:** Year: 0Quarter: 0 Date of Last Report:

4. Name and Address of Reporting Entity:	**5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:**
[X] Prime [ ] Subawardee Tier, if known: 0 Name: Arizona Department of Education Address: 1535 West Jefferson City: Phoenix State: AZ Zip Code + 4: 85007- **Congressional District, if known:**	Name: Address: City: State: Zip Code + 4: - **Congressional District,** if known:
6. Federal Department/Agency: US Department of Education	**7. Federal Program Name/Description:** Statewide Longitudinal Data System CFDA Number, if applicable: 84.384A
8. Federal Action Number, if known:	**9. Award Amount,** if known: $0
10. a. Name of Lobbying Registrant (if individual, last name, first name, MI): Address: City: State: Zip Code + 4: -	**b. Individuals Performing Services** (including address if different from No. 10a) (last name, first name, MI): Address: City: State: Zip Code + 4: -
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	Name: Margaret Title: Dugan Applicant: Arizona Department of Education Date: 10/28/2009

Federal Use Only:	Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements.

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal Loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form - LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Statement for Loan Guarantees and Loan Insurance.

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee or any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions. Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

APPLICANT'S ORGANIZATION	
Arizona Department of Education	
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Prefix: First Name: Margaret	Middle Name:
Last Name: Dugan	Suffix:
Title: Deputy Superintendent of Public Instruct	
Signature: _____	Date: 10/28/2009

ED 80-0013 03/04

SUPPLEMENTAL INFORMATION REQUIRED FOR DEPARTMENT OF EDUCATION GRANTS

1. Project Director:

Prefix:	* First Name:	Middle Name:	* Last Name:	Suffix:
	Donald		Houde	

Address:

* Street1: 1535 West Jefferson, Bib #17

Street2:

* City: Phoenix

County:

* State: AZ* Zip / Postal Code: 85007 * Country: **USA**

* Phone Number (give area code)	Fax Number (give area code)
(602)364-1368	

Email Address:

DONALD.HOUDE@AZED.GOV

2. Applicant Experience

Novice Applicant [ ] Yes [ ] No [X] Not applicable

3. Human Subjects Research

Are any research activities involving human subjects planned at any time during the proposed project period?

[ ] Yes [X] No

Are ALL the research activities proposed designated to be exempt from the regulations?

[ ] Yes Provide Exemption(s) #:

[ ] No Provide Assurance #, if available:

Please attach an explanation Narrative:

Attachment:
Title :
File :

Project Narrative

Project Narrative - Project Abstract

Attachment 1:
Title: **Project Narrative_Project Abstract** Pages: **1** Uploaded File: **Project Narrative_Project Abstract.pdf**

Abstract: Arizona Education Data Warehouse (AEDW)

Arizona will improve, expand, and broaden the scope of its now-operational (grades P-12) Arizona Education Data Warehouse (AEDW) Student Longitudinal Data System (SLDS). The vision of this far-reaching project is to support the career readiness of students for the workforce and provide a foundation to enable them to achieve their life goals. Major goals in support of this vision are: to improve every student's educational experience and raise achievement levels from preschool through postsecondary education; to significantly broaden linkages between teacher and student information by restructuring and improving existing systems; to improve Arizona's existing discipline and non-violence intervention solution; to create a master data management system to support the wide array of education-related programs and support services; to provide a 360-degree view of education financial data; to safeguard personal information by developing a statewide identity management and single sign-on system with identity federation; and to establish a comprehensive data governance and training organization managing ongoing content and technical training. In support of these goals, this project will produce five major outcomes:

Expanded Data Content Scope and Provision of Supporting Instructional Tools and Technology. Expansion of AEDW scope and instruction is necessary for nearly all system capabilities and elements of the SLDS. Every enhanced education-related service and program offered by Arizona requires amplified data about participants, students, organizations and facilities. To achieve this and to meet the challenges of Arizona's educational environment data collection processes, existing inadequate student information systems, financial data systems, and identity management systems will be restructured and enhanced.

Improvement of Student and School Performance Measures. To understand whether an individual child is making acceptable progress in accruing needed academic skills, Arizona will employ the Colorado Growth Model (CGM). The current academic progress of individual students will be measured relative to the progress of their academic peers through an intergovernmental agreement. The system will support interoperability with agencies and institutions, both within the state and outside the state.

Expansion of the Data Warehouse. The existing AEDW uses student and school data elements and makes available 60 student-related measures via a web-based portal. All new data from outcomes 1 and 2 must still be developed and added.

Creation of Data Governance, Training and Communications Organizations. Outcomes 1 through 3 will double the number of data providers, the content and volume of data, and the number of information measures. A rigorous change control organization and process will be created to bring about more reliable information in support of education decisions, by assessing and ensuring the quality and the integrity of data in the system, providing extensive training and communications methodology to the user community.

Expansion of Technology Infrastructure. To achieve Arizona's desired outcomes requires additional desktop support, workstation and UI tools, servers and databases, bandwidth, and enhanced security and data administration. This expansion will result in significant improvements in communications with higher education data systems, and enhance both data exchange and interoperability among a variety of agencies and institutions.

Project Narrative

Project Narrative - Project Narrative

Attachment 1:
Title: **Project Narrative** Pages: **30** Uploaded File: **Project Narrative.pdf**

a. Need for Warehouse Project

The Arizona Department of Education's (ADE) education reform initiatives are focusing on four areas: driving excellence in teaching by recruiting, developing, retaining, rewarding and equitably distributing quality teachers and principals; providing LEAs instructional support tools, and technology that enable teachers to target and measure improvement at individual student levels; adopting standards and assessments for success in college or the workplace that include international benchmarks; and supporting struggling schools by providing information and insight on issues which affect academic achievement. This project will build upon existing technological investments to increase the quality and content of data, resulting in improved student achievement and measures of success throughout Arizona's education ecosystem.

ADE has dedicated significant resources for the past three years to re-chart Arizona's education data management roadmap and an enterprise business intelligence solution. At the heart of the solution is the preschool to high school (grades P-12) Arizona Education Data Warehouse (AEDW). In support of the AEDW, core organizational structures were established to manage the critical areas of governance, training, information security, analysis, project management, operations, infrastructure management, quality assurance, end-user support, and professional solutions development.

The AEDW will be expanded in content and technology to match the state's educational initiatives. This requires restructuring the source data collection systems which provide AEDW data content, enhancing data training and governance, and providing additional student and school performance measures. Project needs are described in outcome order:

- Outcome 1: Expand Data Content Scope and Provide Instructional Support Tools and Technology
- Outcome 2: Improve Student and School Performance Measures
- Outcome 3: Expand the Data Warehouse
- Outcome 4: Establish Data Governance, Training and Communications
- Outcome 5: Expand Technology Infrastructure

All outcomes take into consideration the requirements of state fiscal stabilization fund phase II. Implementation of the outcomes provides Arizona with information to achieve equity in teacher distribution, support struggling schools and support standards and assessment requirements.

Expand Data Content Scope and Provide Instructional Support Tools and Technology

EXPAND STUDENT DATA COLLECTION AND SOURCES

ADE oversees public education and provides education- related and support services to a very wide population. Apart from the normal business streams of schools and support programs for P-12 students, ADE provides services and support to 0-5 year-old children, juveniles in secure care, families, adults, college students, community groups and seniors—as well as to Bureau of Indian Education (BIE) schools. *(see figure 1.1)*

Each of the services and programs supported by ADE requires basic data about the participants, students, organizations and facilities where these are offered, along with the relationship between

the providing and parent organizations. ADE needs to know what education and related services are being provided at each facility, to whom, how these offerings are funded, and the physical characteristics of all facilities used in the educational arena. Information is collected about many of these elements, but the data collection processes, student information systems, financial data, and identity management systems are products of the 1990 public education setting and must be restructured and enhanced to meet the challenges of Arizona's 21st century educational environment.

The current AEDW is in development and includes measures about K-12 student memberships in schools, participation in SPED, ELL and support programs, AIMS achievements, attendance and other funding factors. For AEDW to be expanded to include all birth-to-work data (P-20 and early childhood), development of production data systems to collect, process, store, and manage the extended data are needed. This also requires unique identity management, development (or redevelopment) of collection systems, enhanced data and physical security, re-architecting the master data management components, and creation of a state-offered student management system option for small LEAs.

In particular, the data collection system processes and structures need comprehensive analysis and structuring to provide state education agencies with all data necessary for education management from birth to work. This work must be completed so that the SLDS project can continue to absorb the data and create measures around them. The key areas of data collection that need restructuring include student data (birth to work: early childhood, preschool, K-12, college, post-college), financial data systems (state school financing, state and federal grants management), teacher data (certification and highly-qualified attribution, as well as personnel identification and tracking), and a suite of master data management areas (school facilities, nutrition sites, business licensing, and other funding recipients).

Besides the regular teacher data collection systems, we must be able to link students and teachers, by grade or course. This data area will include courses taken by high school students in vocational and community colleges, plus the teachers of those courses and resulting grades. The course information will be available to ECAP planning. Course achievement will be linked with standardized assessment results to analyze the level of congruity for various student populations.

Preschool and early childhood data should have the same focus as K-12 student data. ADE doesn't currently collect non-state-funded preschool student and facility data, such as Head Start programs and private preschools on public district sites. This data is critical to understanding the impacts of early childhood and preschool education on kindergarten attainments and the first standardized state assessment taken in grade three. Later, longitudinal data could help determine the impact of early childhood and preschool programs on later stages of the education pipeline.

There are data collection requirements for K-12 tribal students, on and off the reservations. During the K-12 sequence, many of the reservation students change from BIE-controlled schools to Arizona public schools—and vice versa. The difficulty here is not only tracking achievement from school to school, but also targeting educational interventions for those struggling with cultural and environment changes between the two. Longitudinal data sharing between BIE and ADE would help eliminate risks for dropping out of both systems and encourage students to achieve attainable goals by supporting their progress through ECAPs.

Other mobile student groups require additional data collection, enhanced measures, and inter-agency sharing (potentially via WICHE): migrants (using the new M6), inter-state students from

border areas, secure care (detention and corrections), and students from active military families (through MIC3). Much like the tribal students, these children move from one educational situation to another, some regularly. Many of these students are at-risk. Secure care students may go from a regular public school to a rehab program to a secure care facility and although there is required academic record sharing, their achievement results and educational plans may not follow as quickly. It is incumbent upon the state to not let these children fall by the wayside because of frequent transitions. We must be able to track them continuously and provide academic progress along their educational migrations.

Along with the elementary and secondary student course data, we need to collect post-secondary student college and readiness evaluations, post-secondary attainment, and student remediation needs. Remediation coursework in post-secondary level is an indicator of gaps between secondary and post secondary. Results of remediation studies will enable better targeted instruction for high school students.

EXPAND STUDENT ENVIRONMENTAL DATA

Expand discipline and school safety data

The AZ SAFE system was developed with a federal grant and provides LEAs with information needed to improve school safety and to meet federal and state reporting requirements. All public schools in Arizona are required to report safety-related incident and disciplinary action data to ADE through AZ SAFE, beginning this school year (FY 2010).

AZ SAFE produces reports that provide school administrators with the information needed to evaluate individual student and group behavior, design school-wide and individual student interventions and strategies, and improve disciplinary practices. AZ SAFE has also improved the ability of ADE to accurately report information to the Education Data Exchange Network (EDEN/EDFACT) and to easily accommodate the frequent changes to these requirements without imposing any additional burdens on schools.

To provide a complete perspective of students' disciplinary infractions, data in AZ SAFE needs to be augmented by data on juvenile referrals, detention, and adjudication by the county juvenile courts. A need for further research regarding juvenile transitions between public schools and secure care surfaced from discussions with Arizona Supreme Court juvenile justice authorities and analysis of their data. In 2008, 46,750 juveniles ages 8-18 were referred to authorities for diversion, detention, or adjudication. Though not all were public school students, the referred juveniles constitute 4.91% of students in public schools from this age group in 2008. Of the number referred, 25% were detained.

This court data and data recommendations from pilot schools that used AZ SAFE in 2009 require enhancements to the system. The enhancements are in line with the federal direction of improving crime reporting and data-driven decisions by the school, including data augmentation, ad hoc reporting tools, and auto-generation of parent notification letters. Additional reporting is needed to improve campus safety with real-time reporting containing suspension and expulsion data, as well as other usability tools.

Discussions in the numerous statewide pre-implementation workshops indicated the need for research on perceptions of school climate. Also, as 2010 is the first year of statewide data collection, an audit of the data collected is needed to improve data quality.

The changes will require extensive school-level professional development and technical assistance. Part of this work will be for training on proper and improper use of incident and disciplinary action data and part will be to support school personnel in effective utilization of data to improve school climate and safety.

Collect student home environment factors

Several initiatives are in development for on-line and home delivery of curriculum, particularly for rural and proximity-challenged students. To determine delivery options and methods, ADE will need to know what kind of technology is available to students in their homes. In addition, student economic factors that are needed to determine targeted programs and other support opportunities are now collected sporadically at the school level and submitted to ADE in aggregate. We will need to establish a data collection process and protocol for both kinds of data at the LEA and SEA level and include the data within the new student data collection system. Once in the production systems, we will be able to load it to the data warehouse, measure it by a variety of criteria, and use it as criteria in other measures such as AIMS achievements.

Implement ECAP (Education and Career Action Plan) system

The Arizona Statewide Education and Career Action Plan (ECAP) will be an individualized planning process to help about 250,000 high school students develop individual career aspirations and goals, and to examine how their curriculum choices may affect their goal achievement. In an ECAP system, students identify their goals and the career counselor and/or teachers respond with an action plan of required coursework and study. ECAP will be accessible to students in grades 9-12, parents, school career counselors and teachers. It will combine, for each student, his/her interests, abilities, talents, academic planning and progress toward career goals into a personalized education roadmap.

Teachers will monitor students' academic performance and response to instructional and behavioral intervention in view of the student career plans and intercede if a student falters. Students may adjust the ECAP as they mature and evolve throughout their high school years. After three to four years' usage, ECAP will be able to provide data on student preparedness for civil or military careers. Data from ECAP will be incorporated in the AEDW to support measures on readiness and ECAP process effectiveness.

Given student mobility within the Arizona public schools, the ECAP process can be successful only if managed by a rigorous enterprise class web-based solution. In the future, the usage of this system can be extended to post-secondary students.

Enhance acquisition of LEA data

Current acquisition of data from LEAs is done through submission of data transaction files via batch submission every 20 days. This means that there is a significant delay in the accuracy of current data stored at ADE, which impacts accuracy of the payment and reporting processes. Both ADE and the LEA spend unnecessary resources on data corrections. The implementation of near-time data acquisition from LEA SMS systems will be of benefit to both LEAs and ADE. It

will also require negotiation with 15 SMS vendors regarding enhancement of their software to accommodate this change in data delivery.

LEA Student management systems (SMS) must be enhanced to enable implementation of new data exchange technology that supports near-time data submission, validation, and verification. ADE intends to create a robust system that allows data push or pull and/or have ADE receive direct access to pull from LEA databases. Consequently, the changes will require SMS software modification and technical support. In addition, the LEAs will need training on the submission processes along with guidance about user identification federation (see EduAccess subtask) that will be involved.

CREATE A STATEWIDE SMS OPTION FOR LEAS

Arizona has many remote small LEAs in rural and high-poverty areas and hundreds of small charter schools that cannot afford to contract with a student management system vendor, or to install a sophisticated technology infrastructure. At the moment, these entities use the online version of ADE's student data submission and maintain their local records in isolated databases or spreadsheets. To provide integrated support that allows such LEAs to manage their students and submit data easily to the state student data system, ADE will create a statewide SMS option for such schools.

The envisioned system will provide both local student management functions and data collection required by ADE. It will have an easy-to-use interface for entities which do not have technical support and provide a method to allow non-standard school year calendars (like year-round, part-day, daily, secure care). It will also provide the opportunity to capture non-public student data for schools which have data relationships with ADE for assessments, SPED support, and federal grant funding distribution. It is intended for use by any kind of LEA, including rural public districts, private and federally funded preschools, county secure care schools, one-room schoolhouses, or tribal schools.

EXPAND SCHOOL STAFF DATA

ADE currently collects school personnel data in disparate systems. These systems currently include a teacher certification system (CERT), highly qualified teachers (HQT), and school district employee report (SDER). These systems were created separately over the years and have remained independently structured. To achieve the new initiatives related to teachers and principals, ADE must create a new integrated system that supports public school personnel employment, certification of teachers and other education professionals, curricula assignment of teachers for determination of teacher compliance with HQT requirements, and data about preparation pathways of teacher aides.

Every school staff member will carry a unique ID. The ID will be used in the student-teacher relationship record of the new student data system and in computing metrics for teacher quality and performance, such as student academic achievements and growth.

The SDER system is an annual snapshot of staff employed on October 1st, capturing positions assignments, salaries, and years of experience. It was designed mainly for calculating teacher experience index which is a factor in state equalization funding. Changes within the fiscal year

are not captured until the following year, limiting the usability of the data. The redesign of this component will have to provide for a continual update and inclusion of charter schools.

Course and Class Taught

The new system will have a component to collect grade, class, and courses taught by each teacher and teacher aide. This data is available in most LEAs implementation of SMS software. Where it is not available, LEAs will use the new statewide SMS.

IMPLEMENT EDUCATION ENTITY MASTER DATA MANAGEMENT

Master Data Management

ADE currently collects a substantial number of master data items, predominantly about facilities providing education (like physical and on-line schools, juvenile secure care facilities), programs (disabled student, languages, nutrition, etc), and organizations (community services, Head Starts, Boys and Girls Clubs, tribes) that are serviced or supported through ADE.

The central entity database, Enterprise, was developed originally to support ADE's primary function of school funding by keeping track of every entity that received funds for students. As the functions of ADE expanded, the data collection scope and flexibility need grew substantially. ADE deals with a much wider range of entities now, like private and parochial schools, the county coalition Head Start grantees, privately held behavioral health facilities, even tribal dormitories. ADE also has many more complex relationships with a myriad of entities beyond school districts and charter schools, including US Dept. of Agriculture nutrition program support to adult day and child care sites, migrant programs, schools on reservations that are overseen by both ADE and BIE, public schools and charters on- and off- military bases.

Another central system keeps track of the programs and services offered by entities, as well as collecting data about which students use the programs and services at what place. This system, SAIS (Student Accountability Information system), depends on the Enterprise system for entity data. The combination of these two systems can tell you which student is enrolled in an English language program, at what school, during what time period. However, like Enterprise, the major capabilities of SAIS were developed to track students for school funding. Currently, ADE is involved in supporting many programs and services that are beyond state funded P-12 education, such as tracking Arizona State University students who are teacher candidates, expectant mothers and children up to three years old in early childhood programs, and tribal students who take the state standardized test at BIE schools. As the opportunities to participate in new programs expanded, so did the complexity of student relationships. Many students are attending more than one school at a time, or are involved in many more programs at the same time.

Due to the shortcomings of the existing Enterprise system, ADE was forced to create artificial entities and artificial relationships between those entities in Enterprise, as well as squeeze new non-student types and programs into SAIS. While this allowed ADE to continue capturing data for new kinds of students, entities, programs and relationships, it has become increasingly difficult to manage and use the data effectively. It also inhibits wide roll-out of the new EduAccess identity management system, which requires clear hierarchical structures for the definition of user groups.

The analysis of school funding sources for the school phase of AEDW has exposed the urgent need to redesign ADE master data management. A new data model has been developed; its full development and implementation require substantial resources that were not included in the scope of the original SLDS project. To accomplish this level of structure, we must engage the services of a data architect to determine directions and oversee progress.

Expand EduAccess (statewide identity management)

ADE has multiple system domains, each of which requires its own access management. Current users have a unique ID to access functions, but they may have several, depending on how many roles they have or how many entities that they work for. ADE has begun integrating user sign-on and account management for all its domains, as well as externally provided resources, by establishing an agency-wide identity management system (IDMS). The IDMS, EduAccess, provides a single user account management interface to manage access to all ADE-provided resources, including the AEDW. It will also federate identity management and authentication services with trusted partners such as school districts. The result will be faster access to distributed resources by reducing the user's need to remember and deal with multiple usernames and passwords, lower sign-on failure rate, upgraded system security including the ability of administrators to change a user's access to all system resources in a coordinated, consistent way, and improved administrator response when adding/removing users and modifying access rights.

EduAccess will contain identification and credential information to verify the user's unique identity and support the user's authentication for any secondary domains with which interaction may be required. It will also provide a single user account management interface through which all the component domains may be managed. EduAccess will be used to provide full identity management and authentication services for trusted external partners that do not have the technical capabilities for full federation (such as small school districts).

Although the first phase of EduAccess is underway, the current version is limited to one entity access per person. Once the master data management project is completed with more accurate hierarchy trees, EduAccess will be able to grant users access to the uppermost entity in the tree. Data structure enhancements will provide multiple access paths where appropriate, such as for the State Board of Education and the State Charter Boards, who must have the ability to look across all entities within AEDW measures. Additional development will be needed to provide appropriate user interfaces to post-secondary entities, preschools, and other data providers not currently submitting data to ADE and also to allow thousands of new users, such as teachers, to be identified and federated across multiple new data systems.

RESTRUCTURE EDUCATION FINANCIAL DATA

Within the production environment that feeds the warehouse systems, there are a series of financial data systems. Most of these systems were created 10 years ago to support the then-new student data system and payments to schools. Much like the other changes to ADE's business areas, the financial systems have been modified regularly to shoehorn in the additional functions necessary for state payments and federal financial tracking.

The financial data systems have key inter-relationships with the student and master data systems. Accurate student data is used to determine per-student state funding, federal entitlement and grant fund distribution, and other supplemental state funding.

Within the AEDW, the initial perspective of financial data to be included related to state school funding, state and federal grant funding allocations, USDA child nutrition grant programs, and funding provided by other state agencies, like the Arizona State Land Department's classroom site funds (derived from sales and leases of school trust land). Comprehensive funding source analysis revealed a multitude of other sources that weren't part of the original perspective, the inclusion of which will enable a complete view of actual education funding.

This additional data comes predominantly from sources external to ADE's current financial systems, some of which can be extrapolated out of existing manual reporting mechanisms and some which would require intergovernmental agreements. For example, county education service agencies receive direct federal funding, which turned up during examination of the federal spending data made available online this year. They also receive state grants which are not funneled through ADE. Both of these funding lines are distributed to districts or schools outside of ADE's purview. ADE will need data sharing agreements with each of the 15 counties to obtain the detailed data.

Much like the federal website project to gather all lines of funding across the federal government, AEDW is looking to create a complete funding view of the LEAs. This view is essential for Arizona's educational need management, equity funding distribution, and state spending-per-student studies. It will also provide a federal view of total funding to Arizona education entities.

Although the analysis of the additional data has been completed, along with mapping of the hierarchies that provide this funding, the current AEDW project will not be able to achieve complete implementation within the original grant window ending July 2010. Data from newly discovered funding sources requires sharing agreements, structured landing zones, data architecture and databases, and development of ETL, as well as reverse engineering of current systems to ensure that critical business rules are accounted for.

Improve Student and School Performance Measures

Perhaps the most important facts for an Arizona parent, teacher or administrator is whether an individual child is proficient in the academic skills expected of him or her and, if not, whether that child is making sufficient progress to become proficient as he/she approaches graduation. While information about individual student proficiency as measured by Arizona's standard assessment is available, information about growth toward proficiency is not.

ADE recognizes that the quality of public education rests on the ultimate academic success of each child in its care and that it is necessary to measure each child's proficiency and also to measure growth towards proficiency throughout his or her assessment history. Without a growth measure, determining if progress is adequate to attain proficiency is not possible.

The current AEDW provides measures of how well a child has performed on each annual assessment that he or she has taken. Having had no appropriate source, however, the warehouse lacks a measure of individual student growth. The Colorado Growth Model (CGM), developed for the Colorado Department of Education, is being used by several states and is also part of Project LEARN's objectives for other states. ADE will use the CGM to evaluate individual student and school level growth.

The CGM produces a measure of an individual student's current academic progress relative to the progress of that student's academic peers. The measure, student growth percentile (SGP), is obtained using a statistical technique called quantile regression. The measure is normative rather than absolute, so its calculation is not dependent upon Colorado's state assessment.

Individual student growth percentiles can be summarized for any group of students using the median SGP over the group. In particular, we can obtain a school's or district's growth measure by calculating the median SGP across all students in that school or district, respectively. We can then compare growth measures of schools within a district or districts within the state. A group growth measure can be adapted to measure teacher performance as well. The Colorado Growth Model provides tools for the calculation and display of such summary measures.

Expand the Arizona Education Data Warehouse - AEDW

The current AEDW makes use of the student data available in ADE operational systems: school membership, needs and program participation, absence/attendance (FYs 2003-2009) and AIMS (FY 2005-2009). This scope of data elements was dictated by state legislation in 2001. Transactional data from the operational systems, fed by the LEAs' SMS, is transformed into fact and dimension formats. These formats enable automated aggregation of facts by pre-defined relevant combinations of dimensions (criteria). The aggregation of a fact by a set of dimensions is called a measure. Simple facts are transformed to complex facts (e.g. two consecutive school/ grade memberships are transformed to a school/grade transition fact supporting the analysis of student mobility; single annual AIMS results of a student are transformed to a student multi - years progression array). AEDW has 60 student-related measures available for use via a portal that also includes guiding and training material. So far, access and training has been provided to ADE staff and selective LEA staff and researchers. School and teacher measures (based on current operational data) are in development (see Outcome 1).

Numerous live demonstrations and extensive users' experience have proved the power of AEDW as an ultimate decision support tool for both LEAs and SEAs. Applying the AEDW methodology and technology to the data elements contained in Outcomes 1 & 2 and post secondary data is considered the best way to provide decision support to all levels of education organizations.

The State Data System Advisory Panel of the State Higher Education Officers has issued a draft on the desired capabilities of a state data system for post secondary education, including data elements needed for post secondary students from the systems of higher education organizations. For Arizona higher education organizations, this data can be fed directly to AEDW. Arizona Higher Education officials can define derived facts and measures to support their particular interests and issues relating to all or particular stages in the P-20 workforce transitions.

Establish Governance, Training and Communications

The result of Outcomes 1 and 2 will double the number of data providers, content and volume of data relative to the current AEDW data scope. In addition, the results of Outcome 3 will at least double the number of information measures designed for AEDW's data scope, and significantly increase the number of users by providing information measures aggregated at teacher level.

To develop and implement Outcomes 1 and 2 the project management will have to engage, communicate with and train approximately the following number of people or entities:

- 65 County Superintendents and County Educational Services Agencies staff
- 5000 School district superintendents, principals, and administrators
- 900 Charter holder and charter school administrators and principals
- 90,000 Teachers in district and charter schools
- 20 SMS vendors
- 250 LEAs IT managers/coordinators
- 400 Organizations providing pre-K education funded by federal agencies
- 50 Arizona higher education institutes
- 50 Other AZ state and tribal agencies involved in education
- Parents/guardians of 1.1 million students

This constituency will require ongoing communications about data, development progress and usage. It will also require training for usage of AEDW measures, tailored to constituent type.

Systematic data governance— managing confidentiality, standards, quality, documentation, archive and change control— is an absolute necessity given the extensive scope of the entities involved in providing source data and using the production data systems and the data warehouse.

Expand technology infrastructure

Outcomes 1-3 mandate expansion of the technology infrastructure at ADE, which includes expansion of computing resources, end-user hardware and software, and network capacity. Given the magnitude of systems to be implemented and restructured in Outcomes 1, 2 and 3, sustainability of the technology infrastructure is crucial to the expanded internal and external user communities and requires significant focus. Disaster recovery and business continuity are indispensable to implementation of the scope of these systems and ongoing operations. The massive training that will be needed for the new data collection systems requires tools for an appropriate training environment.

b. Project Outcomes

There are a multitude of process and development needs for the expansion of the warehouse business content and technology. Some are knowledge-based (production data business analysis, communication plans, training and user support, governance, oversight, master data management), some are tool-based (event/data usage logging, identity management, archival management), and some are combinations of knowledge and tools (usability, data and system quality assurance, logical and physical data security, architectural agility, scalability, high availability, predictability and reliability, along with operational management, disaster recovery and business continuity). Each of the major outcomes described below must internally address these areas as part of their delivery package.

- Outcome 1: Expand Data Content Scope and Provide Instructional Support Tools and Technology
- Outcome 2: Improve Student and School Performance Measures
- Outcome 3: Expand the Data Warehouse

- Outcome 4: Establish Data Governance, Training and Communications
- Outcome 5: Expand Technology Infrastructure

Outcome 1: Expand Data Content Scope and Provide Instructional Support Tools and Technology

SUBTASK 1: EXPAND STUDENT DATA COLLECTION AND REDEVELOP DATA COLLECTION SYSTEMS

This subtask has a number of complex components. To successfully collect and integrate many new data elements will require redevelopment and re-architecture of the production systems that collect source data, as well as interagency and data delivery agreements. Each of the sub-activities within this subtask contains implicitly data agreements, cross-platform/cross-system technical and data architectures, security standards, and extensible data modeling.

1.1.1 Re-architect the existing and new data and the data collection processes. New data include student contact (home address, Guardian, last 4 SSN digits), immunization, curriculum and course completion, student-teacher link at a course and/or grade level, post secondary courses taken while a student is in high school, post secondary readiness (SAT, ACT, AP achievements), additional data as required by incorporation of student populations not included in the current student data systems.

1.1.2 Incorporate birth-preschool age children into the new student data system including children in Head Start programs, Early Childhood programs, preschools programs provided by public schools, some for a fee. The entities providing education for this age group will be included in the new master data management system, see Outcome 1.

1.1.3 Incorporate mobile students into the new student data system. This population includes children of migrant families (source data is in COESTAR and M6 systems), children of active military families (source data is in MIC3 system), students in detention and behavioral rehabilitation facilities (source data is in correction state agencies), interstate students the inclusion of which requires collaboration with Arizona adjacent states to establish data sharing.

1.1.4 Incorporate tribal students educated by BIA, BIE and other non public schools. The current data collection is partial and fragmented. Complete inclusion of tribal students in the new student data system is a top priority for the tribal authorities in Arizona.

SUBTASK 2: EXPAND STUDENT ENVIRONMENTAL DATA

1.2.1 Expand school safety data collection and usability (AZ SAFE). 50 schools piloted the AZ SAFE system during FY 2008-2009 and pointed out the need to enhance the system as follows: include seclusion, restraint, and corporal punishment in the mandatory list of disciplinary actions; enable LEAs to define disciplinary actions unique to their needs; capability to download granular data from AZ SAFE to LEAs for developing local reports specific to their circumstances; auto-generate letters for parent notification; alert messages for actions requiring compliance with due process rights of students and adherence to requirements of Special Education students with Individualized Education Plans (IEPs); report real-time suspensions and expulsions with removal reason for local

board review; collect juvenile court data; and modify AZ SAFE reporting to accommodate these enhancements.

1.2.2 Collect School Safety data via intermittent studies. FY 2010 is the first year of statewide data collection in AZ SAFE. An audit of data collected by the end of the year is essential to ensure that all LEAs are capturing and submitting incidents data as required.

In addition to factual data collection in AZ SAFE there is a need to collect data on perceptions about school safety. ADE will conduct a survey to assess the perception of school safety climate at the school level by implementing survey tools. Assessment at the school level is necessary for schools to improve school climate knowledge beyond the information provided by AZ SAFE incident data.

Given the size of the student population involved in behavior resulting in judicial referrals, ADE will also conduct a study of student transitions in and out of behavioral health and secure care facilities.

1.2.3 Provide School Safety professional development and technical assistance. School and LEA personnel need further professional development and technical assistance on proper and improper use of incident and disciplinary action data and on effective utilization of data to improve school climate and safety.

1.2.4 Collect student home environment considerations (economic factors and computer availability). Develop periodic standard statewide survey to collect data from students' guardians on household economic factors and availability of computers and internet access. The survey will be conducted by the LEAs and data submitted to new student data system. LEAs will be consulted in the formulation of the survey.

SUBTASK 3: IMPLEMENT AN ECAP (ELECTRONIC CAREER ACTION PLAN) SYSTEM

The purpose of ECAP is to enable students to plan their future education and career in collaboration with their parents, teachers, and school career counselors. ADE's Career Technical Education Division recently acquired a similar tool from University of Oregon, AZCIS. AZCIS provides students with career information, academic and civil service practice tests, and self assessments relative to inclinations and aspirations, but does not support commensurate high school curriculum planning or collaboration with teachers, parents, and school career counselors.

1.3.1 Acquire and implement centralized ECAP software that supports the collection, management and user display of a secured electronic student portfolio including attributes related to academic, career, postsecondary and extracurricular activities empowering students to enter and adjust their personal information as they mature and evolve throughout their high school years. The system should be: highly available (24x7), use EduAccess to manage identity authentication and user authorization, and interface with curriculum component of the new student data system. The lessons learned from the implementation of AZCIS will be included as criteria for selection of the ECAP system.

1.3.2 Construct and conduct training on the career planning process at the LEA level, primarily for teachers and career counselors.

1.3.3 Examine and determine extensibility to post secondary students and their transitions to the workforce.

SUBTASK 4: ENHANCED ACQUISITION OF LEA DATA

Current acquisition of data from LEAs is done through submission of data transaction files via batch submission every 20 days. This means that there is a significant delay in the accuracy of current data stored at ADE, which impacts accuracy of the payment and reporting processes. Both ADE and the LEA spend unnecessary resources on data corrections. The implementation of near-time data acquisition from LEA SMS systems will be of benefit to both LEAs and ADE.

1.4.1 Determine impact of desired data acquisition processes on vendors' or LEA-originated SMS software and negotiate with all SMS vendors regarding enhancement of their software to accommodate this change in data delivery**.**

1.4. 2 Design and develop new data acquisition processes that support near-time data submission, validation, and verification for both the new ADE student data system and for the vendor SMS.

1.4.3 Provide data submission training to LEAs along with guidance about user identification federation (see EduAccess subtask) that will be involved.

SUBTASK 5: CREATE/IMPLEMENT A STATEWIDE SMS OPTION FOR LEAS

The statewide SMS option for LEAs must provide for collecting and managing student data, including personal, demographic, immunization and student contact information, enrollment and funding-related data, curriculum and teacher-student links, needs assessment and program participation, attendance and absence, college readiness (SAT, ACT, AP achievements) and concurrent enrollment and coursework in post-secondary schools. The system will have an easy-to-use interface for schools and support non-standard school year calendars. The system will service public and non-public schools like BIE, preschools and Head Starts, and private schools.

1.5.1 Determine whether to buy or build and implement an SMS system solution.

1.5.1.1 For an SMS build solution, create blueprints based on the new student data system, and develop data capture and management front-end.

1.5.1.2 For an SMS buy solution, define and conduct RFP and software selection and develop data exchange with new state student database.

1.5.2 Develop user data querying and reporting capabilities whether bought or built, to create custom reporting.

1.5.3 Create statewide training mechanism for the new SMS system and enhance the technology support center to assist users of the system.

SUBTASK 6: EXPAND SCHOOL STAFF DATA

The new school staff system will include all publicly funded schools, i.e., school districts and charter schools. It will also collect data on teachers-in-the-making from teacher pathways, including post-secondary enrollment and curricula in regular and continuing education programs.

1.6.1 Design a new school staff system that satisfies the following requirements:

1.6.1.1 Provide a certification component with online application and payment submission, tools for applicants to track application status; workflow management for certification process; online display of certification status and decision; strict data edits to ensure certificates are issued to properly qualified individuals; online access for LEA

administrators for monitoring application status of their staff; provide notification to certificate holders, LEA administrators, and Dept. of Public Safety on expiration of certifications and fingerprint background checks; and data feeds from teacher pathways.

1.6.1.2 Provide a school district employment component to provide LEAs with the ability to submit employment data files at the beginning of the schools and maintain the data over time by transaction or online submission.

1.6.1.3 Provide a HQT component to provide entry and maintenance of teacher data related to teacher qualifications as required by HQT, including grade and courses taught; determination of highly qualified status; and notification to LEAs on non-qualified teachers.

1.6.1.4 Provide tools for the Investigations Division to inquire about the veracity of application and employment data and provide workflow management process for ongoing investigations.

1.6.1.5 Create conversion process to migrate current system data to populate the new system.

1.6.2 Provide internal and external training support for the new system.

SUBTASK 7: IMPLEMENT EDUCATION ENTITY MASTER DATA MANAGEMENT

1.7.1 Implement master data management

1.7.1.1 Create master data management structures. The design for the new master data management database uses four hierarchy structures to view the role and relationships of entities. This will require data modeling and database design, as well as providing user interfaces to maintain the ongoing data entry. In addition, there will be significant effort to manually map the existing entities into the new structures for conversion and entry of extended definitions and to identify unused data.

1.7.1.2 Retrofit existing systems and link to new student data systems. New data models will require the restructuring of existing production systems and adaption or use of extended attribute availability. The data model for the new student management and EduAccess identity management systems will also address these new structures, which will require extensive coordination among all of the projects.

1.7.1.3 Collect new data about current entities by obtaining sharing agreements where appropriate or soliciting additional data from already linked sources, including definition and details for funding, legal, service role, or data relationships.

1.7.2 Expand EduAccess data security/identity management

1.7.2.1 Install and implement EduAccess infrastructure.

1.7.2.2 Develop a full-fledged system that enhances security compliance through centralized authentication and improved account administration tools and enables accurate and efficient management of thousand of user accounts with minimal new staff.

1.7.2.3 Migrate AEDW user accounts from pilot system to new EduAccess accounts.

1.7.2.4 Provide federated identity management and authentication services with trusted external partners, allowing partners to effectively and securely manage account access within their authorization sphere.

LEAs and state agencies involved in education are external partners by the nature of their relationship with ADE. In order to determine their trustworthiness in this context, a set of criteria and an evaluation process by which to determine trustworthiness has to be determined by the governance board and the chief security officer.

1.7.2.5 Enhance AEDW access privilege components to accommodate user access to multiple specific LEAs.

1.7.2.6 Train system developers regarding integration of existing applications with EduAccess.

1.7.2.7 Convert existing ADE system applications to fully utilize EduAccess.

SUBTASK 8: RESTRUCTURE EDUCATION FINANCIAL DATA

The restructure of education financial data consists of developing tools for acquiring and managing funding data sources that are ignored by ADE, as well as restructuring existing financial systems to enable streamlined payment processing and financial reporting.

1.8.1 Confirm data availability from additional funding sources and obtain data sharing agreements with the agencies and develop data acquisition processes for additional funding sources, including structured landing zone and data architecture and databases.

1.8.2 Redesign existing financial systems (state equalization appropriation, charter school funding, budget/annual financial reporting, transportation funding and teacher experience indexing, State Land Dept. classroom site and institutional funds, state and federal grant distribution management). These systems will require reverse engineering to ensure that critical business rules are accounted for.

Outcome 2: Improve Student and School Performance Measures

SUBTASK 1: IMPLEMENT COLORADO GROWTH MODEL

The Colorado growth model (CGM) provides student and school level growth indicators. It uses the Colorado state standard assessment for academic performance data, along with Colorado-specific technology for data processing, storage, and display. To use the CGM, Arizona will need to adapt the model to the Arizona state standard assessment (AIMS) and ADE technology.

2.1.1 Implement the statistical component of CGM in the ADE SQL Server environment, test relative to AIMS and make necessary adaptation.

2.1.2 Implement adapted model for student-level growth, including design and development of processes and tools for providing student-level growth information to schools, teachers and parents.

2.1.3 Develop guides for parents, teachers, and principals on student-level growth; conduct teacher and parent workshops on interpretation and use of results.

2.1.4 **Study CGM school-level growth formula** and evaluate its adequacy for Arizona; explore criteria to determine the formula for Arizona implementation; design and develop processes and tools to implement and display the Arizona formula.

2.1.5 **Conduct workshops for LEAs** on interpretation and use of school-level growth results.

2.1.6 **Analyze impact of school-level growth indicators** on AYP and AZ LEARNS; modify AYP and AZ LEARNS or develop new school performance indicators.

SUBTASK 2: CREATE METRICS FOR STATE FISCAL STABILIZATION FUND

Metrics for SFSF compliance will be collected, vetted and published by ADE for statewide consolidation by the Arizona Department of Administration.

Outcome 3: Expand the Data Warehouse

The redesign of currently collected data under outcome 1 subtask 1 is anticipated to change the current operational student data structure and their associated code values. These changes do not impact the current AEDW facts and measures but will require revision of the data transformation programs that take this operational data as a source.

Outcome 1 contains subtasks to incorporate special student groups that are currently left out (e.g. students in BIE schools, students in detention centers). Accommodating these groups in AEDW may necessitate changes in current dimension tables.

Implementation of a new education entities master data management under Outcome 1 will require replacement of the current AEDW dimensional data structures relating to these entities. The preliminary data model that has been developed is significantly richer and more complex than the existing one, implying a significant development effort.

3.1 **Revise AEDW data transformations** to match data structure changes resulting from Outcome 1 redesign of student data and education entities master data.

3.2 **Incorporate new data from Outcomes 1 & 2:** To provide longitudinal perspectives of the new data, DW dimension and fact tables and relevant measures need to be developed with particular emphasis on relationships among AIMS results, ELL assessments, student growth, and ECAPS; Accommodating student groups that are currently left out (e.g. students in BIE schools, students in detention centers) in AEDW may necessitate changes in current dimension tables; Implementation of a new education entities master data management under Outcome 1 will require replacement of the current AEDW dimensional data structures relating to these entities.

3.3 **Incorporate post secondary student data** from the student information systems of the post-secondary institutes: Develop data acquisition processes from local post secondary systems to AEDW for student data related to demographics, institution, enrollment status, financial aid, academic activity, academic remediation, academic attainment, and college to work (using the University of Arizona tracking software); Develop new dimension and fact tables for post secondary student data; Create new measures related to transition from secondary to post secondary education, post secondary education progression and attainment, post secondary transition to workforce.

This subtask needs to be pursued with full collaboration of Arizona post secondary institutions

3.4 **Enhance AEDW Portal:** expanding data dictionary to accommodate all new data; expand User Guide and portal texts to accommodate all new measures; provide a variety of user analytical and viewing tools beyond Excel 2007. As AEDW user community expands, implementation of additional user tools, some more technical and some less technical, is required

Outcome 4: Establish Data Governance, Training and Communications Organizations

SUBTASK 1: CREATE DATA GOVERNANCE ORGANIZATION AND PROCESSES

4.1.1 **Establish a data governance board** that will represent all stakeholders (universities, LEAs, county superintendents, state universities, community colleges, state agencies and BIE, etc.), set and approve guidelines related to managed data access, privacy and security, adequacy of training and data model implementation, prioritization of funding opportunities recommended by governance support groups, and resolve data conflicts. The board would also be empowered to determine the most effective way to integrate data acquisition and distribution between P-12 and higher education.

4.1.2 **Establish ADE technology governance support group** to provide recommendations on spending priorities of this grant award. It will also provide analysis and recommendations for: controlling data confidentiality and data security for stored data and data-in-flight (in transmission state); access privileges (who can see what) and access management (granting and denying); data audit management including data quality metrics, sanctions and incentives for data quality improvement; data standards for both stored and in-flight data, including definition, format, source, provenance, element level and contextual integrity rules; documentation standards for data elements (data dictionary) and systems components; data archival and retrieval management system, along with change control and change tracking. If AEDW technology does not successfully support a critical requirement, the governance group will provide an analytic recommendation.

SUBTASK 2: CREATE DATA TRAINING AND COMMUNICATIONS ORGANIZATION

4.2.1 **Establish a training and communication group** to provide training strategies, establish regional training teams, create and deliver course curricula, monitor training delivery, communicate with users and external stakeholders, provide media content and delivery methods, and deliver training content at user and train-the-trainer sessions. *(see figure 1.3)*

4.2.2 **Develop a training system** with a centralized Website for all training activities including: online course schedule and registration; subject matter/business system sites; training delivery modes (e.g. e-learning, webinars, virtual classroom, in person, movies, documentation, conferences); guidelines for training mode usage; knowledge base for user inquiries; training material and support documents; and website traffic tracking.

4.2.3 **Acquire Knowledge Base software and develop content** to assist the ADE support center in resolving users' questions and issues.

Outcome 5: Expand Technology Infrastructure

SUBTASK 1: PROVIDE TECHNOLOGY TOOLS, INFRASTRUCTURE AND SUPPORT FOR NEW SYSTEMS

(SEE FIGURES 5.1, 5.2, AND 5.3)

5.1.1 **Provide solution for new system front ends**, including desktop support and tools, including workstation and user interface tools using thin client solutions, web servers, firewalls, along with internet and data center bandwidth increases.

5.1.2 **Provide backend hardware and software to support landing zone** for inbound data streams, databases and applications, data backups and acquire sufficient physical data center space for the additional technology.

5.1.3 **Acquire technical implementation expertise** to assist with the expansion of the technology infrastructure.

SUBTASK 2: EXPAND ADE TECHNOLOGY INFRASTRUCTURE TO PROVIDE SUSTAINABILITY

5.2.1 **Implement infrastructure management tools**, including data center server, new web load-balancing devices, data and network security administration, and a global traffic manager.

5.2.2 **Create a backup data center for disaster recovery and business continuity** mirror imaging for 5.1.1 and 5.1.2. Develop business continuity plans and testable disaster recovery plans; coordinate recovery with ADOA (current data center host); and prepare plans for personnel movement to the facility in Tucson.

5.2.3 **Review and improve LEA bandwidth capacity** to support the new technology requirements and backup data center.

SUBTASK 3: PROVIDE TRAINING AND COMMUNICATIONS TECHNOLOGY

5.3.1 **Provide tools for remote electronic training and communications**, including video conference, webinar, and virtual classroom software.

5.3.2 **Acquire laptops and equipped carts for trainers and classrooms**.

SUBTASK 4: PROVIDE TRAINING, COMMUNICATION AND SUPPORT CENTER TOOLS

5.4.1 **Expand support center for technology and application systems,** including acquiring more robust monitoring tools, ticketing system, and new servers.

5.4.2 **Implement click stream website usage tracking software,** including website tracking, usage reporting, and content monitoring.

5.4.3 **Implement training management** software including session registration management.

5.4.4 **Implement knowledge base software** that will be used by Operations, Support Center, and Network Support staff to track issue solutions and other necessary knowledge for the new systems.

c. Timelines

Task #	Year 1	Year 2	Year 3	Responsible Person	Start	End
1	**Expand Data Content Scope and Provide Instructional Support Tools**					
1.1	**Expand student data collection and redevelop data collection systems (inclusive of all subtasks under 1.1)**			J. Whelan	5/10	4/13
	• Negotiate data collection processes with external organizations serving students under 1.1.2-1.1.4 and determine data availability and feasible exchange schedule • Define requirements and specifications for: existing data collections and all new items, data audits; data quality metrics and reports • Communicate all specifications to SMS Vendors, and LEAs, and other data submitting organizations	• Re-architect System - Data Base design; Data flow design; Data quality metrics; reports design; Infrastructure design • Development and Implementation in ADE and vendor SMS • Data conversion from current system to new system in ADE • Prepare Training material • Plan deployment and training with SMS vendors	• Deployment to LEAs including organizations serving students under 1.1.2-1.1.3 Note: Implementation may extend beyond year 3.			
1.1.1	**Re-architect the existing and new data and the data collection processes**			R. Martherus		
1.1.2	**Incorporate birth-preschool children into the new student data system**			R. Rachkofski		
1.1.3	**Incorporate mobile students into the new student data system**			R. Rachkofski		
1.1.4	**Incorporate tribal students**			R. Rachkofski		
1.2	**Expand student environmental data**					
1.2.1	**Expand school safety data collection and usability (AZ SAFE)**			J. Ajamie	5/10	4/12
	• Reconvene the AZ safe advisory council to define guidelines and review audit results • Design and conduct	• Develop and implement enhancements	•			

Task #	Year 1	Year 2	Year 3	Responsible Person	Start	End
	audit study to assess reliability and adequacy of data collected in AZSAFE • Confirm enhance-ments to AZSAFE data collection and reporting. • Communicate to LEAs and SMS vendors					
1.2.2	**Collect School Safety data via intermittent studies**			J. Ajamie	5/10	4/13
	• Select appropriate research entities to provide the following services: • Design survey on school climate (students and staff) • Design study of students transitions in and out of behavioral health and secure care facilities	• Conduct research, survey and study • Analyze collected data • Discuss findings with appropriate authorities (e.g. LEAs, secure care) and determine recommendations	• Implement research recommenda-tions, study, and survey outcomes Note: Implementation may extend beyond year 3.			
1.2.3	**Provide School Safety Professional development and technical assistance**			J. Ajamie	5/10	4/13
	• Content preparation	• Conduct professional development workshops • Provide technical assistance	• Conduct professional development workshops • Provide technical assistance			
1.2.4	**Collect student home environment considerations**			J. Whelan	5/10	4/13
	• Obtain guidelines from Data Governance Board • Contract appropriate research entities to provide the following services: • Determine survey methodology • Develop survey of	• Conduct survey • Analyze collected data • Set an ADE - LEAs taskforce to determine feasible solutions and plan for providing in-home education delivery	• Implementation of feasible solutions • Note: Implementation may extend beyond year 3.			

Task #	Year 1	Year 2	Year 3	Responsible Person	Start	End
	student home environment					
1.3	**Implement an ECAP system**					
1.3.1	**Acquire and implement centralized ECAP software**			J. Whelan	5/10	4/13
	• Establish a task force of school career counselors to define requirements and criteria for software selection and outline rollout plan • RFP and select software system • Plan rollout and training • Determine what data will be shared with New State Student System and what data will be loaded to AEDW	• Design and develop data sharing • Rollout to phase 1 schools	• Rollout to phase 2 schools Note: Implementation may extend beyond year 3.			
1.3.2	**Construct and conduct training on the career planning process at the LEA level**			N. Quinn	5/10	4/13
	Prepare training material for career counselors, teachers, parents, students.	Deliver training to career counselors, teachers, parents, students.	Deliver training to teachers, parents, students, career counselors			
1.3.3	**Examine and determine extensibility to post secondary students**			J. Whelan	5/11	4/13
	•	• Set up a post secondary taskforce to examine extensibility	• Evaluate benefits for post secondary students • Determine post secondary rollout plan Note: Implementation will extend beyond year 3.			
1.4	**Enhanced acquisition of LEA data**			L. Lindain	5/10	4/13
	• Formalize the desired data acquisition processes	• Develop new data acquisition processes for the	• Implement enhancements at LEAs as			

Task #	Year 1	Year 2	Year 3	Responsible Person	Start	End
	• Organize and conduct impact assessment with LEAs and SMS vendors • Determine specifications of new data acquisition	new student data system • Enhancements of SMS by vendors • Prepare training material for LEA on new data sub-mission processes	integral part of 1.1 deployment • Conduct training to implementing LEA on new data submission processes			
1.4.1	**Determine impact of desired data acquisition processes**			J. Whelan		
1.4.2	**Design and develop new data acquisition processes**			L. Lindain		
1.4.3	**Provide data submission training to LEAs**			N. Quinn		
1.5	**Create/implement a statewide SMS option for LEAs**			J. Whelan	5/10	4/13
	• Conduct cost benefit analysis and determine "buy or build" solution • If build, design blueprint based on specifications of new student data system resulting from 1.1 • If buy, define and conduct RFP and software selection	• If build, develop: data capture and audit front end to the new state student data base; data querying and reporting tools; user guides, training material • If buy, vendor to develop data delivery to new student data system as specified in 1.4 • Plan rollout to interested LEAs	• Implement system and access for interested LEAs • Train interested LEAs Note: Implementation may extend beyond year 3.			
1.5.1	**Determine whether to buy or build and implement an SMS solution**			D. Houde		
1.5.2	**Develop user data querying and reporting capabilities**			L. Lindain		
1.5.3	**Create statewide training mechanism for the new SMS system**			N. Quinn		
1.6	**Expand school staff data**			R. Rachkofski	5/10	4/13
	• Confirm business and data requirements and define data elements and data quality metrics and reports specifications • Communicate specifications to	• Design and develop new system: online data capture, batch data file acquisition from LEAs and pathway orgs, database, querying	• Implement system • Conduct workshops on new system to ADE staff, LEAs and pathway			

Task #	Year 1	Year 2	Year 3	Responsible Person	Start	End
	LEAs and their software vendors • Determine data collection and process specifications with organizations providing pathways	and reporting tools • Design and develop data conversion from existing systems • Create user guides & training material • Plan rollout	organizations			
1.6.1	**Design a new school staff system**			R. Rachkofski		
1.6.2	**Provide internal and external training support for the new system**			N. Quinn		
1.7	**Implement education entity master data management**					
1.7.1	**Create master data management structures**			M. Johnson	5/10	4/13
	• Complete data model for entities involved in education • Confirm data model with affected agencies and organizations • Design database • Design data capture interface • Determine feasibility and process of conversion from current system to the new system • Communicate new data model to LEAs and other entities involved in education	• Develop and implement a new system • Populate new master data structures with existing data by a mix of audited automated and manual conversions	• Verify that all systems using education entity IDs are congruent with the new Master Data Management database.			
1.7.2	**Expand EduAccess data security/identity management**			J. Holden	5/10	4/13
	• Install EduAccess infrastructure • develop a fully fledged system (currently a pilot version services AEDW users) including granting a user access to multiple specific	• Develop federated identity and authentication management • Determine criteria for trust worthiness of external partners • Train ADE developers to convert existing	• Select trust worthy partners and implement federated management with them			

Task #	Year 1	Year 2	Year 3	Responsible Person	Start	End
	entities • Migrate current user accounts to new account structure	ADE systems to be accessed via EduAccess and execute conversions				
1.8	**Restructure education financial data**			R. Rachkofski	5/10	4/13
	• Confirm new data items and their data sources to be collected • Design collection processes for new data • Determine functionality of current financial systems by reverse engineering and confirm business requirements • Develop conceptual design of new funding/ payments processes, in particular state equalization funding processes driven by student membership and attendance, in conjunction with 1.1. • Confirm design with School Finance division	• Design a new system based on the conceptual processes design • Develop a new system	• Pilot run new financial processes in parallel with existing processes • Obtain user confirmation • Implement new financial systems			
1.8.1	**Confirm data availability from additional funding sources**			R. Rachkofski		
1.8.2	**Redesign existing financial systems**			R. Rachkofski		
2	**Improve Student and School Performance Measures**					
2.1	**Implement Colorado Growth Model**			D. Houde	5/10	4/13
	• Establish a task force of District Accountability professionals to assist	• Develop Growth data system • Develop guides for parents, teachers,	• Conduct teacher workshops and parent workshop on			

Task #	Year 1	Year 2	Year 3	Responsible Person	Start	End
	in implementation and adaptation • Implement the CGM software & process in ADE SQL Server Environment • Conduct test run of the model on AZ AIMS data history(FY 2005 onward), evaluate results and apply adaptations if needed • Communicate results to LEAs • Design a Growth data system for computing and providing student growth information to schools, teachers and parents	principals • Conduct teacher workshops and parent workshop on interpretation and usage of results • Apply CGM school level growth formula to Arizona and evaluate results • Formulate school level growth measure for Arizona • Implement school level growth component with online visual rendering • Develop school growth guides • Analyze impact on current AYP, AZ LEARNS indicators and Determine needed changes	interpretation and usage of results • Conduct workshops for LEAs on school growth and usage of results • Obtain legislature approval for new AZ LEARNS indicator) • Develop and implement new performance Indicators • Develop guides for LEAs; Conduct workshops for LEAs			
2.1.1	**Implement the statistical component of CGM**			L. Lindain		
2.1.2	**Implement adapted model for student-level growth**			A. Jones		
2.1.3	**Develop guides for parents, teachers, and principals**			N. Quinn		
2.1.4	**Study CGM school-level growth formula**			A. Jones		
2.1.5	**Conduct workshops for LEAs**			N. Quinn		
2.1.6	**Analyze impact of school-level growth indicators**			A. Jones		
2.2	**Create metrics for state fiscal stabilization fund**			ADOA		
3	**Expand the Data Warehouse**			I. Licht	5/10	4/13
	• Establish an Arizona post secondary data advisory group to define post secondary data and measures requirements	• Identify new/ modified data elements in the new student data system; Modify or develop ETL to	• Determine what data to incorporate in the AEDW for new systems/ components:			

Task #	Year 1	Year 2	Year 3	Responsible Person	Start	End
	• Determine tools and schedules of data transportation from post secondary systems to ADEW • Develop ETL for new post secondary dimension and fact tables • Develop derived facts and measures for post secondary data • Develop user guide and training material • Conduct training	include these data in AEDW; modify student related measures as necessary. • Determine data to be incorporate in the AEDW for the new systems/ components: AZ SAFE, ECAP, Student Growth, Master Data Management • Develop ETL, derived facts and measures • Re-associate existing measures with the new education entities dimensions and hierarchy • Develop user guide and training material • Conduct training	School Growth, School Staff, Financial systems • Develop ETL, derived facts and measures • Revise existing measures of school funding to include new sources • Develop user guide and training material • Conduct training			
3.1	**Revise AEDW data transformations**			I. Licht		
3.2	**Incorporate new data from outcomes 1 & 2**			I. Licht		
3.3	**Incorporate post secondary student data**			I. Licht		
3.4	**Enhance AEDW portal**			I. Licht		
4	**Establish Data Governance, Training and Communications Organizations**			D. Houde		
4.1	**Create data governance organization and processes**			D. Houde	5/10	4/13
	• Establish data governance board • Establish technology governance support group • Devise and approve subject matter priority for guideline issuance • Analyze subject	• Analyze subject matters, define and issue guidelines according to priority schedule • Augment ADE technology support center staff	• Analyze subject matters, define and issue guidelines according to priority schedule			

Task #	Year 1	Year 2	Year 3	Responsible Person	Start	End
	matters, define and issue guidelines according to priority schedule					
4.1.1	**Establish a data governance board**			D. Houde		
4.1.2	**Establish ADE technology governance support group**			D. Houde		
4.2	**Create data training and communications organization**			N. Quinn	5/10	4/13
	• Establish training and communication group • Devise a master plan for training and communications need of outcomes 1-3 • Explore collaboration opportunities with LEAs and regional organizations to establish regional training teams, trained by the central team • Establish regional training teams • Implement an extensible training system • Prepare multimedia material and deliver training as needed by outcomes 1,2,3 subtasks	• Acquire Knowledge Base software for ADE technology support center • Implement initial content derived from systems development documentation • Update training master plan to include deliveries by regional training teams • Prepare multimedia material and deliver system scheduled training as needed by outcomes 1,2,3 subtasks	• Prepare multimedia material and deliver system scheduled training as needed by outcomes 1,2,3 subtasks Note: Training delivery will extend beyond year 3.			
4.2.1	**Establish a training and communication group**			N. Quinn		
4.2.2	**Develop a training system**			N. Quinn		
5	**Expand technology infrastructure**			K. Boesel		
5.1	**Provide technology tools, infrastructure and support for new systems**			K. Boesel	5/10	4/13
	• Acquire and install HW/SW and tools to support implementation of new systems/ components: EduAccess, AEDW, AZ SAFE, ECAPS,	• Acquire and install HW/SW to support implementation of new systems: Student data, central SMS, School Growth, AEDW, Financial,	• Acquire and install HW/SW to support implementation of new systems/ components: AEDW • Acquire			

Task #	Year 1	Year 2	Year 3	Responsible Person	Start	End
	Student Growth • Acquire and install auxiliary infrastructure components • Acquire personal computers for developers under this project • Acquire and install staging servers for production environment	Master data management • Acquire and install HW/SW for upgrading response time: internet bandwidth, firewall upgrade, server cluster for high utilization databases, high speed data storage • Acquire personal computers for developers under this project • Add production applications to staging server	personal computers for developers under this project • Add remaining production applications to staging server			
5.1.1	**Provide solution for new system front ends**			K. Boesel		
5.1.2	**Provide backend hardware and software to support landing zone**			K. Boesel		
5.1.3	**Acquire technical implementation expertise**			K. Boesel		
5.2	**Expand ADE technology infrastructure to provide sustainability**				5/10	4/13
	Acquire and implement a new load balancing devices	Acquire and install backup data center for year 2 project components	Expand backup data center for year 3 project components			
5.2.1	**Implement infrastructure management tools**			K. Boesel		
5.2.2	**Create a backup data center for disaster recovery and business continuity**			K. Boesel		
5.2.3	**Review and improve LEA bandwidth capacity**			K. Boesel		
5.3	**Provide training and communications technology**			K. Boesel	5/10	4/11
	• Acquire and install training server • Expand web conferencing system capacity • Acquire mobile computing equipment for mobile training	•				
5.3.1	**Provide tools for remote electronic training and**					

Task #	Year 1	Year 2	Year 3	Responsible Person	Start	End
	communications					
5.3.2	**Acquire laptops and equipped carts for trainers and classrooms**					
5.4	**Provide training, communication and support center tools**				5/10	4/13
	• Acquire and install tools for creating e-learning courses • Select and install Knowledge Base software • Select and install training management software • Acquire and install ticketing system for support center/ ops/network ops • Expand streaming media server for e-learning	• Acquire and implement software for tracking usage of training system • Acquire and implement application and database monitoring software	• Augment support center to support new systems and technology users			
5.4.1	**Expand support center for technology and application systems**			T. Mendez		
5.4.2	**Implement click stream website usage tracking software**			T. Mendez		
5.4.3	**Implement training management software**			N. Quinn		
5.4.4	**Implement knowledge base software**			T. Mendez		

d. Project Management and Governance

Project Governance

The SLDS Governance Board (SGB), created by the Arizona P-20 council's data system subcommittee, is comprised of leadership from various education sectors and will be expanded to other SLDS system stakeholders, including other state agencies, secure care, and BIE representation. The SGB's project governance plan has four key areas of management and oversight: 1) Stakeholder Reporting and Disclosure; 2) Project Definition and Management Criteria; 3) Project Portfolio Priorities and Status; and 4) Financial Controls.

The SGB will assure that SLDS partnerships and alliances (workforce, health, BIE, LEA, counties, post-secondary, etc.) remain in alignment to meet the project's goals. It will also provide oversight and progress monitoring against forecasted targets and expected outcomes. The SGB will set key success indicators and drivers while providing a mechanism for addressing and escalating issues, newly defined risks, or data opportunities to pursue.

Project Management

The scope of this project will require a program management structure, including program director with oversight on the entire project's delivery, primary federal grant funding reporting

responsibility and budget tracking. Program managers will be assigned for the major project components and report to the program director. Each program will have project managers providing daily guidance and oversight to keep that portion of project component on track. *(see figures 4.1 and 4.2 regarding standard lifecycles)*

The business area complexity will require extensive collaboration and cooperation between internal and external groups and also involve significant data governance to align the new data output from these groups. Some of the project managers may be from these other agencies or business groups, where business content expertise is paramount to the project success.

The project's approval, oversight will be provided by a consortium of affected parties, including ADE, Arizona Board of Regents and the state universities, Arizona P-20 council, a governor representative, the Arizona State Board of Education, Arizona State Charter Board, Arizona Charter Schools Association, Arizona community college system, county superintendents of schools and state representatives from participating states.

e. Staffing

The staffing model for the production system outcomes follows a standard technology lifecycle—project initiation through analysis, development, testing, and implementation—already in use in ADE's IT organization (*see figures 4.1 and 4.2).* The warehouse staffing model follows a business intelligence lifecycle—analysis on existing data systems, creation of aggregations and measures, development of ETL and transformations to the cube, comprehensive cube testing, implementation, and training in data use—followed by extensive data governance and control.

Arizona's success in creating the AEDW has been based on recognition that creating exceptional business intelligence solutions requires much more than solely organizing a group of quality technologists. The AEDW team is constructed of FTEs and long-term consultants. This stable and seasoned team has already completed the hard work associated with synthesizing the complex nature of education management and acquiring a fundamental understanding of the operational systems that are sources of AEDW data. Leveraging the talents of each individual working in an orchestrated multi-disciplined team environment enables AEDW to continue functioning as a highly performing, efficient and productive unit. This places Arizona in a unique position to leverage this mature organization to efficiently expand the existing AEDW and address all of the additional outcomes within this application.

The resumes included in this application demonstrate the caliber of individuals required to complete the current AEDW and associated projects. Successful completion of this substantial project suite within the three year timeline will require hiring a significant number of technical consultants and FTEs. Additional project management will be needed to direct each project, manage intergovernmental relationships and align these into a synergistic whole. It will take about six months to recruit and assimilate the volume of new staff needed, so the bulk of personnel dollars will fall into years two and three, when the teams are fully staffed.

Project Narrative

Project Narrative - Appendix A, Optional Attachments

Attachment 1:
Title: **Project Narrative_Appendix A Optional Attachments** Pages: **14** Uploaded File: **Project Narrative_Appendix A Optional Attachments.pdf**

Entities with Funding and Data Relationships to ADE

Source	Subagency/Subgroup	Funding	Data Needs	Individual?	Notes
Arizona State Board of Regents		Charter ADM, CNP, IDEAL, Others		No	
Arizona State University		Charter ADM, CNP, IDEAL, Other pgms	EduAccess student & teacher data	Yes	
Arizona Western College			Facility, Student, college readiness data	Yes	Comm College
AZ Charter Board			Facility, teacher, ownership	No	teachers are individual data
AZ Charter Board Association			Performance data for charters	No	
AZ Dept of Corrections		ADM	JOLTS student and tracking data	Yes	
Az Dept of Economic Security			Workforce tracking data	No	
AZ Dept of Health Services	Preschools		Preschool & teacher licensing and certification	Yes	preschool facility only; teacher individual data
AZ Dept of Health Services	Exceptional Education		Facility, teacher, ownership	Yes	facility only; teacher individual data; legal ownership
AZ Dept of Juvenile Corrections		ADM	JOLTS student and tracking data	Yes	
AZ Dept of Labor	Workforce		Workforce tracking data	No	
AZ Dept of Revenue	Income Tax	tax refunds (entire refund donated to a school)		No	
AZ Dept of Revenue	tuition tax credits	tax credits	School tuition organization fund recipients	No	
AZ Head Start Association	Head Start		Facility, teacher, students	Yes	
AZ School Facility Board		Construction & maintenance	School projections, recipient fund data	No	
AZ State Appropriations	Education	operating funds	Recipients	Yes	
AZ State Grants	Adult Ed	Grant recipients	Enrollees	Yes	
AZ State Grants	Early Childhood	Grant recipients	Enrollees	Yes	
AZ State Grants	Family Literacy	Grant recipients	Enrollees	Yes	
AZ State Grants	ELL (Comp Ed, AMAO, SEI)	Grant recipients	Recipients	Yes	
AZ State Grants	AIMS Tutor	Grant recipients	Recipients	Yes	
AZ State Land Department	State Trust Lands	Classroom site fund proceeds	Detail data	No	
AZ Supreme Court	Administrative Office of the Courts (County juv detention)	Equalization, ADM	Incarcerated student data	Yes	only agg data now, unless SPED
Business Entity		operating funds (ownership of charters, preschools, etc.)	Legal data	No	
Central Arizona College			Facility, Student, college readiness data	Yes	Comm College
Cochise College			Facility, Student, college readiness data	Yes	Comm College
Coconino Community College			Facility, Student, college readiness data	Yes	Comm College

Entities with Funding and Data Relationships to ADE

Source	Subagency/Subgroup	Funding	Data Needs	Individual?	Notes
COESTAR	AZ Migrant data w/Littleton USD (Avondale)		Detail student data	Yes	Don't know which one holds detail
Community Based Organizations		operating funds	Enrollees	Yes	
County - Apache	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County - Cochise	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County - Coconino	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County - Gila	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County - Graham	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County - Greenlee	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County Jail - Gila			Detained Student+ school funding data	Yes	Jail school data
County Jail - Graham			Detained Student+ school funding data	Yes	Jail school data
County Jail - Greenlee			Detained Student+ school funding data	Yes	Jail school data
County Jail - La Paz			Detained Student+ school funding data	Yes	Jail school data
County Jail - Maricopa			Detained Student+ school funding data	Yes	Jail school data
County Jail - Mohave			Detained Student+ school funding data	Yes	Jail school data
County Jail - Navajo			Detained Student+ school funding data	Yes	Jail school data
County Jail - Pima			Detained Student+ school funding data	Yes	Jail school data
County - La Paz	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County - Maricopa	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County - Mohave	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County - Navajo	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County - Pima	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County - Pinal	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County - Santa Cruz	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County - Yavapai	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	

Entities with Funding and Data Relationships to ADE

Source	Subagency/Subgroup	Funding	Data Needs	Individual?	Notes
County - Yuma	County Treasurer, County ESA	Property tax, direct fed and state funds	County-only funding & detail data	No	
County Jail - Pinal			Detained Student+ school funding data	Yes	Jail school data
County Jail - Santa Cruz			Detained Student+ school funding data	Yes	Jail school data
County Jail - Yavapai			Detained Student+ school funding data	Yes	Jail school data
County Jail - Yuma			Detained Student+ school funding data	Yes	Jail school data
County Jail - Apache			Detained Student+ school funding data	Yes	Jail school data
County Jail - Cochise			Detained Student+ school funding data	Yes	Jail school data
County Jail - Coconino			Detained Student+ school funding data	Yes	Jail school data
Dept of Public Safety (DPS)	Fingerprinting, data		fingerprint & other potential data	Yes	
Diné College			Facility, Student, college readiness data	Yes	Comm College
District business ventures		Revenue	Legal data	No	
Districts	Preschools	(privately funded)	Students	Yes	
Eastern Arizona College			Facility, Student, college readiness data	Yes	Comm College
Individual donations		donations		No	
Individual Tax credits		tax credits		No	
Individual Tuition		Revenue (preschool, out of state student, foreign exchange)		No	
Littleton USD	AZ Migrant data w/COESTAR (vendor)		Detail student data	Yes	Don't know which one holds detail
Local Governments	city, area, consortiums	operating funds	Recipients	No	
Maricopa Community College District (MCCD)			Facility, Student, college readiness data	Yes	Comm College
MCCD Chandler-Gilbert Community College			Facility, Student, college readiness data	Yes	Comm College
MCCD Estrella Mountain Community College			Facility, Student, college readiness data	Yes	Comm College
MCCD GateWay Community College			Facility, Student, college readiness data	Yes	Comm College
MCCD Glendale Community College			Facility, Student, college readiness data	Yes	Comm College
MCCD Mesa Community College			Facility, Student, college readiness data	Yes	Comm College
MCCD Paradise Valley Community College			Facility, Student, college readiness data	Yes	Comm College
MCCD Phoenix College			Facility, Student, college readiness data	Yes	Comm College
MCCD Rio Salado Community College			Facility, Student, college readiness data	Yes	Comm College
MCCD Scottsdale Community College			Facility, Student, college readiness data	Yes	Comm College

Entities with Funding and Data Relationships to ADE

Source	Subagency/Subgroup	Funding	Data Needs	Individual?	Notes
MCCD South Mountain Community College			Facility, Student, college readiness data	Yes	Comm College
Mohave Community College			Facility, Student, college readiness data	Yes	Comm College
Northern Arizona University		Charter ADM, CNP, Other pgms	EduAccess student & teacher data	Yes	
Northland Pioneer College			Facility, Student, college readiness data	Yes	Comm College
Philanthropic Foundations		donations		No	
Pima Community College			Facility, Student, college readiness data	Yes	Comm College
Private Schools	AIMS Takers		Students/AIMS takers	Yes	
Tohono O'odham Community College			Facility, Student, college readiness data	Yes	Comm College
University of Arizona		Charter ADM, CNP, Other pgms	EduAccess student & teacher data	Yes	
US Agency for International Development	7200: Agency for International Development	Grants	Recipients	No	
US Bureau of Indian Affairs		Funds distributor to public schools for Johnson O'Malley; other programs	Recipients	No	
US Bureau of Indian Education		Revenue (on-rez schools)	Students/AIMS takers	Yes	
US Corporation for National and Community Service		Grants	Recipients	No	
US Department of Agriculture	12E3: Dept. Ag. - Rural Housing Service	Grants	Recipients	No	
US Department of Agriculture	Nutrition Programs	Grants	Recipients	No	
US Department of Education	9101: DOED - Immediate Office of the Secy. of Education	Grants	Recipients	No	
US Department of Education	9120: DOED - Vocational and Adult Education	Grants	Recipients	No	
US Department of Education	9121: DOED - English Lang. Acquisition	Grants	Recipients	No	

ADE Major Entity Types

Entity	Type	Notes
Adult and Child Day Care Nutrition Services	Service Provider	ADE provides eligible adult and child day cares with nutrition services.
Arizona Dept of Corrections	State Detention	Students convicted as adults and <18 or <22 if SPED
Arizona Dept of Juvenile Corrections	State Detention	Students adjudicated and under jurisdiction of county, ages 8-17
Arizona State Schools for the Deaf and Blind	Education Service Provider	Deaf, blind, or other sensory issue K-12 students in both residential facilities, plus preschool, pre-preschool/family ed services (birth - 5), and parent support (B-3) statewide.
Charter Schools	Education Provider	Anybody in-state, including SPED. Variety of charter business owners: community colleges, county board of supervisors, public districts, corporations, all three state universities, tribes (both on and off-reservation locations). Charters frequently have preschools that may be co-located with the school, however the preschools are not included in the charter contract and are run by the business owner of the charter contract. A charter may be a distance learning school. Eligible charters receive nutrition services via ADE.
Community programs	Education Service Provider	Adult and family literacy program support. Nutrition services for community organizations, including boys & girls clubs, community centers, and food banks.
County Jails	County Detention	Students pretrial or adjudicated to remain, <18 or <22 if SPED. Sheriff jointly responsible with county superintendent.
County Juvenile Detentions	County Detention	Students awaiting adjudication, ages 8-17. ADE works in conjunction with Arizona State Supreme Court Administrative Office of the Courts on oversight for these schools. Sheriff jointly responsible with county superintendent.
Exceptional Education Facilities	Education Service Provider	Foster care, court placement, rehab residential facilities
Head Starts	Education Service Provider	Head Starts are overseen by the state HS organization. There are 488 sites. They are programs at preschools, and the preschools can be at private, public, or charter school or community locations. HS are federally funded, but ADE pays for SPED students enrolled in HS programs. HS receive nutrition services via ADE.
Preschools	Education Provider	Legally, can only be for SPED kids, but many of the public districts and charters have tuition preschools for regular kids in addition. We provide nutrition services, early childhood education, family literacy (if applicable).
Private Schools	Education Provider	Private schools may test on AIMS and also receive nutrition services from ADE.
Public Accommodation Districts (Detention)	Education Provider	Detention accommodation districts operate under county superintendents jointly with the county sheriff. They are part of the county jail system for students in Coconino, Maricopa, and Pima counties.

ADE Major Entity Types

Entity	Type	Notes
Public Accommodation Districts (Non-detention)	Education Provider	Regular accommodation districts operate under county superintendents and are sometimes located on decommissioned military bases (like General Myers).
Public Districts* & Schools	Education Provider	Anybody in-state; also pay out of state for border areas or SPED services. Many northern AZ districts are on, or overlay, reservations (Ganado, Chinle, Camp Verde, etc.). Eligible districts receive nutrition services via ADE.
State Hospital School	Education Service Provider	Students with mental challenges
Tribal/BIE Schools	Education Provider	Tribal schools are usually contract or grant schools owned and operated by a tribe on a reservation. Bureau of Indian Education schools are on reservations and run by BIE, an agency of the Dept of the Interior. These schools may (and usually do) take AIMS tests and receive nutrition services, as well as other support programs, from ADE. Charter and public districts located on a reservation report to both ADE and BIE for academic and student oversight.
Tribe Nutrition Services	Service Provider	ADE may provide nutrition services to tribes and/or reservations.

*Public Districts may have evening and night schools, district libraries, district charters, TAPP programs, VOTECs with/without JTED partnerships, exceptional education schools, adult meal programs, senior meal programs, preschools, early childhood programs, Head Starts, and related business ventures.

ADE IT PROJECT COMMUNICATION PLAN METHODOLOGY (rev. 10/26/2009)
A well planned project has a well planned Communication strategy. The following are guidelines and options when creating a Project Communication Plan.

What	Who/Target	Purpose	When/Frequency	Type/Method(s)
Initiation Meeting	All stakeholders	Gather information for Initiation Plan	FIRST Before Project Start Date	Meeting
Distribute Project Initiation Plan	All stakeholders	Distribute Plan to alert stakeholders of project scope and to gain buy in.	Before Kick Off Meeting Before Project Start Date	Document distributed via hardcopy or electronically. May be posted on an approved project portal
Project Kick Off	All stakeholders	Introduction of project with a high level scope dissemination Encourage communication among stakeholders.	At or near Project Start Date	Meeting
Responsibility Matrix	All stakeholders	Communicate stakeholder roles/responsibilities.	At or near Project Start Date	Meeting / Distribute via the project portal / Include in project and requirements documentation
Status Reports	All stakeholders and Project Office	Update stakeholders on progress of the project.	Regularly Scheduled. Monthly is recommended for large/midsize projects.	Distribute via the project portal
Core Project Team Meetings	Core Project Team. Individual meetings for sub-teams, technical team, and Functional teams as appropriate.	To review detailed plans (tasks, assignments, and action items).	Regularly Scheduled. Weekly is recommended for entire team. Weekly or bi-weekly for sub-teams as appropriate.	Meeting
Project Advisory Group Meetings (this may apply only to larger projects)	Project Advisory Group and Project Manager	Update Project Advisory Group on status and discuss critical issues. Work through issues and change requests here before escalating to the Sponsor(s).	Regularly Scheduled. Monthly is recommended.	Meeting
Sponsor Meetings	Sponsor(s) and Project Manager	Update Sponsor(s) on status and discuss critical issues. Seek approval for changes to Project Plan.	Regularly scheduled Recommended biweekly or monthly and also as needed when issues cannot be resolved or changes need to be made to Project Plan.	Meeting
PPO Audit/Change Management Team	Project Office, Project Manager, select stakeholders, and possibly Sponsor(s) if necessary.	Review status reports, issues, and risks. To identify and communicate potential risks and issues that may affect the schedule, budget, or deliverables.	Monthly Scheduled by the Project Office	Meeting/Report Place on project portal

What	Who/Target	Purpose	When/Frequency	Type/Method(s)
Post Project Review	Project Office, Project Manager, key stakeholders, and sponsor(s).	Identify improvement plans, lessons learned, what worked and what could have gone better. Review accomplishments.	End of Project or end of major phase	Meeting/Report Place on project portal
Quarterly Project Review	Project Office, Project Manager, and key stakeholders.	Review overall health of the project and highlight areas that need action.	Quarterly depending on size and criticality of the project. Scheduled by the Project Office.	Meeting/Report Place on project portal
Presentations to Special Interest Groups	Examples: Project Managers Team, Various Business and Academic groups, State Government entities, etc.	To update external groups to promote communication a create awareness of project interdependencies.	At project milestones so as to communicate with other interested parties of changes that will be introduced outside of the Project Team.	Presentation/Demonstration
Project Portal	ALL Project Team Members.	Central location to house Status Reports, meeting minutes, Project description, and Project Plan. For any communications that can be shared with team members.	Update monthly with Status Reports; otherwise, as necessary.	Collaboration portal dedicated to this project
Periodic Demos and Target Presentations	Specific Focus Groups or End Users. Examples: ADE Executive Team, Power Users, Support Desk, Dept Mgrs., etc.	To gain input from special groups and keep them abreast of the Project's status.	Once product has enough to "show". As you complete critical phases or make major enhancements.	Presentation/Discussion
Other…	To be determined by the Core Project Team	General communications	As needed	Email lists, Superintendent meetings, Memos, Media, Public Relations materials, Electronic Bulletin boards, etc.

Definitions:

Executive Sponsor	Agency or group for whom the Project Sponsor represents
Project Sponsor	A person or group who is the primary client. The Project Sponsor is responsible for the Project Charter/request and project funding. Additionally, the Project Sponsor provides strategic project goals & measures of success and clear obstacles & provide an escalation point within the organization
Project Manager	A person(s) responsible for the overall direction, coordination, implementation, execution, control and completion of specific projects ensuring consistency with company strategy, commitments and goals
Stakeholder	Any person or group, who has a vested interest in the success of the project, i.e. either provides services to the project, or receives services from the project
Key Stakeholder	A person whose support is critical to the project – if the support of a key stakeholder was to be withdrawn, the project would fail
Team Member	The individuals reporting either part-time or full-time to the project manager who are responsible for some aspect of the project's activities
Core Team Member	The individuals reporting to the project manager who are responsible for overall project activities while being a leader for other team members. This is a subset of the full team.
Project Advisory Group	A group of high-level stakeholders who are responsible for providing guidance on overall strategic direction
Change Management Team	A team made up of a diverse membership that ensures proposed changes are properly assessed and, if approved, prioritized, incorporated into the project plan, and managed as part of the project

BA Answers any Questions or Enhances documentation

Developer Begins Systems Build and resolves any issues with code that is uncovered.

Developer coordinates with DM/DBA to ensure data needs are met

DEV signs off on systems build and OK's Test Environment Migration

QA Lead or QA Analyst approves migration to test and alerts Scrummaster

Scrummaster assigns migration to developer.

Analyst Reviews Requirements, checks version number to ensure a match with dev, and asks for any clarifications from BA

QA tests solution

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Review

PM Marks Task Not Started and DM/DBA Alerted

DM/DBA begins planning scripts, jobs, data structures necessary to meet requirements

DM/DBA Posts any documentation created to project workspace under IT Only Documents section.

DM/DBA and BA coordinate to make any changes necessary to existing requirements documentation

PM Marks Task Not Started and DEV Lead Alerted

DEV Lead Assigns Task To Developer

Developer breaks down work into subtasks and provides detail to DEV Lead

DEV Lead reviews detail and presents to PM (email or post mpp file to PW)

PM integrates detail into global project plan and posts mpp file.

DEV plans Unit Testing

DEV Updates Status % on DEV task throughout

Developer plans System Build phase, documents, and posts file to IT Only section of project portal

Developer Begins Systems Build and resolves any issues with code that is uncovered.

DEV signs off on systems build and OK's Test Environment Migration

QA Lead or QA Analyst approves migration to test and alerts DEV Lead

DEV lead assigns migration to developer.

Developer coordinates with DM/DBA to ensure data needs are met

QA Lead Assigns Task To Analyst (Note: To occur at beginning of project)

Upon reciept of task change by QA Lead, PM Adds Assigned QA Analyst to Project Team

PM Marks Task Not Started and QA Lead Alerted

Analyst Reviews Requirements, checks version number to ensure a match with dev, and asks for any clarifications from BA

QA Creates test plan and posts to the IT only documents section

QA tests solution

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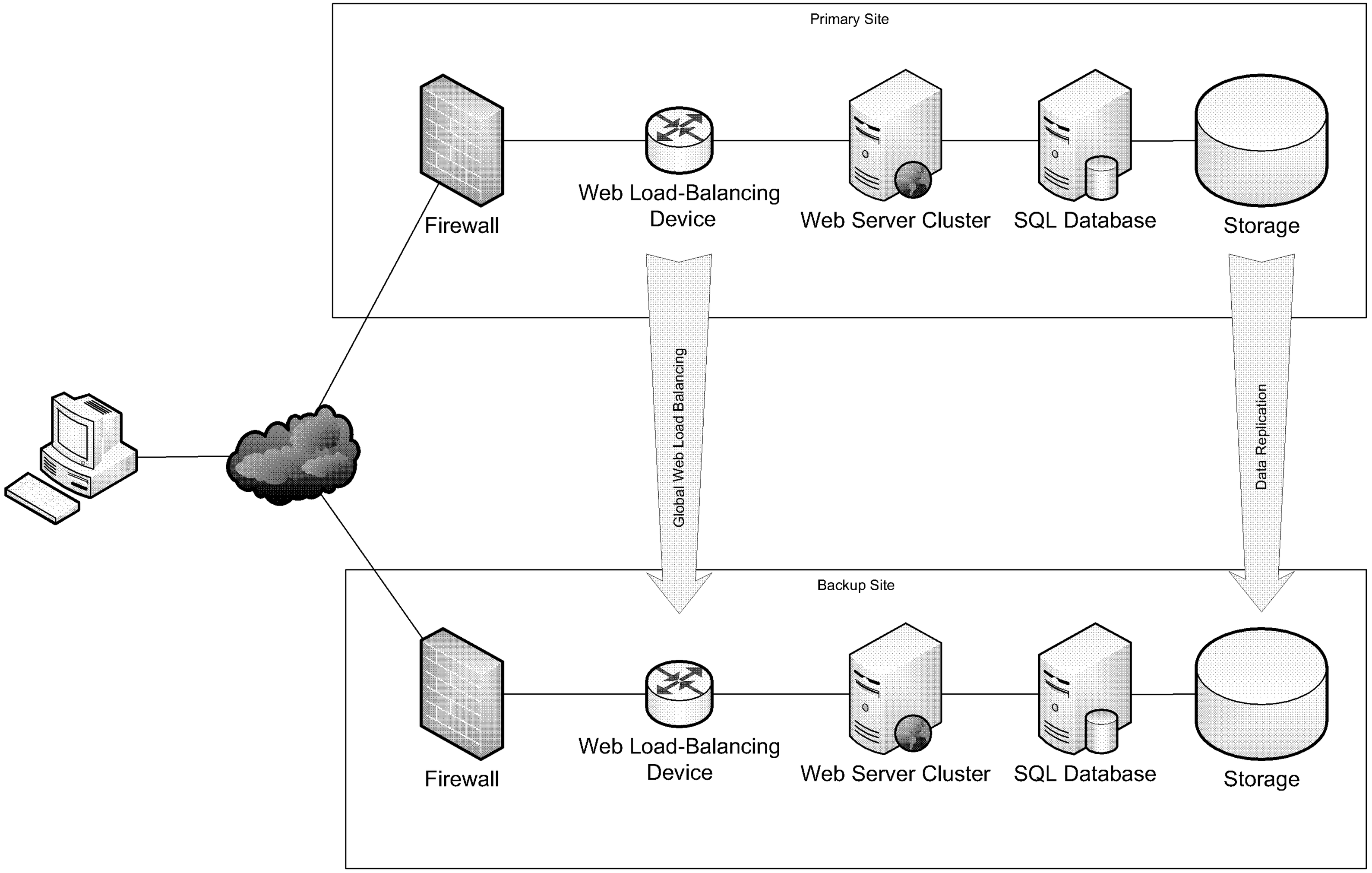
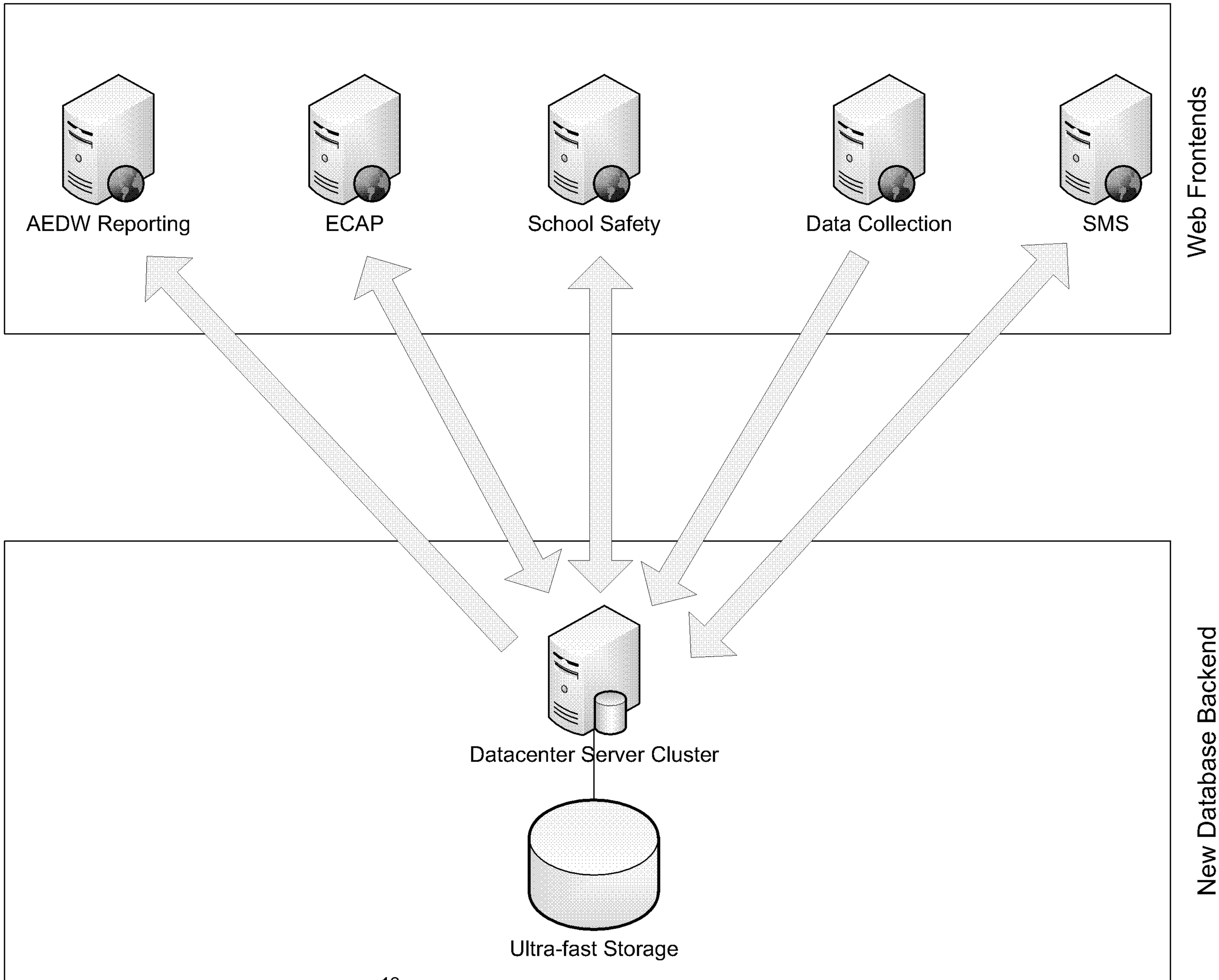
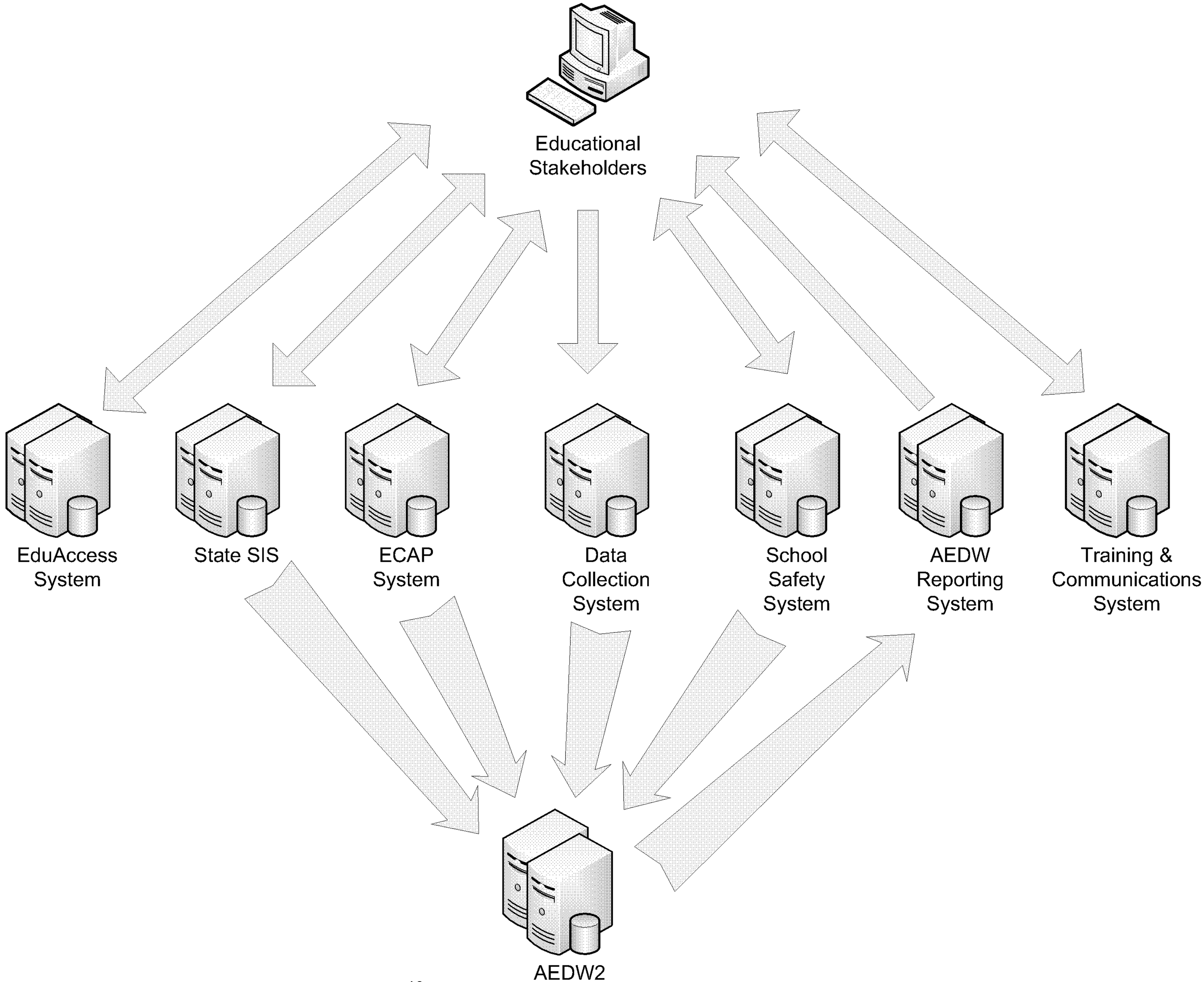

Primary Site
Firewall
Web Load-Balancing Device
Web Server Cluster
SQL Database
Storage
Global Web Load Balancing
Data Replication
Backup Site
Firewall
Web Load-Balancing Device
Web Server Cluster
SQL Database
Storage


AEDW Reporting
ECAP
School Safety
Data Collection
SMS
Web Frontends
Datacenter Server Cluster
Ultra-fast Storage
New Database Backend


Educational Stakeholders
EduAccess System
State SIS
ECAP System
Data Collection System
School Safety System
AEDW Reporting System
Training & Communications System
AEDW2

Project Narrative

Project Narrative - Appendix B Resumes of Key Personnel

Attachment 1:
Title: **Project Narrative_Appendix B Resumes** Pages: **66** Uploaded File: **Project Narrative_Appendix B Resumes.pdf**

Donald J. Houde

Chief Information Officer
Chief Technology Officer
Deputy Associate Superintendent

Extensive experience with over thirty-five years in the management, design, development and implementation of business/operational processes and technical solutions that integrate transactional and multi-dimensional information systems to align business requirements with technical investments. Related areas of expertise include:

- Leadership and mentoring strategies for highly performing organizations
- Large Scale Enterprise Business Intelligence Solutions Design and Implementation
- Operations management; developing an organization that focuses on the efficient delivery of measurable unsurpassed customer service. Project development and management.
- ITIL service delivery process design and deployment.
- Application/tool architectural design emphasizing a balance between ROI, high availability, scalability, operational excellence, code reuse, and reliability (i.e. SOA, clusters, web services, load balancers, geographic disparate sites, backup strategies).
- Physical storage model architectural design and implementation (i.e. SAN, NAS, etc.).
- Logical information architectural design and implementation (i.e. file, database, etc.).
- Securitization planning and implementation related to applications, infrastructure and critical information. (i.e. IDS, IPS, encryption, firewalls, virus, auditing, event logging/review etc.).
- Enterprise configuration management process design and implementation (QA, capacity planning, code/systems/network/database promotion and deployment, etc.).
- Disaster recovery planning, testing and review (hot and warm sites, off-site vault storage, geographically disparate DR facilities).
- ETL process engineering including architecture, development, administration and optimization.
- Vendor relationship and fiscal management

Experience

Arizona Department of Education (ADE) **2005 - Present**

Chief Information Officer
Chief Technology Officer
Deputy Associate Superintendent
State Level Education IT Governance and Service Delivery

Responsible for acting as a change leader culturally, organizationally, and technically to continue the migration of ADE IT from an agency resource pool to a service management organization incorporating ITIL processes. Created functional groups integrating requirements associated with educational information security and privacy office, data governance and management group, project management and business analyst division, quality assurance team, operations group, support center organization, network services team, systems management team and end-

user support. Serve as federal and state legislative liaison for initiatives related to Post Secondary, Workforce, EDFacts, NCES, CCSSO, EIMAC, IES and Department of Agriculture and Arizona State Level Education Initiatives. Additionally responsibilities include designing measurable IT business, technical and operational processes/standards to support P-20 longitudinal data initiatives, defining sustainable IT organization and infrastructure, strategic planning, governance policies development of an OLAP environment, measurable resource management, updated balanced prioritization on operational excellence with time-to-market development requirements.

General Electric Canada **2002-2006**
Chief Architect for Data Systems Integration and Business Intelligence Solution

ISAGENIX Inc **2006**
Multi-Level Marketing Web Application Design, Operational Process Development

- Responsible for initial design of upgraded multi-level marketing management system. Included was business process management design and implementation.

MiniCo Inc. **2006**
Oracle Systems Upgrade and Migration, Off-shore Development Team Relationship Facilitator and Operational Process Design

- Responsible for assisting in Oracle 8i to 10g migration with off-shore development staff.

BENTEK Energy, LLC **2005**
Operational Process, Data Management and Engineering Services Consultant

- Responsible for designing, managing, implementing and monitoring a plan surrounding BENTEK's technical organizational maturation and the development of BENTEK's technical strategic vision to manage the real time commoditization of information detailing natural gas flow rates and supply/demand metrics. To that end, development of an OLAP environment, measurable resource management, updated balanced prioritization on operational excellence with time-to-market development requirements, staff development and skill set inventory are a subset of the requirements associated with BENTEK's IT transformation.

Diagnostic Cardiology Products (DCP), LLC **2005**
Process and Engineering Services Consultant

- Accountable for designing, managing, implementing and monitoring the creation of required infrastructure to support the national sales requirements of products utilized in the operating theatre. HIPPA compliance governance established and business intelligence solutions. Included were the requirements to manage a co-development integration process with EKG, ultrasound and other cardiovascular monitoring process vendors.

Total System Services, Inc. **2004-2005**
Credit Card Business Intelligence Solution Architect

- Accountable for designing, managing, implementing and monitoring the creation of required infrastructure to support the business intelligence requirements of international credit card data mining

Total System Services, Inc. **2004**
Operational Process and Engineering Services Consultant

- Directly accountable for the organizational, resource, process and budgetary consolidation of the production operations, help desk, critical issue management, infrastructure (systems and network), and the operations data management teams. Managed planned staff reduction process and cultural transformation from a siloed organizational structure to a more matrixed cross-discipline organization.

Aurora Mental Health Center Consultative Assignment **2004-2005**
Data Management and Infrastructure Consultant

- Lead consultative team to review Aurora Mental Health Center's existing data management systems, business intelligence support

Total System Services, Inc **2003-2004**
Data Management and Engineering Services Consultant

- Tasked with the creation of an engineering group focused on the data management (DM) discipline. Additionally I was tasked with the integration of this newly created DM group into a matrixed cross-discipline group with existing engineers focused on the systems and network disciplines. Finally, directed a feasibility analysis surrounding 64 bit database servers.

Kroll Worldwide Factual Data Div. Consultative Assignment **2003**
Data Management and Infrastructure Consultant

- Worked with Fidelity to create a

Total System Services, Inc. **2002-2003**
Database Architecture Consultant

- Tasked with reviewing legacy application back-end processes and developing recommendations/processes and coding for optimization and scalability requirements. Additionally tasked with designing data management processes and data management architecture strategies for new application development.

Certifications

Microsoft Certified Database Administrator (MCDBA)
Oracle Certified Professional (OCP)
Information Technology

Education

University of California, San Diego (Applied Physics)
Coleman College (Computer Science)

KEITH BOESEL

(b)(6)

keith.boesel@azed.gov

EXPERIENCE

Arizona Department of Education, Phoenix, AZ — February 2002-Present

Director of IT Infrastructure (April 2008-present)
Manager of Network Services (February 2002-April 2008)

The IT Infrastructure department consists of Technology Support and Network Services. From 2002 to 2005 I was the manager of Network Services. In 2005, my responsibilities were expanded to include managing Technology Support. In 2008, I was promoted to Director but with the same group of employees.

Technology Support is responsible for assisting internal ADE users with the use of technology, including user questions and problem resolution, desktop imaging and repair, and user account management. Goals of the Technology Support team include providing the best customer service possible and providing secure and efficient technology systems to help our users complete their tasks.

Network Services maintains the server and network infrastructure for the agency, including OEM and internally-written applications, SAN storage, and IP Telephony. Network Services' goals include creating a mature, secure, and efficient infrastructure that minimizes service outages and provides the tools users require to accomplish their tasks.

My responsibilities include writing policies and procedures, budgeting, purchasing, planning, employee coaching and guidance, and problem resolution. I coordinate with the Support Center (ADE's external helpdesk), Operations, Data Management, Information Security, Project Management, and Application Development teams to maintain and implement enterprise-wide applications and resolve issues.

Some of the IT Infrastructure department's accomplishments during my time at ADE include:

- Migrating approximately 70% of our servers to a virtual infrastructure using VMware products for improved power, thermal, and management efficiency and improved disaster recovery
- Migrating about 70% of our physical servers to blade servers for improved power, thermal, and management efficiency
- Moving our Data Center to a facility managed by another state agency
- Implementing a disk-to-disk backup system
- Implementing a tiered storage architecture

TEKsystems, Phoenix, AZ October 2000-February 2002
Technology Professional
Assisted customers with information technology planning and design.

Accomplishments:

- Designed and implemented a web server farm used to distribute sales information to 1500 retail locations nationwide
- Consulted with a small organization to redesign their IT department
- Designed and implemented several Active Directory migrations

Syngress Media, Inc., Rockland, MA December 2000-January 2001
Author
Co-author of the book Configuring Exchange Server 2000 (ISBN: 1928994253). Completed two chapters, one on backing up and restoring Exchange 2000 Servers, and the other on Clustering Exchange 2000 servers.

IKON Office Solutions, Phoenix, AZ September 1997-October 2000
Senior Systems Engineer
Designed and implemented Microsoft Windows 2000 Server and Windows NT 4.0 Server networks. Diagnosed and repaired Windows NT and Exchange networks.

Accomplishments:

- Project lead for a Novell to Windows NT migration, including 15 servers and 700 workstations
- Project lead for an AS/400 to Windows 2000 migration including 10 servers and 250 workstations
- Worked on a Fortune 500 company's Microsoft Mail to Exchange migration
- Worked on a Fortune 500 company's Exchange 4.0 to 5.5 migration
- Completed several cc:Mail, GroupWise, Lotus Notes, and Microsoft Mail to Exchange migrations
- Participated in the Windows NT 5/Windows 2000 Rapid Deployment Project

Prior employment history available on request.

EDUCATION

The Ohio State University 1989 - 1995
College of Engineering
Columbus, Ohio

Bachelor of Science, Computer and Information Sciences.

INDUSTRY CERTIFICATIONS

Microsoft Certified Systems Engineer

- Windows 2003, completed May, 2006
- Windows 2000, completed November, 2000
- NT 4.0, completed June, 1998
- NT 3.51, completed October, 1996

Microsoft Certified Systems Administrator

- Windows 2003, completed September 2004

Microsoft Certified Database Administrator

- SQL 2000, completed April 2003

CompTIA Security +

- Completed July, 2006

(b)(6)

James R. Whelan

Experience

2007-present AZ Dept. of Education Phoenix, AZ

Director of IT Program/Project Management Office

- Director of Project/Program Management teams, including Project Managers, Business Analysts and Quality Assurance Testers.
- Lead team effort to standardize Project Management methodologies and guidelines.
- Lead PMO team in implementation of Waterfall and SCRUM Development Life Cycles (SLDC).
- Member and contributor to the IT Guidelines and Procedures team and IT Change Control team.
- Work with CIO and IT Directors on IT Strategic Planning and Operations.
- Successfully managed the PMO team in IT implementation of multi-million dollar projects.
- Work with ADE Management to plan, review, and implement IT solutions to legislative edicts and ADE Strategic Visions.

2005-2007 AZ Dept. of Education Phoenix, AZ

Business Analyst Lead (late 2005-present) / Business Analyst (2005-late 2005)

- Perform Business Analysis for IT projects at the AZ Department of Education.
- Promoted to manage all Business Analysis projects and personnel in late 2005.
- Manage various IT professionals in the Business Analysis group as well as provide guidance and support for QA and Project Management teams as needed.
- Specifically assumed and perform the role of Project Manager, in addition to Business Analyst, the last year to the Early Childhood, Exceptional Student Services, and English Acquisition divisions of the ADE.
- Lead team effort to standardize Business Analysis methodologies, customer service focus (internal and external to IT), and documentation standards.
- Lead team Business Analysis effort in releasing the new fiscal year's version of the SAIS software program earlier each of the past 2 fiscal years.
- Contribute to the Business Analyst definition and integration into ADE-IT's software development life cycle methodology (SDLC).
- Member and contributor to the IT Services Management Team.
- Participated in the ADE's Student Detail's Stakeholder meeting to promote IT's goals and objectives.
- Held training sessions for SAIS users and software vendors for technical and practical knowledge of enhancements to ADE systems.
- Intimate institutional knowledge of SAIS and of the ADE.
- Multi task many responsibilities simultaneously; from advising and providing internal customer service to other AZ Department of Education departments, to providing external customer service to software vendors, etc.

2002-2004 Spherion Technology Architects Scottsdale, AZ
2004-2005 AZ Dept. of Education Phoenix, AZ
(Consultant through Spherion through 6/27/2004 on location at the AZ Department of Education. After 6/27/2004, direct state employee of the ADE)

QA,/Software Tester

- Software Tester for the SAIS project at the AZ Department of Education.
- Write/execute test plans/cases focusing on User Acceptance Testing.
- Write/execute test plans/cases on the system and component levels.
- Identify time critical Production problems and initiate course of corrective actions.
- Handle all vendor communications including vendor support, vendor SAIS training, and vendor compliance testing.
- Perform GUI testing for all divisions of the AZ Department. of Education.
- Execute SQL database queries as part of testing procedures.
- Use Footprints bug tracking system to report all levels of progress on any system bug or AZ Department of Education IT issue.
- Multi task many responsibilities simultaneously; from various stages of different tests at the same time, to advising and providing internal customer service to other AZ Department of Education departments, to providing external customer service to vendors and school liaisons, etc.

2000-2001 Zany Brainy, Inc. Scottsdale, AZ
Associate General Manager-QA,/Trainer

- Handled all aspects of internal and external customer service, including policy and procedure training, both individually and in groups.
- Trainer for all aspects of Arizona operations, including JDA, Microsoft Back Office software and customer service policy and procedures.
- Beta tested JDA software and Microsoft Back Office applications.
- Television spokesperson for company in Arizona.

2000 Independent Contractor Scottsdale, AZ
Flex Solutions, Inc. – Election.com Project

- Assisted in the setup, testing, and implementation of the first ever legally binding Internet-based voting program for the Arizona
- Democratic Presidential Primary.
- Project Manager responsible for site surveys, software installation, and software testing for voting locations throughout Southern and Southwestern AZ.
- Communication liaison between management and end user.
- Technical support for the Election Day Command Center.

1997-2000 Frontier Airlines Phoenix, AZ
Station Auditor/Trainer/Associate City Manager

- Project developer and manager of agent training program. Wrote training materials and training coursework/manuals.
- Senior weight and balance agent and trainer.
- Trained employees on Shares computer software application.
- Extensive travel to help open stations in new cities and train new employees.
- Direct manager of 23 employees.
- General computer work with MS Office.

1996-1997 Alaska Airlines Tempe, AZ

Sales Agent/Lead Customer Support

- Lead Customer Service Agent and peer advisor for sales agent group.
- Computer experience with IMAGE (mask program for Sabre).
- Helped trained employees on IMAGE software application.

1994-1996 Warner Bros. Studio Stores Denver, CO

Store Manager – Gallery Quality Control Manager

- Management position in charge of animation gallery, sales, training and customer service.
- Created training materials and classes for employees and customers.
- Project Manager for the West Coast region's effort to install and test computer touch screen program for sales presentations.
- Traveled extensively throughout the U.S. to train and run special events.
- Doubled sales in Palm Desert, CA before promotion to Denver, CO.

Education

- Oakton C.C. – DesPlaines, IL - 1989
- Valparaiso University – IN - 1991

Current Interests

I love all sports and sporting events. I enjoy traveling, especially to sporting events and to amusement parks. I played and coached semi-professional baseball on local and international levels.

References available upon request.

Certifications

Professional IT Certifications:

State of Arizona Government Project Management Certification

Brainbench: Software Testing, Business, Computer Industry, Computer Fundamentals, and Project Management

Affiliations

Professional IT Affiliations:

Project Management Institute

Laurento Lindain, PMP

Highly accomplished, innovative, and goal-oriented Software Development Director with 14+ years' experience in the field of Information Technology and Software Development. Managed the development, implementation, maintenance, and support of software applications using Microsoft based technologies that increase business productivity, expand customer base, and promote centralized data management. Successful track record in leading IT groups to achieve business objectives and operational efficiency. Demonstrated strengths in creating IT development strategies to meet and exceed customer expectations.

CORE QUALIFICATIONS

- Software Application Development
- Project Stakeholder Contract Negotiation
- Outsourcing & Staffing Optimization
- Infrastructure Improvement
- Operations and Support Management
- Budgeting & Cost Containment
- Functional Organization Management
- Enterprise Architecture

PROFESSIONAL EXPERIENCE

ARIZONA DEPARTMENT OF EDUCATION – Phoenix, Arizona **2002-Present**

Provides services to approximately 1430 schools in 237 districts, 459 charter schools, and more than 1 million students. Implements state academic standards, administers statewide assessments, manages and allocates $900M per year of federal funds and $3B per year of state funds, and provides program improvement assistance to schools and districts.

Director of Software Development, Information Technology (2005-Present)

Planned, established, directed, and maintained the overall policies and procedures for the Software Development group. Developed systems architecture plans, estimated costs, and ensured projects meet strategic needs. Managed priorities for feasibility studies, systems design, and implementation to develop new and/or modify current software applications. Coordinated, interacted, and negotiated with the different IT function units. Supervised four direct reports (Project Technical Leads) with a total of 25 FTEs and consultants.

Performance Milestones:

- Initiated and executed SDLC methodologies that ultimately led to an overall process improvement and achieved more than 20% increase in productivity right in the first year of implementation.
- Introduced and implemented FogBugz, a project management and ticket-tracking system which helped manage software development and maintenance, subsequently improving the overall IT operations and technical support.
- Achieved key initiative of CIO and CTO by creating a .NET standards development program, including reusable and extensible components, to improve developer productivity and increase reliability and configurability of enterprise solutions.

Software Development Lead (2002-2005)

Managed teams of software developers to architect, design, implement, and maintain applications. Successfully implemented tight project development deadlines while working with limited resources. Responsible for maintaining the integrity and scalability of the underlying architecture of the enterprise system. Handled complex application features and technical designs.

Performance Milestones:

- Led the re-architecture of a major system component that resulted in more than 200% increase in processing performance.
- Successfully implemented annual changes to a statewide information system as mandated by state and federal legislatures.
- Provided an alternative solution using an online application that extends the functionality of a statewide information system for small schools who cannot afford to purchase 3rd party software.

SPHERION CORPORATION – Scottsdale, Arizona **1999-2002**

Provides integrated solutions to meet the evolving needs and priorities of companies and job candidates through recruitment and staffing. With approximately 375,000 employees in more than 8,000 clients, including 85% of the Fortune 100, making it one of the top employers in North America.

Consultant - Assigned on-site at the Arizona Department of Education (1999-2002)

Software Maintenance Lead (2002)

Managed and supervised a team of software developers and operators to implement, monitor, maintain, and support applications. Successfully managed priorities, schedules, and resources for change requests, bug fixes, and data requests.

Performance Milestones:

- Achieved more than 10% increase in productivity by creating effective processes and procedures for software maintenance, operations, and support .
- Created more than 20 data exports and custom reports to business units and legislatures to provide support decisions on legislative changes and budget allocations.

Analyst/Programmer (1999-2002)

Analyzed, designed, developed, tested, implemented, and maintained software, including web, middle-tier, and desktop applications. Provided technical support and training to other developers and team members.

Performance Milestones:

- Developed and maintained 3 major components of a multi-tier application.
- Re-designed database schema that optimized report generation performance by up to 200%.

EQUITABLE DATA CENTER INCORPORATED – Manila, Philippines **1997-1999**

Provides IT-related activities for Equitable PCI Bank's automation requirements to deliver products and services. A wholly-owned subsidiary of the bank which is presently the Philippines' third largest banking group.

Systems Analyst/Lead Programmer (1997-1999)

Led a team of programmers responsible for the development, implementation, and support of multi-tier banking applications. Assisted the Development Manager in targeting initiatives for future development projects.

- Created and implemented ahead of schedule 2 new wholesale banking applications.
- Built the structure and logic of a major mathematical model, the Black-Scholes algorithm, and converted to a single component function.
- Developed a custom security component specifically designed for a highly critical application.

IBM SOLUTIONS DELIVERY, INC. *(formerly ACI SYSTEMS, INC.)* – Quezon City, Philippines **1996-1997**

A wholly-owned subsidiary of IBM Philippines, Inc., provides systems integration and technology consulting. Offers services in such areas as systems development, data storage, and infrastructure management.

Consultant/Programmer - Assigned on-site at the PDCP Bank (1996-1997)

Analyzed, developed, tested, implemented, and maintained client-server banking applications. Provided technical support and training to other programmers and team members.

- Enhanced and revised several programming modules.
- Developed, maintained, and supported existing retail banking applications.

EDUCATIONAL BACKGROUND

UNIVERSITY OF SANTO TOMAS – Manila, Philippines
BS in Mathematics Major in Computer Science

CERTIFICATIONS

Project Management Professional (PMP) - 2006

Microsoft Certified Software Developer (MCSD) - 2002

Terry L. Mendez

SUMMARY

Highly skilled information technology professional with over 20 years experience. Experienced in all phases of design, maintenance and implementation of quality software. Adept in technical and user support for hardware and software issues. Recognized for communication and people skills. Quick learner, decisive and resourceful. Talented in pre and post sales and implementation support.

ACCOMPLISHMENTS

Call Center Operations

- Technical lead for selection, purchase and implementation of LAN based ACD switch.
- Consulted with clients to provide inbound customer care call center solutions.
- Developed and maintained Interactive Voice Response systems to meet client requirements in a timely fashion.
- Defined and documented technical call center methods and procedures.
- Technical lead for selection, purchase and implementation of customer relationship management platform.

Product Development

- Technical lead for initial implementation of new product at beta customer site which was completed ahead of schedule.
- Assisted in two subsequent implementations that were successful, resolving all customer issues.
- Completed new automated replenishment module for on time delivery to client site.

Information Services

- Designed, developed, and instituted an operational tool currently in use by Alcatel Data Networks and Sprint network support personnel to diagnose network alarms that resulted in a reduction of network switch resets by 900 per month.
- Prototyped verification, packaging and distribution of a major network release on a new hardware platform. Received Sprint Monthly Champion Award.
- Re-engineered all key processes for Configuration Management covering software distribution, ordering, and problem resolution. Received Alcatel Data Networks Premiere Employee Award.
- Managed all aspects of data processing for Melart Jewelers that included support for 20 retail stores and over 250 users.

Customer Service/Technical Support

- Implemented a process to notify customers of new product availability via electronic mail that reduced ordering and shipping time by an average of 4 days.
- Reduced the volume of hard-copy document reproduction by providing customers with electronic document and software retrieval.
- Reduced outstanding customer problem reports queue from 70 to less then 5 in a one month period. Received Sprint Monthly Champion Award

Quality Assurance

- Instituted a process that allowed software development groups to transfer product electronically, resulting in the elimination of the inefficiencies and cost associated with a paper-based process.
- Reduced errors in customer software deliveries from 20% to 2%.
- Increased on time delivery of customer software orders to 99%.
- Performed quality assurance testing of network management software, assuring customer satisfaction.
- Evaluated and purchased software, hardware, and media to support Product Operations.

- Recommended software packaging alternative, reducing magnetic media costs by more then 50%.

PROFESSIONAL BACKGROUND

STATE OF ARIZONA, DEPARTMENT OF EDUCATION, PHOENIX, AZ 2001 - PRESENT

Director - Support and Operations

Oversees the daily operations of ADE Support Center and Operations unit and its various components, ensuring compliance with agency, local, state, and federal policies and regulations.
Establishes and implements units policies and procedures
Oversee the supervision of personnel, which includes work allocation, training, and problem resolution; evaluates performance and makes recommendations for personnel actions; motivates employees to achieve peak productivity and performance
Participates in and coordinates the implementation of data collection and analysis systems for the unit.

EXCELL AGENT SERVICES, PHOENIX, AZ **1998 - 2001**

Director of Technical Services

Provide strategic direction for call center technical infrastructure. Plan and organize operational priorities to meet organization objectives. Provide support and information to sales, operations and executives teams. Oversee all technical activities including telecommunications, LAN, ACD, IVR.

JDA SOFTWARE, PHOENIX, AZ **1995 - 1998**

Systems Analyst

Research, analyze and create detailed technical specifications for new development projects. Monitor, prioritize and disburse product problem reports to developers. Review code, test results, functional change documentation and test plans to maintain standards. Unit test all patches and enhancements for application modules.

TRG, INC., PHOENIX, AZ **1995**

Senior Consultant, Application Engineer

Provide planning, design and technical consulting to educational institutions throughout the United States.

ALCATEL DATA NETWORKS (SPRINT INTERNATIONAL), RESTON, VA 1988-1994

Supervisor, Software Development, 1993-1994

Provided technical leadership and managed resources in the Software Configuration Management group.

Member of Technical Staff, 1990-1993

Assisted software developers in the testing of Sprint International data communications products. Identified and corrected defects in Network Management Center software products.

Support Systems Analyst, Network Services, 1988-1990

Managed and distributed Network Control Center software. Provided security and Prime system administration back-up. Performed quality assurance testing of software.

MELART JEWELERS, SILVER SPRING, MD **1986-1988**

Data Processing Manager

EDUCATIONAL BACKGROUND

Strayer College

- Computer Information Systems

Yorktowne Business College

- Computer Programming

(b)(6)

Rick Rachkofski

Education

1966 – 1970 Niagara University Lewiston, NY
Major: Sociology; Minor: Philosophy
- Graduated Magna Cum Laude

1971 – 1973 State Univ. of New York at Buffalo Amherst, NY
Masters Program in Sociology
- Completed all coursework; left for full time management position

1982 – 1983 AZ Inst. Of Business & Technology Phoenix, AZ
Major: Computer Programming
- Graduated first in class in an intensive nine month program for computer programming, operations, and accounting

Professional Experience

1973 – 1993 Niagara Falls, NY and Phoenix, AZ
Various Management Positions
- After graduate school, gained experience in a variety of management positions in the following fields: home and commercial audio systems design facility; furniture manufacturing front office; commercial art business office

August, 1993 - to present AZ Department of Education Phoenix, AZ
Data Management Director, IT
- Started as an Administrative Assistant in the computer technology section of the Accounting unit
- During the next sixteen years in state government moved from the position above to Programmer Analyst in the IT department; then to lead supervisor in the software development area; then to the IT department's Process Manager; then to Director of Infrastructure; and finally to Data Management Director
- In addition to the standard responsibilities of these positions, within the last ten years, had the responsibility for the IT budget creation and control

Objective

To continue in the education arena and play a valued role in the maturation of data quality efforts and the construction of data driven decision support mechanisms for the entire state as an Enterprise for educational improvements.

Jenner Holden

(b)(6)

Experience

Information Security Office

April 2008 to Present

Arizona Department of Education, Phoenix AZ

- *Governance*
  - Developed, implemented and oversaw an enterprise-wide **security program**, including a governance framework, policies, training, incident monitoring and security assessments.
  - Provided **leadership** across the enterprise for all aspects of information security. Routinely briefed executives on security matters, and persuaded them towards/against specific actions or investments.
  - Developed and implemented understandable and enforceable **information security policies**
- *Security Awareness Training*
  - Developed and **taught security awareness training classes** to all agency employees (700+), in groups from 3 to 80. Consistent praise for making the training relevant and interesting, as well as explaining technical concepts in ways that can be understood by non-technicians.
  - Developed **written security awareness training materials**, including an intranet security awareness portal.
  - Created and implemented **an innovative training mechanism** for recognizing and responding appropriately to phishing emails. Sent out test phishing emails to all agency employees, tracked the actions and created metrics to assess risk and future training needs.
- *Intrusion Detection/Incident Response/Forensic Analysis*
  - Daily review of intrusion detection system alerts, as well as other system logs. **Conducted incident investigations and analysis**, including network forensics, malware analysis and hard drive forensics. Lead the incident response team when necessary.
- *End-Point Protection (Malware Prevention, Encryption)*
  - Daily monitoring and investigation of malware alerts, **including in-depth analysis of malware** not being detected by the Anti-Malware solution.
  - Managed the vendor selection and deployment of **full-disk encryption** for mobile devices.
- *Vulnerability Management (Vulnerability Scanning, Application Assessments)*

    - Implemented **a network vulnerability scanning** and remediation process. Configured, scheduled and reviewed scans. Identified false-positives, categorized findings by risk and oversaw the remediation efforts.
    - Conducted **application security assessments** using both automated scanners and manual testing. Consistently discovered flaws including SQL injection, cross-site scripting, and hard-to-find logic flaws. Oversaw the remediation process.
- *Identity Management*
    - Provided leadership, requirements and backing for a new identity management system. Includes the ability for delegated administration, policy-driven workflows, and federated authentication and provisioning. It will server all educational stakeholders in the State of Arizona.

IT Auditor I, II, Senior IT Auditor (Security Specialist) - Quickly Promoted
August 2005 to April 2008
Arizona Office of the Auditor General, Phoenix AZ

- Conducted Penetration Testing/Security Assessments - Consistently discovered and exploited high-risk security vulnerabilities in web applications, web servers, and other systems that routinely resulted in unauthorized access to backend databases, compromise of user accounts, or complete control of the server. (Resulting Reports Include "Arizona Department of Education - Information Management (August 2006, Report No. 06-07)" & "Arizona's Universities - Information Technology Security (June 2008)" found at http://www.auditorgen.state.az.us/)
- Developed and taught classes of 15-70 people on security awareness, auditing IT controls, and web application security - Consistently received excellent feedback such as, “Jenner was destined to be an instructor…he made the class feel like he was having a personal conversation with just you…”
- Managed Vendor & Consulting Relationships - Evaluated and recommended the purchase of various security audit tools. Managed the relationship with the security audit tool vendors. Prepared RFP’s for security consulting services and participated in the evaluation process. Managed the consulting relationships and ensured a positive outcome and successful deliverables

Auditor I, II -
August 2004 to August 2005
California Bureau of State Audits, Sacramento CA

Technical (experience using, securing and/or performing security assessments against)

- Microsoft: Windows (2000, XP, Vista, 7), Server (2000, 2003, 2008), Office, IIS, WSUS, Active Directory, SharePoint, SQL Server (7, 2000, 2005, 2008), .NET Applications, ASP,

- Other: Linux (Red Hat, Ubuntu, Debian, Suse, etc), AIX, Solaris, Apache, MySQL, DB2, Oracle, PHP, ColdFusion, Java, McAfee EPO, VMware ESX platform
- Network: F5 BigIP load balancer, Cisco IPsec VPN, Firepass SSL VPN, Cisco ASA Firewall, Cisco IPS, 802.11 a,b,g,n, Bluetooth, RFID,

Security Tools (experience using and/or implementing)

- Network Assessment: McAfee Vulnerability Manager (Foundstone), eEye Retina, Core Impact, Nessus, Nmap, Metasploit, OpenVAS, Cain & Abel, John the Ripper, Nikto, GFI LanGuard, BackTrack Live CD, Qualys Guard,
- Application Assessment: Cenzic Hailstorm, HP WebInspect, ratproxy, Paros proxy, Fiddler, Burp Suite, WebScarab, Firebug & other Firefox extensions
- Wireless Security: AirDefense, Air Magnet, Kismet, NetStumbler, Aircrack,
- Anti-Malware: Trend Micro, McAfee
- Encryption: Safeboot, PGP, GnuPG, TrueCrypt
- Intrusion Detection/Prevention: Cisco IPS, Snort, Cisco MARS,
- Network Forensics/Log Analysis: Wireshark, Gigastor, Splunk,
- Computer Forensics: Helix Pro 3

Education and Certifications

Certified Information Systems Auditor (CISA)
2007

Master of Public Administration, *Finance and Management Analysis*
April 2004
Brigham Young University, Provo UT
Bachelor of Arts, *Economics*
April 2002
Brigham Young University, Provo UT

Jean.Ajamie@azed.gov
Contact: 602.542.8734

JEAN AJAMIE

Professional Experience

Arizona Department of Education— Phoenix, Arizona 2000 - Present
Domain: Safe and Drug Free Schools
Role: Director of School Safety and Prevention Unit

Primary Responsibilities:
Provides direction and oversight for the following federal and state programs:

- US Department of Education Safe and Drug-Free Schools Program
- State of Arizona School Safety Program and Chemical Abuse Prevention Program
- Centers for Disease Control and Prevention (CDC) HIV/Pregnancy Prevention Program

Other Responsibilities:

- Research and evaluation of the above programs and other school safety initiatives
- Ongoing development of comprehensive data surveillance system for school safety
- Oversight of $22 million budget
- Development of technical assistance and training for school personnel on implementation of effective drug and violence prevention programs and emergency response planning

Expertise:
Project Management: Skilled project manager with the knowledge, skills, and ability to:

- Reach consensus on project goals and deliverables
- Assess project for strategic risk: anticipating problems before they occur
- Create an effective project plan: accomplishing the goal with the team's buy-in
- Manage change: controlling the project day to day
- Extract best practices for future projects
- Ability to see a whole system in relation to its parts

Program Manager: Provided direction and oversight for the successful development and implementation of the Arizona Safety Accountability for Education (Az SAFE) initiative which was funded by a $1.4 million US Department of Education data infrastructure grant

SME (Subject Matter Expert): Providing Business Rules and definition to IT group and other business units. Review, improve, and approve business requirements. Train and educate new users on the business matters.

(b)(6)

RESUME

Qualifications:

- Extensive expertise in assessment, development and deployment of Information Technology in complex organizational environments across a variety of industries and Information Technology infrastructures
- Comprehensive planning skills and timely delivery record
- Outstanding thought leadership and communication skills
- Excellent business and technical analysis skills and solution acumen
- Adeptness at forming partnerships and building work teams

Major areas of expertise:

- Strategic Planning, Enterprise Integration
- Architecture, Re-engineering, Optimization of Processes, Systems, Data
- Enterprise Scale Program/Project Management
- Quantitative Analysis and Modeling
- Data Warehousing, Data Mining
- Parallel and Distributive Processing
- Methodologies, Tools, Metrics

Education:

University of California Los Angeles: Ph.D., Management Science - 1988
Concentration in optimization of data processing systems.
University of Miami, Miami, Florida: **MSc Management Science - 1978**
Hebrew University of Jerusalem, Israel: **BA, English Literature and Political Science - 1972**

Professional Experience:

Arizona Department of Education 2006 – Current

Project Manager - Data Warehouse project funded by Federal SLDS grant. 2007 – current

- Established the Data Warehouse framework - data sources, business intelligence measures (cube content), development process, infrastructure, phased delivery project plan, user interface, access privilege classes, user training.
- Managed the project including staffing
- Delivered numerous presentations on the Data Warehouse and demonstrations of actual measures information to various stakeholders.
- **Project Manager** – Project portfolio management for the IT Program office 2006

Arizona State Retirement System (ASRS) 2002

Consultant

- Developed a Strategic System Plan for Automated Customer Center, Customer Document Imaging and Financial System, including project budgets, project investment justifications and timetables. The plan was approved by ASRS Board of Directors.

Arizona Department of Education (ADE) (Microsoft/Internet Environment) 1997 - 2001

Child Nutrition Services 2001

Advisor

- Audited all systems and processes for compliance with 10 USDA Nutrition Programs (e.g National School Lunch Program) and operational efficiency. Recommended corrective and improvement measures.
- Designed an interactive Web tutorial to assist schools in selecting the USDA program most appropriate to their circumstances

Project Director - Student Accountability Information System (SAIS) 1997 -2001

Defined requirements, project scope and plan for new school funding and reporting

systems. Established and managed a project team of 20 consultants. Project constructed as 2-phase delivery: New School Funding System in first phase delivered in summer 1999 and a Statewide Student Tracking System in the second phase delivered in summer 2001.

- The project encompassed: system development at ADE; enhancements to 10 Student Management Software products by the product vendors; pilot with selected districts; deployment across 1800 schools and 200 school districts educating 850,000 students.
- Provided extensive presentations, discussions and status reports on new systems concepts, processes, plans and progress to various organizations within Arizona education system, including the State Superintendent of Education, Arizona Government Information Technology Agency, Legislative Committees, County & School District Superintendents and Administrators, Teacher Union, State Auditor General, ADE Units, Student Management Software Vendors.
- The new School Funding System includes 6 distinct Student Counts; Funds Apportionment & Payment; School Budgets; a statewide Local Education Agencies (LEA's) Database. All subsystems follow a 3 tier design where authorized staff of LEA's upload mandated data files to ADE web site, triggering a chain of Object Processing that culminates in placing PDF reports at the LEA's Directories in the ADE Web site. Some reports are accessible to the public. To satisfy Arizona law, all subsystems designed to maintain data and particular processing rules for each of the latest 3 fiscal years, enabling retroactive changes in funding.
- The Statewide Student Tracking System tracks students from preschool to graduation maintaining state standard tests achievements and data that pertain to state and federal funding. Data are submitted electronically, via the Internet, by LEA's Student Management Systems, and on CD's by the external testing agencies. The system calculates Student Counts for all LEA's for funds apportionment and mandated reports. The system supports automation of federal funds appropriation and reports and research and policy analysis of academic progress, student mobility, cost of education and ad hoc issues.

PCSHealth Systems Co. Scottsdale, AZ **1996**
Consultant

- Led the development of a comprehensive Information Model integrating PCS pharmaceutical benefit management with managed care services for chronic diseases/conditions patients. The model was used as baseline for assessing enhancements and changes needed in PCS system to enable PCS entrance into managed care arena.
- Designed an Electronically Facilitated Business Review Process for the model, using Ventana Group System software.

American Express, TRS Technologies (Multi IBM mainframe Environment) **1985 - 1995**
Director - Productivity and Quality, Phoenix, AZ. **1992 - 1995**

- Established and managed Productivity and Quality Goals and Measurement Program, for an IT organization of 1100 employees that supported the card and travel business systems. The major Metrics of the program were: Function Points based Productivity, Time to Market, Resource Utilization, Project Estimation Variance; McCabe Code complexity; Release Accuracy; Production Failures; Customer Satisfaction.
- Built and deployed a Client/Server platform for Metrics consisting of IBM AS Project Tracking System, Metric Tools, Applications Repository, Executive Information System.
- Identified process deficiencies through continuous quantitative and root-cause analyses.
- Provided on-going education to all levels of the organization, focused on results analysis and potential ways for improvement, using the framework of SEI Capability

Maturity Model.

- Recommended and supported process re-engineering initiatives: methodology (METHOD1) implementation, project prioritization, scheduling techniques, dedicated maintenance teams, upgrade of the Client/Server Development Environment, roll-out of automated release process, roll-out of Computer Assisted JAD, Usability testing, migration to COBOL/370.
- Results of 1994 over 1993 showed 60% improvement in average Time to Market and 37% improvement in average Effort Productivity.
- Advised the Data Warehouse project on performance assessment of parallel processing platforms (IBM SP/2, AT&T 3600, Encore, HP 9000, Sequent, TMC-CM5).

Director - MIS, Phoenix, AZ. **1988 - 1992**

- Directed the development and implementation of Credit risk MIS, in partnership with the Credit risk business units. System consisted of: a Data Warehouse with a segmented database of 20 million accounts maintaining rolling 25 months of data on financial activity and delinquency, 1% sample database, a time-series multidimensional database (MDD) of business metrics for on-line analysis processing (OLAP) maintained on mainframe and replicated on PC's, executive information system (EIS) of time-series multidimensional numerical and graphical performance reports. Data segmentation design enabled parallel processing of updates, analysis and queries. Application provided daily updated data for analysis performed by 80 business analysts. Application enabled adaptive collection policies and minimization of reserve for losses.
- Implemented the natural language query tool INTELLECT for Marketing Research analysts.
- Led the design of a worldwide Service Establishment MIS.
- Member of a joint AMEX-IBM work group that designed an MVS parallel processing facility for very large data retrieval applications (Marketing System). Contributed process flow model to the system design.
- Performed a comparative capacity analysis of parallel processing platforms for querying massive data repositories (100 million accounts Marketing Database). Due to findings, the intended $20MM investment was shifted from a SIMD Connection Machine to the subsequent MIMD computer.

Director - Development Tools, Ft. Lauderdale, FL. **1985 -1 988**

- Conducted studies on CPU consumption by development activities and by decision support activities. Recommended consolidation of each area on a dedicated machine.
- Directed the consolidation of two development environments servicing 500 technicians into one dedicated machine.
- Rolled-out application development/maintenance tools: Performance Analysis (Strobe), Testing (Xpeditor) and Design Analysis (PMSS).
- Led the development and roll-out of a mainframe Programmer Workbench- an ISPF facility that integrated access to compilers, development and testing tools, home grown utilities and associated user guides.

Burger King Corporation Miami FL.(IBM mainframe environment) **1983 - 1985**
Director - Financial System,

- Stabilized failing systems. Selected MSA accounting software. Installed hardware and accounting software in the European operation center. Implemented financial analysis software (IFPS Mainframe/PC).

Myrna Rae Johnson

Consultant, Spherion, Phoenix, 2005-2009 and MDI, 2009-Present
2006 to Present, At Arizona Department of Education (Spherion '06-'09, MDI 09-present): Business process and data analysis for state longitudinal data system warehouse project in SQL server-based environment. Currently working on extensive analysis of master data, including redefining entity hierarchies, attributes and legal/funding/data/service relationship mapping for state public, charter, private, post-secondary, tribal and BIE schools, preschools and Head Starts. Also performed detailed analysis of federal, tribal, state, and county schools funding streams (grants, appropriations, property taxes, and other secondary funding).

Previously project manager and business analyst for standardized state testing (AIMS) technology projects and associated statistical analysis of test results, AYP and AZLEARNS ratings programs. Determined process improvement and re-engineering opportunities on production data systems, along with decomposition and documentation of IT supporting functions. Created requirements documents, performed ad hoc analyses and operations support.

2006, At Arizona State Retirement Systems: Business analysis for retirement system development project transformation from manual process, including cross-platform development. Created requirements for existing undocumented business functions via a variety of techniques such as JAD sessions, process mapping, database research, and research for financial, legal, federal, and state regulatory compliance.

2005, At American Express: Supporting tasks for implementation of global sales prospecting system.

Independent Consultant, Phoenix, 2002-2005
2004, At Wells Fargo Bank: Analyzed transactional risks in support of Sarbanes-Oxley Act, including research into undocumented business processes, risk identification and analysis, scope definition, and risk resolution recommendations.

2004, At American Express: Created process flows and work flows for an enterprise financial reporting system with master data and metadata implementation.

2003-4, On behalf of a software development company: Provided on-site analytical and project management services for the British Nuclear Fuels' Oracle-based nuclear waste tracking system, specializing in core sampling business processes. Duties included integration analysis between conveyor, data, and equipment software; requirements tracing and collaboration with end users and other SME groups to meet NRC, Federal and state regulatory and project operational needs; module scope definition; requirements change control tracking; and end user forms prototyping. Created process workflows based on researched business rules and equipment operation; analyzed and identified subsequent gaps; developed recommendations for system efficiencies and corrective actions. Conducted system test and project scope reviews, as well as business requirement and JAD sessions.

2002-3, For a private consulting company: Performed strategic and tactical analyses on emergency management business continuity plans for the U.S. Senate and General Services Administration, including: organizational readiness assessments; cross-organization and interoperability dependencies; risk mitigation analyses; creating final recommendation report deliverables. Created plan tests with catastrophic disaster scenarios based on potential threat

placement within targeted facilities, backup facilities routes of travel, business ingress/egress points, and specific continuity plan stated responses.

Consulting Analyst, AdvancePCS, Scottsdale, AZ, 1995-2002

1998-2002: Performed project management, human factor studies, and process re-engineering for automated mail service pharmacy system operations in Texas, resulting in reduced costs and streamlined activities. Was corporate construction liaison and internal corporate project manager for the creation of a 112K SF automated mail service pharmacy in Birmingham, including operational analysis, integration of conveyor, data entry, and equipment software. Also monitored compliance and implemented corrective measures to meet physical security considerations, DEA, other Federal and state regulations, mail, and OSHA standards. Performed a variety of studies and self-initiated projects involving operations or business process re-engineering and cost benefit analyses, including bin box improvements, outbound mail prep, packaging, manifesting, and loss recovery, as well as initiating an outsourced carrier trial study.

1995-1998: System development project manager for a variety of internal and external client projects. Trained as a Ventana group system facilitator and facilitated company business sessions for business and systems requirement gathering, JAD requirements, re-engineering, organizational alignment, and corporate marketing strategy development. Created system process flows for undocumented primary company software and business use cases, based on software functions and programmer interviews. For several development systems, performed systems analysis, helped develop logical data models, and wrote technical specifications.

Independent Consultant, Phoenix, AZ, 1994-1995

On behalf of a quality software assessment company: Developed corporate quality and employee satisfaction surveys for a large corporation. Performed survey results analysis and created management recommendation reports for increased employee effectiveness, risk mitigation, and process quality improvements.

At USWest: Provided project management for a new Yellow Pages enterprise terradata database conversion. Developed user requirements, logical data models, and data dictionary definitions. Performed statistical analysis on advertising data.

Sr. Analyst, American Express, Phoenix, AZ, 1990-1994

1992-1994: Performed strategic and tactical planning for the worldwide technology division. Performed special projects for international IT management, including evaluating best in class practices, researching and teaching a workshop on the company structure, goals, and drivers of major corporate entities. Created ad hoc white papers on technical topics for the CIO and senior management, including statistical analyses on operational topics. Self-initiated a strategic intellectual capital project. Contributed technical and organizational articles to the global IT magazine.

1990-1992: Provided project management for a $250 million international system development, including budget estimates, scheduling, senior leadership status meeting coordination, and strategic project change control monitoring. Created personal project and budget analyses for the senior corporate executive in charge.

Intelligence Analyst, US Army Reserve, 1975-1977
San Jose State University, 1984, BS Journalism
Mission College, 1982, AA Liberal Arts

Nancy Quinn
(b)(6)
E-M

SUMMARY

Experienced technology director specializing in software implementation and project management; focusing on e-Learning, training, user support and data visualization.

KEY PROJECTS AND EXPERIENCE

- **Over 7 years experience of managing staff including budgets, schedules, and evaluation of strength. Coaching and empowering employees to develop their skills**
- **Building and reorganizing training departments standardizing documentation and delivery**
- **E-learning environments, Portals, SharePoint and Web site production**
- **Data Warehouse, Data visualization, reporting dashboards and end user training**
- **Improvement of User Support areas by developing online resources and implementing matrix management**
- **Major Software Implementations including ERP systems, Microsoft systems, CRM and Data Visualization**
- **Wireless campus implementation**
- **Global Online Banking Training and Support**

SOFTWARE AND COMPUTER SKILLS

Microsoft: Performance Point, Data Warehouse Solutions, Data Visualization tools: Pro Clarity, Tableau, Excel Web Services, SharePoint, Office all versions. PeopleSoft: Portal, Queries, Campus Solutions, UPK (User Productivity Kit). Network: Citrix, VPN, Anti-Virus/Spyware SQL, Active Directory, Wireless networking, VPN, Exchange, Microsoft Server, and Remote Access. Training: Learning Management Software (PeopleSoft, SharePoint and Developer Built), Blackboard, RWD, UPK, Macromedia Captivate and Contribute Internet/Intranet: Web Trends, WebEx, Live Meeting, Web authoring software, SharePoint Services, SharePoint Server and SharePoint Designer, HTML and Adobe. Reporting: Pro Clarity, Performance Point, Tableau, Excel Web Services, Dashboard creation, Crystal, iStrategy, Business Objects, Queries, BI Publisher, Web Intelligence Sales: (CRM) Onyx. Imaging: Image Now. Event Scheduling: R25.

PROFESSIONAL EXPERIENCE

[2008-Current] Arizona Department of Education; Phoenix, Arizona
Technology Senior Lead: Data Visualization, Training and Support

- **Managed Data Visualization and End User Implementation and all training for major 3 year Data Warehouse Project for the State of Arizona**
- **Created and maintained E-Learning Web Site for End User online and blended training.**

[2004-2008] Towson University (large Maryland State College with 20,000 plus students); Towson, Maryland
Promoted to: Application Consulting Services Director: to manage 5 Senior Managers and implement the following projects)

- **R25: Event Scheduler and Master Calendar**
- **PeopleSoft version upgrade to 9.0 (HR, CS and Financials)**
- **UPK: PeopleSoft User Productivity Kit for online training and analysis**
- **ImageNow: Scanning software for paperless environments**
- **PeopleSoft Portal Environment**
- **Reporting: iStrategy (Data Warehouse) PeopleSoft Queries and Crystal Reports**
- **SharePoint: Project Management, Document Management, Integration with Office and Reports**

(Hired as Technology Training Manager and did the following:)

- **Managed 6 people (Instructional Designers, online developers and trainer)**
- **Creation and management of the University's technology training department**
- **Created e-Learning environment including over 245 self-help 24/7 online documents (this site is requested nationally and is currently used by other business and academic institutions)**
- **Provided major support for the University's IT Help Center acting as a first level support**
- **Provided project management, training and documentation for all standard University software and projects**

Laureate Education Inc. (Online global University); Baltimore, Maryland Director of Learning and Performance (Managed 7 Matrix Trainers nationwide)

- **Standardize method and tools for training and development delivery**
- **SharePoint implementation for Intranet resources including deploying Training materials, Disaster Recovery, Surveys and Client Directory, Microsoft Live Meeting, uPerform (RWD)**
- **Partner with vendors and training team to deliver worldwide CRM and sales training**

[2000-2004] Lynx Software Systems (Financial Software Company based in UK); Irving, Texas
Project Manager\Trainer\Network Administrator

- **Network Administrator for the company: Win 2000 Server and Pro, Active Directory, SQL, NT, Exchange (e-mail), VPN, 98, Dual Booting, Disaster Recovery, Server Configuration, Virus Control,**

Network and Building Security, Firewall, Ghosting, Backups and Restores. Purchased, configured, standardized and maintained all hardware

- **Project Manager of Online Banking software from concept, development, to implementation**
- **Trained clients on in-depth database financial software, SQL and Microsoft Software**
- **Trained company employees on new Help Desk and Data Tracking Software**
- **QA Testing of Software**

[1994-2000] City Of Naperville Illinois; Naperville, Illinois
Computer Trainer and Support Analyst for major school district (203)

Trained students, teachers and Principals in all Microsoft software, e-mail, web page authoring, Internet use and over 50 other specialized software packages.
Responsible for 5 primary buildings, 16 secondary, over 18,000 users and 1000+ computers.
Partnered with Computer Associates implementing their software on 21 servers and 1000+ workstations, including agent, Remotely Possible, Software Delivery.
NT networking on servers-User Manager, login control, workstations and wiring, IP, TCP, DHCP, Client Server, printers, Mac networking, Continuous virus control.

[Prior Experience] Sales Representative for 3 Fortune 500 Companies: Dr. Pepper Soft drink Company; Chicago, Illinois; Johnson and Johnson Des Moines, Iowa; Revlon Cosmetics Company; Des Moines, Iowa

Summary Description of Nancy Quinn

Excellent people manager excelling at building strong teams and developing staff

Expert in project management and building e-Learning Portals and delivering blended learning

Expert knowledge and experience in enterprise and end user software implementation

Strong liaison between technical IT, HR, upper management and end user

Skilled at budget and statistic tracking and reporting for proof of department's productivity

Outstanding at building "good will" and creating positive public relations throughout cross functional units

EDUCATION
University of Iowa; Iowa City, Iowa: BBA Marketing, Minor in Communications

KENNETH W. KURKOWSKI, PMP, MBA

(b)(6)

CAREER SUMMARY

Project Management specialist with a background in systems and technology supporting a dynamic business environment. Experience includes: Project Manager with government agency background, Senior Project Manager of a hardware/software release for a Fortune 100 technology company. Project Manager incorporating a new subsidiary into Ameritech systems; integrating business strategies with related human resources, technology, and real estate to enhance workplace productivity. Proven ability to manage multiple projects within demanding environments and experienced in building self directed teams.

CERTIFICATIONS

Project Management Professional (PMP) – 1999
Certified State Government Project Manager - 2009

EXPERIENCE

Arizona Department of Education, Phoenix, Arizona 2007 to present
Project Manager,
Project Management of Hardware/Software releases.
Functioned as Project Manager managing teams for multiple projects.
Successfully completed projects on-time with high-level of external customer satisfaction .
Project management of:

Highly Qualified Teachers application rewrite, completed on time, within budget, with high quality, with high level of internal and external user satisfaction with new application. Currently in Phase II Reporting.
Certification application rewrite, currently in Development phase.
EduACCESS – Single Sign On/Federation replacement for Common Logon system
eSTUDIES-Enterprise a rewrite of ADE's Enterprise system in discovery phase
eSTUDIES-Financial Systems a rewrite of ADE's Budget/APOR/CHAR and related applications in discovery phase.

TigerMAG, Surprise, Arizona 2005 to 2007
Operations Manager,
Manage the manufacturing and shipping & receiving operations.
Implemented changes to the manufacturing process improving productivity by 37% and reduced costs by 17%.

Implemented new processes to streamline the shipping process and reducing costs by 25% and shipping time by 2 days.

Computer Horizons Corp., Rosemont, Illinois 2000 to 2001
Senior Project Manager,
Project Management of Hardware/Software release at Fortune 100 client site ($3M)
Functioned as Project Manager managing multiple teams for troubled project
Successfully completed project on-time with high-level of external customer satisfaction
Resulting in avoidance of end-of-life hardware issue and $1M penalty

AMERITECH, Hoffman Estates, Illinois 1969 - 2000
Specialist Project Management, Corporate IS (1998 to 2000)
Project Management of medium sized projects ($250K - $1M)
Managed Project Management Office (PMO) for Financial Systems Development Group
Resulting in standardization of project tracking and metrics
Managed multiple simultaneous projects
Lead implementation of Program Realization Process (PRP) in the Financial Systems Development Group
Functioned as a team member for the Marketing Finance & Human Resources Organization Roll out
Team member – CMM/PRP Alignment
Managed Optimization Coordination for the Financial Systems Development Group.
Functioned as Application Coordinator.
Resulting in $500,000 savings in 2000
Resulting in $750,000 savings in 1999

Project Manager - Financial Transformation Accounts Payable, Corporate IS
Coordinated optimization strategy resulting in $600,000 in savings for 1998
Lead the Financial Transformation Netcom Standardization Team PMO.
Lead Netcom Standardization Deployment team.
Participated as a core member of the Financial Transformation Accounts Payable (AP) Team, responsible for the analysis, design, and implementation of the PeopleSoft Rel. 6.0 AP system.

Specialist Workplace Solutions, Corporate Real Estate (1996 to 1996)
Managed Ameritech's Integrated Workplace Strategies (IWS), Visitor Work Centers and IWS technology requirements.
Successfully initiated development of Enhanced Business Services channel strategies based on Virtual Office Model.
Resulted in pilot program in Ohio for sales group, group achieved highest sales of over $600K for three months running.

Managed the Network Services Telework (Telecommuting) Team, responsible for setting direction of program. Marketed program to Ameritech's top 500 customers.
Lead the planning, development, implementation and maintenance of local modifications for four Bellcore VM applications, updates and fixes to the Customer Billing System and for maintenance releases and local modifications to 3 AT&T systems (LMOS, TREAT and LATIS).

TECHNICAL

Participated in formal off-site Project Management Training
Received formal Project Training on the following Project Management Tools
Project WorkBench
MS Project
Primavera 2.0
Received formal on-site Function Point Training
Query/Crystal Power Reporting
Experienced in MS suite of applications
Software Installation and hardware configuration.
Focus (Limited exposure since 1993)
Lotus Notes (On-site)
COBOL (Limited exposure since 1988

MILITARY SERVICE

U.S. Marine Corps, Active duty: Honorable Discharge

EDUCATION

M.B.A., Olivet Nazarene University, Kankakee, Illinois,	1996
B.A., Management, National-Louis University, Evanston, Illinois,	1993
A.A., Harper College, Palatine, Illinois,	1991

AFFILIATIONS

Project Management Institute
PMI Phoenix Chapter
Telephone Pioneers
White Tank Mountain MCL Detachment
Maricopa VFW

RAYMOND J. FERREIRA

(b)(6)

EDUCATION

- Bryant & Stratton Jr. College, Boston, MA; Assoc. Degree in Business Data Processing
- Bristol Community College, Fall River, MA; Assoc. Degree in Fire Science Technology
- Graduated Maricopa County Sheriffs Office, Phoenix, AZ - Detention Officer Academy
- State of AZ – Dept. of Economic Security; Trained in Database File Design, Natural Security, Natural 2 (4GL), TSO, Panvalet, COBOL II CICS, ADAPREP, and COBOL II Batch.

EMPLOYMENT

Arizona Dept. of Education – IT August 2005 – Present
Information Technology Specialist III -

As a Quality Assurance Applications and Security Tester on the web-based SAIS Project (Student Accountability Information System), I was responsible for application testing, security testing, documentation and adherence to ADE Standards. The QA team would assist the Dev team and the User community with the resolution of applications problems regarding student enrollments, student needs, SPED, etc.

Maricopa County Sheriffs Office Feb 2003 – July 2005
Detention Officer

After an extensive background check and polygraph exam, I attended and graduated from the MCSO Detention Officer Academy (Class 794) in Phoenix, AZ. I received training and currently work with the LEISC online computer system. The LEISC system shares and updates Law Enforcement data with ALETS (Arizona Law Enforcement Telecommunications System), NLETS (National Law Enforcement Telecommunications System), NCIC (National Crime Information Center), ACIC (Arizona Crime Information Center), SORN (Sex Offender Registration and Notification File), JOLTS (Juvenile Online Tracking System) and the FBI database.

ACS Inc. August 2000 – Nov 2002
Systems Analyst (IBM Mainframe) -

Consultant to our major client's (Motorola – SPS) Finance Team. This outsourcing initiative requires that I be oncall for Production Abend Resolution and Cobol Program enhancement for Worldwide Inventory / Product Cost Standards and AdHOC Reports as required by an International User community. I use IBM utilities, program code using Cobol in a Batch and

CICS environment, as well as a working knowledge of CA-7, MARKIV and QuikJob Report Generator. My duties included working with Motorola manufacturing sites and finance teams in foreign countries.

Intel Corp. Jan 2000 – Aug 2000
Senior Software Engineer / Project Leader -

Project Leader with the Worldwide CI (Corporate Interfaces) IBM / VAX team. My duties included working with our manufacturing sites in foreign countries, CIP (Continuous Improvement Process) for the business/manufacturing applications supported by the CI Team and to be a technical liaison for Intel IBM (JCL) and VAX (DCL) IT sites. My team provided manufacturing/modeling support using the Consilium (Vax EOL) business application known as WorkStream (WIP). Strict Intel standards (CE! – Copy Exact!) were used throughout the project life cycle.

St . Joseph's Hospital Sept 1999 –Dec 1999
IBM Systems Analyst/Consultant -

Brief Y2K Project – reengineering all Hospital Billing reports using the SMS Billing System on the IBM mainframe. Working with the Operations Manager, I formulated standards for JCL, Job restart procedures, Job/file naming conventions and improved/streamlined the Production Support and oncall Emergency procedures.

C.B.S.I. Inc. March 1998 – Sept 1999
Senior Consultant -

YR2000 Project - reengineering a Corporate Benefits / Insurance Application using COBOL II and VSAM files for a local Phoenix client. (Motorola). Y2K file data modified using FileAid and EasyTrieve. The client mandated that S.E.I. best practices, Quality Assurance and TQM standards be used throughout all phases of the project lifecycle.

ALLIED SIGNAL - Corporate Data Center April 1996 - March 1998
Production Support Analyst-Senior

Using S.E.I. standards, IMS and DB2, responsible for abend resolution, technical problems, job stream performance, backup and recovery of datasets on several Worldwide Production applications in an IBM mainframe environment. Worked on the team that upgraded the corporate JCL standards and Restart Procedures for all business applications.

STATE OF ARIZONA – D.E.S.

Database Specialist II Aug. 1991 - March 1996
Working with 2 IBM compatible mainframes, with OS MVS, TSO, ISPF, JCL, Ad Hoc, and IBM utilities. Resolved technical problems with the Production databases assigned to me, allowing or denying Users security access to database files, abend resolution, file restoration and

recovery, and providing technical support to several programming application development teams using ADABAS (Software AG) RDBMS and Natural 2 (4GL).

Operations Support / Programmer Analyst III Dec. 1989 - Aug. 1991
Responsible for the Quality Assurance, review, analysis, JCL and documentation of jobs going into Production, recovery of abnormally ended jobs in a timely manner and checking for adherence to DES/ODA computer operations standards and procedures. Using IBM utilities to restore and recover production datasets of application systems assigned to me.

Programmer/Analyst II Feb. 1988 - Dec. 1989
Writing, testing, and debugging COBOL II CICS and batch COBOL II programs for various child/family welfare systems. Prepared JCL, QA, and Operations Documentation (Panvalet) according to DES/ODA standards to migrate Jobs from Test to the Production environment.

Yaw Bediako-Poku

(b)(6)

SUMMARY: Quality Assurance Analyst with over 5 yrs experience implementing and improving the quality validation process of software, web applications including security

EDUCATION:

DePaul University, Chicago, ILL June 2003
Master of Science in Computer Science-Database Systems/Data Analysis

Moody Aviation, Tennessee
Bachelor of Science in Aviation July 1997

University of Ghana, Ghana Sept 1986
Bachelor of Science in Physics/Mathematics

COMPUTER SKILLS:

Programming Languages:
Java, Html, Cascading Style Sheets, Visual Basic, XML DTD/Schema, Extensible Markup Language (XML), SQL

Other Skills:
System Administration, Data Modeling, Project Testing

Applications:
Microsoft Office Suite, Visual Studio, Microsoft Project

Databases:
SQL, Oracle, Pl/SQL, SQLJ

Operating Systems:
Microsoft WINDOWS Microsoft DOS
UNIX: Redhat Linux

EXPERIENCE:

Quality Assurance Manager January 2007-present
Arizona Department of Education, Phoenix,AZ

- Reviewed and assigned QA projects to Analysts
- Assigned and scheduled projects for QA personnel
- Helped to promote the acceptance of unit testing by software development
- Assigned and provided supervision on various projects to team members

Quality Assurance Analyst August 2004-present
Arizona Department of Education, Phoenix,AZ

- Wrote test plans, test cases and tested Web applications
- Provided training on ADE's SAIS application to QA team and other business units

- Presented new SAIS transactions to Business units
- Assigned and provided supervision on SAIS projects to team members
- Performed Analysis and Troubleshooting on SAIS Issues
- Analyzed and assessed Web applications for security vulnerabilities
- Tested both Windows and web-based applications developed in ASP,.NET, Java etc..
- Created and performed Beta/Regression testing
- Performed Security and Functional testing of Web Applications
- Performed database testing and validation using Microsoft SQL server

Motorola Electronics Technician November 2000 – June 2001
Motorola,Shaumberg IL

- Tested and Certified Power Amplifiers
- Troubleshooted electronic circuit boards
- Inspected and tested transmitters

Electronics Technician September 1999-October 2000
Baxter (Dade Behring),Mundelein IL

- Tested and Operated Hospital Infusion Pumps to Specification
- Assembled electronic components for Pump Heads
- Fabrication and Soldering of Air-Line circuit boards Assisted in the development of an accounting

Avionics Technician July 1998-August 1999
Waukegan Avionics, Waukegan,WI

- Developed database software to customize client info. retrieved from the internet
- Received training in the rudiments of financial planning, insurance, and mutual funds
- Shadowed financial advisers in their daily activities
- Researched and reported findings on issues pertaining to investments of clients

PROFESSIONAL AFFILIATION:

American Society for Quality (ASQ)

Shane Crabtree

(b)(6)

(b)(6)

QUALIFICATIONS

Proven ability to recognize and solve potential problems as well as being able to suggest cost effective solutions.

Solid background in coordinating various resources to improve productivity and increase the company's bottom line.

Demonstrated technical know how in implementing new technologies into various parts of the company. This has been achieved by conducting intense research into areas requiring improvement and formulating the solution to best fit the business needs.

WORK HISTORY

5/28/2007-Present ***Business Analyst Manager- Arizona Department of Education***

Duties Include:

Oversight of Business Analyst section of department's Project Management Office.
Reviewing legislation and performing risk assessments based on proposed changes.
Review and approval of Business Requirements produced by employees.
Provide continuing support to ADE internal and external customers as subject matter expert in system specifications.
Business Analyst duties as needed.

11/26/2005-Present ***Business Analyst- Arizona Department of Education***

Duties Include:
Determine high level business process requirements by interviewing business owners & IT team contacts.
Elicit detailed system requirements from stakeholders; learn existing systems though interviews and absorbing existing documentation.
Analyze business process, requirements and synthesize high level design parameters
Create and maintain documentation in support of all functional responsibilities.

Provide continuing support to ADE internal and external customers as subject matter expert in system specifications.
Act as liaison between developers and users during development process.

Assignment Areas:
Research and Evaluation Division- Arizona Department of Education – Managing AIMS data requirements.
School Safety and Prevention- Arizona Department of Education -Safe and Drug Free Schools Project
Student Accountability Information System (SAIS)

1/3/2005-11/26/2005 Quality Assurance Analyst-Arizona Department of Education

Duties Included:
Performed testing and determined scope of quality assurance requirements
Develop new and improve existing quality assurance procedures
Interface with business analyst and development teams in determining and understanding functional and technical requirements necessary for testing

7/03/2002-1/3/2005 Firefighter/Engineer/EMT-Wilcox Rural Fire Department

Duties Included:
Wild land Firefighting
Structure Firefighting
Hazmat Operations
Type I, II, and III Fire Apparatus Operation
Victim vehicle extrication
Administered Fire prevention program in local school district (K-6)
EMT Operations

3/15/99-4/26/2002 System Test Coordinator-Tempe Facility, Walgreens Healthcare Initiatives

Duties Included:
Design and test OCR applications developed for the Pharmacy industry.
Testing and evaluation of software to be implemented into production.
Troubleshoot hardware/software problems in production.
Conduct cost benefits for software enhancement suggestions.
Coordinate new software conversions in the facility.
Formulate new programs based on employee needs.
Testing and evaluation of software to be implemented into Walgreen's Web site.
Assisting the Systems Department as needed.
Create new training programs for employees based on the software upgrades.
Conducted long term studies of software systems to evaluate cost effectiveness.

11/26/94-3/15/99 Order Entry Team Lead, Walgreens Healthcare Plus

Duties Included:
Administration of company policies.

Coordinating work responsibilities of Order Entry Technicians.
Evaluating personnel in performance appraisals.
Interpreting and entering written prescriptions into a nationwide computer database.
Maintain contact with insurance companies regarding concurred accounts.
Coordinate work flow into the team.
Contacting customers regarding questions and/or delays in processing their order.
Contacting doctors regarding prescriptions issued from their offices.
Transmitting claims to the proper payer for authorization.

COMPUTER SKILLS

- Well versed in Win 3.1, Win95, Win98, WinNT, WinXP and Vista.
- Worked with Tel-Net, Oracle, UNIX, and SQL extensively.
- Build and troubleshoot all types of hardware.
- Worked extensively with imaging systems, OCR, ect.
- Formulated complicated spreadsheets with Microsoft Excel.
- Mastered the use of Microsoft Word and PowerPoint.
- Programmed using BASIC computer language.
- Knowledgeable in networking systems including Novell and WinNT.

EDUCATION

High School Graduate -Greenway High School, Phoenix Arizona - 1988
Administration of Justice Program - Glendale Community College – 1993
Arizona State Fire Academy - 2001
Bachelor of Science in Information Technology Program - University of Phoenix - 2004-2007

Chris Wasserman

(b)(6)

TECHNICAL SKILLS

- Needs Assessment, Specification Writing
- Project Management; assisting in resource management and adhering to project timelines
- QA Testing and leading user acceptance testing
- Performed Individual and Group Training; face-to-face, teleconference, and webinar
- Tracked User Issues and Resolution
- Produced Flow Diagrams in Visio
- Utilized SharePoint to facilitate projects
- Produced Training Materials using Adobe Photoshop, PowerPoint, and Camtasia Studio
- Deployment and Administration of CRM systems
- Windows 2000/2003 Server Administration
- PC Hardware/Software installation, configuration, and troubleshooting
- Support of Microsoft Windows 2000, XP
- Remote Desktop Support
- LAN/WAN/WLAN Support and Troubleshooting

RECENT WORK EXPERIENCE

Arizona Department of Education, Phoenix, AZ **October 2007 - Present**

Provided business analysis and documentation for web-based software development projects used within the agency and by schools throughout the state.

- Created all documentation and managed the project, working with the business unit, the scoring vendor, and the development team, for a transfer of student assessment data between the scoring vendor and ADE to reduce errors and eliminate the ability for schools to falsify scores which affect school funding and performance evaluation. Previously, schools submitted the results to ADE.
- Also managed, performed Quality Assurance testing, and produced training materials for a sub-project to create a new web-based application for schools to be able to correct errors only in student information for assessment records that could not be matched upon receipt from the vendor.
- Produced requirements documents and performed QA on an application for selection of students for annual standardized testing which saved the state hundreds of thousands of dollars in reduced testing materials production. Previously, materials were produced for all high school students when not all test in each cycle.
- Produced requirements for a system to enable internal users to administer functions on their department's externally-facing site used by the schools; posting time-sensitive communications, controlling access to applications, updating select information in the central database. This reduced assistance needed from IT to perform these maintenance tasks.
- Produced training materials and provided support for a web-based system to replace the paper forms still used by a small program within the agency.
- Worked with IT management to create documentation standards within the department, to facilitate consistent communications and expectations with the business users, development, and quality assurance teams.

NetPro Computing, Inc., Phoenix, AZ **October 2005 - October 2007**

Provided primary support for the CRM system utilized by an internationally distributed workforce with an ongoing schedule of system changes.

- Acted as a primary point of contact for all user issues for the CRM system, communicating with all levels of management and project team members, for better request and issue tracking.
- Worked with users to assess needs for system enhancements, and produced written specifications that led to more effective use of team resources and a more effective finished product.
- Produced documentation, videos, and webinars for internal staff on commonly performed tasks and new features as they were released, which provided needed system information to users worldwide.
- Coordinated project team efforts and end-user testing, which enabled smoother project deployments. Provided training to all new users on the CRM and other IT systems, consolidating the systems orientation process and streamlined staff roles in processing new hires.
- Administrated the CRM system and made user-requested system changes on an ongoing basis to accommodate fast-paced changes needed by the business.

RQA, Inc., Phoenix, AZ **June 2003 - October 2005**

Provided primary network, PC, and phone support for a local office and for 4 remote satellite offices.

- Acted as liaison between the end users locally and the programming staff in another office to facilitate better communication and problem resolution during the development of a custom-built web-based application which increased end user satisfaction and reduced the need for extra development time.
- Produced documentation for internal and consulting staff, and the composition of IT policies and procedures, creating increased use of software tools and awareness of proper operating procedures.
- Evaluated, recommended purchase of, installed, deployed, and trained users on Act! 2005 Premium, which centralized customer data for the first time for company-wide use.
- Provided centralized network and PC support for all North American remote office locations for better cross-department support, issue tracking and resolution.
- Performed basic SQL database maintenance and Linux-based mail and file server maintenance which centralized often requested tasks and increased response time.

OSI Outsourcing, Inc., Phoenix, AZ **March 2002 - March 2003**

Provided primary technical support for an office of 350 and local satellite office locations.

- Coordinated projects with the corporate data center staff to utilize their skills instead of outsourcing locally, which saved the company money in outside consulting costs.
- Maintained detailed logs of trouble tickets in the “Remedy” help desk system and tasks in Outlook, which enabled better tracking of long term problems to be addressed.
- Refurbished older equipment before redeploy which increased equipment reliability, reduced downtime, and extended equipment life.
- Troubleshot and repaired telephone and data wiring problems. Cross-connected wire for telephone services. Doing this in-house saved the company money in high outside service fees and increased turn-around time.

Independent Contractor **September 2001 - Present**

Provided technical support for small business clients around the Phoenix Metropolitan area, including: Performed troubleshooting and repaired hardware and software issues for Windows 95/98/NT/2000/XP PCs and peripherals such as networked and shared printers. Designed, composed, and proofread

instruction manuals. Performed end-user training in Microsoft Office products. Compiled and filed government forms.

- Created detailed instruction manuals for clients, which reduced dependence on outside consultants, and gained greater efficiency of in-house staff.
- Trained customers on the use of business software for better utilization of the software's features, which increased efficiency.
- Wrote "How-To" articles for popular research web sites on a professional freelance basis.

BPLW Architects & Engineers, Mesa, AZ **April 2000 - August 2001**

Provided primary technical support for an organization consisting of multiple local small office locations.

- Maintained and troubleshot Windows 95/98/NT/2000 PCs, printers, plotters, and scanners; Windows NT/2000 network administration; troubleshot and provided software maintenance for a server-based relational database. Having all services in-house increased up-time, increased productivity, and user satisfaction.
- Provided end-user training which greatly increased user productivity.

Action Performance Companies, Phoenix, AZ **November 1998 – April 2000**

Provided coverage of internal Help Desk: Troubleshot PC and software issues over the phone.

- Revamped Help Desk and overall IT service level procedures to better reflect the company's needs, and more effectively utilized support staff.
- Scheduled projects and initiatives, and developed a project management database which resulted in better tracking to deliver projects on time or ahead of schedule.

EDUCATION

Bachelor of Fine Arts, Rochester Institute of Technology, Rochester, NY
Degree minor in Minority Relations
Graduate Study at the University of the Arts, Philadelphia, PA
Continuing Education: New Horizons Computer Learning Center, ExecuTrain Virtual Campus, Mindleaders

(b)(6)

T O B Y J . K O E N I G

OBJECTIVE

PROFESSIONAL EXPERIENCE

2007-Present Arizona Department of Education - Phoenix, Arizona
IT- Project Manager

- Worked closely with the business units and business analysts to determine their business needs.
- Managed a project portfolio of 15-25 active software development projects at any given time. The majority of these were mission critical.
- Developed estimates, scope documentation, schedules, executive presentations, etc.
- Developed custom SDLCs (based off Waterfall and SCRUM) to be used for all IT projects which was one of the key components to mature our IT division.
- Close collaboration with development and operations teams to ensure projects stayed on track and any issues that arose were resolved quickly.
- Conceived and assisted with design and implementation of a custom SharePoint 2007 based project management system to improve quality of deliverable and improve oversight. This system is functions similarly to Microsoft's Project Server/Team Foundation Server. Features include automation of project requests, approvals, project workspace creation, dashboards for global views of tasks, and overall project portfolio management for the project management office.

1998-2007 CompassLearning - Phoenix, Arizona
MIS - Field Automation Systems Manager

- Single-handedly managed all IS/IT tasks specific to "Field Operations" for the company's 300+ remote sales, service, and professional development employees nationwide.
- Research, recommend, develop, and deploy new "remote work force related" technologies to enhance field employee productivity and manage overall corporate operating expenses.
- Sole provider of end user hardware and software technical support for all field employees.
- Managed and implemented large scale hardware and software rollout projects to the remote work force under extremely tight budgets/deadlines.
- Developed custom scripts and installers to automate cumbersome product updates to the company's flagship IIS/SQL-based education product, named CompassLearning Odyssey.

- Wrote detailed technical documentation to aid remote users of all skill levels with installation and usage of business applications as well as sales demo tools.
- Developed and Implemented policies and procedures to increase employee productivity and minimize downtime.
- Excelled in minimally staffed IS/IT department with no direct supervision.

ADDITIONAL PROFESSIONAL SKILLS

- Significant IS/IT project management and business analysis experience.
- Expertise and proficiency administering and supporting PC and Windows Server Operating Systems, various business productivity applications, web applications, and Microsoft LAN/WANs.
- Self-Taught in Web application development, with emphasis in business applications using ASP, VB, and SQL technologies.
- Overall broad understanding of technology, and ability to absorb quickly new technologies necessary for evolving job duties.

EDUCATION

1995-1997 University of Wisconsin - Milwaukee, Wisconsin

- Worked towards a Bachelors degree in Business with a focus on Information Systems

REFERENCES

- David Gildar - VP - Information Systems, CompassLearning - 480.236.3048
- Dr. James Buckner - CEO, IMPACT Educational Consulting Associates, Inc - 770.289.5879
- John Pendergast – CFO, Broan International – 414.405.4898
- Letters of recommendation available upon request.

Qais "Casey" Gharib

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Technical Skills

Microsoft SharePoint Services	MOSS 2007	C# .Net
Performance Point Server 2007	ProClarity/ProClarity Server	Tableau
ASP.Net, ASP	Visual Basic.Net, Visual Basic 6.0	Web Services
SQL SERVER 2000/2005, MS Access	SQL Server Reporting Services	HTML/DHTML

Summary

- **Microsoft Certified Technology Specialist (MCTS)**
- Senior Software Architect with extensive experience in **design**, **development** and **implementation**.
- Extensive experience in Microsoft Server Technologies, specifically **MOSS 2007**
- Specialize in .Net technologies including **ASP.Net**, **C#.Net**, **VB.Net and ADO.Net**..
- **BI** development using industry leading tools
- Eight years of developing **Objected Oriented** applications, using **N-Tier architecture**, including rich UI design, middle-tier Business Rules and database connectivity, and back-end design and development.
- Comprehensive experience in designing and developing **relational databases** in **SQL Server** and **Oracle.**
- Managed projects throughout **Lifecycle**, including developing **requirements** and **specifications** documents.
- Architecting using **UML** and **Viso.Net**.

Professional Experience

Arizona Department of Education Phoenix, AZ 06/08-Present
Contract

- Developed business and technical requirements for User Interface and Data Visualization of federally funded Data Warehousing project aimed at analyzing the results of Arizona's educational system's performance as well as assessment testing.
- Provided leadership and insight for UI development.
- Led initiative to provide a User Interface for the Data Warehouse results as well as Training, Data Dictionary and other functions of the team.
- Implemented and configured **MOSS** and **SQL Server 2008**.
- Configured **Shared Services Provider** and **Excel Web Services**.
- Configured **Kerberos Authentication** in order to provide cube data to excel pivot tables stored in **Sharepoint**.
- Developed custom **ASP.Net** application to manage and display Data Dictionary data and intergrated it into Sharepoint.
- Developed **Business Intelligence Dashboards** using **Performance Point Server**, **ProClarity**, **ProClarity Server**, **Microsoft Excel** and **Tableau**
- Customized Master Pages and Page Templates to brand site.
- Created **features** to deploy **custom Web Parts** that queried external data sources.

- Developed solution for content deployment to QA and Production environments.

V-Commerce Scottsdale, AZ 02/08-06/08
Contract

- Provided detailed cost-benefit analysis to determine which technology should be used to accommodate need for document management, workflow and content management.
- Created custom applications that used Sharepoint API to add custom content to Sharepoint databases.

Thought-Matrix San Francisco, California 12/07-02/08
Contract

- Developed **Content Management** based **Sharepoint** site for major energy company
- Used page templates to create consistent look and feel throughout site
- Developed site columns to add to custom lists. These lists were then used in Data View Web parts. This allowed client to have complete content control over what was displayed.
- Customized master pages, page templates and style sheets
- Developed custom features to display content rolled up by meta data types, import documents and other custom web parts. Used features to install custom master pages and page layouts.
- Created content deployment system to publish from development **Sharepoint** to company's external web site.
- Created shared services and configured clients **Sharepoint** farm.

Straightline Scottsdale, Arizona 12/06-12/07
Contract

- Developed solutions in Microsoft SharePoint Services and MOSS 2007 for various clients.
- Experience includes MOSS implementation and configuration.
- Developed custom web parts to meet various client needs.
- Created various workflows using SharePoint built-in **workflows**, **SharePoint Designer**, and **Visual Studio 2005 Windows Workflow Foundation** (WWF) templates.
- Created **BDCs** to access various line of business data sources.
- Developed workflows using Infopath forms. These workflows were installed using WSS3.0 stsadm feature installation and activation.
- Implemented **Excel Services**, **SharePoint Search** and various other **Enterprise** features of MOSS 2007.
- Developed **BI Dashboard** solutions using **excel web services** and **KPIs**.
- Master Page redesign using Microsoft Office Sharepoint Designer.
- Employed features to install various customizations to clients' Sharepoint implementations

Ensynch Tempe, Arizona 03/05-12/06
Contract

- Enhanced existing loan processing software for major financial institution. Application consisted of several parts that handled loan processing from initial business development, data entry, and underwriting and approval.
- Developed internal sharepoint solutions for Fortune 500 firm. Developed web parts to meet the specific needs of various consumers throughout the organization.

Immedient Scottsdale, Arizona 04/04-02/05
Contract

- Architected and designed contract automation system. Assisted client in gathering requirements and stabilizing business process for the purposes of developing architecture to streamline workflow. Used **Microsoft Sharepoint services, SQL Server 2000, SQL Server Reporting Services, and ASP.Net** to automate manual process. The new process allows marketers to download Excel negotiation workbooks from the team SharePoint site. The marketers negotiate prices with clients and update the workbook. The workbook is then synched back to the SQL Server database through a web service.
- Created functionality for team members to checkin/checkout workbooks, create and assign tasks, and approve workbooks through the team portal.

Wells Fargo Scottsdale, Arizona 03/04-04/04
Contract

- Maintained and enhanced internal web application using ASP.Net, C#, and SQL Server 2000. Created tables and stored procedures to manage executive level data. Administered IIS server as well as SQL Server database. Migrated changes from throughout staging environments. Met with client to finalize specs.

Spherion Technogies Scottsdale, Arizona 11/03-02/04
Contract

- Senior Software Developer working on various client projects. Experiences include ASP.Net portal application for financial services client. Application interfaced with Oracle database. Assisted in development of SharePoint site for team members to share source code, progress reports and project updates.

Intrasight, Inc Scottsdale, Arizona 07/03-10/03
Contract

- Maintained and modified ASP web applications for a leading tobacco company. Developed various SQL Server DTS packages to modify, transform and export data. Modified and created Crystal Reports.

Bank of America Phoenix, Arizona 05/03-07/03
Contract

- Worked on corporate portal application to be used by 3500 associates. The application made an interface available to develop future snap-in functionality, much like Microsoft's MMC. I developed the framework and interface to integrate snap-ins to the foundation application. The Windows forms project was developed using C#. I developed a base class snap-in to be used by any department in the organization that wanted to add functionality to the application. All modules of the application had two components, client and server. All communications between client and server were facilitated by XML and data access was handled by ADO.Net.

Education

Arizona State University Tempe, Arizona Graduated 5/98
Degree earned *Bachelor of Science, Marketing*

Robin Martherus

PROFESSIONAL SUMMARY

Summary

Almost 20 years of professional experience in all aspects of bringing enterprise class software to market with a focus on patentable Identity Management, Security, and Search technologies.

PingIdentity - Senior Director, Architecture 2/2007 – present

- Company focus: Internet single signon and federated single signon.
- Responsible for duties of Chief Architect and Chief Technology Officer including providing innovation, architecture and design for all future products.
- Performed technical due-diligence for potential acquisitions including acquisition of SxipAccess. This project added single signon from internal enterprise authentication to SAAS applications such as Salesforce.com and GoogleApps.
- Directed numerous technical research projects to help determine possible future technical directions for the company. These projects regularly resulted in hard data for senior executive decisions.
- Present technical material to potential customers and internal organizations.
- Participated in the OASIS WS-SX and WS-Federation workgroups which includes WS-Federation (Microsoft's federated single signon protocol) and WS-Trust (web services single signon and token exchange)
- Performed technical due-diligence on Microsoft's new "Geneva" framework and services.

Oracle – Architect/Consulting Member of Technical Staff 4/2005 – 2/2007
(Oracle acquired Oblix in 4/2005)

- Responsible for design and interoperability of numerous identity management and security technologies.
- Performed technical due-diligence on over a dozen potential acquisition targets. Targets included a variety of security disciplines such as threat detection, provisioning, web services security.
- Sat on 5 different committees to provide security perspective on internal company initiatives.
- Designed the Oracle Security Token Service and implemented the first prototype. This product allows web services to seamlessly leverage existing single signon services.
- Provide direction to internal organization to unify all identity/security related projects within Oracle.
- Provided technical assistance and consulting to provide single signon to all internal Oracle systems which was very complex due to numerous very large acquisitions.

Oblix - Chief Architect - 5/1999 – 4/2005

- Defined future technical vision for the entire company.
- Defined architecture for unified suite of products.
- Performed due diligence for possible mergers and acquisitions.
- Participated in standards committees as related to current and future project and products. (currently participating in OASIS SAML and XACML TCs, WSI Security Profile group, also a WS-Trust/WS-SecureConversation co-author, and implemented WS-Federation server)
- Ensured architectural compliance for all engineering development.
- Worked closely with all organizations within the company to communicate the technical strategy internally
- Worked as the technical liaison between Oblix and Microsoft to be able to leverage Microsoft's .NET technologies in Oblix products.
- Represented Oblix to analysts and industry conferences.
- Worked with potential partners to formulate strategies for integration of our products. (Worked very closely with a number of Microsoft development teams)
- Was the lead architect for the architecture and design of all Oblix products.
- Developed large portions of several of the shipped products. The largest product was Oblix Netpoint which is now called Oracle Access Manager, an enterprise single signon server. Oblix ShareID is a product that provides federated single signon across the internet.
- Numerous patents filed – 1 issued so far (see patent section below)
- Programming work done in c (10%), c++ (75%), Java (15%)

Verano, Co-Founder and Principal Engineer - 8/1996 - 5/1999
(Verano is now called "Digital Defender")

- Build the company from the ground up. Starting with 3 people doing everything to a company of 200 who is the leading provider of security solutions for mission-critical industrial operations.
- Was responsible for all architecture and technical designs.
- Developed several versions of the flagship product.
- 6 patents filed, 1 patents issued so far
- Programming work done in c (90%), c++ (10%)

Apple Computer - Senior Software Engineer - 7/1990 - 8/1996

- Designed and developed personal file sharing product as part of MacOS System 7.
- Design and build AppleShare 3.x series of products.
- Rebuild MacTCP, Apple's TCP stack.
- Design and build AppleSearch (using state of the art search technologies out of the ATG group) (2 patents)
- Started Apple's Internet Server development team responsible for developing all internet related services (smtp/pop/imap, nntp, http servers) (aka Cybertech)
- Programming done in c++ (50%), Object Pascal (40%), other (10%, Dylan, smalltalk, lisp)

Issued Patents

- 7,194,764 – Single Sign-on User Authentication
- 6,161,102 – Search agents
- 6,055,543 – Search multiple file formats using meta-data
- 5,715,443 – Search agents results display mechanism

Education:

Brigham Young University - Hawaii Campus, Laie, HI
BS-Bachelor of Science 6/1990
Majors: Computer Science and Mathematics
Minor: Business

Additional Information:

During the span of my career I have accumulated experience with the following technologies:

- Programming languages: C (8 years) , C++ (8 years), Java (10 years), C# (3 years), some Assembly (1 year)
- Programming frameworks: .NET, J2EE, Web Services, SAAS, SOA.
- Operating systems: UNIX (AIX, HPUX, Linux), Mac OS, Windows.
- Other: LDAP directory services including extensive Active Directory experience, SQL databases, virtual directories, and meta directories.

Alexandra Jones, Ph.D.

Professional Profile

Over twenty years experience in mastering emerging software technologies and applying them to the needs of business and industry. Skilled in data modeling and database design. Extensive experience in business analysis, rapid prototyping and developing client friendly software. Analytical, pragmatic and creative. Committed to completing projects on time and within budget. Can work independently or as part of a team.

Skill Sets

- Conceptual and logical data modeling, relational and dimensional database design and implementation, data transformation, SQL Server 2000/2005/2008
- Development languages: Transact-SQL, SAS, R, C#.NET, some VB.NET, Visual Basic 6.0, VBScript
- Development tools: SQL Server Reporting Services (SSRS) 2000/2005, some SSIS, Visual Studio .NET, MS Office, Visio, Visual UML, Enterprise Architect.
- Development technologies: .NET Framework, ADO.NET. Full life-cycle n-tier application development
- Object-oriented requirements analysis and design using UML, particularly Rosenberg's use-case driven ICONIX process.

Professional Experience

ARIZONA DEPARTMENT OF EDUCATION, PHOENIX, AZ
Dec 2008 – present
Responsible for analyzing data warehouse proposed source data for structure, content and quality. Lead architect of new, flexible data model of the state educational system – all public, private and tribal entities and the ownership, oversight, funding and reporting relationships between them. Migrated and reengineered federal (AYP) and state (AZ Learns) accountability system statistical calculations from desktop SAS to server-side Transact-SQL, improving repeatability and transparency

CONTINENTAL PROMOTION GROUP, INC. TEMPE, AZ
Nov 2006 – Nov 2008
As sole developer, designed and implemented a dimensional accounting data mart for reporting on and analyzing the final disposition of rebate checks. Converted T-SQL scripts for ETL to SSIS packages. As Content Manager and primary troubleshooter, participated in introduction of SQL Server Reporting Services as corporate reporting platform. Sole developer of system extending and integrating SSRS subscription delivery capabilities with existing client-facing reporting systems. Reengineered or replaced T-SQL stored procedures as required to improve performance of transaction processing systems.
Utilizing: SSRS, SSIS for business intelligence, ICONIX process for analysis and design, C# for application development.

TRIVITA, INC., SCOTTSDALE, AZ
Sep 2002 – Sep 2006
As sole developer, delivered a system which scores machine-readable health assessments and generates customized health reports based on those scores. System runs both unattended and with a user interface for managing the process. Delivered automated process transforming external call center order data into company order-entry system format. New system reduced processing time from hours to seconds. Delivered administrative UI for managing call center and product data in support of automated transformation process. As part of SQL team, provided stored procedures and report designs to reengineer MS Access reports for SQL Server Reporting Services. Utilized: UML for analysis and design, C#, Transact-SQL for development, MS Word for report creation, FTP, DTS for call center data transformations.

BANK OF AMERICA, PHOENIX, AZ
Apr 2002 – Jul 2002
As sole developer, delivered automated transformation process for ATM/Debit Card fraud analysis and reporting. Began design of data mart for next phase.
Utilized SQL Server 7.0/2000 DTS, Transact-SQL for data warehouse transformation, loading and analysis services. Planned Crystal Reports 8.0 for report creation, ASP for report requests.

EVERETT CHARLES TECHNOLOGIES INC., TEMPE, AZ
Jan 2000 – Mar 2002
Developed performance metrics reporting for the design, manufacture and delivery of semiconductor test boards. Delivered applications for employee time tracking and scrapped materials tracking and reporting. Created ad hoc reporting system that allowed users to select from more than 60 specialized reports in Excel spreadsheet format.
Utilized: UML for analysis and design, Visual Basic 6.0, Transact-SQL for client/server development.

Educational, Professional Certifications and Training

Education

- Ph. D. in Computer Sciences, University of Wisconsin, Madison, WI
- M.S. in Computer Sciences, University of Wisconsin, Madison, WI
- B.S. in Computer Sciences, University of Wisconsin, Madison, WI

Certifications

- Microsoft Certified Professional, SQL Server Database Design and Implementation
- Regular A.1.a Teaching Certification with endorsements in Mathematics and Computer Sciences,
  Community Colleges of the State of Arizona, Maricopa County, AZ

Training

- SQL Server 2005 Business Intelligence Application Development, Hands On Technology Transfer, Inc., 2007

Angela McGee (b)(6)

Expertise

Sr. Business Analyst/Project Manager

Highlights

- Over 10 years of Business Analyst experience, Master's degree in CIS.
- **Full SDLC experience**: From project kickoff meeting, user requirements gathering, technical specification documents for developers, work with developers, create test plans and test cases, coordinate UAT, create training materials and train end users, to support of production applications.
- **Team oriented:** Excel at building teams, creating positive team dynamics and user buy-in. Have attended formal Facilitator training. Function well as part of a team.
- **Excellent communication skills:** Excellent skills giving presentations, communicating project status information to senior management and stakeholders, coordinating with external vendors, working with developers and testers, and training end users.
- **Data Specialist**: Research data to create data mappings, identify data issues, create technical specifications, and create test cases for each data issue or anomaly.
- **Issue assessment and Risk aversion**: Astute ability to identify and resolve issues, escalate issues as potential risks and avert possible delays to the project.

Professional Experience

Sr. Business Analyst/ Assistant Project Manager *July 2007--current*
Arizona Dept of Education - Phoenix, AZ (contract)

The Arizona Department of Education received a grant from the federal government to create a student education data warehouse. The data warehouse extracted data from 15 different systems in a project with four implementation phases. Also responsible for updating 8 of the processing systems due to data issue found during the data warehouse data mapping phase.

- **Build Team and Hire Staff**: Acted as Assistant Project Manager who lead a team of 10 (later expanded to 15) to create a data warehouse. Developed team member responsibilities, created job descriptions, worked with vendors to fill team positions, interview and hire candidates. Train team on data warehouse concepts, coordinate and establish team workflow processes, promoted team members to other positions as the project progressed.
- **Project Planning**: Meet with stakeholders to establish expectations and time lines. Coordinate work with project team to further define tasks and time lines. Create and maintain project plan, risk assessments, issue tracking and feasibility matrix. Communicate project status to senior management and stakeholders in quarterly meetings and monthly written status reports which were accessible on the project SharePoint portal.
- **Requirements/Analysis:** Utilized spiral and agile methodologies. Facilitate user requirements gathering sessions. Solicit user requirements using use-cases, process diagrams, logical diagrams, data flow diagrams, story boards and surveys. Adhere to FERPA security requirements. Provided in depth data analysis for 6 processing systems using SQL Server Management Studio/SQL queries.

- **Project Documentation**: Create Business Requirements documents, translate requirements into technical specifications, create Test Plan and test cases, and review training documentation. Create post-production support documentation for the existing help desk/support services area to support the new Data Warehouse.

Accomplishments: *Deliver an additional 20% work than originally agreed to on initial project plan (in the same time and budget), due to processing systems needing updating and other opportunities found during the project for including data.*

Tools: Visio 2003, MS Project 2007, Team Foundation Server, SQL Server 2005 & 2008, MS Excel 2007 (used to access the Data Warehouse Cube), SSRS, SSIS, SSAS, Agile methodology

Sr. Business Analyst/Project Manager *Jan 2007-July 2007*
PF Chang's Home Office – Scottsdale, AZ (permanent)

The CIO wanted an evaluation of their systems for feasibility of a data warehouse.

- **Evaluation:** Perform database and data field analysis related to reporting requirements**.** Give presentations to senior management, train team on data warehouse concepts, write documentation.
- **Recommendation:** Through the evaluation, we found that the central processing system, which all the restaurants downloaded their data to each evening, held summary tables. These summary tables provided the required reporting information. Thus, it was recommended that a data warehouse was not needed.
- **Re-engineering the process:** We re-engineered the reporting process. The report writers were given access to the summary tables. They received training on using SSRS and they utilized a web portal to display their canned reports and receive requests for ad hoc and new reports.

Accomplishments: *This solution saved an estimated equivalent of 2 FTE salaries per year, streamlined reporting request delivery time by 40%, and increased number of reports delivered by 20%.*

Tools: Visio 2003, MS Project 2003, Power Point, Outlook

Sr. Business Analyst/Project Manager Blue *Jan 2001-Jan 2007*
Cross Blue Shield of Arizona – Phoenix, AZ (permanent)

DSS (Decision Support Services) team supported a data warehouse and created and supported new data marts and reporting.

- **Report Writing:** Joined the team as a 'Business Analyst I' and performed report writing for the data warehouse and data marts. Wrote complex reports using Business Objects and SQL statements.
- **Department Lead for Large Projects**: Promoted to Business Analyst II then to Senior Business Analyst and operated as the internal Lead/Project Manager for all large and medium data warehouse projects. Due to working with the same group of end users and similar delivered product, we utilized waterfall methodology which enabled each of the projects to meet or exceed the project timeline. Completed formal 'Facilitator' training.

- **Requirements/Analysis:** Solicit user requirements using use-cases, process diagrams, logical diagrams, data flow diagrams, story boards and surveys. Adhere to HIPAA security requirements. Provided in depth data analysis of several processing systems using Business Objects/SQL for inclusion into the data warehouse or data marts. Processing systems included claims processing, pharmacy claims, provider information, membership, out of state claims and provider issue resolution.
- **Training:** When I joined the team, the Business Objects training for end users was provided by a Training vendor. To save money and make the training more effective, I brought the training program internal. Created Business Objects training program (including training manual, sample reports, training quick-sheets) and I trained the classes. We also modified the already internal data warehouse training to coincide with the style of the Business Objects Training. Was responsible for leading the creation of new training materials for any new data marts the department delivered.

Accomplishments: *Promoted from Business Analyst1 to Senior Business Analyst and Lead PM of DSS Department. + Brought Business Objects training in-house for an annual savings of $8,000 and a decrease of Business Objects related help calls by 23%. + Was lead for implementing 3 large data marts on time and under budget. + Was lead for re-engineering internal processes of DSS department as department grew.*

Tools: Business Objects v5, SQL server 2000, Visio, Excel 2000

Business Analyst *June 1999-Dec 2000*
6 Month Contract Positions

Worked as a Contractor for 6 month contracts. Acted as report writer and Business Analyst supporting and upgrading processing systems.

- **Contact Behavioral Health – Tempe, AZ:** Responsible for gathering requirements and creating HEDIS reports using Crystal Reports.
- **Discount Tire Company, Corporate Headquarters – Scottsdale, AZ:** Responsible for supporting processing systems, creating new MS Access databases to support end user requests, creating reports using AS400 and SQL.
- **American Equity Insurance – Scottsdale, AZ:** Responsible for supporting processing systems, creating reports using Crystal Reports and SQL, and created new file tracking system.

Billing Database Analyst *Jan 1994-May 1999*
Gallon & Takacs Co. LPA Law Firm - Toledo, OH (permanent)

Supported the billing software. Entered data, created monthly and ad-hoc reports. Was the lead for the conversion from one billing software to another.

Education

Masters of Science in CIS, University of Phoenix

BBA in Information Systems, University of Toledo

AMITESH KASERA

Profile

MBA Professional, with successful industry experience. Vast experience working as a Business Analyst in the software development industry**.** Significant experience in working across organizational groups, using clear/concise communication skills to facilitate mission objectives in a timely manner. Tested team player skills. A broad base of experience and knowledge to draw from that will assist companies in meeting their organizational objectives

Expertise

- Extensive experience in gathering business and application requirements, business processes, identifying risks, impact analysis**, UML modeling, Sequence and Activity Diagrams using Enterprise Architect, Rational Rose and Microsoft Visio.**
- Comprehensive knowledge of Software Development Life Cycle (SDLC) having thorough understanding of various phases like Requirements, Analysis/Design, Development and Testing.
- Comprehensive knowledge of **RUPs** Iterative Software Development Cycle process.
- Adept at creating and transforming business requirements into functional requirements and designing business models using UML diagrams- Use Case and activity diagrams in Rational Rose and MS Visio.
- Excellent facilitation skills in conducting walkthroughs, surveys, questionnaires, interviews, brainstorming and **Joint Application Development (JAD)** sessions.
- Recognized for excellent communication and people skills that help successfully influence and drive consensus across cross-functional teams
- Experience in conducting **GAP analysis, SWOT analysis**, Cost benefit analysis, and **ROI analysis**.
- Possess strong analytical, verbal and presentation skills that help in communicating with team members as well as Project sponsors.
- Experience working with business users as well as senior management.
- Well versed in different management scenarios like Change Control, Quality Assurance, Defect Tracking, System Integration, and Scheduling.
- Good working knowledge of Microsoft Office Suite including Word, PowerPoint, Excel, Outlook.

Computer Skills

Requirements Management Tools: Enterprise Architect, Use-case Models, RequisitePro, Caliber RM, Excel, JIRA Issue Tracking.
Business Modeling Tools: Enterprise Architect, Rational Rose, MS Visio, UML
Change Management Tools: Clearquest, Clearcase, Fogbuguz, Footprints.
Languages: Fundamentals -SQL, C++
Operating Systems: UNIX, Windows 95/98/NT/2000/XP
Databases: Oracle, Unisys, SQL Server, MS Access
Web Technologies: ASP.NET, HTML
Processes/Technologies: SDLC, RUP, Use Cases, BPM Workflow, Avaya Workflow, CMM
Software/Applications: MS Project Server, SharePoint, FIM, Geneva, Microsoft Office, Adobe Photoshop, JIRA.

PROFESSIONAL EXPERIENCE

Arizona Department of Education—Phoenix, Arizona May '07 till date
Domain: Education, State operations
Role: Business Analyst
Arizona schools and districts are guided and supported by ADE (Arizona Department of Education) IT division, in their use of technology to improve both administration and instruction. ADE IT maintains up-the-minute and accurate information for educators, legislature, federal reporting and the public.
Projects:

- CTE Online Assessments and Performance Measure Reporting
- SAIS Concurrency, Limiting, Aggregation and Integration
- SharePoint workflow and web portals
- Az SAFE -School Safety and Prevention
- EduAccess Identity Management
- Grants Management Electronic Signature
- AIMS Data Import and Matching
- Lexile -AIMS Correlation Score

Responsibility/ Role:

- Conducting JAD sessions with SME's and users to gather requirements.
- UML modeling and other documentation preparation.
- User Interface Wire frames, Screen Shots designs.
- Responsible for preparing and analyzing Business Requirement Documents.
- Assisted QA team to write the Test plan and Test cases
- Business Presentations and UAT (User Acceptance Testing).

Project Details:

- Documenting Arizona's Student Accountability Information System (SAIS) business requirements. Reverse engineering and redesigning SAIS Finance module to resolve concurrency, integration and aggregation issues.

- Gathering and documenting ADE CTE(Career and Technical Education) Assessment System business requirements to develop state owened online assesment application. Developing CTE online student asseement certificate delievery system and coordinating with test vendor. Documenting CTE perforemance measure business requirements to meet state accountability system measure requirements, based on Perkins act. Waterfall sequential software development process using UML, Visio, FootPrints, FogBugz, MS Project, UML, Visio, Dot NET, C#, Microsoft SQL 2005, HTML, SQL Reporting Services.

- Planning, coordinating and documenting, internal and public **SharePoint** web portals to collaborate organization functions, process management and documentation management; customizing SharePoint web parts for individual projects. Conducting walkthroughs, surveys, questionnaires, interviews, brainstorming and JAD (Joint Application Development) sessions. Agile software development process using UML, Visio, Dot Net, C#, MOSS, Web Parts, AJAX SQL server 2008, MDX, Cube, SQL Server Integration and SQL Server Analysis Services.

- Analyzing and customizing Microsoft **FIM** (Forefront Identity Manager) for integrating and managing entire lifecycle of user identities and their credentials to provide self service capabilities and workflow creation tools to end users. RAD (Rapid Application Development) software development process using UML, Visio, SharePoint, Dot NET, C#, MOSS, XML, XSL, XSLT, SQL server 2008, SQL Server Integration and Analysis Services.

- Developing and documenting business rules for Microsoft claim–aware framework **Geneva**; to provide simplified user access and single sign-on for on- site and cloud –based applications. Waterfall sequential software development process using UML, Visio, SharePoint, Dot NET, C#, SQL server 2008, MDX, Cube, SQL Server Integration and SQL Server Analysis Services.

- Maintaining and upgrading Department of Education's GME (Grants Management Enterprise) system, implement **Electronic-Signature** module. Custom Grant application and amendment workflow implementation, auto email notifications, employee module setup, event logging. Waterfall sequential software development process using UML, Visio, FootPrints, FogBugz, Dot NET, C#, Microsoft SQL 2005, HTML, SQL Reporting Services.

- Developing, , managing and maintaining statewide Az SAFE (Arizona Safety Accountability for Education) data management and reporting system. Defining **SMS** (Student Mangement System) requirements and cordinating with all state vendors. Redefining and restructuring reports based on Federal Safe and Drug Free Schools and EDEN reporing requrements. Developing user training manuals, onile taring videos, conduction webinars to train 1800 state wide school users. Waterfall sequential software development process using UML, Visio, FootPrints, FogBugz, MS Project, UML, Visio, Dot NET, C#, Microsoft SQL 2005, HTML, SQL Reporting Services.

Technical skills: MSOffice Suite, Footprints, Fogbugz, Performance Point, SharePoint FIM, Geneva.

Environment: SQL, .Net, HTML, SharePoint Server.

Education

- **Johnson & Wales University, Providence, RI --**M.B.A.
- **M.D.U., Haryana, India** --B.B.A (Marketing & IT).
- **Microsoft Certified Professional**-- Networking

DR. SINA CRAWFORD MOWZOON

SUMMARY

Executive level, results-oriented program manager, extensive experience in business analysis, systems integration, conversion, testing, quality control, implementation and development disciplines. Excellent organizational, analytical, problem solving, and negotiation skills. A diverse background in industries, including healthcare, finance, education, utilities, software development, hotel reservations, agriculture, manufacturing, distribution and insurance. A goal-oriented manager known for meeting critical deadlines and challenges in changing environments. Well-developed ability to supervise and interact with diverse cultures. A strong team leader who promotes active participation of team members in decision-making and implementation of objectives. Familiar with a variety of environments, including IBM AS/400, 370, 3033 and SQL Server.

PROFESSIONAL EXPERIENCE

ARIZONA STATE GOVERNMENT 2003 - Present

Arizona Department of Education - Through Matrix Consulting
Business Intelligence Analyst

Analyze the business rules and the data, ensure the rules are applied correctly in the Data Warehouse; evaluate the outcome of the development process in the measures and the fact tables to ensure the accuracy of development and presentation. Responsible for the development of the User Reference Guide to document definitions, logic and rules, as well as guidelines for the proper use of the measures. Responsible for development and maintenance of the Data Dictionary application and its interface with the Data Warehouse UI, as well as developing its content and definitions, and training the staff in its use and maintenance.

Arizona Health Care Cost Containment System - AHCCCS
Project Manager

Responsible for management of the project to implement a Continuity of Care Record system for Arizona Medicaid program, AHCCCS. This was a federally funded project which received a federal Medicaid transformation grant. It consisted of two phases as separate projects: a health information exchange and a CCR (Continuity of Care Record) system.

Department of Economic Security
Chief Financial Officer

Comprehensive Medical and Dental Program – Responsible for financial activities of the Program, and financial reporting to the Division. Managed the groups responsible for claims, receivables, contracts, medical eligibility, and reinsurance. Responsible to coordinate the development of required technology capabilities with the IT group.

Prior to that worked with the Division of Technology Services, Child Support Enforcement, and Child Protective Services.

UNIVERSITY OF PHOENIX, Phoenix, Arizona 2006 - 2009
Faculty - Currently teaching programming languages

GILLTEK SYSTEMS INT"L, INC., Tempe, Arizona 2000 - 2002
Release Manager – Customer Information System

Managed release of new versions of the application system at regular intervals. Developed release plan and coordinated the deployment and installation of the release, including the following functions: coordinate and manage all components of the release; call and chair the release meetings among the business analyst, developers, operations staff, and managers; document and communicate installation and technical requirements and status of the release; maintain the official components detail and change inventory; publish the schedule; develop, document and communicate step-by-step installation plan; prepare report and communicate the status of the release at all stages to the release participants. Initiated, organized, and chaired the user group for the CIS system. Developed processes, forms, and procedures for Release teams, which assisted in transformation of frequent production changes to orderly, planned, and documented releases. Managed the Web application development group.

INDEPENDENT CONSULTANT, Chandler, Arizona 1998 - 2000

Perform business analysis, define business rules and requirements, design application systems, define application integration specifications and technical requirements, prepare database and program specifications, define quality
control procedures, monitor integrated system test, educate the development staff on lease management and lease accounting principles.

FINOVA CAPITAL CORPORATION, Phoenix, Arizona 1989 - 1998
Formerly known as Greyhound Financial Corporation

Vice President of Solutions Development and Integration

Managed development/integration team, data warehouse/database administration team, technical services team, and Y2K compliance group, as well as managing the large and complex multi-million dollar development and integration projects.

Defined strategic plan for the department based on the company direction and goals. Coordinated business analysis, defined and monitored short and long range plans and budgets; performed project status reporting; represented the department at the Steering Committee. Provided training, development plans and opportunities, and mentoring for the culturally diverse staff of the department.

Managed development, implementation and integration of a Loan Management System, in client/server environment, using MS-Solutions Development Discipline, MS-Project, S-Designor SQL Server and Visual Basic. Defined and managed conversion processes from legacy systems. The project team numbered approximately one hundred people, including vendor-partnered developers, in-house developers, functional coordinators from five major lines of business, and administrative staff, located across the country. Developed processes for user requirement definition, design documentation, change/version control, integrated and system acceptance test.

Managed definition and collection of business processes and rules and user requirement, evaluation, buy-versus-build recommendation, tool selection, design, integration, data analysis, and implementation of data warehouse/data mart; member of the process improvement team; served as a liaison between the business and the development group. Responsibilities also included cost-benefit analysis, issue tracking and risk mitigation, suggesting innovative business solutions, and improving customer satisfaction.

Prior to this, was project leader in charge of database. KnowledgeWare and SYNON tools were used to develop contract management system, consisting of twenty-five sub-systems for AS/400 environment. Developed comprehensive relational database for this system, which was the main

reason for the success of the project. It was flexible enough to efficiently accommodate business changes over a nine-year period, and eventually was used to set up a vendor package to be marketed to other financial businesses. This database and system design expertise saved about a year in the development lifecycle of the packaged version of contract management system.

Other Related Experience: Director of MIS for an agriculture company. Taught COBOL at a community college. Worked with top consulting firms and service bureaus as programmer/analyst and lead programmer in Hawaii. Major systems included: Hotel and airline reservations, savings and loans institutions, traffic and criminal information for prosecuting attorney's office, pension, health & welfare, statistical analysis and social surveys, real estate accounting, sales, inventory, general ledger, accounts receivable, accounts payable and fixed assets.

EDUCATION

Doctor of Philosophy, Women's Studies - Arbor University, New Mexico
Master of Science, Information and Computer Science - University of Hawaii
Bachelor of Science, Accounting, - Minor in Management, Abadan, Iran
Completed numerous project management, system development, technical, and management courses.

SUSAN GABBARD

(b)(6)

PROFESSIONAL SUMMARY

Ms. Gabbard is a Project Manager/Systems Analyst with over 18 years experience in the IT systems development area. She has experience in business analysis, gathering requirements, managing projects from definition through completion phases, coordinating the implementation of new application systems, mentoring employees, and meeting budgeting and time constraints.

TECHNICAL SUMMARY

Languages/Tools: Cobol, Java, Oracle, .Net, Oracle 9i, Business Objects, SQL Plus, J2EE, Realia Cobol, JCL, Cobol II, EDITJCL, CICS Command, Korn Shell, Scripts, SED, Focus Language, Easytrieve, SQL, Telon, MSA, Gateways, Abend-Aid, Ms-Excel, IDCAMS, VTAM, TSO/ISPF, XPF, Ms-Word, File Aid, Panvalet, InterTest, CICS Playback, EFS, DataCom, Ms-Project, Ms-PowerPoint, Netscape, Explorer, Expediter, SAS, Telon, Librarian, Business Objects, SharePoint

Databases: DB2, Oracle, Teradata, Focus Database, Ms-Access, VSAM, SQL 2008

PROFESSIONAL EXPERIENCE

MDI Group August 2008 – Present

Business Analyst/ Project Manager
Assigned to Arizona Department of Education

Project: Teacher Certification Rewrite

- Provided analytical skills to design a web based application for the Teacher Certification System. The system will be used internally by the Highly Qualified Professionals Unit and the Investigative Unit along with external users (Teachers, Administrators, LEA, and Universities). This application provides all certification services to educators and administrators within the state of Arizona. Documentation created during this project; Business Requirements, System Data Flowchart, Service Data Flowcharts, Project Plan, Entity Relationship Diagrams, Data Conversion, Data Warehouse Schema, Web design pages, Data Element Requirement documents, Business Rules Matrix, Administrative System Support Application and various dropdown value lists to support the new application. All documentation that was created adhered to Arizona Government Standards.

Project: Institutional Recommendation Online Application

- Provided analytical skills to design a web based application for Institutions of Higher Education (IHE) to process Institutional Recommendations (IR). The system will be used externally by

IHE's, graduating students and internally by the Highly Qualified Professionals Unit (HQPU). This system provides IHE's with the ability to enter information online or through batch processing for all students graduating from a teacher prep program within their organization. The system then sends the pre-populated application via email to the graduate for further processing. The HQPU databases are updated with the graduate IR information and stored for verification and reporting. The new application provides the HQPU with an online application to view IR's completed by the IHE's. Supporting information is available online for HQPU verification.

Project: Highly Qualified Teacher System Rewrite

- Worked closely with the business team creating a matrix of the business rules. The matrix was then used by the development team to develop a system that would determine when an educator is Highly Qualified. This project was on a very tight time constraint. All documentation that was created adhered to Arizona Government Standards. Worked closely with Business Unit and IT teams to deliver the best possible solution within budget and on time.

Ajilon Consulting March 2002 – June 2008

Senior Systems Analyst

Assigned to Ford Motor Credit

- Provide analytical skills to design and implement a claims system for the American Road Claim Center.
- Analysis of Legacy System (Focus Application) to Vendor Solution (Oracle Web Based Application) and System Conversion. This is the main project and the most time is spent working on this. This project is titled ACE - American Road Claims Enabler. It is a large scale project and will continue through into 2qtr 2004. Heavily involved in the analysis/scope of ACE working very closely with project management. Also performed development work on the ace project.

Project: AMRO Field Adjuster Equipment Renewal

- Involves new hardware and software for the insurance adjusters.
- The equipment involved in project is ruggedized laptops, handheld scanners, flatbed scanners, digital cameras, and a medium for wireless connections to the Ford hub.
- Worked with multiple vendors around the world to support the claim center and field staff for insurance systems at FMCC.

Project: The Insurance Bureau of Canada

- Revamped their premiums, losses, and out standings process for regulatory reporting.
- Work closely with the IBC in Toronto to provide analytical, design and coding skills that incorporated the changes requested by the IBC.
- The changes involved establishing a new VPN tunnel point to point connection, modifications to several COBOL programs, multiple JCL members, rexx jobs, FTP members, fileaids, sorts, and CA7 scheduling .

Global Crossing December 1997 – March 2002

Application Manager

- Provided analytical skills to design and implement an inventory system for the Network Routing Engineers. Worked closely with a team of business analysts, system users, and

DBA's to design an Oracle/UNIX GUI application. Once the design phase was completed, managed a team of developers that created this new inventory system.

Ajilon Consulting January 1996 – December 1997

Programmer Analyst
Assigned to Ford Motor Credit

- Provided day to day programming and maintenance support for the Insurance Department.

Dimension Systems May 1995 – January 1996

Systems Consultant
Assigned to Central Transport

- Converted client data from DBS E: Series to Computer Associates Human Resource, Payroll, and Benefits system using COBOL and COBOL II.

Source One Mortgage Services Company May 1992 – May 1995

Programmer Analyst

- Worked with the Acquisitions System, including all servicing departments (Taxes, PMI, Collections, Foreclosure, Delinquency Reporting, Hazard Insurance, etc.).
- Coded all conversion programs for the incoming data using COBOL, COBOL II, TELON, and CICS.

EDUCATION

Associate of Applied Science Degree in Computer Information Systems 2003
Wayne County Community College

CERTIFICATIONS

Six Sigma Greenbelt Certification 2003

PROFESSIONAL TRAINING

Six-Sigma Training

AWARDS

Received two recognition awards from Ford Motor Company clients for outstanding service

SRILATHA KANCHANAPELLY

Background Summary:

Over Seven years of experience in Information Technology, I have experience in system design and implementation in full life cycle of Project development methodology, which includes experience in software Quality Assurance testing of Business and IT applications analysis. I also have Extensive working experience in Regression, Integration, Performance, Load, Black Box, Stress, Functionality, Acceptance and Configuration testing. I have completion of manual and automated testing using WinRunner, good exposure on data warehouse testing methodologies.

Professional Skills:

- Expertise in Manual and Automation testing using software SQL, Oracle, Visual Basic, Java, C, UNIX, MS-DOS, Windows 7, Windows Vista, Windows XP. SQL Server 2005/2008, MS visual Studio 9.0, 2005/2008, Ms-Office 2000, 2003, 2007 and testing tools Win Runner, Load Runner, Test Director and QTP.
- Strong knowledge of Data Warehouse systems and environments. Strong knowledge in Data Exporting, Importing and Loading Flat files/Tables from Production to Test Environment using SQL, INFORMATICA, ETL. Experience in Cross Browser testing (IE, NETSCAPE). Extensively used Protocols like FTP, TCP/IP, Telnet. Experience in Web testing Using HTTP, HTML, DHTML, JAVA, JDK1.4 and XML. Strong skills in Back End testing using SQL Queries on Oracle tables. Strong working knowledge on TELECOM and DATA WAREHOUSING applications.
- Strong skills in QA techniques and methodologies and in-depth knowledge of systems analysis, programming design, relational database concepts and logical database design. Strong in analyzing Business specification.
- Additional Skills :

Test Plans	Detail Design and System Documents	System	Regression
Proposal	Expertise in Executing Test cases	Functionality	Sanity
Reliability	Expertise in Executing Test cases	Unit	Stress
Batch	Report bugs and Document Test Results	Integration	Compatibility
Front-End	Extensive working experience in Black box	GUI	Performance
Data-Driven	Test case based on Functional Design	Database	Back-End

Computer Skills:

Operating systems: MS-Windows (95/98/2000/NT/XP/Vista), MS-DOS and UNIX.
ERP: People Soft 8.x
Automated Test Tools: Win Runner, Test director, Load Runner, QTP and Rational Tools
Languages: SQL, PL/SQL, C/C++, VB5/6, HTML, XML, Java, JSP, COBOL, BASIC, WordStar, Lotus, Pascal
Network: TCP/IP, FTP and Telnet.
Databases: Oracle 7/8/8i, TOAD, SQL Server, DB2, Sybase, MS Access
ETL &Utilities: Informatica 6.x/7.x/8.x Power Center/Power Mart/Power Connect, Workflow Manager, Workflow Monitor, Designer, Server Manager and Repository Manager
Browsers/Intranet: I.E 5.5/6.0, Netscape 4.7
Bug Tracking Tools : TFS, Test Director 7.6/8, FogBugz, Bugzilla
Packages: MS-Office (Word, Excel, PowerPoint, Access, Outlook)

Educational Qualifications:

- Masters In Computer Applications
- Bachelor Degree In Computers
- Advanced Diploma In Computer Applications
- Post Graduate Diploma In Computer Application
- Certificate In Computing

EXPERIENCE

ADE DW Project, Phoenix, AZ
Role : Data Warehouse QA Consultant 12/07 - present

Project : I have been working with SAIS, AIMS and Enterprise data in 3 phases, 6 Analysis groups which includes Membership, Needs and Program Participation Annual and History, AIMS Assessments High School Level , All levels and School Calendar. SDLC testing for whole project included the Responsibilities…

- I developed Test Plans, Test Cases, Automated Scripts, Test harness to get expected results. Identify, document and raise issues (i.e., test schedule to plan) as they arise, participate in issue resolution. Re-test and confirm defects reported as fixed in new product builds and deployments. Interface with Development team in resolving the defects as needed by utilizing SharePoint 2007 and Excel Services.
- Responsible for verifying data in test environments to identify ETL business rules. Validating business rules by creating various scenarios to check the data quality. Quality checking includes Source data verification and filtering bad data, duplicate data, invalid data, misused data and reporting to the team for further investigation. ETL cross verification includes Run comparisons based on mapping excel documents by using various Joins, adding subsequent tables to compare the destination one by one. Retesting the data.
- Responsible for ETL process validation by developing test scenarios in SQL Server Management Studio. Validation testing includes, Extracted data validation by comparing source data and Transformation logic checking by creating SQL Test Scripts, validating ETL business logic, validating Primary key, Foreign key relation, Crosschecking with ER diagrams, Reference tables and Functional table.
- Responsible for Testing Source tables, Dimensions, Attributes, Fact and Derived Fact validations. Responsible for creating test plans and SQL test scripts for checking ETL Lookup codes while verifying Derived Dimension tables, out of source databases, joining on lookup tables to return descriptions and lookup codes to ensure the functionality of lookup table codes and its descriptions. Responsible for creating automated test scripts for additional runs. Responsible for generating cross test reports for validating Derived fact tables.
- Responsible for Initial pull and Incremental testing. Reporting data differences to the team for additional verification. Responsible for Dimensions, Facts, Derived facts validation which includes completeness of data, Auditing and tracking and transformation accuracy to detect Bad data and Lookup derivations for validation.

- Responsible for Validating Measures data with Aggregated Fact data by verifying Logical Dimensions and Attributes. Using SQL Test scripts to validate Measure data by combining different fact tables to get derived data set to check granular data. Testing Aggregation Builds and Verifying Cube data. Evaluate the outcome of the development process in the measures and fact tables to ensure the accuracy.
- Responsible for creating scripts in Data Migration Tool to verify ETL packages are operating as expected. This tool includes schema objects, stored procedures created on SQL Server 2008, in addition to reports written in SQL Server Reporting Services 2008 using custom developed KPIs. Responsible for defining Source tables, Staging tables, Link tables creating Filters and Checking Exceptions, Organizing data by validating Count Results, Entity Mappings, Workflow and Schedule results. Schedule jobs for Automatic regressions and validating results in each stage includes pre and post Incremental results verification and report generation.
- Responsible for Creating Measure information and Identifying Data Elements which relates to measures. Defining Measure groups and testing functionality of the User Interface tool and creating WebPages to display Measure information. Responsible for overall UI testing. Validating content and definitions, training documents reference documents and published reports in the web portal.
- Responsible for published reports Behavior and Functionality testing, Security Testing, Progressing checking. Responsible for Testing Analysis, Reference, Training, Data Dictionary Modules both internal and External portal.

ECHOSTAR Satellite Technologies, Denver, CO

Project: Enterprise Incentive Management System, Role: Sr. QA Consultant July'06–Nov'07

Quality Analyst for Performance Testing on the EIMS project to convert legacy system to new Siebel system. Responsible for writing test scripts for performance testing as well as identifying requirements and risks for Performance Testing. Responsibilities include:

- Worked closely with Business Analyst, Developers and Database Architect in identifying requirements. Attending meetings with ECHOSTAR Team members for identifying new requirements, analyze the user/business requirements and documented those requirements. Responsible for Design and writing Unit Test Plans (Data Conversion – ETL). Identify the Echo Star applications, existing data transport mechanisms and Database tables that will be used in production following the EIMS Project implementation and Testing. Identify the Source system tables/manual files that contain the data required to populate the identified Siebel ICM solution repositories for test processing. Working with UI designers to Enhance Designing of R-Web (Retailer-Website). Involved in **Data** Driven, Functional, Regression, GUI, System, Smoke and Integration testing for R-Web Implementation.

Environment: Test Director 8.0, TOAD 8.0, SQL Query Analyzer, Load Runner 8.0, Oracle 9i, Informatica 7.1.3, Java, Oracle Apps, O/S: IBM AIX, WINDOWS 2000 Server, MS-Office, Bugzilla.

Project Narrative

Project Narrative - Appendix C Current Status of State's Longitudinal Data System

Attachment 1:
Title: **Project Narrative - Appendix C** Pages: **2** Uploaded File: **Project Narrative_Appendix C.pdf**

	Capability or Element	Completed	*Under Development	Existing Grant	**This Grant	Relevant Outcomes 1. Expand Data Content Scope and Provide Instructional Support Tools and Technology 2. Improve Student and School Performance Measures 3. Expand the Data Warehouse 4. Establish Data Governance, Training and Communications 5. Expand Technology Infrastructure
	Capability					
1	Enable States to examine student progress and outcomes over time, including students' preparation to meet the demands of postsecondary education, the 21st century workforce, and the Armed Forces. Such a system must include data at the individual student level from preschool through postsecondary education and into the workforce		X	X	**E**	1, 2, 3
2	Facilitate and enable the exchange of data among agencies and institutions within the State and between States so that data may be used to inform policy and practice. Such a system would support interoperability by using standard data structures, data formats, and data definitions to ensure linkage and connectivity among the various levels and types of data				X	1, 2, 3, 4, 5
3	Link student data with teachers, i.e., it must enable the matching of teachers and students so that a given student may be matched with the particular teachers primarily responsible for providing instruction in various subjects				X	1, 2, 3
4	Enable the matching of teachers with information about their certification and teacher preparation programs, including the institutions at which teachers received their training		X		**E**	1, 3
5	Enable data to be easily generated for continuous improvement and decision-making, including timely reporting to parents, teachers, and school leaders on the achievement of their students		X	X	**E**	1, 2, 3
6	Ensure the quality and integrity of data contained in the system		X	X	**E**	4
7	Provide the State with the ability to meet reporting requirements of the Department, especially reporting progress on the metrics established for the State Fiscal Stabilization Fund and the reporting requirements included in the *EDFacts* data collection and reporting system		X	X	**E**	1, 2, 3

*If currently under development, whether supported by an existing grant, and whether it will be under a grant awarded in this competition.

**This Grant, E = Enhancement

	Capability or Element	Completed	*Under Development	Existing Grant	**This Grant	Relevant Outcomes 1. Expand Data Content Scope and Provide Instructional Support Tools and Technology 2. Improve Student and School Performance Measures 3. Expand the Data Warehouse 4. Establish Data Governance, Training and Communications 5. Expand Technology Infrastructure
	Element					
1	Unique statewide student identifier that does not permit a student to be individually identified by users of the system	X			**E**	1
2	Student-level enrollment, demographic, and program participation information	X			**E**	1, 3
3	Student-level information about the points at which students exit, transfer in, transfer out, drop out, or complete P-16 education programs	X			**E**	1, 3
4	The capacity to communicate with higher education data systems	X			**E**	1, 3, 4, 5
5	A State data audit system assessing data quality, validity, and reliability	X			**E**	4
6	Yearly test records of individual students with respect to assessments under section 1111(b) of the Elementary and Secondary Education Act of 1965	X			**E**	1, 2, 3
7	Information on students not tested, by grade and subject	X			**E**	1, 3
8	A teacher identifier system with the ability to match teachers to students				X	1, 3
9	Student-level transcript information including courses completed and grades earned				X	1, 3
10	Student-level college readiness test scores				X	1, 3
11	Data providing information regarding the extent to which students transition successfully from secondary to postsecondary education, including whether enrolling in remedial coursework				X	1, 2, 3
12	Data that provide other information determined necessary to address alignment and adequate preparation for success in postsecondary education				X	1, 2, 3

*If currently under development, whether supported by an existing grant, and whether it will be under a grant awarded in this competition.

**This Grant, E = Enhancement

Project Narrative

Project Narrative - Appendix D Letters of Support

Attachment 1:
Title: **Project Narrative_Appendix D Letters of Support** Pages: **29** Uploaded File: **Project Narrative_Appendix D Letters of Support.pdf**

COLORADO DEPARTMENT OF EDUCATION

201 East Colfax Avenue • Denver, Colorado 80203-1799
303.866.6600 • www.cde.state.co.us

Dwight D. Jones
Commissioner of Education

Robert K. Hammond
Deputy Commissioner

Kenneth R. Turner
Deputy Commissioner

RECEIVED
NOV 16 2009
BY

November 5, 2009

Superintendent Tom Horne
Arizona Department of Education
1535 West Jefferson Street
Phoenix, Arizona 85007

Dear Superintendent Horne,

Enclosed with this letter are four copies of the "State Collaboration: Longitudinal Data Systems, Data Visualization, Research and Development" Agreement for Execution. Please sign these documents and return three of them for final disposition. We will return one fully executed copy to each party.

The return address is (for three signed copies):

Richard Wenning
Associate Commissioner
Colorado Department of Education
201 E. Colfax Avenue
Denver, Colorado 80203

Sincerely,

Richard Wenning
Associate Commissioner

Att.(4)

State Collaboration: Longitudinal Data Systems, Data Visualization, Research and Development

Agreement for Execution - Effective Date: November 2, 2009

The terms on these two pages outline the initial agreement for a collaborative effort to co-locate state longitudinal growth data sets for the purpose of creating common data visualizations that build upon the Colorado Growth Model.

1. ***Agreement to Participate***. Each Chief State School Officer signs on to the collaborative research and development effort and agrees to the participation of the Chief's designee, chief information officer, and state assessment director or director of research and evaluation.

2. ***Common Longitudinal Growth Measure***. Each state agrees to calculate growth percentiles in the same manner using R (programming language) to allow common cross-state comparisons and data visualization development related to normative and criterion-referenced growth.

3. ***Common Display Platform***. Each state agrees to use the Colorado Growth Model Version 1.0 or 1.5 display layer as an initial common visualization platform.

4. ***State Branding***. Each state may rebrand the display layer (e.g., "The Indiana Growth Model") and will provide mutually agreed upon attribution to Colorado and the National Center for the Improvement of Educational Assessment.

5. ***Common Development Environment***. To the extent practicable, each state agrees to load its longitudinal data set into a common, standardized data storage environment with appropriate security. This storage environment may be a cloud-based, virtual environment. The purpose is to permit common cross-state enhancement of the data visualization tools by the application developers. The application developers for Versions 1.5 and 2.0 will be the Colorado Department of Education, the National Center for the Improvement of Educational Assessment, and Universal Mind.

6. ***Enhancements to the Display Layer.*** Each state agrees to collaborate in the development of a common Version 2.0 of the Growth Model Display Layer. Such modifications will include, but not be limited to, postsecondary metrics, multi-year visualization and animation, inclusion of teacher identifiers, multiple axis selection, enhanced mapping functionality. Each state may fund the development of different enhancements of the display layer. For example, a state may fund development of displays incorporating unique teacher identifiers and interim assessment data. Enhancement priorities will be established through consensus among the participating states.

7. ***Modifications Shared***. Each state agrees to collaborate in, and contribute know-how and financial resources to, the development of modifications and enhancements, which will be shared freely among each participating state, subject to the Creative Commons Attribution-Non-Commercial-Share Alike 3.0 Public License (http://creativecommons.org/licenses/by-nc-sa/3.0legalcode).

State Collaboration: Longitudinal Data Systems, Data Visualization, Research and Development

8. ***Communications and Publicity***. Each state will collaborate on communications and publicity related to the collaborative effort, including an initial press release announcing the agreement.

9. ***Race to the Top and SLDS***. Pending each state's determination of the success and viability of the effort, each state agrees to include language in its Statewide Longitudinal Data Systems (SLDS) Grant and Race to the Top Proposal referencing the collaborative effort as part of the invitational priority related to enhancements of longitudinal data systems and include a budget item to support the collaborative.

10. ***Collaboration with CCSSO's LEARN Effort***. Pending each state's determination of the viability of the proposed CCSSO effort, each state agrees to associate this collaborative effort with the LEARN effort. In doing so, each state agrees to request that CCSSO make funding from the State Education Data Center available to maintain and enhance the initial collaboration, including funding for a common, standardized storage environment.

The undersigned parties agree to the terms outlined above.

Signature _____ Date 11-2-09

Dwight D. Jones, Commissioner, Colorado Department of Education

Signature _____ Date _____

Tony Bennett, Superintendent of Public Instruction, Indiana Department of Education

Signature _____ Date _____

Tom Horne, Superintendent, Arizona Department of Education

J-119 DSA (09/2005)

ARIZONA DEPARTMENT OF ECONOMIC SECURITY
Information Security Administration,
1720 W. Madison St, Room C4, Site 820Z
Phoenix, AZ 85007
Phone: (602) 254-2779 · Fax: (602) 542-4014

DATA-SHARING REQUEST/AGREEMENT

BETWEEN

REQUESTING ENTITY:

Arizona Department of Education

(DES Division/Administration/Program/Office Name or External Organization Name)

AND

DATA MANAGER: ARIZONA DEPARTMENT OF ECONOMIC SECURITY

Division of Children, Youth and Families, FBOA, CHILDS

(Division/Administration/Program/Office Name)

Effective Date: __/__/_____	**Agreement No.:** _____

Equal Opportunity Employer/Program
This document available in alternative formats by contacting: (602) 229-2821.

Agreement No.: _____

SECTION I. REQUEST *(Completed by Requesting Entity)*

Use attachment if necessary

1a. PURPOSE OF THIS REQUEST (*What information is being requested and why? How will it be used? Give details/specifics.)*

To enable DES/DCYF to send requests to the Arizona Department of Education (ADE) so that ADE can respond back with education related information of children in the care, custody and control of the DES.

1b. INFORMATION TECHNOLOGY AND CONNECTIVITY

The requester describes the information technology (IT) environment that will connect to DES. (be explicit – consult your IT personnel for assistance.

ADE will provide a secure WebService (https/443) that will enable connectivity to the DES

The requester enters all information required for successful communication between the requesting entity and the DES IT Staff.

Contact Name (1): **Larry Lindain** Phone: **602-542-7882**
Contact Name (2): Phone:
Contact Address: **1535 W Jefferson St Bin #17 Phoenix AZ 85007**
Contact (1) E-Mail Address: Larry.Lindain@azed.gov Contact (2) E-Mail Address:
Contact Fax No: **602-364-1937**

Agreement No.: _____

SECTION I - *REQUEST (Completed by Requesting Entity)*

Use attachment if necessary

2. CITE LAW, REGULATION, DIRECTIVE OR OTHER BASIS FOR THIS REQUEST

The interface between the DES/DCYF CHILDS and the Arizona Department of Education Interface will fulfill educational requirements of the Fostering Connections to Success and Increasing Adoptions Act of 2008 (a federal law that was introduced as HR 6893 and signed into public law as Public Law 110-351.)

3. WILL OTHER ENTITIES INTERFACE WITH YOUR AGENCY?

☐ Yes **X** No If Yes, identify entity and reason(s):

4. WILL IINFORMATION BE DISCLOSED/SHARED WITH ANOTHER ENTITY?

☐ Yes **X** No If Yes, identify entity and reason(s) for disclosure:

5. WILL DES DATA BE REPACKAGED/INCLUDED IN OTHER DATA BASES, FILES, TAPES, ETC.

☐ Yes **X** No If Yes, identify entity and reason(s):

6. DESIRED OUTPUT *(Printout, tape, terminal access/display, etc.)*

XML data stream

7. DESCRIBE SAFEGUARDS IN PLACE TO GUARD AGAINST UNAUTHORIZED ACCESS/DISCLOSURE OF THE INFORMATION All printouts will be shredded in accordance with DES Policy of disposal of confidential data. All users will sign a J-129, Data Security required Training and Annual Recertification.

PRINT NAME AND TITLE OF AUTHORIZED CONTACT	PHONE NO. 602-264-3376 x3243 FAX 602-264-3585 E-MAIL EBaca@azdes.gov	DATE
Ernest Baca, Project Leader		7/9/2009

MAILING ADDRESS/SITE CODE	CITY	STATE	ZIP CODE
3443 N. Central Avenue, Suite 300 Site Code 829Z	Phoenix	AZ	85012

Agreement No.: _____

SECTION II - STIPULATIONS REGARDING THE USE OF INFORMATION

STIPULATIONS APPLICABLE TO THE REQUESTING ENTITY:

1. Disclosure of the data provided to the Requesting Entity is not permitted unless specifically authorized.
2. Repackaging or redistribution of data or screens, or creation of separate files will not be permitted unless specifically authorized.
3. The data shall be used only to assist in valid administrative needs as stated in Section I, item 1 of this Agreement.
4. All data shall be stored in a physically secure facility.
5. All data in electronic format shall be stored or processed so that unauthorized persons cannot retrieve the information by means of a computer, remote access, or other means.
6. Only authorized staff will be given access needed to accomplish the purpose(s) specified in Section I, item 1 of this Agreement.
7. All staff shall attend an authorized data security awareness training class, where they will be instructed on confidentiality, privacy laws and penalties imposed when compliance is breached.
8. A **Request for Terminal Access and Other Activity (J-125)** shall be used to request specific access for each authorized staff member.
9. All authorized staff is required to sign a **User Affirmation Statement (J-129),** as a condition for using requested data.
10. Any personnel changes requiring change or removal of access as described in Section I, item 1 of this Agreement, shall be reported promptly to the respective data security analyst.
11. Federal and state audit and data security personnel may have access to offices and records of the requesting entity to monitor or verify compliance with this agreement.
12. This Data-Sharing Agreement will remain in effect for 2 years from the effective date unless otherwise stipulated.

STIPULATIONS APPLICABLE TO PROVIDER:

1. DES will use the Requesting Entity employee identifying information solely for the purpose of establishing on-line access.
2. Only authorized DES employees will have access to requesting agency employee data.
3. In accordance with applicable federal, state, and/or local privacy regulations, DES will protect all information collected from the Requesting Entity.

STIPULATIONS APPLICABLE TO HIPAA – HEALTH INSURANCE PORTABILITY & ACCOUNTABILITY ACT:

1. All staff shall attend an authorized HIPAA awareness training class, where they will be instructed on confidentiality, privacy, information safeguards and penalties imposed when compliance is breached.
2. If applicable, there is a "Business Associate Contract" [45 CFR 164.502(e), 154.504(e). 164.532(d) & (e)] on file and will be attached to this data sharing agreement as an addendum.

Agreement No.: _____

SECTION III. ADDITIONAL INFORMATION

Print Name Signature _____	PHONE NO. ( ) -	DATE / /

SECTION IV (A) RECOMMENDATIONS *(Completed by the data managing program)*

☐ Recommend **APPROVAL**

☐ Request is not recommended for approval.

Print Name Maeyn Myers/DCYF Security Manager Signature _____	SITE CODE 041C-7	PHONE NO. (602) 264-3376	DATE / /

SECTION IV (B) HIPAA RECOMMENDATIONS *(Completed by the HIPAA DIVISION PRIVACY OFFICER)*

☐ Recommend **APPROVAL**

☐ Request is not recommended for approval.

Print Name Amy Alexander
Signature _____

SITE CODE 030C-3 | PHONE NO. (602) 771-3619 | DATE / /

Agreement No.: _____

SECTION V. APPROVAL *(Completed by the requesting entity and the data managing program)*

I attest to the correctness of the information provided in Section I and agree to the stipulations and costs listed in Section II and III. I agree to comply with all provisions of the DES Data Security Policy. Should any violations of the DES Data Security Policy occur, this Agreement may be terminated. I further understand that DES will periodically review the terms of the Agreement to ensure it conforms with DES Policies and Procedures. In the event changes in either federal or state law or regulations occur that conflict with the terms of the Agreement or render the terms of the Agreement void, impracticable, or otherwise impossible, this Agreement will terminate immediately. A new Agreement or an amendment to the existing Agreement will be initiated to provide for any changes, which cannot be accommodated within the provisions of the existing Agreement. The Requesting Entity shall hold harmless and indemnify the State of Arizona and its Department of Economic Security for any liability resulting from acts or ommissions attributable to the Requesting Entity.

IN WITNESS HERETO, the PARTIES have executed this Agreement by signature of their duly authorized officials:

For the Requesting Entity:

Entity Name

Print Signatory Name

Title

Signature

Date
/ /

For the Department of Economic Security:

Entity Name
Division of Children, Youth & Families

David E. Longo

Title DCYF Administrator

Signature

Date
/ /

SECTION VI. APPROVAL *(Completed by the Information Security Administration)*

This signed Agreement meets all requirements necessary to permit the controlled sharing of the DES data while simultaneously providing for the protection of the data. I certify that:

☐ **THIS AGREEMENT CONFORMS to DES Information Security Policy.**

☐ **THIS AGREEMENT DOES NOT CONFORM to the DES Information Security Policy. Implementation of this Agreement cannot proceed until the following action is taken:**

_____

_____

_____

_____

_____

_____	Kristy Westphal DES Information Security Administrator	/ /
(Signature)	*(Title)*	*(DATE)*

ROUTING INSTRUCTIONS for J-119

DATA SHARING AGREEMENT BETWEEN DES ENTITIES:

1. Section I is completed, contact infromation is provided and the document is signed by the requesting Division or Program Assistant Director, Program Administrator or designee. The requesting entity Division or Program Security Analyst sends the document to the Data Managing Division/Program Security Analyst. The DSA/PSA from the Data Managing Division/Program will complete Section III and the recommendation in Section IV. If applicable, the Division HIPAA Privacy Officer will complete the recommendation in Section IV. Reason must be given if request is not recommended for approval. Section V is signed and dated by the Data Managing Assistant Director, Program Administrator or designee.

   EXCEPTION: All DERS Employment Administration Data Sharing Agreements contain numerous addendums. These data sharing agreements should not be signed by the requesting entity at the time of submittal. The DERS-EA will return the initial agreement with addendums to the requesting entity for review and then signature. The process will then proceed as indicated in No.1 above.

2. The data managing Division/Program Security Analyst forwards the agreement to the Information Security Administration (Site Code 859Z). The agreement is signed, numbered and dated by the Information Security Administrator. The original agreement is filed in the DES Information Security Administration and entered into the master log. The agreement is not final until signed by the Information Security Administrator. A copy of the agreement is sent to both the requesting entity DSA/PSA and the Data Managing DSA/PSA.

NOTE:
When the agreement is modified during the approval process, both entities must review the modifications and resign/date the document.

DATA-SHARING AGREEMENT BETWEEN DES AND AN EXTERNAL ENTITY:

1. Section I is completed by the requesting external entity and Section V is signed and dated by the signatory. The agreement is sent to the DES Information Security Administration, 1717 W Jefferson, Room 114, Phoenix, AZ 85007 (Site Code 859Z), for review and coordination.

   EXCEPTION: All DERS Employment Administration Data Sharing Agreements contain numerous addendums. These data sharing agreements should not be signed by the requesting entity at the time of submittal. The DERS-EA will return the initial agreement with addendums to the requesting entity for review and then signature. The process will then proceed to No 2.

2. The Information Security Administration will distribute the agreement to all applicable Data Managing Division or Program Security Analysts (DSA/PSA). The Data Managing DSA/PSA will complete Section III (if required) and the recommendation in Section IV. If applicable, the Division HIPAA Privacy Officer will complete the recommendation in Section IV. Reason must be given if request is not recommended for approval. Section V is signed and dated by the Data Managing Assistant Director, Program Administrator or designee.

3. The agreement is sent to the DES Information Security Administrator, 1717 W Jefferson, Room 114, Phoenix, AZ 85007 (Site Code 859Z), for review. The agreement is then signed, numbered and dated by the Information Security Administrator. The original agreement is filed in the DES Information Security Administration and entered into the master log. The Agreement is not final until signed by the Information Security Administrator. A copy of the Agreement is sent to both the requesting external entity and the Data Managing DSA/PSA.

NOTE:
When the agreement is modified during the approval process, both entities must review the modifications and resign/date the document.

JON KYL
ARIZONA
730 HART SENATE OFFICE BUILDING
(202) 224-4521

COMMITTEE ON FINANCE

COMMITTEE ON THE JUDICIARY

REPUBLICAN WHIP

United States Senate

WASHINGTON, DC 20510-0304

STATE OFFICES:
2200 EAST CAMELBACK ROAD
SUITE 120
PHOENIX, AZ 85016
(602) 840-1891

6840 NORTH ORACLE ROAD
SUITE 150
TUCSON, AZ 85704
(520) 575-8633

October 26, 2009

Secretary Arne Duncan
U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202

Dear Secretary Duncan:

I have been informed that the Arizona Department of Education has submitted an application for grant funding to your office.

According to Mr. Doug Nick, the grant funds will be used to expand and accelerate the scope and timeframe of the existing Arizona Education Data Warehouse (AEDW). The planned expansion of the AEDW will provide education stakeholders the quality data requisite to making informed decisions. Inclusion of post secondary, workforce, and additional early childhood data will result in a unique longitudinal perspective of factors that contribute to the quality of each student's entire educational experience.

Knowing funds are limited and proposals are reviewed through a competitive process, I request that this application be given the consideration it deserves within the parameters of available funding. Naturally, I do not expect any action to be taken in this matter that would contravene normal rules and regulations. Please provide a final notification once a decision has been made.

Thank you for your consideration.

Sincerely,

JON KYL
United States Senator

JK:dr

Maricopa County
Superintendent of Schools

4041 N. Central Ave
Suite 1100
Phoenix, AZ 85012
Phone: 602.506.3866
Fax: 602.506.3753
www.maricopa.gov/schools

November 20, 2009

Secretary Arne Duncan
U.S. Department of Education
400 Maryland Avenue, SW
Washington, DC 20202

Re: Statewide Longitudinal Data Systems Grant under the American Recovery & Recovery Act of 2009
CFDA NUMBER: 84.384A

Dear Secretary Duncan,

The purpose of this letter is to express my support for the Arizona Department of Education's (ADE) application for the Statewide Longitudinal Data Systems Grant under the American Reinvestment & Recovery Act of 2009 (ARRA). As the Assistant Superintendent of the Maricopa County Superintendent of Schools office Educational Services Agency I serve 62 percent of the students in Arizona's K-12 school system. In my position I understand the need for high-quality, high-integrity data systems that can provide valuable time-sensitive information in an efficient and effective manner.

With the additional focus that ARRA brings on improving transparency and accountability measures, the educational community relies on well-purposed data housing systems that provide the range of data and usability that is so important to the use of data in driving policy decisions to improve student learning and achievement. Our office appreciates that ADE's purpose is to maximize the utilization of the current and future grant opportunities to expand and accelerate the scope and timeframe of the existing Arizona Education Data Warehouse (AEDW) in the most efficacious manner.

AEDW's planned expansion will greatly improve visibility and accessibility of the data to education stakeholders across a broad range of roles — ADE, district-level administration, principals and teachers, parents and students, and policy makers and legislators. Making informed decisions in order to provide the most effective services to support the students of Maricopa County depends on the availability of the high-quality data provided for in the AEDW expansion plans. The receipt of this award will provide Arizona with the ability to enhance several key initiatives to support the national education outcomes supported by ARRA. With this system, we will be able to access the data necessary for addressing the needs of the 21st Century learner.

In Maricopa County, with a population size in the top five in the nation, my role to serve the students through improving access to services can be best accomplished when my team has the reliable data that they need in a timely manner. This grant will deliver a critical element in Arizona's comprehensive plans to provide equitable, high-quality educational experiences for all students while realizing significant measurable improvements in student achievement. Thank you for your time and attention in helping to provide crucial support for the success of our students.

Sincerely,

Jeff Peterson
Assistant Superintendent for Quality Innovations and Improvement of Instruction

Arizona Community College Presidents' Council

2411 West 14th Street Tempe, AZ 85281 480.731.8318

November 9, 2009

Honorable Arne Duncan
Secretary of Education
U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202

Re: Statewide Longitudinal Data Systems Grant under the American Recovery & Reinvestment Act of 2009, CFDA NUMBER: 84.384A

Dear Secretary Duncan,

The Arizona Community College Presidents' Council (ACCPC) is a statewide partnership of the chief executive officers of each of the ten accredited community college districts in the state. It exists to strengthen and promote Arizona's community colleges and addresses a range of issues important to community colleges. On behalf of ACCPC, I am writing to support Arizona's application for the Statewide Longitudinal Data Systems Grant under the American Recovery & Reinvestment Act of 2009.

In this time of increased focus on governmental transparency and accountability, the educational community is increasingly reliant upon data to measure student achievement and provide measured accountability. Arizona plans to use the grant funds to expand the scope and accelerate the functionality of the Arizona Education Data Warehouse (AEDW).

The planned expansion of the AEDW will provide education stakeholders the quality data required for making informed decisions. Inclusion of post secondary, workforce and additional early childhood data will result in the critical longitudinal perspective that contributes to the quality of each student's educational experience and provides an opportunity for increased performance.

This grant award will support user education on how to effectively utilize performance measuring data. It will provide funds to each participating data provider, from local education agencies through post secondary institutions, in their efforts to readily supply quality information. In a state with a burgeoning school-age population, this grant is a foundational element of Arizona's comprehensive plans to provide an equitable quality educational experience for all learners while realizing significant measurable improvements in student achievement.

The Arizona Community College Presidents' Council and I appreciate your consideration of this very important request.

Sincerely,

Rufus Glasper, Ph.D., CPA, Chair
Arizona Community College Presidents' Council

c: Arizona Community College Presidents' Council

November 24, 2009

Mr. Donald J. Houde
Chief Information Officer
Deputy Associate Superintendent for Information Technology
Arizona Department of Education
1535 W. Jefferson
Phoenix, AZ 85007

Dear Mr. Houde:

We are writing this letter in support of the application by the Arizona Department of Education (ADE) for the Statewide Longitudinal Data Systems Grant under the American and Recovery Act of 2009.

Business officials in school districts understand the importance of quality data systems and the importance of these systems in making informed decisions. The expansion of the Arizona Education Data Warehouse (AEDW) will provide preschool through workforce data to assist with decision making which will provide students with a quality educational experience.

This grant will provide ADE and local educational agencies with additional funds to be able to provide data in a timely and accurate manner. This will provide all of the stakeholders with the needed data to make informed decisions to assure a quality educational environment for all students.

Sincerely,

John C. Fung
Executive Director

Chuck Essigs
Director of Governmental Relations

2100 N. Central Avenue, Suite 202 • Phoenix, Arizona 85004

AASBO
Arizona Association of School Business Officials

p: 602.253.5576 f: 602.253.5764 www.aasbo.org

Maricopa County
Superintendent of Schools

4041 N. Central Ave
Suite 1100
Phoenix, AZ 85012
Phone: 602.506.3866
Fax: 602.506.3753
www.maricopa.gov/schools

November 20, 2009

Secretary Arne Duncan
U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202

Re: Statewide Longitudinal Data Systems Grant under the American Recovery & Recovery Act of 2009 CFDA NUMBER: 84.384A

Dear Secretary Duncan,

As Maricopa County's Superintendent of Schools, I am writing to strongly support Arizona Department of Education (ADE) in its grant application for the Statewide Longitudinal Data Systems (SLDS) Grant under the American Recovery & Recovery Act of 2009. Maricopa County represents more than 60 percent of the students, teachers, and administrators in the state of Arizona. We firmly believe that a **robust longitudinal data system is the foundation for all future initiatives in education** and encourage the United States Department of Education to fully fund this project.

The planned expansion of the Arizona Education Data Warehouse (AEDW) through funding received with the SLDS grant will provide education stakeholders, including parents/students, classroom teachers, schools administrators, and policy makers with quality data requisite to making informed decisions. We are confident that this grant will provide Arizona's Department of Education's Information Technology Division the resources to **transform an already robust data warehouse into a flexible and accessible tool for accurate, real-time informed decision making at all levels of the system.**

As County Superintendent we need a system that enables us to: **monitor student growth, measure teacher performance, evaluate transitions between and within systems**, and **determine areas for on-going professional growth and development**, all in the **interest of continuous improvement**. In a state with a burgeoning school-age population, **this grant is a critical element of Arizona's** comprehensive plan to provide an equitable quality educational experience for all learners while realizing significant measurable improvements in student achievement.

We are confident that with this enhanced Data System, and **through collaboration** with the Maricopa County School Superintendent's Educational Service Agencies, schools and districts can use the SLDS to **facilitate improvement of learning and close achievement gaps** for children throughout Arizona. SLDS gives us a tool to assist schools in

accomplishing the change that is needed to make Arizona's educational system **First in the Nation** as we can build a robust workforce for future growth and development.

Thank you for your consideration and support of Arizona's Application for an enhanced Statewide Longitudinal Data System.

Respectfully,

Dr. Donald Covey
Superintendent Maricopa County

OFFICE OF THE
COCHISE COUNTY SCHOOL SUPERINTENDENT
P.O. Drawer 208
Bisbee, Arizona 85603

TRUDY BERRY
SUPERINTENDENT

Telephone No. (520) 432-8950
Fax No. (520) 432-7136

November 24, 2009

Secretary Arnie Duncan
U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202

Re: Statewide Longitudinal Data Systems Grant under the American Recovery and Reinvestment Act of 2009 CFDA NUMBER: 84.384A

Dear Secretary Duncan,
As Cochise County's Superintendent of Schools, I am writing to strongly support Arizona Department of Education in its grant application for the Statewide Longitudinal Data Systems (SLDS) Grant under the American Recovery and Reinvestment Act of 2009. We believe that a robust longitudinal data system is the foundation for all future initiatives in education and encourage the United States Department of Education to fully fund this project.

The planned expansion of the Arizona Education Data Warehouse (AEDW) through funding received with the SLDS grant will provide education stakeholders, including parents/students, classroom teachers, schools administrators, and policy makers with quality data requisite to making informed decisions. We are confident that this grant will provide Arizona's Department of Education's Information Technology Division the resources to transform an already robust data warehouse into a flexible and accessible tool for accurate, real-time informed decision making at all levels of the system.

As County Superintendent we need a system that enables us to: monitor student growth, measure teacher performance, evaluate transitions between and within systems, and determine areas for on-going professional growth and development, all in the interest of continuous improvement. In a state with a burgeoning school-age population, this grant is a critical element of Arizona's comprehensive plan to provide an equitable quality educational experience for all learners while realizing significant measurable improvements in student achievement.

We are confident that with this enhanced Data System, and through collaboration with the Cochise County School Superintendent's Educational Service Agencies, schools and districts can use the SLDS to facilitate improvement of learning and close achievement gaps for children throughout Arizona. SLDS gives us a tool to assist schools in accomplishing the change that is needed to make Arizona's educational system first in the nation as we can build a robust workforce for future growth and development.

Thank you for your consideration and support of Arizona's Application for an enhanced Statewide Longitudinal Data System.

Respectfully,

Trudy Berry

Trudy Berry
Cochise County School Superintendent

Re: Statewide Longitudinal Data Systems Grant under the American Recovery & Recovery Act of 2009 CFDA NUMBER: 84.384A

Dear Secretary Duncan,

I am writing this letter in my support of the Arizona Department of Education's (ADE) application for the Statewide Longitudinal Data Systems Grant under the American Recovery & Recovery Act of 2009. I am the president of the Arizona Educational Research Organization (AERO) we are a state affiliate of the American Educational Research Association (AERA). Our organization represents district level researchers, program supporters and administrators as well as our state level researchers (the Arizona Department of Education as well as our state universities). We understand how critical it is for stakeholders and researchers alike to have access to timely information that can be analyzed at many different levels.

In this time of increased focus on governmental transparency and accountability, the entire educational community is increasingly reliant upon data to measure student achievement and provide measured accountability. We understand that the ADE intends to maximize the utilization of these grant monies to expand and accelerate the scope and timeframe of the existing Arizona Education Data Warehouse (AEDW). We are supportive of this expansion program in that it will allow school, district and state agencies access to data that is necessary to make appropriate decisions.

The planned expansion of the AEDW will provide education stakeholders, from parents/students through the education community to policy makers, the quality data requisite to making informed decisions. Inclusion of post secondary, workforce and additional early childhood data will result in a unique longitudinal perspective of factors that contributes to the quality of each student's entire educational experience. Unifying preschool through workforce data provides insight into accurately responding to key questions like which factors positively influence a student's educational experience, which student's require remediation in post secondary or which student's have a successful post secondary career?

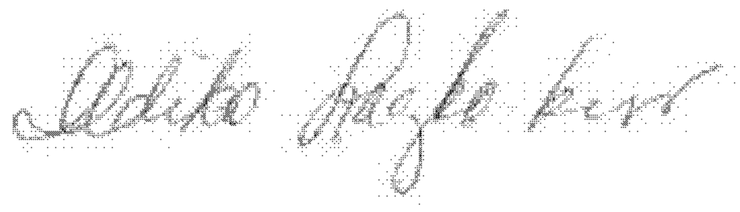
This grant award will assist Arizona in enhancing several key education based initiatives that provide key pieces of informative data. A prime example of this opportunity is automating and extending the Education and Career Action Plans initiatives for all of Arizona's students. In addition, data associating the teacher with their students, student course completion grades, student transcript information and student post secondary readiness test scores will now be collected at the state level and, through strict security and governance structures, provisioned for credible analysis.

Finally, this grant award is more than just constructing a quality data system. It will support user education on how to effectively use performance measuring data. It will provide funds to each participating data provider, from local education agencies through post secondary institutions, in their efforts to readily supply quality information. In a state

with a burgeoning school-age population, this grant is a critical element of Arizona's comprehensive plans to provide an equitable quality educational experience for all learners while realizing significant measurable improvements in student achievement.

If I can provide any more information regarding our support of this endeavor please feel free to contact me directly at ilaczko@susd.org or 480-484-6197.

Sincerely,



Dr. Ildiko Laczko-Kerr
President, AERO

Scottsdale Unified School District
Executive Director
Curriculum, Instruction and Assessment

Re: Statewide Longitudinal Data Systems Grant under the American Recovery & Recovery Act of 2009 CFDA NUMBER: 84.384A

Dear Secretary Duncan,

I am writing this letter in my support of the Arizona Department of Education's (ADE) application for the Statewide Longitudinal Data Systems Grant under the American Recovery & Recovery Act of 2009. The ADE intends to maximize the utilization of these grant monies to expand and accelerate the scope and timeframe of the existing Arizona Education Data Warehouse (AEDW). The planned expansion of the AEDW will provide education stakeholders, from parents/students through the education community to policy makers, the quality data requisite to making informed decisions.

This grant award will also assist Arizona in enhancing several key education based initiatives that provide key pieces of informative data. Data associating the teacher with their students, student course completion grades, student transcript information and student post secondary readiness test scores will now be collected at the state level and, through strict security and governance structures, provisioned for credible analysis.

Finally, this grant will support user education on how to effectively use performance measuring data. It will provide funds to each participating data provider, from local education agencies through post secondary institutions, in their efforts to readily supply quality information. In a state with a burgeoning school-age population, this grant is a critical element of Arizona's comprehensive plans to provide an equitable quality educational experience for all learners while realizing significant measurable improvements in student achievement.

Sincerely,

Debbie D'Amore
Chief Deputy

HARRY E. MITCHELL
5TH DISTRICT, ARIZONA

1410 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
PH: 202-225-2190

7201 EAST CAMELBACK ROAD, SUITE 315
SCOTTSDALE, AZ 85251
PH: 480-946-2411
FX: 480-946-2448

mitchell.house.gov

Congress of the United States
House of Representatives

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
SUBCOMMITTEE ON AVIATION
SUBCOMMITTEE ON HIGHWAYS AND TRANSIT
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT

COMMITTEE ON VETERANS' AFFAIRS
CHAIRMAN
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS

COMMITTEE ON SCIENCE AND TECHNOLOGY
SUBCOMMITTEE ON TECHNOLOGY AND INNOVATION

October 23, 2009

Secretary Arne Duncan
U.S. Department of Education
400 Maryland Ave. SW
Washington, DC 20202

Dear Secretary Duncan,

I write regarding the application from the Arizona Department of Education for the Statewide Longitudinal Data Systems Grant under the American Recovery and Reinvestment Act of 2009.

According to the Arizona Department of Education, this grant would be utilized to expand and accelerate the scope and timeframe of the existing Arizona Education Data Warehouse (AEDW). The Arizona Department of Education would also increase the data collected by including post secondary, workforce, and additional early childhood data for a unique longitudinal perspective. This comprehensive quality data would assist education stakeholders in making informed decisions.

I urge you to give this application full and fair consideration.

Thank you for your consideration.

Sincerely,

Harry E. Mitchell
Member of Congress

PRINTED ON RECYCLED PAPER

ED PASTOR
4TH DISTRICT, ARIZONA

COMMITTEE ON APPROPRIATIONS

SUBCOMMITTEE ON
TRANSPORTATION, HOUSING AND URBAN
DEVELOPMENT, AND RELATED AGENCIES

SUBCOMMITTEE ON
ENERGY AND WATER DEVELOPMENT, AND RELATED
AGENCIES

SUBCOMMITTEE ON
INTERIOR, ENVIRONMENT, AND RELATED AGENCIES

CHIEF DEPUTY DEMOCRATIC WHIP

Congress of the United States
House of Representatives

PLEASE REPLY TO:

☐ 2465 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-0304
(202) 225-4065

☐ 411 NORTH CENTRAL AVENUE, SUITE 150
PHOENIX, AZ 85004
(602) 256-0551

October 22, 2009

The Honorable Arne Duncan
Secretary
U.S. Department of Education
400 Maryland Avenue SW
Washington, D.C. 20202-0001

Dear Mr. Secretary:

I write in support of the Arizona Department of Education's (ADE) application for the Statewide Longitudinal Data Systems Grant under the American Recovery and Reinvestment Act of 2009.

In this time of increased focus on governmental transparency and accountability, the entire educational community is increasingly reliant upon data to measure student achievement and provide measured accountability. Accordingly, the ADE intends to maximize the utilization of these grant monies to expand and accelerate the scope and time frame of the existing Arizona Education Data Warehouse (AEDW).

The planned expansion of the AEDW will provide education stakeholders, from parents and students to policy makers, the quality data necessary to make informed decisions. Inclusion of post-secondary, workforce, and additional early childhood data will result in a unique longitudinal perspective of factors that contribute to the quality of each student's entire educational experience. Unifying preschool through workforce data provides insight to key questions such as which factors positively influence a student's educational experience, what types of students require remediation in post-secondary, and what kinds of students have a successful post-secondary career.

This grant will assist Arizona in enhancing several key education-based initiatives designed to provide important pieces of informative data. This includes helping to automate and extend the Education and Career Action Plans initiative for all Arizona students. It also includes assisting in the collection and analysis of statewide data on student course completion grades, student transcript information, and student post-secondary readiness test scores, as well as data that associates each teacher with their students.

Finally, this grant award will do more than just help to construct a quality data system. It will support user education on how to effectively use performance measuring data. It will provide funds to each participating data provider, from local education agencies through post-secondary institutions, to continue their efforts to readily supply quality information. In a state with a burgeoning school-age population, this grant is a critical element of Arizona's comprehensive

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plans to provide an equitable quality educational experience for all learners, while realizing significant measurable improvements in student achievement. Therefore, in accordance with all applicable rules and regulations, I strongly support the ADE's application for the Statewide Longitudinal Data Systems Grant under the American Recovery and Reinvestment Act of 2009.

Thank you for your favorable consideration of this grant application.

Sincerely,

Ed Pastor
Member of Congress

EP/rh

GABRIELLE GIFFORDS
8TH DISTRICT, ARIZONA

WASHINGTON OFFICE:
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(202) 225-2542

DISTRICT OFFICES:
TUCSON OFFICE
1661 NORTH SWAN, SUITE 112
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77 CALLE PORTAL, SUITE B-160
SIERRA VISTA, AZ 85635
(520) 459-3115

COMMITTEES:
ARMED SERVICES
SUBCOMMITTEE ON AIR AND LAND FORCES
SUBCOMMITTEE ON MILITARY READINESS

SCIENCE AND TECHNOLOGY
CHAIR, SUBCOMMITTEE ON SPACE AND AERONAUTICS
SUBCOMMITTEE ON ENERGY AND ENVIRONMENT

FOREIGN AFFAIRS
SUBCOMMITTEE ON THE WESTERN HEMISPHERE

Congress of the United States
House of Representatives
Washington, DC 20515–0308

www.giffords.house.gov

October 29, 2009

Secretary Arne Duncan
U.S. Department of Education
400 Maryland Ave. SW
Washington, D.C. 20202

Re: Statewide Longitudinal Data Systems Grant under the American Recovery & Recovery Act of 2009 CFDA NUMBER: 84.384A

Dear Secretary Duncan,

I am writing this letter in support of the Arizona Department of Education's (ADE) application for the Statewide Longitudinal Data Systems Grant under the American Recovery & Recovery Act of 2009. The ADE will apply these grant monies to expand and accelerate the scope and timeframe of the existing Arizona Education Data Warehouse (AEDW).

The planned expansion of the AEDW will provide education stakeholders, from parents and students in the education community to policy makers, the quality data requisite to making informed decisions. Inclusion of post secondary, workforce and additional early childhood data will result in improved longitudinal perspective of factors that impact the quality of each student's educational experience. Unifying data from preschool to employment provides insight into key questions.

The grant will also support user education on how to effectively use performance measuring data. It will provide funds to each participating data provider, from local education agencies through post secondary institutions, in their efforts to readily supply quality information gathering and analysis. In a state with a growing school-age population, this grant is a critical element of Arizona's comprehensive plan to provide a quality educational experience for all learners and realize significant measurable improvements in student achievement.

I urge you to support the Arizona Department of Education's application for a Statewide Longitudinal Data Systems Grant under the American Recovery and Reinvestment Act.

Sincerely Yours,

Gabrielle Giffords
Member of Congress

PRINTED ON RECYCLED PAPER

JOHN SHADEGG
3RD DISTRICT, ARIZONA

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http://johnshadegg.house.gov

Congress of the United States

House of Representatives

Washington, DC 20515–0304

ENERGY AND COMMERCE
SUBCOMMITTEES:
ENERGY AND ENVIRONMENT
HEALTH
COMMUNICATIONS, TECHNOLOGY AND THE INTERNET

SELECT COMMITTEE ON ENERGY INDEPENDENCE AND GLOBAL WARMING

REPUBLICAN STUDY COMMITTEE

October 28, 2009

Secretary Arne Duncan
U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202

Dear Secretary Duncan:

The Arizona Department of Education has contacted my office regarding their grant application titled the Statewide Longitudinal Data Systems grant under the American Recovery & Reinvestment Act of 2009. This grant will be used to support and expand the existing Arizona Education Data Warehouse (AEDW). The expansion of the AEDW will allow for increased collection of education data, which will benefit education stakeholders such as parents and students, teachers and policy makers. In addition, the grant will support the effective use of performance measuring data in an effort to supply quality information on student achievement.

While it is my understanding that grant applications are considered upon their merits and weighed against competing proposals, I am confident that the Arizona Department of Education will use the Statewide Longitudinal Data Systems grant in an effective and efficient manner.

Thank you for giving this grant application your consideration.

Sincerely,

John Shadegg
Congressman
Arizona 3rd District
U.S. House of Representatives

JBS:els

Arizona Board of Regents
2020 North Central Avenue, Suite 230
Phoenix, AZ 85004-4593
602-229-2500
Fax 602-229-2555
www.azregents.edu

Arizona State University *Northern Arizona University* *University of Arizona*

December 2, 2009

Superintendent Tom Horne
Arizona Department of Education
1535 W Jefferson
Phoenix, AZ 85007

Superintendent Horne:

The Arizona Board of Regents intends to participate in the collection and use of data as requested by the Arizona Educational Data Warehouse Governance Board as part of the 2009 federal Statewide Longitudinal Data System grant proposal. We support this project and intend to share appropriate data with the AEDW to accomplish the goals stated in the grant proposal.

This is a preliminary intent to support this project and it does not obligate us to participate. At the time of project initiation, we expect to determine the actual data to be shared, the method of sharing, storage, archival and other technical or business considerations. We will also agree at that time on appropriate governance and release rules for this data.

Sincerely,

Joel Sideman
Executive Director

Board Members: **President Ernest Calderón,** Phoenix **Fred T. Boice,** Tucson **Robert B. Bulla,** Scottsdale
Dennis DeConcini, Tucson **Fred P. DuVal,** Phoenix **LuAnn H. Leonard,** Polacca
Anne L. Mariucci, Phoenix **Bob J. McLendon,** Yuma
Governor Janice K. Brewer **Superintendent of Public Instruction Tom Horne**
Student Regents: **Ross Meyer,** ASU **Jennifer Ginther,** NAU
Executive Director: **Joel Sideman**

NORTHERN ARIZONA UNIVERSITY

Office of the President

Northern Arizona University
PO Box 4092
Flagstaff, AZ 86011-4092

928-523-3232
928-523-1848 fax
www.nau.edu

December 3, 2009

Superintendent Tom Horne
Arizona Department of Education
1535 W Jefferson
Phoenix, AZ 85007

Superintendent Horne:

Northern Arizona University intends to participate in the collection and use of data as requested by the Arizona Educational Data Warehouse Governance Board as part of the 2009 federal Statewide Longitudinal Data System grant proposal. We support this project and intend to share appropriate data with the AEDW to accomplish the goals stated in the grant proposal.

This is a preliminary intent to support this project and it does not obligate us to participate. At the time of project initiation, we expect to determine the actual data to be shared, the method of sharing, storage, archival and other technical or business considerations. We will also agree at that time on appropriate governance and release rules for this data.

Sincerely,

John D. Haeger
President

THE UNIVERSITY OF ARIZONA

Chief Information Officer
P.O. Box 210073
Tucson, AZ 85721-0073
Tel: (520) 621-5972
Fax: (520) 621-9222
http://www.cio.arizona.edu/

December 2, 2009

Superintendent Tom Horne
Arizona Department of Education
1535 W Jefferson
Phoenix, AZ 85007

Superintendent Horne:

The University of Arizona intends to participate in the collection and use of data as requested by the Arizona Educational Data Warehouse Governance Board as part of the 2009 federal Statewide Longitudinal Data System grant proposal. We support this project and intend to share appropriate data with the AEDW to accomplish the goals stated in the grant proposal.

This is a preliminary intent to support this project and it does not obligate us to participate. At the time of project initiation, we expect to determine the actual data to be shared, the method of sharing, storage, archival and other technical or business considerations. We will also agree at that time on appropriate governance and release rules for this data.

Sincerely,

Michele Norin
Chief Information Officer

Rick Kroc
Associate Vice Provost for Institutional Research

Cc Robert N. Shelton, President
Meredith Hay, Provost
Gail Burd, Vice Provost for Academic Affairs
Joel Sideman, Executive Director for ABOR

Budget Narrative

Budget Narrative - Budget Justification

Attachment 1:
Title: **AZ-SLDS-Budget Justification FINAL** Pages: **9** Uploaded File: **AZ-SLDS- Budget Justification FINAL.pdf**

Arizona Department of Education (ADE)
ARRA Statewide Longitudinal Data System Grant
Budget Narrative Justification

The need for the initiatives detailed in this grant application are driven by the current unprecedented opportunities for innovative ideas and reform imminent in Arizona's education landscape. The foundational building blocks of an individual's lifelong success are laid in the formative years described by the data managed by the expanded AEDW. This grant will provide the foundational systems and tools necessary to assist all of Arizona's and national education stakeholders in generating the data informed measures, indicators and responses to the P-20 and career education focused questions needing answers. Budgeted expenses associated with exceptional requirements associated with proposed ARRA RTTT data usage and SFSF Phase II indicators are included as requirements of these initiatives but funded through these alternate sources. If those secondary sources are not realized, than the plan will be limited to

The primary expenses associated with implementing these critical initiatives involve the cost of assembling a specialized talent pool. With the AEDW expanding to including workforce and P-20 data, this talent pool will be required to provide a wide array of subject matter expertise in subject areas beyond the current P-12 mindset. Additionally, when constructing and sustaining enterprise class solutions like the AEDW, Arizona's successful practice of retaining ownership of intellectual property will continue to be practiced when completing these initiatives. This gives certainty that these investments and the insight gleaned by exercising the expanded AEDW will be foundational to how the entire Arizona ecosystem will "do business" for the foreseeable future. These best practices also provide certainty that these initial investments will continue to support the factors required to sustain, operate and adjust the expanded AEDW across the entire stakeholder spectrum.

Recognizing that even though accomplishing these aggressive outcomes requires significant investments, the return on these investments are measurable and reasonable. The return becomes evident when acknowledging that the sizable on-going state and federal investment in public education is the fastest track to measurable continuous improvement in Arizona student achievement is founded upon the expanded AEDW. Additionally, these investments also provide transparency and measures by which specific education focused investments may be correlating to the affect upon the quality the student's educational experience.

When generating the budget for each of this grant's five outcomes, several foundational tenets were utilized.

1. Personnel
Personnel costs include an amortized 2.5% annual Cost Of Living Adjustment (COLA) for years 2 and 3.

This project will be staffed with a combination of full-time employees and consultants including committed personnel from ADE and the institutions now committing to be part of the Arizona Education Data Warehouse set of initiatives.

Existing FTE staff. In order to leverage existing institutional knowledge and to maximize cross-pollination of new knowledge gained on this project with other ongoing project efforts (such as the State's existing data warehouse project), many full-time staff will work part time on this project and part time on other related projects. The smallest incremental split of time will be 50%, so that staff does not lose momentum by continually switching gears between assignments. At the termination of this project funded by this SLDS grant, those full-time staff will revert to working on other projects full time.

2. Fringe Benefits

ADE calculates fringe benefits at a flat rate for FTEs. The current rate is 25%. No fringe benefits are included for staff retained on a contractual basis

3. Travel

ADE's travel budget has two general components.

Information sharing with grantee and collaboration states. Several trips are budgeted for information sharing not only about this grant opportunity itself, but also about education data in general. Each year two people from the project team will travel to the summer NCES Data Conference, to the winter NCES MIS Conference, interstate collaboration trips and to Washington, DC, grantee state conference.

Stakeholder professional development and training. Arizona's successful SLDS initiatives have included a keen focus on stakeholder professional development and training. In Arizona, this requirement has special significance due to its large geographically dispersed landscape. New system deployment and training always poses a difficult and often insurmountable challenge to stakeholder and other stakeholder groups that are in remote, rural locations. More often than not, this distance and the expense of travel makes it impossible for these users to avail themselves of centrally offered training. Traveling is a sizable drain on all stakeholder's budgets and it continually vies with other equally crucial demands on their staffs' time.

In order for these initiatives to succeed, it will involve considerable travel, so this built in component is large. The stakeholder professional development and training travel component lists two types of trips: same-day trips and overnight trips.

- Two trips per month in each year of the grant (early on for information gathering, later on for training).
- Travel is via state vehicle, with a cost of $28 per day.
- State vehicle fuel cost is $3 per gallon, calculated at 15 miles per gallon.

- Sixteen of the twenty-four trips each year will be single-day trips averaging 200 miles per trip.
- Eight trips each year (two trips to each of the four remotest areas of the state) will be three-day trips so that we can most economically serve multiple stakeholders. The state per diem rate ($47.66) and average hotel rate ($91.22) apply to these trips.

4. Equipment

"One-time setup costs for new staff" include the desktop or laptop computer and associated hardware for new staff only. The Arizona standard cost at this time is $1,000 and has $1,000 per year allowances for expanded occupancy floor space and excludes capital purchases over $5,000.

5. Supplies

"Supplies" covers print shop printing and copying supplies, mailing costs, and other miscellaneous costs associated with supporting a major implementation project. This is set at $4000 per year for the project.

6. Contractual

Budget for contractual labor assumes 8 hours per day and 5 days per week. As a result of the highly specialized requirements of the talent pool, an average rate of $95/hour plus a $5.00/hour overhead fee has been utilized.

Contractual rates include an amortized 2.5% annual Cost Of Living Adjustment (COLA).

7. Construction

There is no construction component to this grant.

8. Other

Software Licenses

Software licenses are required for the 9 additional staff members being added for this project. These licenses are the standard suite of tools used by the existing AEDW project and are costed out at $2500.

Operating Expenses

Operating Expenses per staff headcount includes is an Arizona agency standard. ADE costs include IT services charge, risk management, telecommunications, internal printer/copier, and rent. Current Arizona "Other" expense cost points are noted in the table below.

Risk Management	$ 836
MIS	$ 925

Telecom	$ 1,500
Internal Printer/Copier	$ 250
Rent	$ 1,240
Total	$ 4,751

10. Indirect Costs

Arizona calculates Indirect Costs at 13.5% of Direct Costs. Only the first $25,000 of each **Contracted Services** is subject to Indirect Cost according to Arizona Department of Education policy.

11. Training Stipends

There is no training stipend component to this proposal.

Outcome #1 – Expand Data Content Scope and Provide Instruction Support Tools

Expanding the existing AEDW to include all P-20 and early childhood data sets requires the development of production data systems to collect, process, store, and manage the extended data are needed. This also requires unique identity management, development (or redevelopment) of collection systems, enhanced data and physical security, re-architecting the master data management components, and creation of a state-offered student management system option for small LEAs.

	Amount
Personnel (FTE)	7.5
Fringe Benefits	2.49
Travel	.1
Equipment	.91
Supplies	0
Contractual	5.87
Construction	0
Other (Software,OpEx)	.1
Total Direct Costs	16.867
Indirect Costs	2.63
Training Stipends	0
Total Costs	19.5

Outcome #2 – Improve School and School Improvement Measures

From data systems perspective, outcome #1 will remedy many of the existing gaps in the AEDW's ability to support school and school improvement measures. In addition, incorporation of the Colorado growth model (CGM) will result in providing a set of usable student and school level growth indicators. Adapting CGM's current utilization of Colorado state standard assessment to Arizona's summative assessment for academic performance data, along with Colorado-specific technology for data processing, storage, and display, provides Arizona stakeholders with a powerful tool for measuring student and school progress.

	Amount
Personnel (FTE)	.975
Fringe Benefits	.325
Travel	.1
Equipment	0
Supplies	0
Contractual	.88
Construction	0
Other (Software,OpEx)	.1
Total Direct Costs	2.38
Indirect Costs	.371
Training Stipends	0
Total Costs	2.75

Outcome #3 – Expand Data Warehouse

Outcome #1.1 will require revision of the data transformation programs that take this operational data as a source.

Outcome 1 also contains subtasks to incorporate new special student groups that may necessitate changes in current AEDW dimension tables.

Implementation of a new education entities master data management under Outcome 1 will require replacement of the current AEDW dimensional data structures relating to these entities. The preliminary data model that has been developed is significantly richer and more complex than the existing one, implying a significant development effort.

		Amount
Personnel (FTE)		
Fringe Benefits		
Travel		
Equipment		
Supplies		
Contractual		
Construction		
Other (Software,OpEx)		
Total Direct Costs		
Indirect Costs		
Training Stipends		
Total Costs		

Outcome #4 – Create Governance, Training and Communications Organizations

The establishment of a governance board, a technology governance support group, a training and communication group along with a structured training system and the development of a knowledge base will also require a broad set of incremental staffing from the entire stakeholder community.

	Headcount	Amount
Personnel (FTE)		
Fringe Benefits		
Travel		
Equipment		

Supplies		
Contractual		
Construction		
Other (Software,OpEx)		
Total Direct Costs		
Indirect Costs		
Training Stipends		
Total Costs		

Outcome #5 – Expand Technical Infrastructure

Provide Technology Tools, Infrastructure and Support for Outcomes #1-#4

Purpose	Item	Description	Qty	Total
New Applications	Internet bandwidth	Increase Internet capacity (cost/month * 36 months)	36	$720,000
New Applications	Firewall upgrade	Increase firewall capacity to match bandwidth upgrade	2	$40,000
New Applications	New web load-balancing devices	Increase web load balancing capacity	2	$100,000
New Applications	Misc Infrastructure	Enclosures for new servers, racks, etc	1	$80,000
New Applications	Servers, Web	Front-end web servers	14	$70,000
New Applications	Servers, DB	Back-end database servers	10	$100,000
New Applications	Servers, App	Middle-tier application servers	4	$40,000
New Applications	Backup, Avamar upgrades	Increase capacity of disk-based backup system	2	$500,000
New Applications	Backup, Tape upgrades	Increase capacity of tape-based backup system (for archive)	1	$50,000
New Applications	Data Center space	cost of 1 rack for 36 months	36	$40,500
New Applications	Storage capacity	Additional disks and	1	$45,000

	increase	shelves for databases		
Database Upgrades	Datacenter server	Server cluster for high utilization databases	1	$1,500,000
Database Upgrades	Storage	High-speed data storage	1	$850,000
Backup Datacenter	Misc Infrastructure	Enclosures for new servers, server racks, etc	1	$80,000
Backup Datacenter	Global Traffic Manager	Devices to redirect Internet traffic if the primary site fails	2	$100,000
Backup Datacenter	Firewall	Firewall device	1	$20,000
Backup Datacenter	Other Networking equipment	Networking equipment (switch, router, etc) for backup data center	1	$30,000
Backup Datacenter	Servers, Web	Front-end web servers	10	$50,000
Backup Datacenter	Servers, DB	Back-end database servers	10	$100,000
Backup Datacenter	Servers, App	Middle-tier application servers	4	$40,000
Backup Datacenter	Data Center space	2 racks for 3 years	72	$36,000
Backup Datacenter	Storage	SAN Storage system for backup data center	1	$350,000
Backup Datacenter	Software, Data replication	Software to replicate data from the primary site SAN to the backup site SAN	1	$100,000
Implementation	Consultants	Consultants to implement new infrastructure (2 consultants for 3 years)	12,000	$1,200,000
Training Upgrades	Expand Web Conferencing system	Increase capacity of existing web conferencing system	1	$64,000
Training Upgrades	Laptops	Laptops for conducting training sessions	10	$10,000
Training Upgrades	Software	Training workshop registration software (Camtasia)	1	$50,000
Training Upgrades	Expand streaming media server	Delivery server for elearning	1	$5,000
Support Center Expansion	Laptops	Laptops for new support center staff	9	$9,000
Support Center	Software	Monitoring software	1	$20,000

Expansion		upgrade		
Support Center Expansion	Software	Database monitoring software	1	$20,000
Support Center Expansion	Software	Knowledge base and ticketing system software	1	$200,000
Support Center Expansion	Servers, App	Staging servers for new production system migrations	5	$50,000
Support Center Expansion	Data Center space	cost of 1 rack for 36 months	36	$40,500
				$5,770,000

	Headcount	Amount
Personnel (FTE)	0	$0
Fringe Benefits		$0
Travel		$0
Equipment		$5,770,000
Supplies		$0
Contractual	0	$0
Construction		$0
Other (Software,OpEx)		$0
Total Direct Costs		$5,770,000
Indirect Costs		0
Training Stipends		0
Total Costs		$5,770,000

Budget Narrative

Budget Narrative - ED 524 Section C Spreadsheet

Attachment 1:
Title: **AZ Budget Narrative Section C** Pages: **5** Uploaded File: **Budget Narrative Section C.pdf**

on	SLDS Grant Appli-cation	RTTT Grant Appli-cation	Other Funding (State	funding total	year 1						year 2						year		
					personnel total	total cost	consultant fees	equip-ment	supplies	travel	personnel total	total cost	consultant fees	equip-ment	supplies	travel	personnel total	total cost	consultant fees
Scope and Support	**11.30**	**5.45**	**2.75**	**19.50**	36.25	7.31	0.72	0.67	0.00	0.07	50.50	9.47	0.00	0.10	0.00	0.24	14.00	2.73	0.00
llection and n systems	6.50	2.50	1.00	10.00	17.00	3.23	0.00	0.03	0.00	0.06	29.50	5.54	0.00	0.06	0.00	0.20	6.00	1.23	0.00
g and new ction	5.00		0.65	5.65	6.00	1.23		0.01			17.50	3.19		0.04			6.00	1.23	
hool age udent data	0.50	1.00	0.35	1.85	3.50	0.65		0.01		0.01	6.50	1.20		0.01		0.15			
lents into the m	0.50	0.50		1.00	3.50	0.60		0.01			2.00	0.40		0.00					
nts into the m	0.50	1.00		1.50	4.00	0.75		0.01		0.05	3.50	0.75		0.01		0.05			
nmental data	0.50	0.00	0.50	1.00	1.50	0.38	0.00	0.01	0.00	0.01	1.75	0.48	0.00	0.01	0.00	0.02	0.85	0.15	0.00
ata collection)	0.125		0.125	0.25	0.70	0.125		0.00			0.70	0.13		0.00		0.00			
ections via	0.125		0.125	0.25		0.10		0.00				0.15		0.00					
onal ng	0.125		0.125	0.25	0.30	0.05		0.00			0.55	0.10		0.00		0.01	0.55	0.10	
nent nic factors and	0.125		0.125	0.25	0.50	0.10		0.00		0.01	0.50	0.10		0.00		0.01	0.30	0.05	
stem	0.80	0.45	0.50	1.75	5.00	1.15	0.52	0.28	0.00	0.00	1.00	0.20	0.00	0.00	0.00	0.01	2.00	0.40	0.00
centralized	0.55		0.25	0.80	3.00	0.80	0.52	0.28											

on	SLDS Grant Appli-cation	RTTT Grant Appli-cation	Other Funding (State	funding total	year 1						year 2						year		
					personnel total	total cost	consultant fees	equip-ment	supplies	travel	personnel total	total cost	consultant fees	equip-ment	supplies	travel	personnel total	total cost	consultant fees
training on the s at the LEA	0.25	0.25	0.25	0.75	2.00	0.35		0.00			1.00	0.20		0.00		0.01	1.00	0.20	
e extensibility ents		0.20		0.20													1.00	0.20	
f LEA data	0.65	0.00	0.00	0.65	0.75	0.15	0.00	0.00	0.00	0.00	2.00	0.35	0.00	0.01	0.00	0.00	0.75	0.15	0.00
sired data	0.15			0.15	0.75	0.15		0.00											
w data	0.35			0.35							2.00	0.35		0.01					
n training to	0.15			0.15													0.75	0.15	
tewide SMS	0.75	0.75	0.75	2.25	1.15	0.50	0.20	0.30	0.00	0.00	7.85	1.45	0.00	0.00	0.00	0.01	1.60	0.30	0.00
uy or build solution	0.50		0.50	1.00	1.15	0.50	0.20	0.30			2.75	0.50							
ying and		0.50	0.25	0.75							4.00	0.75							
g mechanism m	0.25	0.25		0.50							1.10	0.20				0.01	1.60	0.30	
a	0.60	0.50	0.00	1.10	3.00	0.50	0.00	0.01	0.00	0.00	3.00	0.50	0.00	0.00	0.00	0.00	0.50	0.10	0.00
aff system	0.50	0.50		1.00	3.00	0.50		0.01			3.00	0.50							
ternal training stem	0.10			0.10													0.50	0.10	
ntity master	0.75	0.25	0.00	1.00	2.85	0.53	0.00	0.03	0.00	0.00	2.40	0.43	0.00	0.00	0.00	0.00	0.30	0.05	0.00
nagement	0.50	0.125		0.625	1.75	0.325		0.03			1.70	0.30		0.00					
a ement	0.25	0.125		0.375	1.10	0.20					0.70	0.125		0.00			0.30	0.050	

on	SLDS Grant Appli-cation	RTTT Grant Appli-cation	Other Funding (State	funding total	year 1						year 2						year		
					personnel total	total cost	consultant fees	equip-ment	supplies	travel	personnel total	total cost	consultant fees	equip-ment	supplies	travel	personnel total	total cost	consultant fees
financial data	0.75	1.00	0.00	1.75	5.00	0.88	0.00	0.00	0.00	0.00	3.00	0.53	0.00	0.01	0.00	0.00	2.00	0.35	0.00
y from ces	0.10	0.25		0.35	2.00	0.35		0.00											
financial data	0.65	0.75		1.40	3.00	0.525					3.00	0.525		0.01			2.00	0.35	
school es	**0.75**	**1.25**	**0.75**	**2.75**		3.55													
rowth Model	0.75	1.25	0.00	2.00	2.75	0.50	0.00	0.00	0.00	0.00	6.95	1.25	0.00	0.00	0.00	0.00	1.40	0.25	0.00
al component	0.30	0.20		0.50	2.75	0.50		0.00											
del for student-	0.30	0.20		0.50							2.75	0.50							
ents, teachers,	0.15	0.10		0.25							1.40	0.25							
el growth		0.25		0.25							1.40	0.25							
LEAs		0.25		0.25													1.40	0.25	
ol-level growth		0.25		0.25							1.40	0.25							
e fiscal			0.75	0.75	8.85	3.05	1.33	0.02	0.00	0.00	11.50	3.80	1.83	0.02	0.00	0.00	12.00	4.15	1.94
use	**3.10**	**1.70**	**0.25**	**5.05**	**7.6**	**1.35**	**1.33**	**0.02**			**10**	**1.75**	**1.828**	**0.013**			**11**	**1.95**	**1.939**
nsformations	0.50			0.50								0.2						0.3	
om outcomes	2.15	0.70		2.85								1.4						1.45	
dary student	0.20	1.00		1.20		1.2													
	0.25	0.00	0.25	0.50		0.15						0.15						0.2	

on	SLDS Grant Appli-cation	RTTT Grant Appli-cation	Other Funding (State	funding total	year 1						year 2						year		
					total personnel	total cost	consultant fees	equip-ment	supplies	travel	total personnel	total cost	consultant fees	equip-ment	supplies	travel	total personnel	total cost	consultant fees
nce, Training	**0.800**	**1.100**	**0.000**	**1.900**	1.250	0.350	0.000	0.003	0.000	0.000	1.500	0.300	0.000	0.003	0.000	0.000	1.000	0.250	0.000
e organization	0.400	0.500	0.000	0.900	1.250	0.350	0.000	0.003	0.000	0.000	1.500	0.300	0.000	0.003	0.000	0.000	1.000	0.250	0.000
nance board	0.400	0.150		0.550	1.000	0.200		0.002			1.000	0.200		0.002			0.500	0.150	
nology oup		0.350		0.350	0.250	0.150		0.001			0.500	0.100		0.001			0.500	0.100	
d zation	0.400	0.600	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
l	0.200	0.300		0.500	1.150	0.200					1.150	0.200					0.600	0.100	
em	0.200	0.300		0.500	2.000	0.350					0.750	0.150							
nfrastructure	**3.29**	**1.91**	**0.03**	**5.22**															
ols, ort for new	0.885	1.20	0.00	2.09		0.52		0.52				1.04		1.04				0.52	
w system front	0.110			0.11		0.03		0.03				0.06		0.06				0.03	
ware and ding zone	0.775			0.78		0.19		0.19				0.39		0.39				0.19	
mentation		1.20		1.20		0.30		0.30				0.60		0.60				0.30	
y infrastructure	1.59	0.00	0.00	1.59		0.40		0.40				0.79		0.79				0.40	
e	0.02			0.02		0.00		0.00				0.01		0.01				0.00	
center for business	0.706			0.71		0.18		0.18				0.35		0.35				0.18	

on	SLDS Grant Appli-cation	RTTT Grant Appli-cation	Other Funding (State	funding total	year 1						year 2						year		
					personnel total	total cost	consultant fees	equip-ment	supplies	travel	personnel total	total cost	consultant fees	equip-ment	supplies	travel	personnel total	total cost	consultant fees
EA bandwidth	0.86			0.86		0.22		0.22				0.43		0.43				0.22	
mmunications	0.069	0.01	0.00	0.08		0.02		0.02				0.04		0.04				0.02	
e electronic ations	0.069			0.07		0.02		0.02				0.03		0.03				0.02	
uipped carts oms		0.010		0.01		0.00		0.00				0.01		0.01				0.00	
unication and	0.750	0.70	0.03	1.48		0.37		0.37				0.74		0.74				0.37	
for technology s	0.675			0.68		0.17		0.17				0.34		0.34				0.17	
website e			0.025	0.03		0.01		0.01				0.01		0.01				0.01	
nagement	0.050			0.05		0.01		0.01				0.03		0.03				0.01	
se software	0.025	0.70		0.73	3.00	0.60		0.01			1.00	0.20		0.00			1.00	0.20	
	0.132			0.13					0.004	0.040					0.004	0.040			
	19.37	11.41	3.78	**34.56**															