



Project Investment Justification (PIJ)

*A Statewide Standard
Document for Information Technology Projects*

***Project Title: Oracle Forms and Reports
Modernization Project***

***Agency Name: Arizona State Retirement System (ASRS)
Date: August 27, 2012
Prepared By: Valerie Burkett***

Revised PIJ Version - July 2010

*RT13001
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PROJECT INVESTMENT JUSTIFICATION (PIJ) TEMPLATE DECISION MATRIX

After determining the category of project, complete the sections of the PIJ or PIJ Lite document as indicated below. All projects with \$25,000 or more in development expense require that a PIJ or PIJ Lite be approved by GITA. All projects with \$1,000,000 or more in development expense require a PIJ to be approved by the Information Technology Authorization Committee (ITAC) as well.

GITA may request additional information or require completion of additional sections, if the project is deemed critical in nature.

Category	PIJ Lite	Pre PIJ *	PIJ	ITAC Review
Low Risk projects: Including Operational Infrastructure Upgrades (<i>i.e. PC Replacement/Refresh, Network Upgrades</i>)	●			
Medium Risk projects		Optional	●	
High Risk projects		Optional	●	
Very High Risk projects		Optional	●	
\$1.0M and Above projects		Optional	●	●

Section	Category	PIJ Lite	Pre PIJ *	PIJ	Add for ITAC \$1.0M+
I.	General Information				
I.a	General Information	●	●	●	
I.b	Special Funding Considerations		●	●	
II.	Project Overview				
II.a	Management Summary	●	●	●	
II.b	Existing Situation & Problem, "As Is"	●	●	●	
II.c	Proposed Changes & Objectives, "To Be"	●	●	●	
II.d	Proposed Technology Approach		●		
III.	Project Approach				
III.a	Proposed Technology	●		●	
III.b	Other Alternatives Considered			●	
III.c	Major Deliverables & Outcomes	●		●	
IV.	Policies, Standards & Procedures				
IV.a	Enterprise Architecture	●		●	
IV.b	Service Oriented Architecture Planning & Implementation			●	
IV.c	Disaster Recovery Plan & Business Continuity Plan			●	
IV.d	Project Operations			●	
IV.e	Web Development Initiative			●	
IV.f	IT State Goals	●		●	
V.	Roles and Responsibilities				
V.a	Roles and Responsibilities	●		●	
VI.	Project Benefits				
VI.a	Benefits to the State			●	
VI.b	Value to the Public			●	
VII.	Project Timeline				
VII.a	Project Schedule	●	●	●	
VIII.	Project Financials				
VIII.a	Pre-Assessment Project Financials		●		
VIII.b	Detailed Project Financials ● <i>Projects \$25K - \$100K: development costs only.</i>	●		●	

	• <i>Projects \$100K+: development & operating costs.</i>				
VIII.c	Funding Source	•	•	•	
VIII.d	Special Terms and Conditions (if required)	•	•	•	
VIII.e	Full Time Employee (FTE) Hours	•		•	
IX.	Project Classification & Risk Assessment				
IX.a	Project Classification & Risk Assessment Matrix	•		•	
X.	Project Approvals				
X.a	CIO Review	•	•	•	
X.b	Project Values	•	•	•	
X.c	Project Approvals	•	•	•	
Appendix					
A	Itemized List with Costs	•		•	
B	Connectivity Diagram				•
C	Gantt Chart, Project Management Summary				•
D	NOI (Web Projects Only)	•		•	

* **Pre PIJ** is optional for agencies seeking approval from external entities to contract for outside labor or resources to assess scope, technology and approach. After the assessment is completed, full project details will be added to the PIJ for final PIJ Approval.

NOTE: Pre PIJ Assessments are not required for all projects but up to the discretion of the Agency.

GITA Forms:

Project Investment Justification Documents - <http://www.azgita.gov/nav/pij.htm>

Project Investment Justification LITE version - <http://www.azgita.gov/nav/pij.htm>

Project Oversight Documents - http://www.azgita.gov/project_pij_monitoring/

Web Development Initiatives - Notice of Intent (NOI) form - http://azgita.gov/digital_gov/noi/

Submit PIJ and Pre PIJ Approval requests to - projects@azgita.gov

I. General Information {A}

I.a General Information {A}

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I.b Special Funding Considerations {A}

Yes No - Does this project require funding approved for a Pre PIJ Assessment phase?

If **YES**, provide details for the **Pre PIJ Assessment** funding needs by filling out the areas marked with {A} or {Required for Pre-PIJ Assessment only}. Further information and details will be required after the assessment for the Final PIJ approval.

If **NO**, provide details for the Final PIJ by filling out **all** areas **excluding** those sections marked with {Required for Pre-PIJ Assessment only}.

II. Project Overview

II.a Management Summary {A}

I. Problem Description

The Arizona State Retirement System (ASRS) maintains two independent business application systems to support the retirement processes and services; PERIS (Public Employees Retirement Information System) is an Oracle Forms and Reports application that was developed from 1998 – 2004 and POL (PERIS Online) is a Java based Web application that was developed from 2005 – 2008.

Oracle Forms and Reports is an aging and outdated technology that will eventually become obsolete. There are increased technology support, maintenance and development costs associated with maintaining two business application systems. The business user productivity is compromised by the restrictive Oracle Forms user interface and with utilizing two different business application systems.

II. Solution

ASRS recommends reengineering the Oracle Forms and Reports manually over a 5 year period to integrate the PERIS applications into the existing POL Java based Web application. This will require approximately \$2 million per year and allocating an average of 15 additional resources to modernizing the Oracle Forms and Reports applications, utilizing the Java and Cognos toolsets already in place. ASRS proposes to begin the reengineering of Oracle Forms and Reports in FY 2014.

III. Quantified Justification

ASRS believes that reengineering the PERIS Oracle Forms and Reports will result in a standardized set of technologies and products which will reduce ongoing production maintenance costs, ongoing development costs and result in higher productivity for the business with a single application, a single sign-on, process improvements and enhanced business functionality.

Reengineering the Oracle Forms and Reports manually will enable ASRS to achieve its strategic goal to "Develop and maintain a modern, high-performing, and secure technology infrastructure that supports timely and efficient service".

II.b Existing Situation and Problem, "As Is" {A}

In 1998, the Arizona State Retirement System (ASRS) chose the Oracle Custom Application Software Engineering (CASE) client-server toolset and Oracle database to begin migration of the legacy Unisys mainframe COBOL applications. The following Oracle Forms and Reports Applications were developed from 1998 - 2004. The application was called Public Employees Retirement Information System (PERIS).

PERIS APPLICATION NAME	IMPLEMENTATION DATE
Employer Demographic System	June 1998
Participant Demographic System	June 1998
Contact Tracking	June 1998
Contribution Accounting	June 1998
Accounts Receivable Ledger	June 1998
Health Insurance	January 2000
Membership Accounting System	April 2002
Benefits Accounting System	July 2002
Fiscal Year End	October 2002
New Retiree Processing System	May 2003
Service Audit System	October 2003
Service Purchase System	May 2004
Member Summary System	May 2004

In 2005, ASRS decided to move to a Java based Web application development environment. The Oracle CASE methodology was replaced with an iterative development methodology called Unified Process (UP). The Oracle database was retained. ASRS made these changes from a strategic and financial perspective. Java was already an established and sound technology and development in Java was more efficient and cost effective. As well, iterative development was an improvement over the traditional waterfall methodology that was currently being used.

The following Java applications were developed from 2005 – 2008. The suite of applications was called PERIS Online (POL).

POL APPLICATION NAME	IMPLEMENTATION DATE
User Profile	July 2005
Print Dashboard	July 2005
Person View	July 2005
My Work (Workflow)	July 2005
Member Statements	November 2005
Long Term Disability	April 2006
Disbursements	December 2006
Forfeitures Late Contributions	December 2006
Benefit Estimates	February 2007
Request Maintenance	October 2007
New Retiree Estimate Check	October 2007
Survivor Benefits	November 2007
Pension Audit	July 2008
Contributions Posting	September 2008

In addition to the two internal development environments supporting PERIS and POL, ASRS maintains the following three external web sites:

PWEB APPLICATION NAME	IMPLEMENTATION DATE
Non-Secure Website (Public)	2002
Secure Website (Employer)	April 2004
Secure Website (Member)	January 2006

While ASRS has been able to maintain current release levels, Oracle Forms and Reports is an aging and outdated technology that requires significant training and complex navigation for the business users. On the technology side, Oracle Forms and Reports are difficult to enhance and time consuming to change. While Oracle still supports Oracle Forms and Reports, they do not have plans for incorporating any major new features. Future Oracle Forms and Reports development effort is focused on stability and bug fixes only.

In a press release from January 2010 Oracle communicated to the world the acquisition of Sun Microsystems, Inc. for \$7.4 billion. In effect, Oracle now owns Java. Oracle said “The acquisition of Java is the most important software Oracle has ever acquired.” Oracle has since developed its own proprietary suite of Java tools and has begun conversion of recent large acquisitions such as JD Edwards, Primavera, PeopleSoft, and their own E-Business Suite to Java technologies. The core of any Oracle software offering going forward will be in Java.

Oracle’s opinion on converting Oracle Forms and Reports to Java technology is: “A large part of the benefit of modernization is achieved as a result of the new environment. This is not only due to the lower costs of the new environment itself, but also due to the ongoing savings that can be achieved due to the agility of the new environment – the ability to react to ongoing business changes more quickly”.

II.c Proposed Changes and Objectives, “To Be” {A}

ASRS is proposing to reengineer the existing PERIS applications originally developed from 1998-2004 utilizing Oracle Forms and Reports, into a modern and sustainable technology platform. The replacement applications will be developed manually by ASRS resources, utilizing the Java (Forms) and Cognos (Reports) toolsets, in order to integrate these into the existing POL Java Web based application.

The Technology Services Division (TSD) has already taken advantage of the benefits of Java technology and we have our own suite of Java tools and framework that we utilize. As mentioned earlier, PERIS Online and the Secure and Non-Secure Member and Employer Websites were developed in Java.

We believe there is tremendous benefit, for both Technology Service Division (TSD) and the Business Services Divisions of ASRS to modernizing Oracle Forms and Reports in Java technology.

The benefits of modernizing in Java for Technology Service Division (TSD) are:

1. Modernizing can be planned and implemented over a period of time that is acceptable to the ASRS.
2. If we eliminate Oracle Forms and Reports, we will have fewer technologies and products that we maintain and support. This reduces costs and increases productivity
3. Oracle Forms and Reports licenses will not need to be purchased. The current licensing costs are \$62,000 per year.
4. If we eliminate Oracle Forms and Reports we will not require resources with Oracle Forms and Reports skills. Java developers will be able to make changes to any TSD application.
5. We will be maintaining less development and production environments. This reduces costs and increases productivity.

6. We will have fewer development standards. For example, we will no longer need to maintain standards for developing and maintaining Oracle Forms and Reports applications.
7. We will have standard user interfaces. The user interface for PERIS is much different than a Java user interface. The PERIS user interface is database centric, not business process driven, and is navigated using function keys and tabs.
8. We will have better integration with other products. For example, PERIS integration with workflow and imaging is complicated and difficult to troubleshoot and maintain.
9. It will take less time and less cost to implement changes. Changes will be made once, not multiple times in some cases when changing both PERIS and POL.
10. We can leverage POL application security, which has better integration with Microsoft Active Directory and Atlassian Crowd Single Sign On (SSO). These technologies are not directly supported by Oracle Forms and Reports.
11. We can take advantage of the numerous features that Java technology offers.

The benefits of modernizing to Java for the Business Service Divisions are:

1. The business will see increased productivity in only having to log into one application. The business users currently work with multiple applications. This reduces productivity in time spent logging on, sizing/resizing screens and toggling between PERIS and POL applications.
2. There will be more consistency in the user interface, business rules and calculations. There are sometimes differences in the two applications. For example the length of an email address is different in PERIS than it is in PWEB. Email addresses that are longer than 40 characters that are entered in PWEB by the member cannot be uploaded to PERIS as the maximum email length in PERIS is 40.
3. There will be lower cost and shorter durations for business enhancements. Currently some business requests for modification may take longer to implement as changes need to be made and tested in multiple applications. For example, a change for spousal consent must be made in both PERIS and POL. This also results in a higher implementation cost and ultimately less business enhancements completed each year.
4. There will be less training required for the business, particularly new Benefit Analysts. The PERIS user interface is much different from POL and the users need to be trained in how to navigate PERIS forms using function keys and tabs.
5. The Standard Operating Procedures (SOP) will be less complex, easier for the business to develop and understand.
6. The employee security access roles will be simplified. Oracle Forms and Reports security is simplistic and outdated. The business sometimes gives an individual more access than is necessary due to the restrictions of the Oracle Security and Menu System. This is a current Internal Audit finding.
7. The new applications can be reengineered to accommodate new business enhancements.

At some point in time, Oracle is going to discontinue supporting Oracle Forms and Reports. We can be proactive in recognizing this future event or we can be reactive when it occurs. The risk of modernizing Oracle Forms and Reports later rather than sooner is the following:

1. Oracle is no longer enhancing Oracle Forms and Reports and we predict that an 'end of product' date will be announced by Oracle in the next 5-7 years. We would like to be proactive in our strategy and approach to moving away from Oracle Forms and Reports, rather than being caught in a situation where we have to convert in a short period of time with inadequate resources (people, time and budget).
2. It will become more difficult to find and retain Oracle Forms and Reports developers. Oracle Forms and Reports development is no longer taught in colleges and universities. Also, existing Oracle Forms and Reports developers are updating their skills in new technologies and are less interested in Oracle Forms and Reports development.

3. The new generation of Quality Assurance (QA) Engineers is not familiar with Oracle Forms and Reports. As a result, testing Oracle Forms and Reports has become a more difficult and time consuming job. We expect the difficulty to increase the longer Oracle Forms and Reports are in use.
4. We will continue to get inferior support for Oracle Forms and Reports. For example, our current Oracle Reports are not certified by Oracle to work on a 64 bit machine (ASRS current standard PC configuration). Oracle's recommendation was to use VM 32 bit on Microsoft XP Operating System. Oracle has not given any timeline on when Oracle Reports for 64 bit will be released. This has resulted in multiple Oracle Forms and Report environments for developers and added more steps to the compilation process of Oracle Reports.
5. All Oracle Forms and Reports development costs will be non-recoverable, sunk costs. We will continue to incur higher development costs and longer schedule durations to enhance multiple applications, where changes are required in both PERIS and POL. We estimate Oracle Form and Reports development costs to be around 30 – 40% higher than Java development costs. Oracle Forms and Reports licensing costs are \$62,000 per year.
6. There is more risk of problems occurring because of the complexity of multiple environments.
7. We will continue to take longer to implement business, technology and legislative changes.
8. The business users will continue to be less productive than they could be. Particularly in applications that require integration with other products like FileNet, Interaction Center, Adobe and Cognos. The business users have already been requesting dual monitors to help assist them with navigating to multiple applications. We will continue to do manual back end database changes instead of fixing of front-end Oracle Form. In many situations, it is less costly to make a database change than it is to update an Oracle Form.
9. Automated testing against Oracle Forms and Reports cannot be easily performed with the current generation of automated testing tools. Therefore TSD is not able to leverage the benefits of automated testing.
10. The benefits of a reengineering effort will not be obtained for the business as it is not cost effective to make large changes to Oracle Forms and Reports.

II.d Proposed Technology Approach {Required for Pre-PIJ Assessment Only}

Not required

III. Project Approach

III.a Proposed Technology {Required for PIJ Approval}

TSD is proposing to manually reengineer the PERIS Oracle Forms and Reports applications to the current POL development environment, using the Java and Cognos toolsets already in place. This would enable TSD to phase the implementation of the Oracle Forms and Reports replacement applications over a five year period and to work with the business to reengineer the applications as they are being rewritten. Processes that are not being used will be eliminated and new functionality can be added with business reengineering. This will result in a single development application that leverages existing POL functionality and provides the business users with improved processes and functionality as needed.

TSD reengineered one Oracle Form, MD0370 Address Maintenance to test the process that would be used. An 'As-Is' analysis was conducted on the current MD0370 form. The 'As-Is' analysis revealed many complex business rules and a user interface that was difficult to use. The 'To-Be' analysis simplified the business rules and processes and the Java program that was written was much easier to use and

maintain. An existing POL screen was enhanced to accommodate the maintain address functionality. We believe that there is potential for significant improvement in productivity for the business and reduced maintenance for TSD if the Oracle Forms and Reports are reengineered in Java.

TSD uses an industry leading software cost estimation tool called Cost Xpert. Using this tool, ASRS has estimated the cost for converting and reengineering the Oracle Forms in Java and for converting the Oracle Reports in Cognos is \$10,214,406. This is based on 224 Oracle Forms (126 small, 57 medium and 41 large) and 124 Oracle Reports (73 small, 43 medium and 8 large) currently in use.

We recommend phasing this development over a 5 year period using a team size of 15 for the Oracle Forms reengineer and a 3 person team for the Oracle Reports reengineer.

The phased implementation is a conservative, risk mitigating approach that has the least impact on business users and TSD. The business users will be involved in requirement gathering, user acceptance testing, training, development standard operating procedures and ultimately in using the new applications. A phased implementation will allow TSD to adequately manage the additional resources needed to reengineer Oracle Forms and Reports.

III.b Other Alternatives Considered

TSD has investigated three options for modernizing the current PERIS Oracle Forms and Report applications:

1. Convert Oracle Forms Using a Conversion Tool (Alternative 1)
2. Purchase Packaged Retirement System (Alternative 2)
3. Re-engineer Oracle Forms and Reports Manually (Recommended Alternative)

Alternative 1 – Convert Oracle Forms Using a Conversion Tool

Several vendors offer conversion solutions for Oracle Forms. TSD worked with CipherSoft to analyze our Oracle Forms to 1) determine the complexity of our forms and 2) to convert a sample Oracle form to determine how well the conversion tool works and to determine how much additional work will need to be performed after the conversion. Most forms will not convert cleanly and will require additional effort to fix the form so that it will function correctly.

The conversion products do not convert Oracle Reports, therefore a conversion from Oracle reports into Cognos reports, for which we currently have licenses and environments, would still be needed.

TSD sent CipherSoft SP0340, the Service Purchase Summary form, its related libraries and database objects. The results of the CipherSoft conversion are as follows:

1. The CipherSoft converted library code is 30% larger than existing SP0340 code.
2. The CipherSoft converted code is highly dependent on its own proprietary libraries. CipherSoft uses custom library code to handle database calls and some standard operations.
3. The CipherSoft code is neither standard Java nor PL/SQL (industry standard development languages).
4. CipherSoft was unable to fully convert the SP0340 form. CipherSoft concluded that SP0340 was a complex form and would require significant manual work before the form would work correctly and completely.
5. We concluded that the code CipherSoft produced is a non-modularized procedural Java program with a heavy dependency on non-standard, vendor specific libraries. The forms would require considerable additional development work. When completed the forms would be very difficult for TSD to maintain and enhance.

TSD also spoke to Oracle. Oracle has no plans to offer a complete solution to migrate Oracle Forms and Reports to Java. Oracle states that the applications resulting from any automated migration would not have

the structure of an architecturally sound Java application. This is due to the fundamental differences between the Oracle Forms and Reports architecture and the Java architecture.

TSD estimates the CipherSoft conversion of 224 Oracle Forms will cost \$2,262,490. The cost of rewriting 124 Oracle Reports in Cognos is estimated at \$1,326,697. The total development effort to convert Oracle Forms using the conversion tool and to re-write the Oracle Reports in Cognos is estimated to be \$3,589,187.

This cost does not include any of the reengineering effort. We have purposely not attempted to estimate the reengineering costs for this option because we believe the reengineering effort to be very costly. An analysis of the converted Oracle Form shows that it would be extremely difficult to maintain and support. The code generated by CipherSoft is not standard Oracle Forms code or standard Java code and would be very difficult for a developer of any skill set to understand.

TSD estimates that converting Oracle Forms using a conversion tool and a re-write of Oracle Reports into Cognos can be implemented in approximately 2 years.

Advantages	Disadvantages
1. Least costly solution	1. Will not result in a single development environment. TSD will be dependent on CipherSoft libraries.
2. Shortest duration to implement	2. The Java code generated by the conversion tool is not efficient and not easily maintainable. This will result in higher ongoing maintenance costs.
3. Eliminates Oracle Forms and Reports licenses and maintenance costs, around \$62,000 per year	3. TSD will not be able to leverage duplicate/similar code already developed with POL. That is, TSD will still have to maintain multiple versions of some code.
	4. The Java code generated by the conversion tool may not perform well. This may result in productivity degradation for the business users.
	5. TSD will not be able to reengineer the business processes without additional costs to enhance the converted code. The business will not see any process or functionality improvements.
	6. Disruptive to the business as all Oracle Forms will need to be converted and implemented at once.
	7. Higher risk of issues after implementation due to all Oracle Forms converted and implemented at once.
	8. There may be integration issues with existing products; FileNet, Interaction Center, Adobe, Cognos.
	9. Integrated Development Environment (IDE) costs \$1,500/developer initially and 20% per year for support.
	10. Support for conversion tool/libraries costs of around \$17,000/year.

Alternative 2 – Purchase Packaged Retirement System

Several vendors offer comprehensive Retirement Systems where you purchase their resources and their retirement toolsets. The vendor performs all aspects of the software development. The retirement toolsets

are not really "COTS" packages as all of the public retirement software offerings are more like "frameworks" that require customization, usually in the range of 40% to 60% of the functionality. Customized functionality includes: Pension Plan Options, Customization Choices, Multiple Plan Types and Overlays, Multiple Benefit Formula, External Reciprocity, COLA Rules, Contribution Rates, Variable Compensation, Service Credit Rules, Divorce Rules, Purchase Rules, Refund Rules, Disability Rules, Translation, Defined Contribution Plan Rules.

This solution would be a complete replacement of both PERIS and POL. It would also require a complete conversion of the PERIS Oracle database to the database used by the vendor solution. The ASRS Web sites would have to be replaced as well or at a minimum they would have to be modified to query and update the database provided by the vendor retirement system package.

We consulted with Bob Solheim from Provaliant, Inc. who is an independent consultant who specializes in public retirement system solutions. Bob provided ASRS with information related to what retirement packages were in use and which States were using retirement packages; a comprehensive extract of public retirement system implementations from Provaliant's implementation tracking database; and also the most recent implementations from each vendor that is currently active in public retirement systems.

Based on this documentation we determined the cost to purchase a retirement system that is comparable in size to ASRS will be \$26,000,000 - \$27,500,000. The cost may not include imaging, workflow or website development.

Included in this sample was the Ohio Public Employees Retirement System (OPERS), with 178,000 active members and 110,000 retirees. OPERS purchased and implemented jClarety from HP. The OPERS cost does not include an imaging conversion. Workflow was part of the project but was done internally by the OPERS staff and thus not included in the budget. OPERS had a website that was built utilizing the state framing standards. The retirement system vendor added web self-service components to the site. Licensing costs for OPERS were \$750,000, with the remainder of the \$27.5 million in implementation costs spent on customization.

Iowa Public Employee Retirement System (Iowa PERS), with 165,660 active members and 93,692 retirees, purchased V3 from Vitech. Iowa PERS utilized Identitech imaging and workflow. It is not known whether or not this was included as part of their budget. We do not know whether the cost included the website component. Iowa PERS licensing costs were \$2 million, with the remainder of the \$26 million in implementation costs spent on customization.

The duration to implement the package retirement system for OPERS was 5 years and duration to implement for Iowa PERS was 6 years.

Advantages	Disadvantages
1. Achieves benefit of a single development environment, if we also convert the ASRS Web sites	1. Highest cost of all options
2. Would not require additional consultants as vendor would provide their own consultants	2. Longest duration of all options
3. Eliminates Oracle Forms and Reports licenses and maintenance costs, around \$62,000 per year	3. Would require a major database conversion
	4. Would not achieve objective of single development environment if we maintain our existing Web sites
	5. Would require the most time of the business to transition requirements to the vendor consultants
	6. Would be the most disruptive to business of all options
	7. Would have the most risk of requirements being missed or issues being introduced of

	all options
	8. Would require the most training of all options
	9. Would result in a dependency on the vendor solution and technologies
	10. Would require developer training and transition for maintenance or reliance on vendor consultants for modifications
	11. May result in delay in business enhancements and new legislation due to reliance on the vendor for changes
	12. There may be integration issues with existing products; FileNet, Interaction Center, Adobe, Cognos.

Alternative 3 – Re-engineer Oracle Forms and Reports manually

The table below summarizes the advantages and disadvantages of this recommended option, followed by a high-level comparison of all 3 alternatives considered:

Advantages	Disadvantages
1. Results in a single development application	1. Higher development costs than converting the forms using a conversion tool as the processes would be reengineered and the programs would be rewritten
2. Results in shared business functionality	2. Longer schedule to implement than converting the forms using a conversion tool as the processes would be reengineered and the programs would be rewritten
3. Utilizes existing technologies and methodology	
4. Leverages developer business and technical knowledge	
5. Leverages existing development environments	
6. Reduces ongoing maintenance costs	
7. Reduces ongoing development costs	
8. Reduces cross training of developers	
9. Higher productivity of business users	
10. Reduces training for the business users	
11. Less disruption for the business due to phased roll out	
12. Lower risk of problems due to phased rollout	
13. Eliminates Oracle Forms and Reports licenses and maintenance costs, around \$62,000 per year	
14. There will not be any integration issues with existing products; FileNet, Interaction Center, Adobe, Cognos.	
15. Simplifies Standard Operating Procedures (SOP) for the business	

SUMMARY OF SOLUTIONS CONSIDERED

Feature	Alternative 1 – Use Conversion Tool	Alternative 2 – Purchase Packaged System	Recommended Alternative – Reengineer Manually
Cost Estimate	\$3,589,187	\$27,500,000	\$10,214,406
Approximate Duration	2 years	6 years	5 years
Number of Resources Needed	10	Unknown	15
Cost Includes Reengineering	No	Unknown	Yes
Yearly Support Costs	\$17,000	Unknown	None
Single Development Environment	No	Maybe	Yes
Uses Java Technology	Yes	Yes	Yes
High Availability of Skilled Resources	No	No	Yes
Easy to Maintain	No	Unknown	Yes
Integrates with Other Products	Unknown	Unknown	Yes
Reduces Ongoing TSD Costs	No	Unknown	Yes
Increases Productivity	No	Unknown	Yes
Low Risk of Issues	No	No	Yes
Phased Implementation	No	Unknown	Yes
Benefits Business	No	Unknown	Yes
Benefits TSD	No	No	Yes

III.c Major Deliverables and Outcomes

This project will replace the PERIS applications noted above, with the exception of Contact Tracking which has already been incorporated into PERIS Online (POL). The schedule outlined below is proposed based on business priorities and technical considerations, and with duration and resource estimates determined by the Cost Xpert software development estimation tool:

PERIS Application Name	Duration Months	Hours	Start Date	Finish Date
Infrastructure and Member Summary System	12.4	10,175	7/1/13	7/15/14
Participant Demographic System	14.1	15,414	1/1/14	3/9/15
Employer Demographic System	8.1	5,485	7/1/14	3/5/15
Membership Accounting System	12.2	11,027	3/2/15	3/11/16
Contribution Accounting	13.6	16,209	3/2/15	4/21/16
Accounts Receivable Ledger	5.2	3,581	3/1/16	8/5/16
Service Audit System	7	4,234	4/4/16	10/28/16
Service Purchase System	12.7	11,014	5/2/16	5/22/17
Fiscal Year End	5	1,854	2/1/17	7/3/17
Benefits Accounting System	19.7	17,652	11/1/16	6/22/18
New Retiree Processing System	5.5	3,684	6/1/17	11/14/17
Health Insurance	16.6	14,836	5/1/17	9/18/18
TOTAL	63	115,165		

IV. Policies, Standards & Procedures

IV.a Enterprise Architecture

Yes **No** - Does this project meet all standards and policies for Network, Security, Platform, Software/Application, and/or Data/Information as defined in http://www.azgita.gov/policies_standards/ as applicable for this project?

If NO please describe NEW or EXCEPTIONS to Standards (Network, Security, Platform, Software/Application and/or Data/Information):

IV.b Service Oriented Architecture Planning and Implementation

Yes **No** - Does this project qualify as an SOA application by improving application delivery for technology reuse and /or application reuse and / or services reuse?

IV.c Disaster Recovery Plan and Business Continuity Plan

Yes **No** - Does this project require a Disaster Recovery Plan and Business Continuity Plan?

IV.d Project Operations

Yes **No** - Is there a written assessment of short-term and long-term effects the project will have on operations?

IV.e Web Development Initiative

Yes **No** - Is this a Web Development initiative? If **YES**, a Notice of Intent (**NOI**) must be provided.
Link: http://azgita.gov/digital_gov/noi/

IV.f IT State Goals

Please check which goal the project is in support of; if more than one, indicate only the primary goal.

- Efficiency & Cost Savings
- Enabling the Private Sector
- Citizen Engagement
- Government Effectiveness
- Security & Privacy
- Other _____

V. Roles and Responsibilities

V.a Please Identify Project Roles & Responsibilities:

The following resources will be dedicated to the project, with other ASRS subject matter experts supporting the work effort as needed. The team will utilize the current iterative development methodology and will apply Project Management Institute (PMI) principles. The development team will have the necessary technical skillsets to perform the work required.

A Change Management Board consisting of Chief Operating Officer (Deputy Director) and Senior Manager (Assistant Directors) will provide project oversight.

Resource Type	Total Resources	%
Project Manager	2	12.5%
Business Analyst	2	12.5%
Technical Lead	2	12.5%
Java Software Engineer	6	37.5%
Quality Assurance Engineer	4	25.0%
TOTAL	16	100.0%

V.b Please indicate Project Manager Certification:

The project manager assigned to the project is:

- Project Management Professional (PMP) Certified
- State of Arizona Certified
- PM Certification not required

VI. Project Benefits

VI.a Benefits to the State

Score: 0=None, 1=Minor, 2=Moderate, 3=Considerable, 4=Substantial, 5=Extensive.

Description	Score
Agency Performance: The extent to which duties and processes will improve or positively affect business functions. Consider reduced redundancy and improved consistency for the agency.	3
Productivity Increase: The improvements in quantity or timeliness of services or deliverables. Consider improved turnaround time or expanded capacity of key processes.	3
Operational Efficiency: Efficiencies based on improved use of resources, greater flexibility in agency responses to stakeholder requests, reduction or elimination of paperwork, legacy systems, or manual tasks.	3
Accomplishment Probability: The extent to which this project is expected to have a high level of success in completing all requirements for the division or agency.	4
Functional Integration: The impact the project will have in eliminating redundancy or improve consistency. Consider the impact of information sharing between departments, divisions, or agencies in the State.	4
Technology Sensitive: The implementation of the right types of technology to meet clear and defined goals and to support key functions. Consider technologies and systems already proven within the agency, division, or other similar organizations.	4
Total	21
Additional Information (provide details on Benefits that score > 3)	
See benefits listed in section II.c Proposed Changes and Objectives, pages 7 & 8	

VI.b Value to the Public

Score: 0=None, 1=Minor, 2=Moderate, 3=Considerable, 4=Substantial, 5=Extensive.

Description	Score
Client Satisfaction: Rate how stakeholders may respond to anticipated improvements. This could apply to health and welfare services, quality of life or life safety functions.	2

Customer Service: Rate anticipated improvements to internal and external customer service delivery. Give consideration to faster response, greater access to information, elimination or reduction in client complaints.	3
Life Safety Functions: Applies to public protection, health, environment, and safety. Consider how this project will reduce risk in these functions.	1
Public Service Functions: Applies to licensing, maintenance, payments, and tax. Consider how this project will enhance services in these functions.	0
Legal Requirements: Consideration should be given to projects mandated by federal or state law. Other consideration could be given if there are interfaces with other federal, state, or local entities.	1
Total	7
Additional Information (provide details on Value to the Public scores > 3)	
<i>Describe additional details on scores > 3.</i>	

VII. Project Timeline {A}

VII.a Project Schedule

Provide estimated schedule for the development of this project. These dates are estimates only; more detailed dates will be required at project start up once the project schedule is established.

Project Start Date: **7/1/2013** Project End Date: **9/18/2018**

VIII. Project Financials

Select if this PIJ will include Assessment Only funding details or full project funding details.

Project Funding Details **Select One** Pre PIJ Assessment Funding Details Only
 Full PIJ Project Funding Details

VIII.a Pre-Assessment Project Financials {Required for Pre-Assessment PIJ Only}

Project Funding Details for Pre-Assessment Project Investment Justification Only

ESTIMATED COSTS						
Category	FY	FY	FY	FY	FY	Total
Assessment Costs						\$ -
Development Costs						\$ -
Total Development Costs (including Assessment)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operational Costs (if estimate is available)						\$ -
Total Estimated Project Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

VIII.b Detailed Project Financials {Required for PIJ Approval}

Development and Operational Project Funding Details

Funding Categories:

Professional and Outside Services: The dollars to be expended for all third-party consultants and contractors.

Hardware: All costs related to computer hardware and peripheral purchases for the project.

Software: All costs related to applications and systems related software purchases for the project.

Communications: All costs related to telecommunications equipment, i.e. switches, routers, leased lines, etc.

Facilities: All costs related to improvements or expansions of existing facilities required to support this project.

License & Maintenance Fees: All licensing and maintenance fees that might apply to hardware, software and any other products as up-front costs to the project (ongoing costs would be included under Operational expense).

Other: Other IT costs not included above, such as travel, training, documentation, etc.

NOTE: FTE costs may be included in section VIII.e below, as required

(Double click on table below – add funding in whole dollars and then click outside the table to return to Word doc)

DEVELOPMENT COSTS						
Category	FY2014	FY2015	FY2016	FY2017	FY2018/19	Total
Professional & Outside Services	\$ 1,330,028	\$ 1,913,633	\$ 2,269,092	\$ 2,070,137	\$ 2,571,516	\$ 10,154,406
Hardware	\$ 22,500					\$ 22,500
Software						\$ -
Communications						\$ -
Facilities	\$ 30,000					\$ 30,000
License & Maintenance Fees	\$ 7,500					\$ 7,500
Other						\$ -
Total Development Costs	\$ 1,390,028	\$ 1,913,633	\$ 2,269,092	\$ 2,070,137	\$ 2,571,516	\$ 10,214,406

Enter Total Development Cost (above) in Project Values table on Approvals page.

OPERATIONAL COSTS						
Category	FY2014	FY2015	FY2016	FY2017	FY2018/19	Total
Professional & Outside Services						\$ -
Hardware						\$ -
Software						\$ -
Communications						\$ -
Facilities						\$ -
License & Maintenance Fees						\$ -
Other						\$ -
Total Operational Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Enter Total Project Cost (below) in Project Values table on Approvals page.

	FY2014	FY2015	FY2016	FY2017	FY2018/19	Total*
TOTAL PROJECT COSTS *(Includes development and operational costs)	\$ 1,390,028	\$ 1,913,633	\$ 2,269,092	\$ 2,070,137	\$ 2,571,516	\$ 10,214,406

VIII.c Funding Source {A}

Funding Source Category	Name of Funding Source	Currently Available (\$)		New Appropriations Request (\$)		Total (\$)
		Development Budget	Operational Budget	Development Budget	Operational Budget	
General Fund						\$ -
Federal ARRA Fund						\$ -
Federal Fund						\$ -
Other Appropriated Funds						\$ -
Other Non Appropriated Funds	ASRS Trust Fund			\$ 10,214,406		\$ 10,214,406
TOTAL PROJECT COSTS		\$ -	\$ -	\$ 10,214,406	\$ -	\$ 10,214,406
Totals should = development and operational totals above						

VIII.d Special Terms and Conditions (if required) {A}

Special Terms and Conditions (if required)

VIII.e Full Time Employee Project (FTE) Hours

Provide estimated FTE Development hours that will be utilized for the duration of the project. Include IT as well as Business Unit FTE hours, if available. Enter into Project Values table on Approvals page. Enter FTE costs (if known) as well.

Total Full Time Employee Hours	7,644
Total Full Time Employee Cost	\$0.00

IX. Project Classification and Risk Assessment

IX.a Rate each question to determine risk level at Low (0), Medium (1), High (2), Very High (3).

RISK EVALUATION RANGES

LOW RISK PROJECT	0 - 8
MEDIUM RISK PROJECT	9 - 25
HIGH RISK PROJECT	26 - 42
VERY HIGH RISK PROJECT	43 +

Add Project Risk Details (if required)

PIJ Project Classification & Risk Evaluation					
Risk Factor	Low (0)	Medium (1)	High (2)	Very High (3)	Score
Project Management Complexity					
Project Team Size (# of people)	1-5	6-10	11-15	> 15	2
Project Manager (PM) Experience	Deep experience in this type of project	Some experience in this type of project and able to leverage subject matter experts	Some experience in this type of project and has limited support from subject matter experts	New to this type of project	0
Team Member Availability	Dedicated staff for project activities only as assigned	Staff is in place, few interrupts for non project tasks are expected and have been accounted for	Available, some turnover expected, some interrupts for non project issues likely	Dedicated team not available; staff will be assigned based on capacity	2
# of Agencies involved in Development activity	1	2	3	> 3	0
Vendor (if used)	No Vendor required	Vendor has been used previously with success	Vendor has been used previously with some management support required	New Vendor and/or multiple vendors	0
Project Schedule	Schedule is flexible	Schedule can handle minor variations, but deadlines are somewhat firm	Scope or budget can handle minor variations, but deadlines are firm	Scope, Budget and Deadlines are fixed and cannot be changed	0
Project Scope	Scope is defined and approved	Scope is defined and pending approval	Scope being defined	High level definition only at this point	1
Budget Constraints	Funds allocated	Funds pending approval	Allocation of funds in doubt or subject to change without notice	No funding allocated	1
Project Methodology	Defined methodology	Defined methodology, no templates	High level methodology framework only	No formal methodology	0
IT Solution Complexity					
Product Maturity (if purchased)	Product implemented & working in > 1 state agency or business of similar size	Product implemented & working in 1 agency or business of similar size	Product implemented & working only in an agency or business of smaller size	Product not implemented in any agency or business	0
Solution Dependencies	No dependencies or interrelated projects	Some minor dependencies or interrelated projects but considered low risk	Some major dependencies or interrelated projects but considered medium risk	Major high-risk dependencies or interrelated projects	1
System Interface Profile	No other system interfaces	1-2 required interfaces	3-4 required interfaces	> 4 required interfaces	2
IT Architectural Impact	Follows State IT approved design; principles, practice & standards	New to the State but follows established industry standards	Evolving "industry standard"	No standards, leading edge technology	0
Deployment Impact					
Process Impact	No business process changes	Agency wide process changes	Multi-State Agency process changes	State-wide process changes	1
Scope of End User Impact	Department or Division level only	Multiple Division or Agency wide impacts	Multi-Agency impacts	State-wide impacts	1
Training Impact	No training is required	Minimal training is required	Considerable training is required	Extensive training is required	1
Total Risk Score					12

X. Project Approvals

X.a CIO Review {A}

Key Management Information		Yes	No
1. Is this project for a mission critical application system?		<u>X</u>	
2. Is this project referenced in your agency's Strategic IT plan?		<u>X</u>	
3. Is this project consistent with agency and State policies, standards and procedures?		<u>X</u>	
4. Is this project in compliance with the Arizona Revised Statutes and GRRC rules?		<u>X</u>	
5. Is this project in compliance with the statewide policy regarding the Accessibility to Equipment and Information Technology for Citizens with Disabilities?		<u>X</u>	
6. Is this project mandated by law, court case or rule? If yes, cite the federal requirement, ARS Reference or Court Case.			<u>X</u>
Details:			

X.b Project Values

The following table contains summary information taken from the other sections of the PIJ document.

Description	Section	Significance
Assessment Cost {A}	VIII. Project Financials {Required for Pre-Assessment PIJ Approval Only}	\$
Economic Benefits	VI. Benefits to the State	21
Value Rating	VI. Value to the Public	7
Total Development Cost	VIII. Project Financials	\$10,214,406
Total Project Cost	VIII. Project Financials	\$10,214,406
FTE Hours	VIII. Project Financials	7,644
Project Risk Factors	IX. Risk Summary	12

X.c Project Approvals {A}

Select One Pre PIJ Assessment Approval Only PIJ Project Approval

Project Title: Oracle Forms and Reports Modernization Project

Responsibility	Approval Signature and Title	Date
Project Manager:	Valerie Burkett	8/27/2012
Agency CIO:	Kent Smith	8/27/2012
Project Sponsor:	Anthony Guarino	8/27/2012
Agency Director:	Paul Matson	8/27/2012

Appendices

A. Itemized List with Costs

One Excel spreadsheet included with three sheets:

1. Project Planning
2. Resource Allocation
3. Project Cost

B. Connectivity Diagram

Two PowerPoint diagrams included:

1. Proven Core Technologies
2. Technology Diagram

C. Project Schedule - Gantt Chart or Project Management Timeline

Gantt Chart is provided

D. NOI (Web Projects Only)

Not applicable

Glossary

Not applicable

Document Information

Title: Project Investment Justification – PIJ Version March 2010
Originator: State of Arizona Government Information Technology Agency
Date: March 2010
Download: azgita.gov

Contacts: **GITA Oversight Managers:**
azgita.gov/project_pij_monitoring

Web Design (NOI Contact):
azgita.gov/digital_gov/noi/

X. Project Approvals

X.a CIO Review {A}

Key Management Information		Yes	No
1. Is this project for a mission critical application system?		X	
2. Is this project referenced in your agency's Strategic IT plan?		X	
3. Is this project consistent with agency and State policies, standards and procedures?		X	
4. Is this project in compliance with the Arizona Revised Statutes and GRRC rules?		X	
5. Is this project in compliance with the statewide policy regarding the Accessibility to Equipment and Information Technology for Citizens with Disabilities?		X	
6. Is this project mandated by law, court case or rule? If yes, cite the federal requirement, ARS Reference or Court Case.			X
Details:			

X.b Project Values

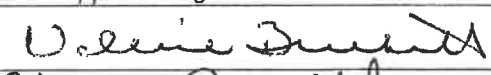

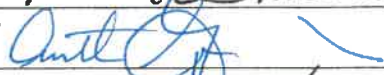
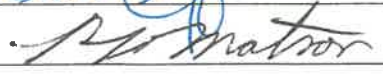
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FTE Hours	VIII. Project Financials	7,644
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X.c Project Approvals {A}

Select One Pre PIJ Assessment Approval Only PIJ Project Approval

Project Title: Oracle Forms and Reports Modernization Project

Responsibility	Approval Signature and Title	Date
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