ADOA-ASET
Arizona Strategic Enterprise Technology

Project Investment Justification

ADES Mainframe Migration

DE19005

Department of Economic Security

Contents

1. GENERAL INFORMATION

PIJ ID: DE19005
PIJ Name: ADES Mainframe Migration
Account: Department of Economic Security
Business Unit Requesting: DES/Division of Technology Services
Sponsor: Al Barbieri
Sponsor Title: Strategy & Innovation Consultant
Sponsor Email: abarbieri@azdes.gov
Sponsor Phone: (602) 774-8844

2. MEETING PRE-WORK

2.1 What is the operational issue or business need that the Agency is trying to solve? (i.e....current process is manual, which increases resource time/costs to the State/Agency, and leads to errors…):

The Arizona Department of Economic Security (DES) currently utilizes an IBM Mainframe that is used to process data in support of thirteen mission-critical applications. This system is organized and equipped with a z196 processor and for data storage an IBM DS8800 disk subsystem supporting 16.7TB (Terabyte) of usable disk space. System data is backed up utilizing an EMC virtual tape library. The DES mainframe operations environment is a 24x7 operation that processes an average of 32,402 scheduled jobs utilizing the CA-7 scheduler each month.

•   Mainframe assets are aging and DES would need to replace the physical mainframe at a considerable cost of approximately $7M

•   Increasingly difficult to recruit and retain qualified mainframe systems personnel

•   With the recent migration of the ADOA mainframe to a hosted solution, the DES disaster recovery (DR) strategy is in jeopardy by the fact that the ADOA physical mainframe site (DES DR Site) terminates 11/30/2018

•   Third party software contracts are up for renewal and are increasingly expensive to negotiate

•   Floor space at IO data center where the DES mainframe is currently residing is costly to retain

•   The current direction for managing state IT assets is to leverage a cloud solution whenever possible

•   Inability to adjust for increased or decreased workloads cost-effectively. Unchanged, the fixed cost for the current physical mainframe will be spread over fewer users as applications are moved from the mainframe platform

•   Upgrades to currently supported versions of applications cannot be supported on the current version of the current physical mainframe leaving DES out of compliance with Federal Government requirements. The compliance gap threatens the discontinuation of several federal funding sources

•   A single source managed services vendor for the mainframe will simplify cost and operational structures

2.2 How will solving this issue or addressing this need benefit the State or the Agency?

The department has selected IBM as the 3rd party hosting and managed services option for the DES mainframe deployment. The choice will ensure a robust environment that provides for stability, geo-diverse disaster recovery, on-demand storage and processing capability scaling, while at the same time, reducing or eliminating the burden and overhead of direct asset ownership. This solution will ensure long-term continuity of operations for the DES mainframe platform. Additionally, by moving to a hosted solution, DES will be able to leverage advanced managed-service staffing models that will address current, as well as, forthcoming gaps within our internal staffing model. Fiscally speaking, we will be able to leverage an elastic payment methodology that will allow for on-demand usage growth or reduction as needed, and a reduction in support resources.

2.3 Describe the proposed solution to this business need.

DES will contract an IBM mainframe managed-services vendor to facilitate the migration of the current physical mainframe to a multi-tenant share mainframe solution that will provide state-of-the-art capabilities including robust geo-diverse disaster recovery and business continuity solution, and reduce interruptions caused by routine system maintenance. By leveraging a pay-for-what-you-use billing model, the multi-tenant shared mainframe solution will provide the ability to economically adjust capacity for increased or decreased workloads. This solution will also address our current difficulties in recruiting and maintaining qualified mainframe systems personnel by shifting the mainframe support services to the IBM robust labor pool.

DES will take advantage of buying and bargaining power provided by IBM providing an advantage to DES when it comes to 3rd party application vendor licensing renewals (e.g.: Computer Associates, Compuware, SAS, Treehouse, etc.)

DES attempted to obtain multiple quotes, but IBM was the only vendor that was able to provide shared multi-tenant IBM mainframe platform solution.

2.4 Has the existing technology environment, into which the proposed solution will be implemented, been documented?

Yes

2.4a Please describe the existing technology environment into which the proposed solution will be implemented.

2.5 Have the business requirements been gathered, along with any technology requirements that have been identified?

Yes

2.5a Please explain below why the requirements are not available.

3. PRE-PIJ/ASSESSMENT

3.1 Are you submitting this as a Pre-PIJ in order to issue a Request for Proposal (RFP) to evaluate options and select a solution that meets the project requirements?

No

3.1a Is the final Statement of Work (SOW) for the RFP available for review?

Yes

3.2 Will you be completing an assessment/Pilot/RFP phase, i.e. an evaluation by a vendor, 3rd party or your agency, of the current state, needs, & desired future state, in order to determine the cost, effort, approach and/or feasibility of a project?

No

3.2a Describe the reason for completing the assessment/pilot/RFP and the expected deliverables.

3.2b Provide the estimated cost, if any, to conduct the assessment phase and/or Pilot and/or RFP/solicitation process.

3.2e Based on research to date, provide a high-level cost estimate to implement the final solution.

4. PROJECT

4.1 Does your agency have a formal project methodology in place?

Yes

4.2 Describe the high level makeup and roles/responsibilities of the Agency, Vendor(s) and other third parties (i.e. agency will do...vendor will do...third party will do).

DES will be responsible for vendor management, project management, requirements, testing, acceptance and subject matter expertise.

The vendor will be responsible for IBM project management, configuration of the mainframe environment, application and data migration, circuit management between DES data center and IBM data centers, service support and ISV management.

4.3 Will a PM be assigned to manage the project, regardless of whether internal or vendor provided?

Yes

4.3a If the PM is credentialed, e.g., PMP, CPM, State certification etc., please provide certification information.

4.4 Is the proposed procurement the result of an RFP solicitation process?

No

4.5 Is this project referenced in your agency's Strategic IT Plan?

Yes

5. SCHEDULE

5.1 Is a project plan available that reflects the estimated Start Date and End Date of the project, and the supporting Milestones of the project?

No

5.2 Provide an estimated start and finish date for implementing the proposed solution.

Est. Implementation Start Date	Est. Implementation End Date
11/1/2018 12:00:00 AM	10/31/2019 12:00:00 AM

5.3 How were the start and end dates determined?

Dates provided

5.3a List the expected high level project tasks/milestones of the project, e.g., acquire new web server, develop software interfaces, deploy new application, production go live, and estimate start/finish dates for each, if known.

Milestone / Task	Estimated Start Date	Estimated Finish Date
Contract signed	11/01/18	11/09/18
Migration dry run testing #1	03/01/19	03/31/19
Transition to IBM support	04/01/19	10/31/19
Migration dry run testing #2	04/01/19	04/30/19
Production cutover	06/21/19	06/23/19
Natural application upgrade	08/31/19	10/31/19

5.4 Have steps needed to roll-out to all impacted parties been incorporated, e.g. communications, planned outages, deployment plan?

Yes

5.5 Will any physical infrastructure improvements be required prior to the implementation of the proposed solution. e.g., building reconstruction, cabling, etc.?

No

5.5a Does the PIJ include the facilities costs associated with construction?

5.5b Does the project plan reflect the timeline associated with completing the construction?

6. IMPACT

6.1 Are there any known resource availability conflicts that could impact the project?

Yes

6.1a Have the identified conflicts been taken into account in the project plan?

Yes

6.2 Does your schedule have dependencies on any other projects or procurements?

No

6.2a Please identify the projects or procurements.

6.3 Will the implementation involve major end user view or functionality changes?

Yes

6.4 Will the proposed solution result in a change to a public-facing application or system?

No

7. BUDGET

7.1 Is a detailed project budget reflecting all of the up-front/startup costs to implement the project available, e.g, hardware, initial software licenses, training, taxes, P&OS, etc.?

Yes

7.2 Have the ongoing support costs for sustaining the proposed solution over a 5-year lifecycle, once the project is complete, been determined, e.g., ongoing vendor hosting costs, annual maintenance and support not acquired upfront, etc.?

Yes

7.3 Have all required funding sources for the project and ongoing support costs been identified?

Yes

7.4 Will the funding for this project expire on a specific date, regardless of project timelines?

No

7.5 Will the funding allocated for this project include any contingency, in the event of cost over-runs or potential changes in scope?

No

8. TECHNOLOGY

8.1 Please indicate whether a statewide enterprise solution will be used or select the primary reason for not choosing an enterprise solution.

There is not a statewide enterprise solution available

8.2 Will the technology and all required services be acquired off existing State contract(s)?

Yes

8.3 Will any software be acquired through the current State value-added reseller contract?

No

8.3a Describe how the software was selected below:

8.4 Does the project involve technology that is new and/or unfamiliar to your agency, e.g., software tool never used before, virtualized server environment?

No

8.5 Does your agency have experience with the vendor (if known)?

Yes

8.6 Does the vendor (if known) have professional experience with similar projects?

Yes

8.7 Does the project involve any coordination across multiple vendors?

Yes

8.8 Does this project require multiple system interfaces, e.g., APIs, data exchange with other external application systems/agencies or other internal systems/divisions?

No

8.9 Have any compatibility issues been identified between the proposed solution and the existing environment, e.g., upgrade to server needed before new COTS solution can be installed?

No

8.9a Describe below the issues that were identified and how they have been/will be resolved, or whether an ADOA-ASET representative should contact you.

8.10 Will a migration/conversion step be required, i.e., data extract, transformation and load?

Yes

8.11 Is this replacing an existing solution?

Yes

8.11a Indicate below when the solution being replaced was originally acquired.

The last mainframe upgrade was completed in 2012.

8.11b Describe the planned disposition of the existing technology below, e.g., surplused, retired, used as backup, used for another purpose:

Mainframe and associated storage asset will be sanitized and surplused.

8.12 Describe how the agency determined the quantities reflected in the PIJ, e.g., number of hours of P&OS, disk capacity required, number of licenses, etc. for the proposed solution?

DES worked with IBM to determine the needs based on existing physical mainframe usage.

8.13 Does the proposed solution and associated costs reflect any assumptions regarding projected growth, e.g., more users over time, increases in the amount of data to be stored over 5 years?

Yes

8.14 Does the proposed solution and associated costs include failover and disaster recovery contingencies?

Yes

8.14a Please select why failover and disaster recovery is not included in the proposed solution.

8.15 Will the vendor need to configure the proposed solution for use by your agency?

Yes

8.15a Are the costs associated with that configuration included in the PIJ financials?

Yes

8.16 Will any app dev or customization of the proposed solution be required for the agency to use the project in the current/planned tech environment, e.g. a COTS app that will req custom programming, an agency app that will be entirely custom developed?

No

8.16a Will the customizations inhibit the ability to implement regular product updates, or to move to future versions?

8.16b Describe who will be customizing the solution below:

8.16c Do the resources that will be customizing the application have experience with the technology platform being used, e.g., .NET, Java, Drupal?

8.16d Please select the application development methodology that will be used:

8.16e Provide an estimate of the amount of customized development required, e.g., 25% for a COTS application, 100% for pure custom development, and describe how that estimate was determined below:

8.16f Are any/all Professional & Outside Services costs associated with the customized development included in the PIJ financials?

8.17 Have you determined that this project is in compliance with all applicable statutes, regulations, policies, standards & procedures, incl. those for network, security, platform, software/application &/or data/info found at aset.az.gov/resources/psp?

Yes

8.17a Describe below the compliance issues that were identified and how they have been/will be resolved, or whether an ADOA-ASET representative should contact you:

8.18 Are there other high risk project issues that have not been identified as part of this PIJ?

No

8.18a Please explain all unidentified high risk project issues below:

9. SECURITY

9.1 Will the proposed solution be vendor-hosted?

Yes

9.1a Please select from the following vendor-hosted options:

Vendor's data center environment

9.1b Describe the rationale for selecting the vendor-hosted option below:

This fits in with State policy and DES's strategic plan for a "cloud first".

9.1c Has the agency been able to confirm the long-term viability of the vendor hosted environment?

Yes

9.1d Has the agency addressed contract termination contingencies, e.g., solution ownership, data ownership, application portability, migration plans upon contract/support termination?

Yes

9.1e Has a Conceptual Design/Network Diagram been provided and reviewed by ASET-SPR?

Yes

9.1f Has the spreadsheet located at https://aset.az.gov/arizona-baseline-security-controls-excel already been completed by the vendor and approved by ASET-SPR?

Yes

9.2 Will the proposed solution be hosted on-premise in a state agency?

No

9.2a Where will the on-premise solution be located:

9.2b Were vendor-hosted options available and reviewed?

9.2c Describe the rationale for selecting an on-premise option below:

9.2d Will any data be transmitted into or out of the agency's on-premise environment or the State Data Center?

9.3 Will any PII, PHI, CGIS, or other Protected Information as defined in the 8110 Statewide Data Classification Policy be transmitted, stored, or processed with this project?

Yes

9.3a Describe below what security infrastructure/controls are/will be put in place to safeguard this data:

• Hosted in a certified government cloud environment (need to ensure that both the platform and the software/application are secure)

• DES's data is segregated and isolated from other client's data (for vendor-hosted environments)

• Data will be accessed via secure sign-on, user authentication

• Data is encrypted at rest and in transit

• Data will be hosted in two IBM Data Centers located within U.S. boundaries – Boulder CO and Raleigh NC

• Data and any data backups will be stored within the U.S

• Data passing between DES and non-DES hosted environments will follow established DES architectural model for external vendors

10. AREAS OF IMPACT

Application Systems

Internal Use Web Application

Database Systems

Other

DB2 and ADABAS

Software

Mainframe Systems Software

Hardware

LAN/WAN Infrastructure;Mainframe Infrastructure;Tape Libraries/Silos

Hosted Solution (Cloud Implementation)

Vendor Hosted

Security

Encryption

Telecommunications

Enterprise Solutions

Disaster Recovery/Business Continuity

Contract Services/Procurements

11. FINANCIALS

Description	PIJ Category	Cost Type	Fiscal Year Spend	Quantity	Unit Cost	Extended Cost	Tax Rate	Tax	Total Cost
IBM Mainframe Migration Professional Services (FY1)	Professional & Outside Services	Development	1	1	$3,132,500	$3,132,500	0.00 %	$0	$3,132,500
IV&V Year 1	Professional & Outside Services	Development	1	10	$19,080	$190,800	0.00 %	$0	$190,800
IBM Mainframe Migration Professional Services (FY2)	Professional & Outside Services	Development	2	1	$2,833,200	$2,833,200	0.00 %	$0	$2,833,200
IV&V - Year 2	Professional & Outside Services	Development	2	5	$19,080	$95,400	0.00 %	$0	$95,400
IBM Mainframe Migration Professional Services - Operational (FY2)	Professional & Outside Services	Operational	2	1	$5,666,400	$5,666,400	0.00 %	$0	$5,666,400
IBM Mainframe Migration Professional Services - Operational (FY3)	Professional & Outside Services	Operational	3	1	$8,499,600	$8,499,600	0.00 %	$0	$8,499,600
IBM Mainframe Migration Professional Services - Operational (FY4)	Professional & Outside Services	Operational	4	1	$8,499,600	$8,499,600	0.00 %	$0	$8,499,600
IBM Mainframe Migration Professional Services - Operational (FY5)	Professional & Outside Services	Operational	5	1	$8,499,600	$8,499,600	0.00 %	$0	$8,499,600
IBM Mainframe Migration Professional Services - Operation (FY6) Note: Using FY5 for fiscal year spend drop down. Needed to report 6 years of costs to cover split costs	Professional & Outside Services	Operational	5	1	$2,833,200	$2,833,200	0.00 %	$0	$2,833,200

over multiple fiscal years									

Base Budget (Available)	Base Budget (To Be Req)	Base Budget % of Project
$6,198,964	$0	14%
APF (Available)	**APF (To Be Req)**	**APF % of Project**
$0	$0	0%
Other Appropriated (Available)	**Other Appropriated (To Be Req)**	**Other Appropriated % of Project**
$0	$0	0%
Federal (Available)	**Federal (To Be Req)**	**Federal % of Project**
$24,893,199	$0	56%
Other Non-Appropriated (Available)	**Other Non-Appropriated (To Be Req)**	**Other Non-Appropriated % of Project**
$13,154,547	$0	30%

Total Budget Available	Total Development Cost
$44,246,710	$6,251,900
Total Budget To Be Req	**Total Operational Cost**
$0	$33,998,400
Total Budget	**Total Cost**
$44,246,710	$40,250,300

12. PROJECT SUCCESS

Please specify what performance indicator(s) will be referenced in determining the success of the proposed project (e.g. increased productivity, improved customer service, etc.)? (A minimum of one performance indicator must be specified)

Please provide the performance objective as a quantifiable metric for each performance indicator specified.
Note: The performance objective should provide the current performance level, the performance goal, and the time period within which that performance goal is intended to be achieved. You should have an auditable means to measure and take corrective action to address any deviations.
Example: Within 6 months of project completion, the agency would hope to increase "Neighborhood Beautification" program registration by 20% (3,986 registrants) from the current registration count of 19,930 active participants.

Performance Indicators

Upon completion of the project, 100% of migrated mainframe applications should function the same the original physical mainframe (source).

13. CONDITIONS

Conditions for Approval

1. Should development costs exceed the approved estimates by 10% or more, or should there be significant changes to the proposed technology scope of work or implementation schedule, the Agency must amend the PIJ to reflect the changes and submit it to ADOA-ASET, and ITAC if required, for review and approval prior to further expenditure of funds.

14. ENGAGEMENT MANAGER COMMENTS

Project Background

The Department of Economic Security (DES) works with families, community organizations, advocates and state and federal partners to realize our collective vision that every child, adult, and family in the state of Arizona will be safe and economically secure. The Division of Technology Services (DTS) provides technical and automation support for all of the DES Divisions, Programs and Services. DTS also provides technology solutions that enable DES programs to deliver value to their customers. The agency will be resolving the following problems with this PIJ:

• Mainframe assets are aging and DES would need to replace the physical mainframe at a considerable cost of approximately $7M
• Increasingly difficult to recruit and retain qualified mainframe systems personnel
• With the recent migration of the ADOA mainframe to a hosted solution, the DES disaster recovery strategy is in jeopardy by the fact that the ADOA physical mainframe site (DES DR Site) terminates 11/30/2018
• Floor space at IO data center where the DES mainframe is currently residing is costly to retain
• Inability to adjust for increased or decreased workloads cost-effectively. Unchanged, the fixed cost for the current physical mainframe will be spread over fewer users as applications are moved from the mainframe platform
• Upgrades to currently supported versions of applications cannot be supported on the current version of the current physical mainframe leaving DES out of compliance with Federal Government requirements. The compliance gap threatens the discontinuation of several federal funding sources
• A single source managed services vendor for the mainframe will simplify cost and operational structures

Business Justification

Upon completion of the project, 100% of migrated mainframe applications should function the same the original physical mainframe (source). The Department of Economic Security (DES) has selected IBM as the 3rd party hosting and managed services option for the DES mainframe deployment. The choice will ensure a robust environment that provides for stability, geo-diverse disaster recovery, on-demand storage and processing capability scaling, while at the same time, reducing or eliminating the burden and overhead of direct asset ownership. This solution will ensure long-term continuity of operations for the DES mainframe platform. Additionally, by moving to a hosted solution, DES will be able to leverage advanced managed-service staffing models that will address current, as well as forthcoming gaps within our internal staffing model. Fiscally speaking, DES will be able to leverage an elastic payment methodology that will allow for on-demand usage growth or reduction as needed and a reduction in support resources.

Implementation Plan

The Department of Economic Security (DES) will be responsible for vendor management, project management, requirements, testing, acceptance and subject matter expertise. The vendor will be responsible for IBM project management, configuration of the mainframe environment, application and data migration, circuit management between DES data center and IBM data centers, service support and ISV management.

Vendor Selection

IBM was the only vendor that was able to provide shared multi-tenant IBM mainframe platform solution.

Budget or Funding Considerations

No Budget or Funding Considerations at this time.

15. PIJ REVIEW CHECKLIST

Agency Project Sponsor

Al Barbieri

Agency CIO (or Designee)

Sanjiv Rastogi

Agency ISO (or designee)

Todd Luther

OSPB Representative

ASET Engagement Manager

Shana Schaller

ASET SPR Representative

Thomas Considine

Agency SPO Representative

Agency CFO

Wesley Fletcher