State of Rhode Island
Health Insurance Exchange Planning

IT Gap Analysis Report

FINAL

October 15, 2011

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Understanding this Report

The purpose of this report is to document observations that came to our attention during our work and to offer our comments and recommendations for the State of Rhode Island's consideration. Our procedures consisted of inquiry, observation and analysis of provided information. Such work does not constitute an audit. Accordingly, we express no opinion on financial results, processes, other information or internal controls. The State of Rhode Island is responsible for the decisions to implement any recommendations and for considering their impact.

1 Executive Summary

KPMG, in association with Wakely Consulting, has been asked to support the strategic planning, gap analysis, design and budgeting of a proposed Health Insurance Exchange (HIX) for the State of Rhode Island. With Wakely's assistance, RI has identified some important challenges regarding the financial sustainability of a state-based exchange due to its unique starting point: small size, expanded Medicaid eligibility, well functioning individual market, and limited number of commercial carriers. Rhode Island therefore spent some time to identify and explore possible exchange business models that might offer a marketable and financially sustainable strategy for RI.

Based on this assessment the State is considering strategic options for the scope of insurance services that the HIX will offer. Because of Rhode Island's small insurance market size, sustainability of the exchange is of particular concern. This project will help the State understand the information technology (IT) implications of the business model options that the State is considering for implementing the exchange.

The objective of the analysis described in this report is to assess the functional and technical gaps between existing systems that are candidates for reuse for Exchange implementation, and the IT systems requirements for a full Exchange implementation. The IT systems requirements are defined by an Exchange reference model based on the Centers for Medicare & Medicaid Services (CMS) Exchange Reference Architecture (ERA), with extensions developed by KPMG to address business areas not yet defined by CMS.

Gap Analysis Process

The KPMG team worked with Rhode Island staff to gather the data required to perform the gap analysis between Rhode Island's current physical systems' capabilities and future system requirements of the Health Insurance Exchange, using the requirements detailed in the Health Insurance Exchange Reference Architecture. This data was then input into KPMG's Gap Analysis Tool.

A revised gap assessment will be performed once Rhode Island has determined how much of the Health Insurance Exchange Reference Architecture's functionality will to be implemented. While the initial gap assessment provides a view of the gap between Rhode Island's current systems and the reference architecture, the revised gap assessment will provide findings that are customized to the health insurance exchange implementation option Rhode Island has selected.

The Gap Analysis Tool will determine which current physical systems may be reused, and which may be augmented, either functionally or technically, to be included in Rhode Island's Health Insurance Exchange.

Major Findings and Recommendations

Finding 1: No current system is reusable as a functional component.

None of the systems perform any functional component to any significant extent. Each system either is not designed to address a functional component, or if it does, has major limitations relative to the capabilities required to do so. Reuse of any system to meet functional requirements would be very difficult.

Many of the state's systems performance similar functions to those required for the Rhode Island Health Insurance Exchange. In all cases, these systems were developed before any exchange functional requirements and policy rules were defined at the Federal level. In most cases, even where the business function is very close to the eventual Exchange requirement, the underlying technology makes the use of these systems, or components of those systems, unlikely. Each system has functional, application, or technology architecture limitations, making its reuse difficult.

For example, the state's eligibility determination system, InRHODES, uses hardcoded program rules that cannot be extracted from the overall program logic, are not easily changed by business users, and are not shareable through a rules repository.

Finding 2: Technical quality of all systems is low, except for one system with respect to one component.

Rhode Island's IT systems are built on software technology that ranges from 20-year old transaction-based systems operating on mainframes to 3-tier web-based systems. Most systems provide limited-to-no access to the general public directly; however, one system, the data warehouse, has the technical capability to offer information management services. The ability for a system to provide a technical capability to the Exchange without Exchange-specific business functionality does not necessarily translate into re-usable functionality.

Finding 3a: No System Exhibits Strong Functional and Technical Alignment

The results of the gap analysis exercise have shown that none of the systems are good candidates for immediate reuse in their current form.

Finding 3b: Human Services Data Warehouse (HSDW) Has Some Reusable Technical Components

HSDW appears to be a good candidate for technical component reuse. Specifically, the Information Management and Data Management technical components should be considered for use in the "to-be" architecture.

Recommendation 1: Consider Reuse of Some Technical Components

Investigate the reusability of some technical components in the HSDW data warehouse as part of the "to be" HIX solution. The HSDW reusability details will be further investigated in the mobilization and design phases.

Finding 4: No Single System has Comprehensive Coverage

While the Rhode Island systems discussed in this section are the closest available able to provide HIX functionality by supporting one or more of the required components to some degree, no one system is able to provide the full range of functionality required. The functional and technical gap-fit assessment for each system may be found in Section 4.

2 Approach

The Rhode Island IT systems assessed in this report exist at the physical level and support current health insurance and human service programs. The purpose of the gap analysis is to determine which, if any, IT systems might be re-used to support the Rhode Island HIX. The results of this analysis support the planning for the State's Health Information Exchange (HIX).

Step	Objective
Step 1 – Review Technical & Functional Components	• Validate the technical & functional components, to ensure that each is applicable to Rhode Island • Identify missing components
Step 2 – Identify Relevant Current IT Assets	• Determine which current IT assets are potential candidates for automating one of more HIX logical component(s)
Step 3 – Assess Current IT Assets	• Document each asset's ability to fulfill the technical and functional components identified in Step 1
Step 4 – Conduct Fit-Gap Analysis	• Determine how well the IT assets identified fit the functional and technology requirements for the component
Step 5 – Determine Implementation Options	• Determine Rhode Island Exchange implementation options to provide varying levels of service

Figure 1: Gap Analysis Approach Summary

This approach and sample artifacts are included in Appendix 2.

3 Current State IT Systems Environment

This section provides an inventory and brief description of the systems eligible for potential reuse in the Rhode Island HIX. These systems were the subjects of KPMG's gap assessment described throughout this document. To qualify for use in a HIX, the system must satisfy at least one functional software component identified as being integral to the logical design defined by the Exchange Reference Architecture. The logical design is shown in Appendix C.

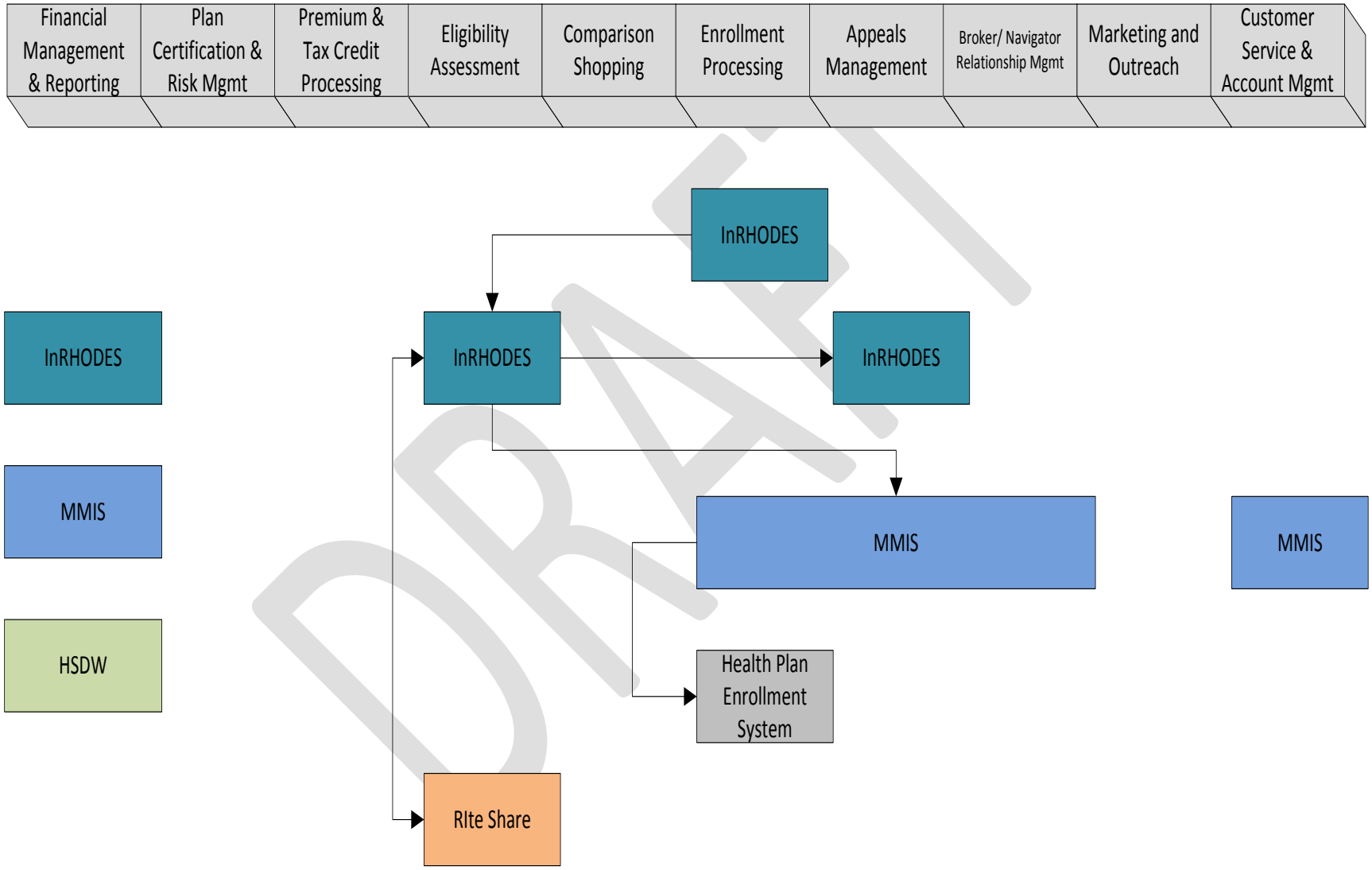
The State of Rhode Island identified several systems for review including:

- InRHODES
- RIte Care
- MMIS
- HSDW

The interaction of these systems and to which functional component(s) each system is aligned are illustrated in Figure 2.

Detailed information on these systems is contained in Appendix A.

Figure 2. Current IT systems by HIX Reference Model Functional Component



Rhode Island Executive Office of Health and Human Services

The Department of Information Technology (DOIT) provides IT overall state oversight on vendors responsible for building and maintaining systems for the Executive Office of Health and Human Services (EOHHS). DoIT builds and maintains some systems for EOHHS itself. InRHODES is maintained by Northrop-Grumman Information Systems and directly overseen by DHS and DoIT. EOHHS has direct oversight over MMIS and HSDW, maintained by the State's Fiscal Agent Hewlett Packard Enterprise Systems (HPES). RIte Share is maintained partially by EOHHS through its vendor Xerox ACS and partially through HPES.

InRHODES is currently used for determining client eligibility for Medicaid, CHIP, the Supplemental Nutrition Assistance Program (SNAP), Child Care Assistance, General Public Assistance (GPA), Child Support, and RI Works and Temporary Assistance (TANF) programs. InRHODES provides business function support for Intake, Eligibility Determination, Case Management, Hearings and Appeals, Notices and Letters, Reporting, Verifications, State and Federal Interfaces, and Financials. This is a mainframe-based system.

InRHODES also contains a customer-facing portal used to gather and submit SNAP application data to the InRHODES mainframe system. This portion of InRHODES has components residing on Windows servers.

The Medicaid Management Information System (MMIS) is a system of software and hardware used to process Medicaid claims and manage information about Medicaid beneficiaries and services. While EOHHS administers the Medicaid program, HPES is the fiscal agent for the Medicaid program and uses MMIS to process claims.

EOHHS also maintains a standalone desktop system to support a program called RIte Share that helps Rhode Island families afford health insurance through their employer by paying for some or all of the employee's cost. The RIteShare system tracks employer-provided coverage details that are used to determine which enrollees would be more efficiently served by the state paying their portion of the employer's coverage plan.

Finally, the HSDW data warehouse is a decision support system that receives data from both InRHODES and MMIS for purposes of aggregate and longitudinal reporting. HSDW is built using current information management products and resides on a three-tier system architecture.

Table 1. Executive office of Health and Human Services Systems Summary

System	Description	Technology	
		Hardware	**Software**
InRHODES	The State of Rhode Island's integrated system for eligibility determination and Child Support case management. It consists of a back office application and a customer-facing portal used to gather and submit social service program application information to InRHODES, and also allows the public to submit change reports online.	• IBM mainframe • Windows 2003 Server	• z/OS • RACF • Natural • ADABAS • COBOL • EntireX Broker • SuperNatural • Natural Security • SoftwareAG Predict • Entire Connection • Direct Connect • Oracle 11g • Cold Fusion • Geo Trust • J2EE • JBoss • Dreamweaver
MMIS	The State of Rhode Island's Medicaid Management Information System.	• Wintel Servers	• Windows Server 2003 • C++ • J2EE • Oracle 11g • Microsoft Active Directory • Citrix • Ingres • Microsoft Exchange Server
RIte Share	RIte Share is Rhode Island's premium assistance database and processes for Medicaid eligibles with access to cost effective help Rhode Island families afford health insurance through their employer based coverage. This system calculates employee's cost by	• Desktop PC	• Microsoft Access

System	Description	Technology	
		Hardware	Software
	paying for some or all of the cost effectiveness of employer based coverage.		
HSDW	Decision support system that receives data from both InRHODES and MMIS for purposes of aggregate and longitudinal reporting.	• Wintel Servers	• Windows Server 2003 • Informatica • Business Objects • Business Objects Infoview • Oracle 11g

Rhode Island Data Center Infrastructure and Architecture

The State of Rhode Island maintains a robust data center that services all state agencies. The facilities, architecture and infrastructure provide a secure, highly available platform from which to deploy new information systems.

Security

Physical – The building is secured through the use of a combination of keycards and manual supervision. Visitors must sign in and be escorted. Employees gain access thru the use of the key card. All entryways are monitored by cameras and the building is always occupied.

Infrastructure –The state maintains a Security Office. They perform, as required, ongoing exploit testing of state systems as well as ad hoc security audits of existing applications. The network and systems are appropriately secured through the use of multiple layers of hardware and software.

Backup and Recovery

Mainframe –Data center backups go to tape. Depending on the operating system, one of the following utilities is used: z/OS -- DFDSS, z/VSE -- VSE fast copy or IDCAMS Backup / Restore and for z/VM - - z/VM Backup/Restore. Backups are stored offsite at multiple locations.

Redundancy – There is sufficient network and equipment redundancy in place to handle most failure situations. Raid Disk technologies, SANs and offsite storage are used to ensure data redundancy and recovery.

Disaster Recovery – The disaster recovery (DR) site is housed in NJ. This site is as a disaster recovery site for critical State systems. The state performs multiple DR tests throughout the each year to ensure its complete functionality.

Performance and Availability

Performance – The data center monitors network bandwidth within the data center. Network bandwidth outside the data center is monitored by the state's network and internet service providers under a service level agreement contract. Mainframe transaction monitoring is performed by various tools specific to the operating system.

Operations Monitoring – In addition to other tools used in the data center, NAGIOS is used for monitoring the Unix Platform and the Mainframe system uses various monitoring tools that are specific to the operating system. For the VSE operating system Tmon for CICS is used. In the z/OS environment, RMF, Tmon for CICS, Netview, and Tmon for MVS is used. In the z/VM environment Perfmon is used.

Capacity Planning

Capacity planning for all systems and applications in the data center is performed at numerous times. Infrastructure planning is done throughout the year. Capacity evaluation and planning for individual system storage, memory, and CPU are performed as needed. The data center utilizes VMware to manage virtual environment and make the best use of existing and excess capacity. The on-going consolidation of servers to the central computer room affords the state to support more servers and equipment with less staff.

Change Management

System/network/etc changes are managed through HP OpenView and the state service desk is responsible for maintaining the application. For planned changes, there are numerous maintenance schedules that are adhered to; these schedules are established by the functional areas. There is hardware redundancy within the center to help avoid unscheduled downtime. Some of the equipment is hot-swappable.

4 Gap Analysis

Step 1 – Review Technical & Functional Components

The technical & functional components were reviewed with RI staff. No outputs included.

Step 2 – Identify Relevant Current IT Assets

Based on the understanding gained from the review of the HIX Logical Component Model, the working group identified the four IT assets in the table below as having the potential for reuse as exchange-specific components within the future state. In addition, the state-level systems RIFANS and HR were identified as likely contributors for general business operations functions of the exchange, but will not be assessed for exchange-specific functionality.

Current IT Systems	System Description
InRHODES	InRHODES is the State of Rhode Island's integrated system for eligibility determination and Child Support case management. It consists of a back office application and a customer-facing portal used to gather and submit social service program application information to InRHODES, and also allows the public to submit change reports online.
RIte Share	RIte Share is a system supporting Rhode Island's Medicaid managed care program for families on the RI Works Program and eligible uninsured pregnant women, children, and parents.
MMIS	MMIS is the State of Rhode Island's Medicaid Management Information System. It is used to process Medicaid claims for eligible program recipients.
HSDW	Rhode Island's Health Care Data Warehouse

Table 2. Current State IT Systems

The four systems identified have functionality that covers, to some degree, the requirements of the Exchange components. The functional and technical components that each system covers are highlighted in the two tables below.

Functional Component	Current Physical Systems			
	InRHODES	RIte Share	MMIS	HSDW
	Performs Function?	Performs Function?	Performs Function?	Performs Function?
Plan Certification & Risk Management			Yes	
Premium & Tax Credit Processing			Yes	
Eligibility Assessment	Yes	Yes		
Comparison Shopping				
Enrollment Processing	Yes	Yes	Yes	
Appeals Management	Yes			
Broker/ Navigator Relationship Management				
Marketing & Outreach				
Customer Service & Account Management			Yes	
Financial Management & Reporting	Yes		Yes	Yes
Information Technology				
Asset Management				
HR Management				
Procurement Management				

Table 3: Current State IT Systems Functional Components

Technical Component	Current IT Systems			
	InRHODES	RIte Share	MMIS	HSDW
	Performs Function?	Performs Function?	Performs Function?	Performs Function?
Information Management	Yes		Yes	Yes
Master Person Index	Yes			
Knowledge Management				
Financial Transaction Procesing				
Business Process Management	Yes			
Privacy and Security	Yes			
Rules Engine				
Workflow Engine				
Data Management	Yes			Yes
Service Management				
Unified Communications				

Technical Component	Current IT Systems			
	InRHODES	RIte Share	MMIS	HSDW
Exchange Portal				
B2B Gateway	Yes			

Table 4: Current State IT Systems Technical Components

Being potential candidates for the future state Health Information Exchange, each of these systems were then assessed for their level of fit for performing the duties of the functional and technical components identified.

Step 3 – Assess Current IT Assets

The KPMG team, along with Rhode Island staff, attempted to gauge each system's capability in performing functions for the various functional and technical components.

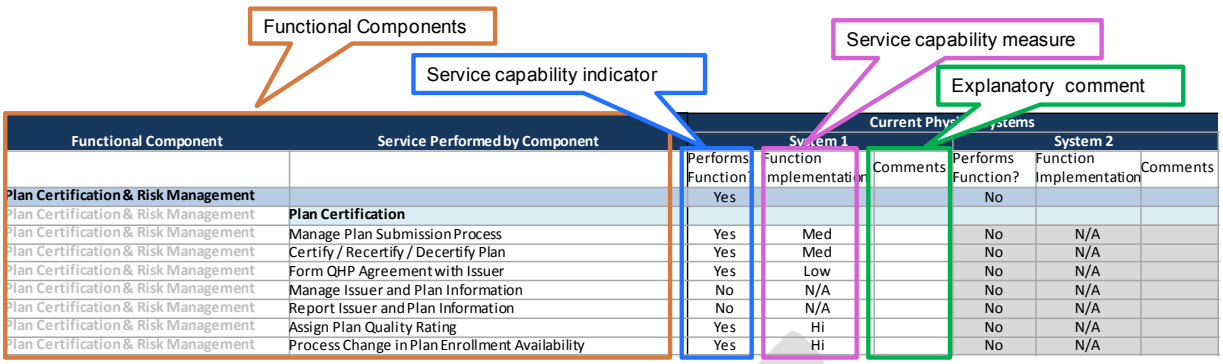
KPMG, in conjunction with Rhode Island staff, evaluated each system as to whether or not it performs the functions of each component and to what degree it performed that function well. In determining whether or not the system performed the function, we rated the system with a value of yes, no or unknown – unknown indicating that further investigation was required prior to determining a "yes" or "no" value.

If a system performed a function, we rated the system as "High," "Medium" or "Low" to indicate the extent to which a system performs the functions of a component. The system was rated "N/A" should it not perform the function and "Unknown" if the value of the system's ability to perform the function was not known. In order to use this evaluation to calculate a system's support for a component, the following scheme was implemented to score the ratings provided to each function of each component:

Value	Rating Implication
High	The system provides 100% of the required functions for the component.
Medium	The system provides 50% of the required functions for the component.
Low	The system provides 10% of the required functions for the component.
N/A	The system does not provide the required functions for the component – the rating assigned is 0%.
Unknown	Whether the system provides any of the functionality of the component was not determined – the rating assigned is 0%.

Table 5: IT Assets Assessment Rating Scale

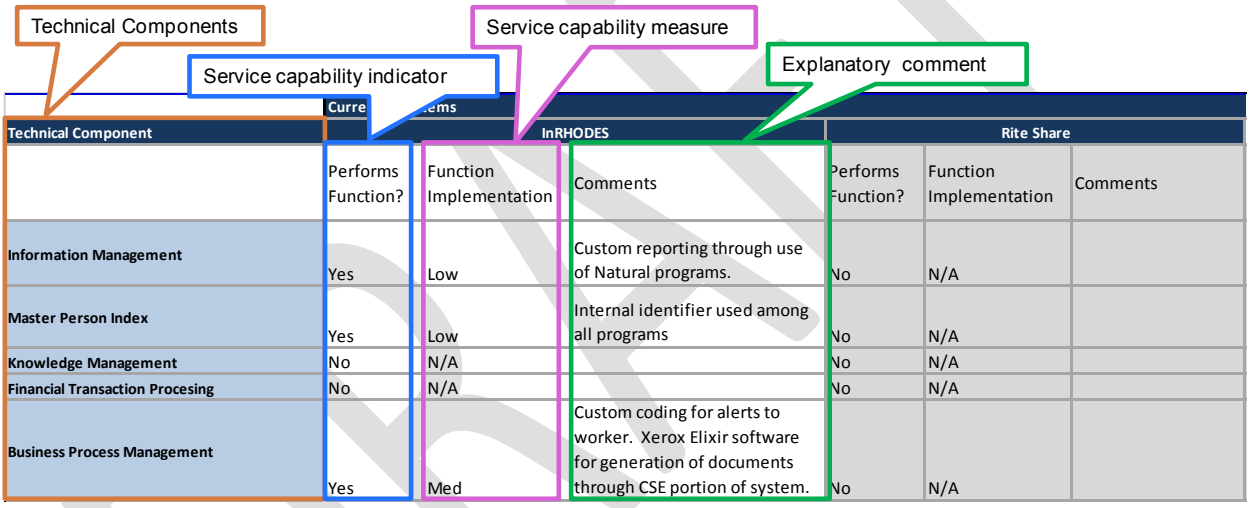
An extract of the worksheet where this information was collected is shown in the figure below.



Functional Component	Service Performed by Component	Current Physical Systems					
		System 1			System 2		
		Performs Function?	Function Implementation	Comments	Performs Function?	Function Implementation	Comments
Plan Certification & Risk Management		Yes			No		
Plan Certification & Risk Management	**Plan Certification**						
Plan Certification & Risk Management	Manage Plan Submission Process	Yes	Med		No	N/A	
Plan Certification & Risk Management	Certify / Recertify / Decertify Plan	Yes	Med		No	N/A	
Plan Certification & Risk Management	Form QHP Agreement with Issuer	Yes	Low		No	N/A	
Plan Certification & Risk Management	Manage Issuer and Plan Information	No	N/A		No	N/A	
Plan Certification & Risk Management	Report Issuer and Plan Information	No	N/A		No	N/A	
Plan Certification & Risk Management	Assign Plan Quality Rating	Yes	Hi		No	N/A	
Plan Certification & Risk Management	Process Change in Plan Enrollment Availability	Yes	Hi		No	N/A	

Figure 3: IT Assets Assessment Functional Component Worksheet

The detailed version of the IT Assets Assessment Functional Component Worksheet is shown in Appendix E: IT Assets Assessment Functional Component Worksheet (Detailed View).



Technical Component	Current Systems					
	InRHODES			Rite Share		
	Performs Function?	Function Implementation	Comments	Performs Function?	Function Implementation	Comments
Information Management	Yes	Low	Custom reporting through use of Natural programs.	No	N/A	
Master Person Index	Yes	Low	Internal identifier used among all programs	No	N/A	
Knowledge Management	No	N/A		No	N/A	
Financial Transaction Procesing	No	N/A		No	N/A	
Business Process Management	Yes	Med	Custom coding for alerts to worker. Xerox Elixir software for generation of documents through CSE portion of system.	No	N/A	

Figure 4: IT Assets Assessment Technical Component Worksheet

The detailed version of the IT Assets Assessment Technical Component Worksheet is shown in Appendix F: IT Assets Assessment Technical Component Worksheet (Detailed View).

KPMG will revise this gap assessment as Rhode Island refines how much of the HIX ERA's functionality will be implemented. While the initial gap assessment provides a view of the gap between Rhode Island's current systems and the reference architecture, the revised gap assessment will provide findings customized to the HIX implementation option Rhode Island selects. Using this information, the next step in the process was to analyze how well each of the identified IT assets fit the needs of each of the functional and technical components that they are able to support.

Step 4 – Conduct Fit-Gap Analysis

KPMG created a Gap Analysis Tool that used the input from Step 3 to calculate the current IT asset's potential for reuse. The assessment data provided in Step 3 was translated into scores which were then used to rate each system's ability to perform the functions and to determine if the system should be reused, augmented for reuse or not used at all. Systems were only evaluated against components they were intended to support.

The KPMG Gap Analysis Tool provided three outputs to summarize the analysis.

1. **A matrix of system ratings against individual functional or technical components;**
   A matrix illustrating the scoring of each system against each functional component was produced. The table below describes the colors that are used in the matrix.

Color	Description
Green	Large amount of the component functionality is supported (71% - 100%)
Yellow	Significant amount of the component functionality is supported (31% - 70%)
Red	Minor amount of the component functionality is supported (0% - 30%)
Grey	Amount of component functionality support is unknown
White	The system was not designed to provide this functionality

Table 6: System Fit-Gap Rating Scale

2. **A rating of each system against overall functional or technical requirements**
   A graph that illustrates the score of the IT asset's components against all functional and technical components that it was being assessed against was also produced. As an example, an IT asset that scores high in each of the components it is assessed against would have a high rating on the graph.
3. **A consolidated scoring of each system in terms of its reusability.**
   This diagram is a bubble chart which shows the functional and technical alignment of each IT asset, as well as the amount of technical and functional values that have been met.

Functional Findings

The table below summarizes the ability of each system to meet the functional requirements for each of the functional components of a health insurance Exchange. As can be seen in the table, all of the systems assessed support a minor amount of component functionality.

Functional Component	Current Physical Systems			
	InRHODES	RIte Share	MMIS	HSDW
Plan Certification & Risk Management				
Premium & Tax Credit Processing				
Eligibility Assessment				
Comparison Shopping				
Enrollment Processing				
Appeals Management				
Broker/ Navigator Relationship Management				
Marketing & Outreach				
Customer Service & Account Management				
Financial Management & Reporting				
Information Technology				
Asset Management				
HR Management				
Procurement Management				

Table 7: Functional Component Fit-Gap Rating

The next diagram illustrates how much functionality each of the above systems provides relative to the requirements of the functional components covered by the system. It indicates a relative rating of how effective a system is at meeting its overall functional requirements.

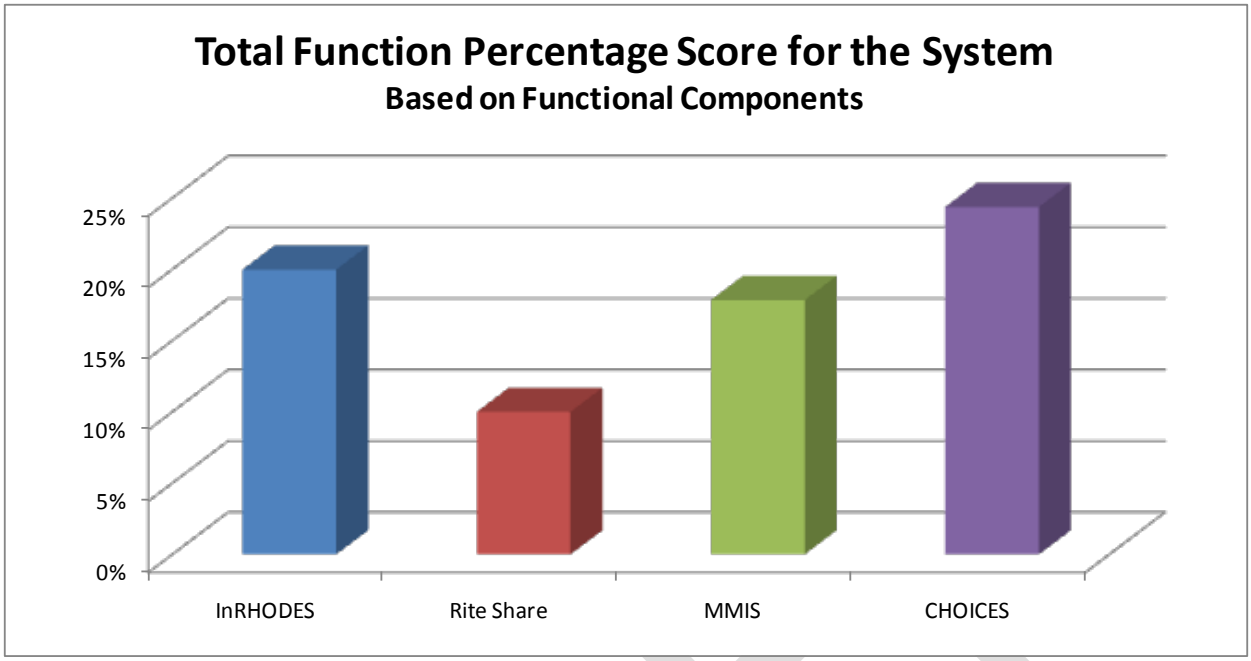


Figure 5: Total Function Percentage by System (for Functional Components)

Plan Certification and Risk Management

This function includes the processes to assess the actuarial value, benefit design, and quality of plan to facilitate certification and quality rating of plans. In addition, management of the plan and carrier relationship and the risk adjustment process are included in this function. The MMIS system provides minimal functionality in managing plan rates however, this is a manual effort. In addition, currently the plan certification and risk management function for Medicaid is also completed manually. Consequently, none of the systems reviewed facilitate the performance of any of the plan certification and risk management activities.

Conclusion: None of the systems have the necessary functionality to satisfy the functional requirements for Plan Certification and Risk Management. MMIS is the only system that supports the plan certification and risk management business function, but its functionality is limited to the management of plan rates.

Premium and Tax Credit Processing

The MMIS system performs automated invoice printing and has the ability to accept payments through Automated Clearing House (ACH), credit cards, or debit cards. Rite Share helps Rhode Island families afford health insurance through their employer by paying for some or all of the employee's cost; the database calculates the state's contribution, but does not actually process payments. None of the other systems reviewed have a related business requirement or the capability to provide this function through their existing codebase.

Conclusion: None of the systems have the necessary functionality to satisfy the functional requirements for Premium and Tax Credit Processing. The MMIS system is the only system that performs some of the required premium processing functions.

Eligibility Assessment

InRHODES and Rite Share provide functionality required to process eligibility determinations. The systems serve different populations and generally communicate within their individual organizations. None of the systems provide the ability to determine eligibility in real-time or without the assistance of a case worker.

Conclusion: None of the systems have the necessary functionality to satisfy the functional requirements for Eligibility Assessment. A more detailed analysis of InRHODES eligibility functionality and gap is available in *Determining Eligibility for the Health Benefit Exchange Evaluation and Cost Estimate Provisional Report*, dated March 25, 2011.

Comparison Shopping

None of the systems reviewed provide the necessary functionality to display plan availability and costs or allow a consumer or employee (through the SHOP) to compare insurance plan information and make an informed choice.

Conclusion: None of the systems have the necessary functionality to satisfy the functional requirements for Comparison Shopping.

Enrollment Operations

Both InRHODES and Rite Share allow for enrollment in their respective programs once a client has been determined eligible. MMIS provides basic enrollment functionality for Managed Care participants. None of the systems allow for customized views for outreach populations, broker or navigator access, or quote generation.

Conclusion: Existing RI systems have minimal functionality related to program enrollment. None of the systems have the necessary functionality to fully satisfy the functional requirements for Enrollment Operations.

Appeals Management

InRHODES provides Appeals tracking through the manual entry of information. Once Statement of Need data for the affected period(s) have been changed, the system retrospectively calculates new eligibility results per program rules in the given months.

Conclusion: None of the systems have the necessary functionality required to manage the Appeals process for both the individual and SHOP Exchanges.

Broker / Navigator Relationship Management

Broker/Navigator Relationship Management includes the processes necessary to manage the relationship between the Exchange and brokers and navigators through a portal, connect Navigators to consumers, measure Navigator performance, facilitate broker quoting of insurance plans, and provide broker incentive compensation capability. None of the systems surveyed provide any functionality which could be readily leveraged for Broker or Navigator Management processes.

Conclusion: None of the systems have the necessary functionality required to meet the Broker / Navigator Relationship Management functional requirements for the Exchange.

Marketing and Outreach

None of the systems reviewed provide the necessary components to fully support these business functions.

Conclusion: None of the systems have the necessary functionality to satisfy the functional requirements for Marketing and Outreach.

Customer Service and Account Management

The MMIS system provides minimal functionality in the area of customer account management. Customer Relationship Management (CRM) functionality such as call tracking and ticketing, managing performance measures, managing employee liability and managing performance are not provided by any of the systems.

Conclusion: None of the systems have the necessary functionality to satisfy the functional requirements for Customer Service and Account Management.

Financial Management and Reporting

No system reviewed provides a full suite of financial management functionality. The InRHODES and MMIS systems do provide limited budget tracking capability for various federal funding streams.

Each system has the ability to generate canned reports based on transactional data. The Data Warehouse provides the ability to aggregate and map data; however, the Warehouse is populated through nightly batch jobs and currently is valuable to EOHHS for only that data which is made available.

Conclusion: None of the systems have the necessary functionality to satisfy the functional requirements for exchange Financial Management. Though the Data Warehouse holds no current value for Exchange reporting, the technology can be utilized to support the Exchange.

Asset Management

Asset Management is the process of managing the various tangible assets that are valuable to the Exchange and operating, maintaining, and upgrading those assets in a cost-effective manner. These assets include technology assets such as computers and printers as well as furnishings. None of the systems provide the functionality necessary to satisfy these requirements.

Conclusion: None of the systems have the necessary functionality to satisfy the functional requirements for Asset Management.

HR Management

Included in HR Management is the ability for the Exchange to manage the recruiting of resources, managing their compensation, job evaluations, performance, time and attendance, salary, professional development, and benefits. None of the systems have the necessary functionality that satisfies the functional requirements for HR Management.

Conclusion: None of the systems reviewed have the necessary functionality that satisfies the functional requirements for HR Management.

Procurement Management

The process of managing purchase orders, inventory, and performing cost analysis are not provided by any of the systems.

Conclusion: None of the systems have the necessary functionality to satisfy the functional requirements for Procurement Management.

Finding 1: No current system is reusable as a functional component.

Finding:
Based on the functional components value score graph, none of the IT assets are suitable for reuse.

All of the systems support less than 25% of the functionality of all components that they have capabilities in. Based on the functional scores achieved by these systems, none are suitable for reuse. None of the systems perform any functional component to any significant extent. Each system either is not designed to address a functional component, or if it does, has major limitations relative to the capabilities required to do so. Reuse of any system to meet functional requirements would be very difficult.

Many of the state's systems perform similar functions to those required for the Rhode Island Health Exchange. In all cases, these systems were developed before any Exchange functional requirements and policy rules were defined at the Federal level. In most cases, even where the business function is very

close to the eventual Exchange requirement, the underlying technology makes the use of these systems, or components of those systems, unlikely. Each system has functional, application, or technology architecture limitations, making its reuse difficult.

For example, the state's eligibility determination system, InRHODES, uses hardcoded program rules that cannot be extracted from the overall program logic, are not easily changed by business users, and are not shareable through a rules repository.

Technical Findings

Similar to the functional findings, a table was created to summarize the ability of each system to meet the technical requirements for each of the technical components for the Rhode Island HIX. This table is shown below. The same scoring mechanism is used as the one described earlier.

Technical Component	Current IT Systems			
	InRHODES	RIte Share	MMIS	HSDW
Information Management				
Master Person Index				
Knowledge Management				
Financial Transaction Processing				
Business Process Management				
Privacy and Security				
Rules Engine				
Workflow Engine				
Data Management				
Service Management				
Unified Communications				
Exchange Portal				
B2B Gateway				

Table 8: Technical Component Fit-Gap Rating

The results show that InRhodes and HSDW have significant capabilities across a few technical components, and are candidates for reuse in these areas. RIte Share doesn't support any of the components, and MMIS only has minor capabilities in one area.

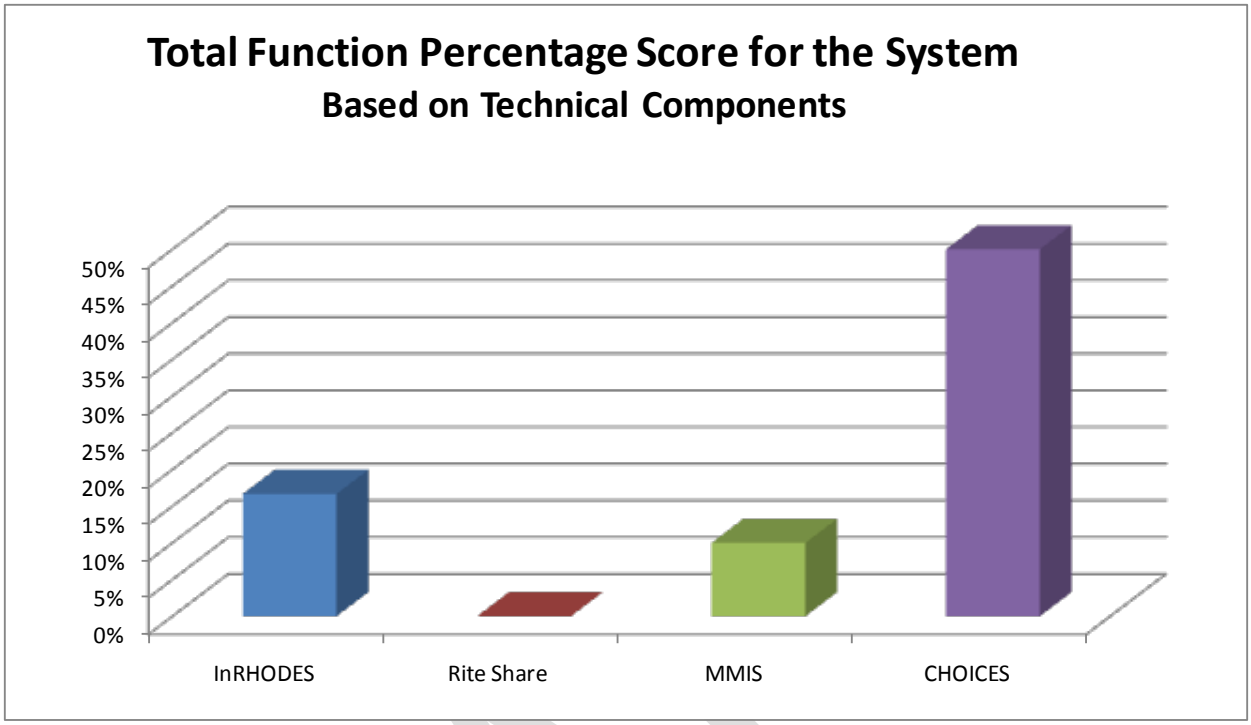


Figure 6: Total Function Percentage by System (for Technical Components)

Privacy and Security

Various strategies and products are in place to provide for privacy and security, though mainframe systems tend to utilize custom programming to provide access to system resources. No system provides for multi-factor authentication. Data in motion is encrypted on all systems while data at rest is not encrypted on any system with the exception of SSN. Message encryption is provided via SSL and HTTPS.

Conclusion: No system provides the technical components needed to satisfy the Privacy and Security requirements for the Exchange.

Business Rules Engine

Each system performs some level of processing using business rules. All systems have business rules embedded in program code.

Conclusion: No system provides the technical components needed to satisfy the Business Rules Engine requirements for the Exchange.

Workflow Engine

No workflow engine is available in any of the current systems. All workflow is handled programmatically.

Conclusion: There are no workflow components in any of the systems reviewed.

Data Management Enablers

The process of extracting and loading data is limited to custom programming for all systems. No system uses a product for Benefit Enrollment Transactions or message transformation.

Conclusion: No system provides the technical components needed to satisfy the Data Management requirements for the Exchange.

Service Management Enablers

None of the systems reviewed provide for non-repudiation. There is no Enterprise Service Bus implemented within any of RI's systems, and no system provides for the management of Services.

Conclusion: No system provides the technical components needed to satisfy the Service Management requirements for the Exchange.

Information Management

With the exception of Rite Share, each system has capabilities that can satisfy various Information Management requirements. InRHODES reports are limited to custom programming however the Data Warehouse contains information that can be reported on through the use of Informatica. The MMIS system also has custom-developed reports. It also includes a Document Management system that may be leverage-able for the Exchange.

Conclusion: Some RI systems have good quality Information Management technical components that are candidates for reuse.

Master Person Index

No Master Person Index is available in any of the current systems though the Data Warehouse maintains a crosswalk table that links various system IDs.

Conclusion: No system provides the technical components needed to satisfy the Master Person Index requirements for the Exchange.

Knowledge Management

No current systems manage metadata or content.

Conclusion: There are no Knowledge Management technical components within any of the systems that are suitable for reuse.

Financial Transaction Processing

No current system provides receipt or payment processing functionality.

Conclusion: No system provides the technical components needed to satisfy the Financial Transaction Processing requirements for the Exchange.

Business Process Management

All notification and alert functionality is system-specific and not available as a consumable service. Document generation is limited in all systems except for InRHODES which uses Xerox Elixir to help produce WYSIWYG forms for the Child Support program. Other correspondence is produced is produced by custom-coded applications that are function-specific.

Conclusion: InRHODES provides for some technical functionality that could be re-used for Document Generation.

Unified Communications

MMIS provides a call center function, but this is not integrated with the MMIS system itself. E-mail and Interactive Voice Response (IVR) are utilized but they are not integrated. The state utilizes Groupwise for e-mail while the MMIS vendor uses Exchange Server. No current asset provides text messaging or fax capability.

Conclusion: No system provides the technical components needed to satisfy the Unified Communications requirements for the Exchange.

Exchange Portal

None of the systems reviewed provide the ability to deploy consumer-specific application views or deployment of functionality for use on different devices such as tablets or smartphones.

Conclusion: No system provides the technical components needed to satisfy the Portal requirements for the Exchange.

B2B Gateway

InRHODES and MMIS provide for file transfer through ETL and Secure FTP. No asset provides EDI or Web Service capabilities.

Conclusion: No system provides significant functionality to satisfy the B2B Gateway requirements for the Exchange.

Finding 2: Technical quality of all systems is low, except for one system with respect to one component.

Finding:
Based on the technical components value score graph, none of the IT assets are suitable for reuse in their current form.

Rhode Island's IT systems are built on software technology that ranges from 20-year old transaction-based systems operating on mainframes to 3-tier web-based systems. Most systems provide limited-to-no access to the general public directly. Technically, the HSDW system scored the highest of all systems, and seems to have the highest potential for reusability from a technical component standpoint. However, HSDW only has capabilities that support one component, that being Information Management. The capability score for HSDW is less than 50%, making HSDW an unlikely candidate for functional reuse as the Information Management component in it's current form however, the existing technology could be used as a basis for this component.

MMIS also has capabilities that support the Information Management component, but its capability in this area is minor. This can be seen in the graph above where its technical score was less that 10%.

RIte Share does not have capabilities in any of the technical component areas, and will not be reused as a component in the future insurance Exchange.

InRhodes supports the largest number of components but only has significant capabilities in Business Process Management. It is a good candidate for reuse in this area, but scored only 50% against this component.

Gap Analysis Summary

The degree of functional and technical capability of each system is summarized in the bubble chart below. Systems in the top right quadrant (high functional and technical capability) are candidates for reuse. Systems in the bottom left quadrant (low functional and technical alignment) are not candidates for reuse by the HIX and may be candidates for retirement in a legacy renewal initiative. Systems in the top left quadrant have strong functional alignment but poor technical alignment; to be reusable, some improvement of the technical platform would be required. Systems in the bottom right quadrant have strong technical alignment but poor functional alignment. The technical elements of these systems might be reusable as a base from which to build out more aligned functionality.

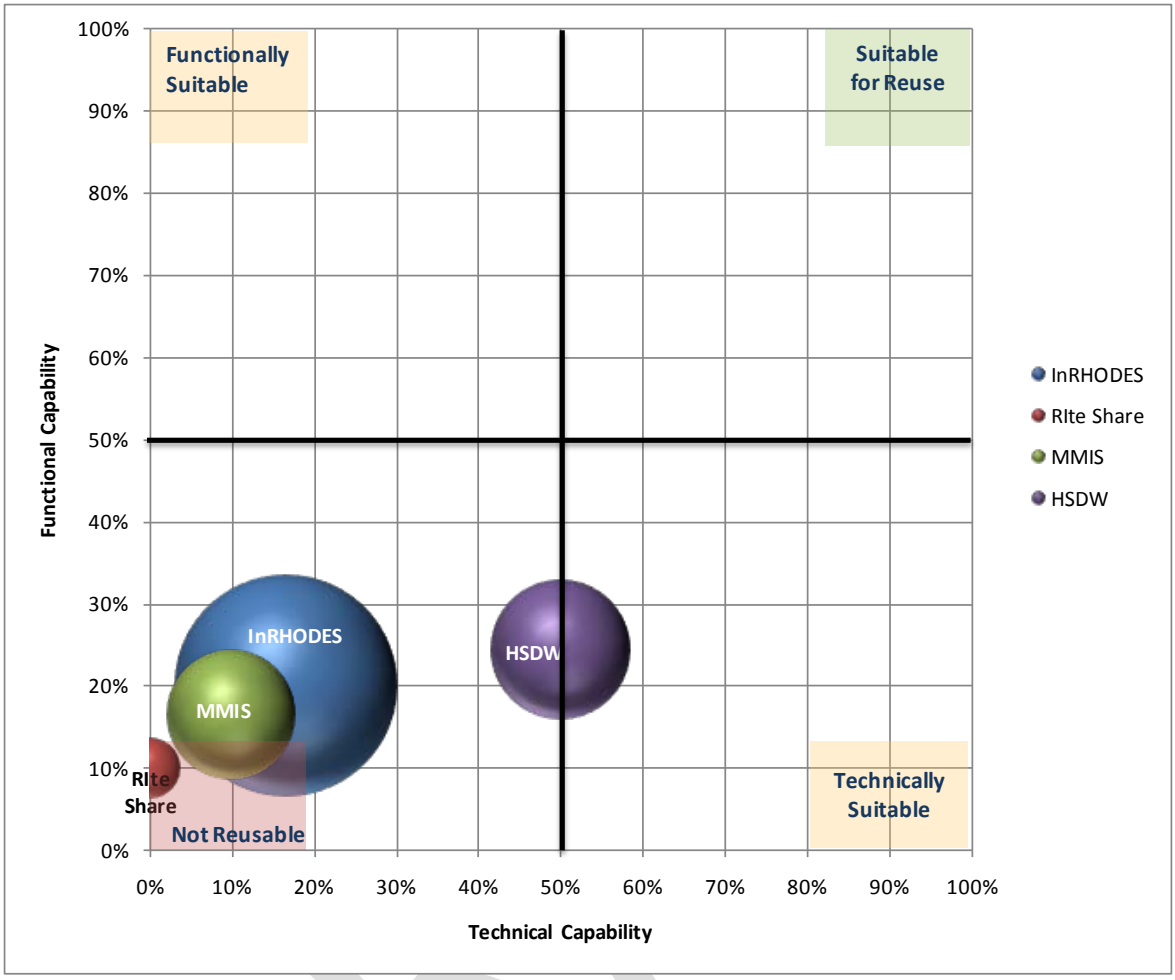


Figure 7: Functional and Technical Capabilities Summary

There are no systems in the top right quadrant, which would indicate strong functional and technical capabilities. There are also no systems in the top left quadrant, which would indicate strong functional but poor technical capability.

All of the systems appear in the bottom left or bottom right quadrants. Those in the bottom right are "Technically Suitable" as systems that can be reused as technical components in the Rhode Island insurance Exchange, but have a low probability of being reused as functional components. Those in the bottom left are classified as "Non-Reusable", and have a low probability of being reused as technical or functional components.

The summary view shows that none of the current systems are suitable candidates for functional or technical reuse in their current form, though the HSDW Data Warehouse is the most likely candidate as a reusable technology platform.

Finding 3a: No System Exhibits Strong Functional and Technical Alignment

The results of the gap analysis exercise have shown that none of the systems are good candidates for immediate reuse.

Finding 3b: The HSDW Data Warehouse Has Some Reusable Technical Components

HSDW appears to be a good candidate for technical component reuse. Specifically, the Information Management and Data Management technical components should be considered for use in the "to-be" architecture. The potentially reuseable components are described in Appendix A: IT Systems Current State Details. The limitations of the HSDW are cataloged in Appendix E: IT Assets Assessment Functional component worksheet.

Recommendation 1: Consider Reuse of Some Technical Components

Investigate the reusability of some technical components in HSDW as part of the "to be" HIX solution.

Finding 4: No Single System has Comprehensive Coverage

While the Rhode Island systems discussed in this section are the closest fit to provide HIX functionality by supporting required components to some degree, no one system is able to provide the full range of functionality required.

Appendix A: IT Systems Current State Details

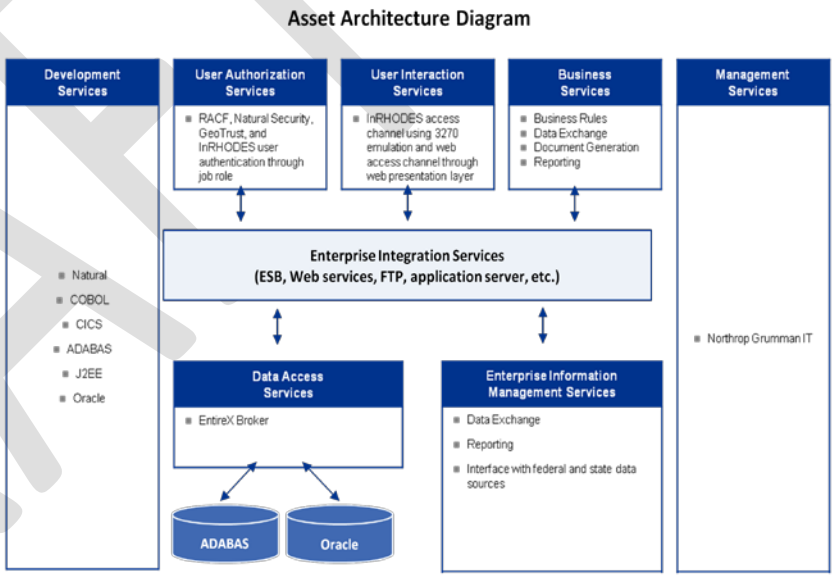
INRHODES

Description

InRHODES is the State of Rhode Island's integrated system for eligibility determination and Child Support case management. It consists of a back office application and a customer-facing portal used to gather and submit social service program application information to InRHODES, and also allows the public to submit SNAP social service program application information on-line to InRHODES.

PPACA Functional Alignment

- Eligibility determination for SNAP, RI Works (TANF), Medicaid, CHIP, General Public Assistance, Child Support, and Child Care.
- Users include case workers, supervisors, and other authorized department personnel.
- Public users do not have access to InRHODES.
- Multiple application forms are used for access to the various eligibility programs.
- No real-time eligibility determination.
- Master Data Management in place for common client identifier and person demographics. This is managed through the Common Client Area (returns the Department Client Number – DCN).



Technology Overview	**PPACA Technology Component Alignment**
■ Use of IBM mainframe, z/OS, RACF, Natural, ADABAS, CICS, COBOL, EntireX Broker, Supernatural, Natural Security, Predict, Entire Connection, and Connect Direct. Web components run on a Windows 2003 server and utilize Oracle 11g, Cold Fusion, GeoTrust, J2EE, JBoss, and Dreamweaver. ■ Data interchange limited to SFTP file transfers and use of Connect Direct. ■ Interfaces to state and federal agencies through the use of a private network. ■ Business rules embedded in program logic.	■ Business Rules Engine — All business rules embedded in Natural program logic — Eligibility determined asynchronously through the use of a batch process ■ Data Exchange — Verification interfaces with numerous state and federal agencies. Other interfaces between agencies and partners for various business purposes. Current interfaces are: o DOA Bureau of Auditors o Social Security Admin. o State of RI Attorney General o State of RI Auditor General o Service Employers International Union (SEIU) o Administration of Children & Families (ACF) o National Institute of Health (NIH) o Citizens Bank o Child Support Lien Network (CSLN) TMR Insurance o Child Support Lien Network (CSLN) Daily FIDM o Data Mining (Childsupportdata.com) o Equifax Credit Bureau o Experian Credit Bureau o First Data Corporation o Health Management Systems Inc. (HMS) o JP Morgan Chase o State of RI Lottery o State of RI Dept of Corrections o State of RI Dept of Environmental Management o State of RI Dept of Motor Vehicles o State of RI Office of Child Support Services o State of RI Treasury o TransUnion Credit Bureau o Western Union o State of RI Department of Children, Youth and Family o State of RI Dept of Labor & Training

	○ Blue Cross Blue Shield of RI ○ National Directory of New Hires (NDNH) ○ State of RI Division of Taxation ○ IRS ○ RI FED FTP (New Hires) to SSA ○ State of RI Dept of Health ○ Electronic Disqualified Recipient Systems ○ FNS (USDA) ○ Food & Drug Admin. ○ State of RI Dept of Education ○ University of RI (FS Outreach) ○ E-Funds ○ StateVision ○ Bank of America ○ Center for Medicare/caid Services (CMS) ○ State of RI Employer Contact Unit ○ Electronic Data Systems (EDS) Local ○ Electronic Data Systems (EDS) National ○ Group Health Inc. (GHI) ○ Neighborhood Health Plans of RI ○ United Health ○ Welligent Software Solutions ○ State of RI Dept of Transportation ○ Defense Manpower Data Center (DMDC) ○ National Grid ○ State of RI MHRH ○ Verizon ○ Maximus ■ Document Generation: — Output generated from Natural program logic used to produce XEROX Elixir forms for document generation — Other document output generated from Natural program logic. ■ Reporting: — Audit trail tracking provided through transaction logs, database logs, and record

	tracking w/ reports — Reporting capabilities through the use of Natural programs against the operational data store. — ETL managed through the use of Natural programs.

INRHODES

In Progress and Future State Projects

- Phase out of Connect Direct product
-

Reliability

- Highly available during normal business hours. Update access provided 5x11 M-F and for 7 hours on Saturday.
- Timely information regarding transaction processing provided
- Data is primarily housed on the state's mainframe
- All applications currently on supported system software
- Disaster recovery provided by DoIT in state data center.
- Backup and recovery provided by DoIT in state data center.

Scalability

- Provides access to 450 users
- Total of 12,000 applications for social programs per month are processed through FAMIS, with about 14% of these submitted through FAMIS Web.
- System currently supports 260,700 on-line transactions and 4,700 background transactions per day.
- Database contains about 42,000,000 records
- No major performance challenges reported to date
- Batch window is greater than12 hours daily.

Security and Compliance

- HIPAA compliant
- Each user group has a different access level which helps manage PHI
- Access is determined by a user's job function and office
- Internal private network used for most data communication
- Data encrypted in motion; data at-rest is not encrypted

Serviceability

- Application managed by vendor resources
- Maintenance performed on a nightly basis or on weekends.
- Maintenance changes are complex due to legacy technology

Transparency and Accountability

- Federal and state reports created from Natural programs.

MMIS

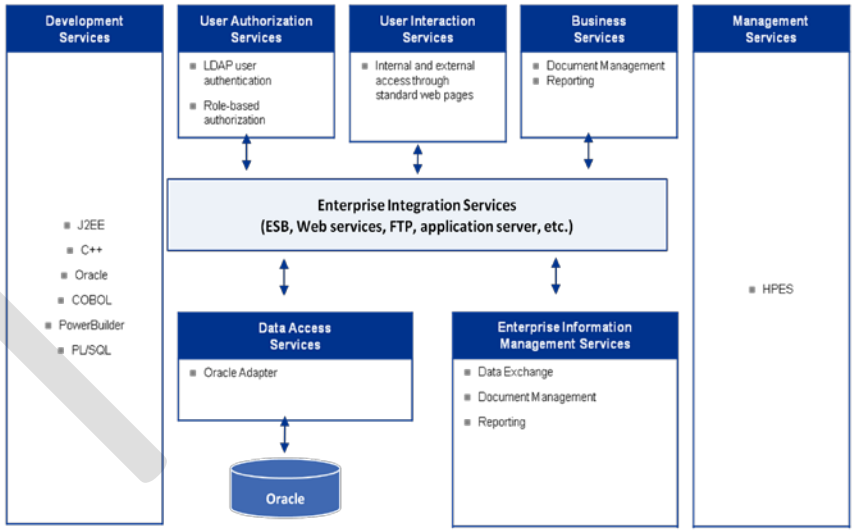
Description

MMIS is the State of Rhode Island's Medicaid Management Information System. It is used to process Medicaid claims for eligible program recipients. Provides portal interface for provider access and client/server access for internal RI users.

PPACA Functional Alignment

- Direct enrollment via web for Managed Care fee-for-service clients.
- Provider access for inquiry on client eligibility and payment information. Public users access claims payment information through a web portal.
- No eligibility determination; this data is transmitted via nightly interface from InRHODES.
- Supporting documentation imaged and indexed to appropriate case records. Available for retrieval and display.
- CRM access provided through call center. Access is provided via IVR. Issues are tracked to resolution using an internal CRM application.

Asset Architecture Diagram



Technology Overview

- Use of Wintel Servers, C++, J2EE, Business Objects Xi, Oracle 11g, Microsoft Active Directory, Citrix, Ingres, MS Exchange Server, COBOL, PowerBuilder, Oracle PL/SQL
- Data interchange using custom ETL programs and SFTP
- AMS Imaging used for document management.
- Reporting provided through Business Objects against transactional database.

PPACA Technology Component Alignment

- Document Management
  - AMS Imaging used for document imaging and retrieval
- Reporting:
  - Audit trail tracking provided.
  - BI and reporting capabilities through the use of COGNOS.
  - Ad Hoc reporting provided through the use of a COLD data mart.
  - External reporting provided through reporting programs in COBOL and J2EE as well as SAS.
  - Data loaded through an ETL process.

MMIS	
In Progress and Future State Projects ■ Currently procuring a new MMIS.	**Reliability** ■ Available 12x5 ■ Systems are housed in vendor's data center ■ Vendor's data center follows standard backup and disaster recovery processes. Full disaster recovery drills performed every other year. ■ SLA for full recovery from disaster within 48 hours ■ Access to systems through multiple high-speed network connections.
Scalability ■ Provides access to about 100 users, including providers, MMIS staff, and clients ■ Standard scaling techniques for client/server systems, including server clustering.	**Security and Compliance** ■ HIPAA compliant ■ HL7 compliant ■ Public facing apps have 508 accessibility compliance for individuals with disabilities compliance ■ LDAP is used for security access through Microsoft Active Directory Server. ■ Access is determined by a user's job function through role table ■ Data encrypted in motion for transmissions outside of the State network; data at-rest is not encrypted
Serviceability ■ Application and infrastructure managed by vendor resources ■ Monthly maintenance unless more frequent need arises, nightly maintenance window of 1 – 2 hours available if required ■ Maintenance changes follow a standard lifecycle methodology.	**Transparency and Accountability** ■ None

RITE SHARE

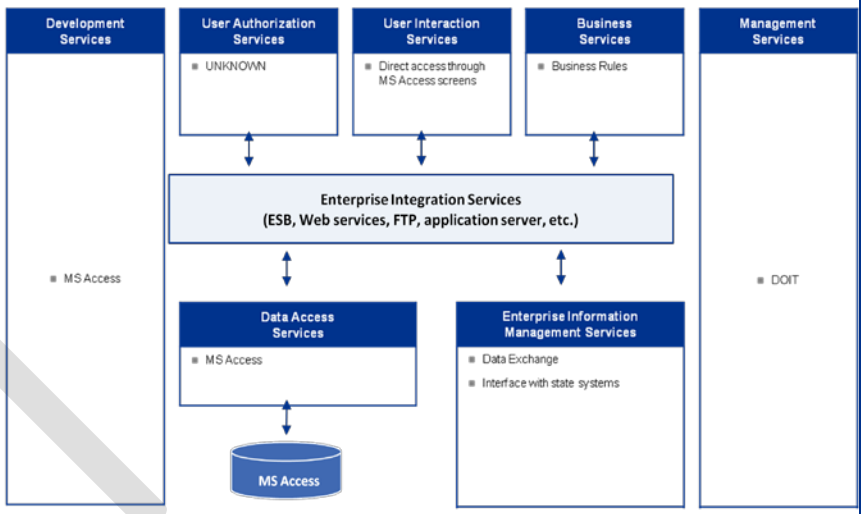
Description

RIte Share is Rhode Island's premium assistance program for Medicaid eligibles with access to cost effective health insurance through their employer based coverage. This system calculates employee's cost by paying for some or all of the cost effectiveness of employer based coverage.

PPACA Functional Alignment

- Calculates eligibility for Managed Care program
- Calculates client cost share

Asset Architecture Diagram



Technology Overview

- Use of MS Access
- Desktop-only application
- Business rules embedded in program logic.

PPACA Technology Component Alignment

- Business Rules Engine
  - Business rules are built into the program logic
- Data Exchange
  - Bi-direction file transfer to InRHODES via SFTP

RITE SHARE

In Progress and Future State Projects ■ None	**Reliability** ■ Available during normal business hours ■ Data is housed on a file server and accessed from a mapped drive. ■ Disaster recovery utilizes DoIT's standards ■ Restorable copies of data available through nightly backups.
Scalability ■ Supports several users ■ Currently running on a small desktop computer. Requires upgrade for any additional use.	**Security and Compliance** ■ Data is not encrypted in motion or at-rest
Serviceability ■ Application managed by Xerox ACS resources and other benefit program resources ■ No scheduled maintenance	**Transparency and Accountability** ■ No reporting provided

HSDW HUMAN SERVICES DATA WAREHOUSE

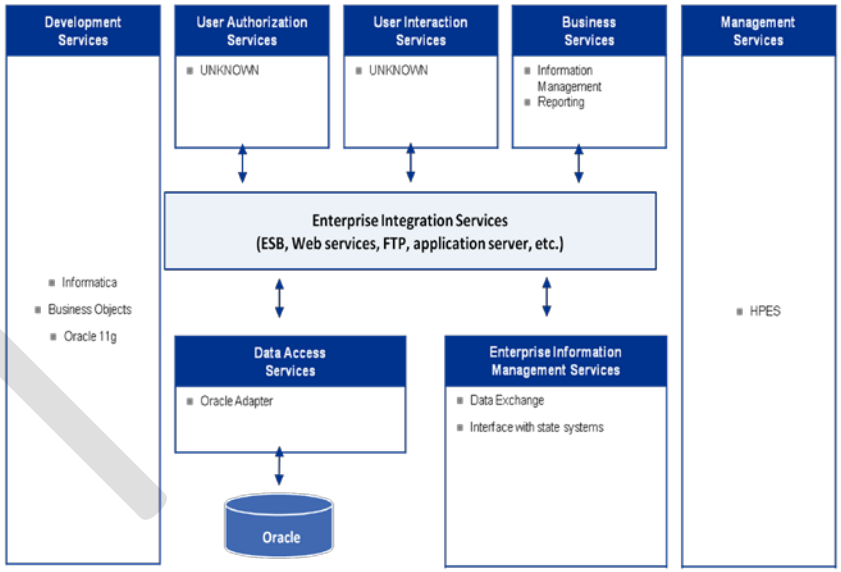
Description

HSDW is a decision support system that receives data from both InRHODES and MMIS for purposes of aggregate and longitudinal reporting. It also contains a number of other data sources.

PPACA Functional Alignment

- No exchange functionality, however currently includes Medicaid eligibility and enrollment information.
- Automated data collection, audit collected data, and automated data mapping.

Asset Architecture Diagram



Technology Overview

- Wintel servers
- Use of Informatica, Business Objects, Oracle 11g, and Windows 2003 Server

PPACA Technology Component Alignment

- Data Management
  - Uses Informatica for data warehouse functionality
- Information Management
  - Uses Business Objects for Reporting and Business Intelligence

HSDW HUMAN SERVICES DATA WAREHOUSE	
In Progress and Future State Projects ■ Development of the APCD (the first step of linking Medicaid and Medicare data)	**Reliability** ■ All applications currently on supported system software ■ Disaster recovery provided by DoIT in state data center. ■ Backup and recovery provided by DoIT in state data center.
Scalability ■ No major performance challenges reported to date	**Security and Compliance** ■ HIPAA Compliant ■ Data encrypted in motion
Serviceability ■ Application managed by DOIT resources	**Transparency and Accountability** ■ Output potentially leverageable for Federal and State reporting

Appendix B: IT Gap Analysis Approach

The purpose of the gap analysis is to determine which, if any, IT systems might be re-used to support the end-state HIX. The results of this analysis support the planning for the State's Health Information Exchange (HIX).

Step	Objective
Step 1 – Review Technical & Functional Components	• Validate the technical & functional components, to ensure that each is applicable to Rhode Island • Identify missing components
Step 2 – Identify Relevant Current IT Assets	• Determine which current IT assets are potential candidates for automating one of more HIX logical component(s)
Step 3 – Assess Current IT Assets	• Document each asset's ability to fulfill the technical and functional components identified in Step 1
Step 4 – Conduct Fit-Gap Analysis	• Determine how well the IT assets identified fit the functional and technology requirements for the component
Step 5 – Determine Implementation Options	• Determine Rhode Island Exchange implementation options to provide varying levels of service

Figure 8: Gap Analysis Approach Summary

Step 1 – Review Technical & Functional Components

Exchange Reference Architecture (ERA)

To perform the analysis, a logical design is required to provide a measure against which current systems can be assessed. To qualify for use in a HIX, a system must satisfy service requirements for at least one functional or technical software component identified as being integral to the HIX logical design. Such a design would be part of an Exchange architecture. Since all health insurance exchanges are required by law to operate in the same manner, a common ERA would be suitable as the source of the required logical design.

The Centers for Medicare & Medicaid Services (CMS) has been developing an ERA particularly geared toward the needs of early innovators such as the New England States Collaborative Insurance Exchange Systems (NESCIES), of which Rhode Island is a participant. The CMS ERA identified six business areas that constitute an HIX and to-date has defined detailed business processes for two of these areas – Eligibility & Enrollment, and Plan Management.

In the absence of a complete ERA, the KPMG project team constructed an ERA for a fully functional HIX that extends and is aligned with the CMS ERA, and meets the requirements of the gap analysis. This KPMG HIX Reference Architecture extends the CMS ERA by defining, for planning purposes, the four other business areas identified by CMS: Oversight, Customer Service, Financial Management, and Communications. It also includes a transformation of the CMS-level architecture into:

1. A Business Operating Model (described in the Blueprint document)
2. The HIX Logical Component Model

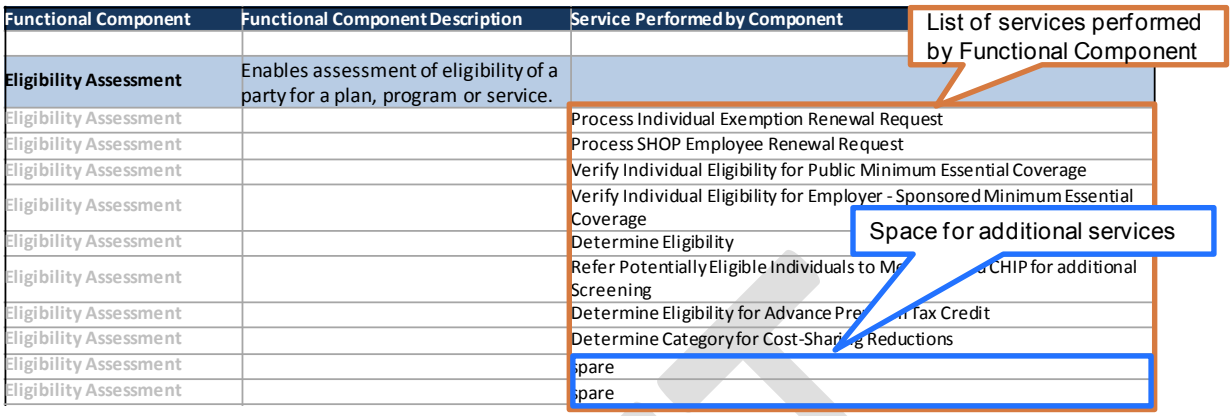
HIX Logical Component Model

Figure 3 is an overview of the structure of the logical architecture for the full HIX that illustrates the grouping of IT components, communications channels, and Exchange stakeholders. A more detailed model that lists the individual IT software components is provided in Appendix C: Detailed HIX Logical Component Model.

Reviewing the functional and technical components

This first step in the process is to review the functional and technical components contained in the Health Insurance Exchange Reference Model and determine if any of these functions are not relevant to Rhode Island, as well as identify additional functions which may not be accounted for. Shown below, in , is an extract of the worksheet reviewed with the Rhode Island staff displaying some of the functional components.

Figure 9: Sample listing of services performed by a functional software component



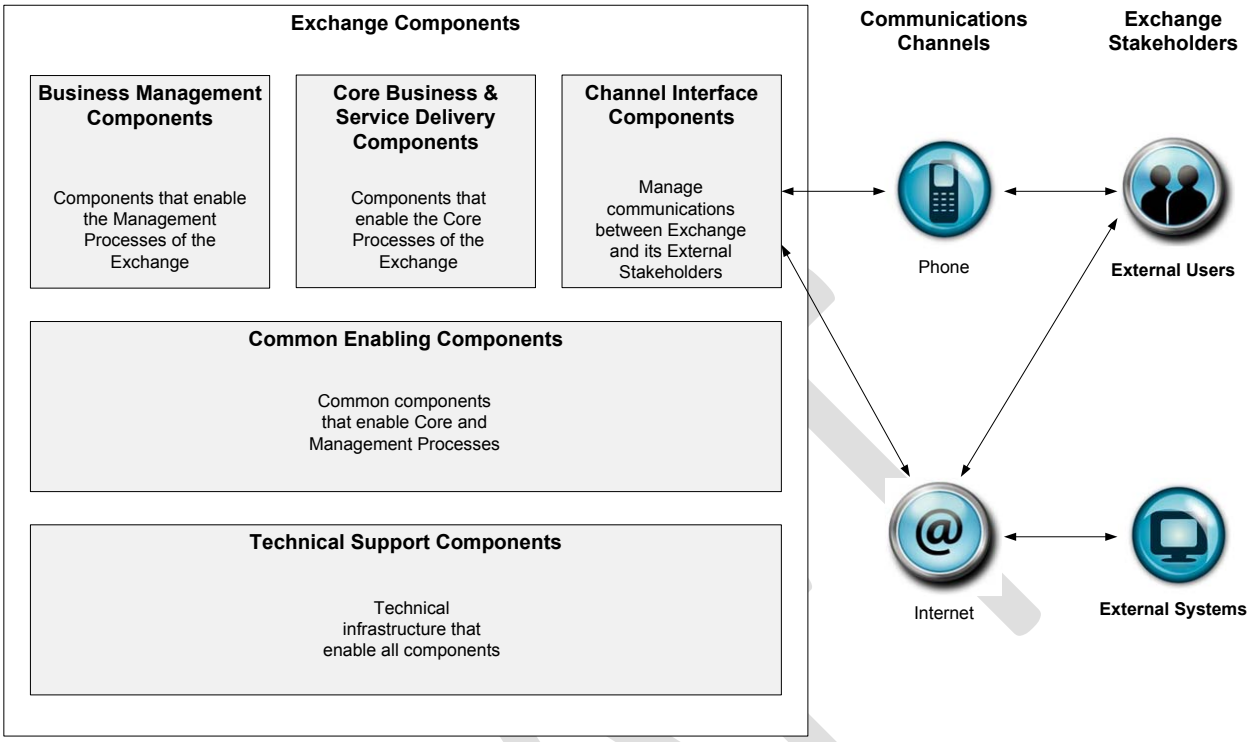
Functional Component	Functional Component Description	Service Performed by Component
Eligibility Assessment	Enables assessment of eligibility of a party for a plan, program or service.	
Eligibility Assessment		Process Individual Exemption Renewal Request
Eligibility Assessment		Process SHOP Employee Renewal Request
Eligibility Assessment		Verify Individual Eligibility for Public Minimum Essential Coverage
Eligibility Assessment		Verify Individual Eligibility for Employer - Sponsored Minimum Essential Coverage
Eligibility Assessment		Determine Eligibility
Eligibility Assessment		Refer Potentially Eligible Individuals to M CHIP for additional Screening
Eligibility Assessment		Determine Eligibility for Advance Pre Tax Credit
Eligibility Assessment		Determine Category for Cost-Shar g Reductions
Eligibility Assessment		Spare
Eligibility Assessment		Spare

A full listing of the functional and technical components may be found in Appendix B: Systems Gap Assessment Scoring.

Step 2 – Identify Relevant Current IT Assets

To determine the functional gap between the required future state architecture of the HIX and the current physical systems, the current systems were assessed against the functions provided by the Business Management Components and the Core Business and Service Delivery Components (top left corner of the Exchange Components in Figure 3). To determine the technical gap, the current systems were assessed against the Channel Interface Components, Common Enabling Components and the Technical Support Components (bottom rows and top right corner of the Exchange Components).

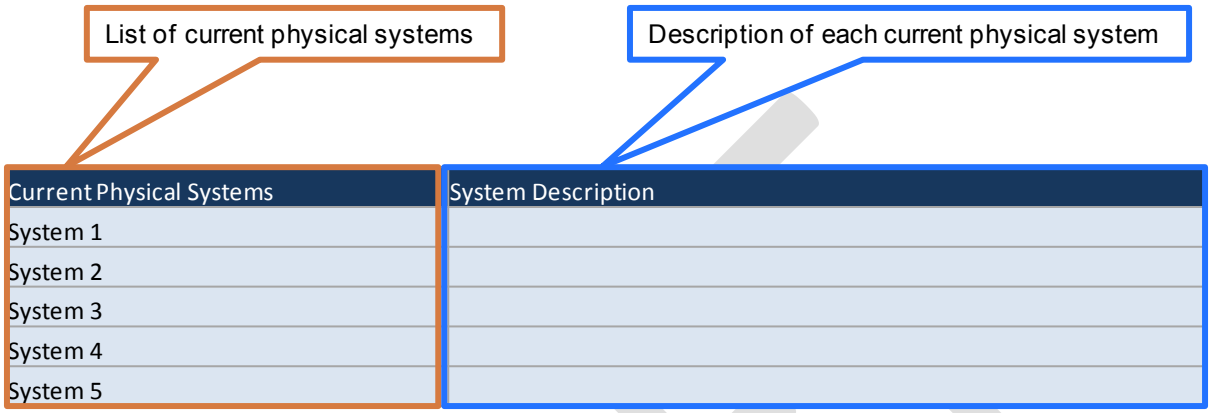
Figure 10: Structure of the Exchange Component Model



Reviewing Current Physical Systems

Secondly, KPMG reviewed the current physical systems in place. Input was provided by the Rhode Island staff and recorded in the worksheet. An extract of the worksheet is shown in below.

Figure 11: List of current IT systems to be assessed and their descriptions



The names of the current physical systems were recorded along with a brief description of each system in the "Current State IT Systems Environment" section of this document.

Step 3 – Assess Current IT Assets

Assessing each current physical system's capability to perform the functional and technical components

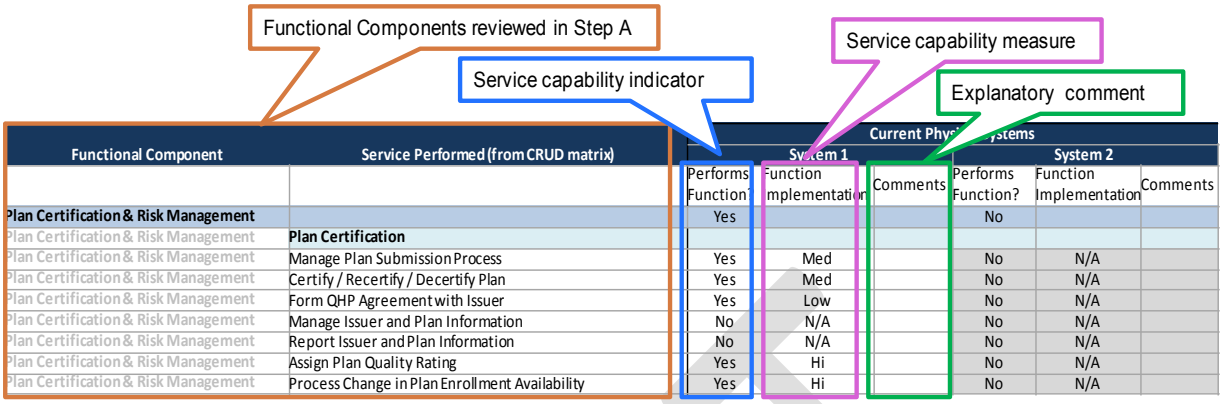
The KPMG team, along with Rhode Island staff, attempted to gauge each system's capability in performing functions for the various functional and technical components.

KPMG, in conjunction with Rhode Island staff, evaluated each system as to whether or not it performs the functions of each component and to what degree it performs that function. In determining whether or not the system performed the interested function, we rated the system with a value of yes, no or unknown – unknown indicating that further investigation was required prior to determining a yes or a no value.

If a system performed a function, we rated the system as "High," "Medium" or "Low" to indicate the extent to which a system performs the functions of a component. The system was rated "N/A" should it not perform the function and "Unknown" if the value of the system's ability to perform the function was not known.

An extract of the worksheet where this information was collected is shown in below. As indicated in the figure, we collected comments specific to the system's ability to perform the function was provided, and collected if supplied. KPMG performed this analysis for each of Rhode Island's current physical systems.

Figure 12: Functional service component rating by system



Functional Component	Service Performed (from CRUD matrix)	Current Physical Systems					
		System 1			System 2		
		Performs Function?	Function Implementation	Comments	Performs Function?	Function Implementation	Comments
Plan Certification & Risk Management		Yes			No		
Plan Certification & Risk Management	**Plan Certification**						
Plan Certification & Risk Management	Manage Plan Submission Process	Yes	Med		No	N/A	
Plan Certification & Risk Management	Certify / Recertify / Decertify Plan	Yes	Med		No	N/A	
Plan Certification & Risk Management	Form QHP Agreement with Issuer	Yes	Low		No	N/A	
Plan Certification & Risk Management	Manage Issuer and Plan Information	No	N/A		No	N/A	
Plan Certification & Risk Management	Report Issuer and Plan Information	No	N/A		No	N/A	
Plan Certification & Risk Management	Assign Plan Quality Rating	Yes	Hi		No	N/A	
Plan Certification & Risk Management	Process Change in Plan Enrollment Availability	Yes	Hi		No	N/A	

Step 4 – Conduct Fit-Gap Analysis

Calculating the Gap Between Current RI Physical Assets and the Exchange Reference Model

The values provided for each system are then translated relative to the various functional and technical components were then translated into scores. KPMG uses these scores to rate each system's ability to perform the functions and determine if the system should be reused, augmented for reuse or retired.

It is possible to revise this gap assessment as Rhode Island refines how much of the HIX ERA's functionality will be implemented. While the initial gap assessment provides a view of the gap between Rhode Island's current systems and the reference architecture, the revised gap assessment would provide findings which are refined to address the HIX implementation option Rhode Island has selected.

KPMG uses the Gap Analysis Tool to determine which current physical systems may be reused, which should be considered for retiring, and which may be augmented, either functionally or technically, to be included in Rhode Island's HIX.

Outputs

The gap analysis produces five outputs:

1. A matrix of system ratings against individual functional components;
2. A matrix of system ratings against individual technical components;
3. A rating of each system against overall functional requirements;
4. A rating of each system against overall technical requirements; and
5. A consolidated scoring of each system in terms of its reusability.

System Rating by Component

Figure 8 illustrates an example of the scoring of each system against each functional component, based on the following color scheme:

Color	Description
Green	Large amount of the component functionality is supported (71% - 100%)
Yellow	Significant amount of the component functionality is supported (31% - 70%)
Red	Minor amount of the component functionality is supported (0% - 30%)
Grey	Amount of component functionality support is unknown
White	The system was not designed to provide this functionality

Figure 13: System rating by functional component

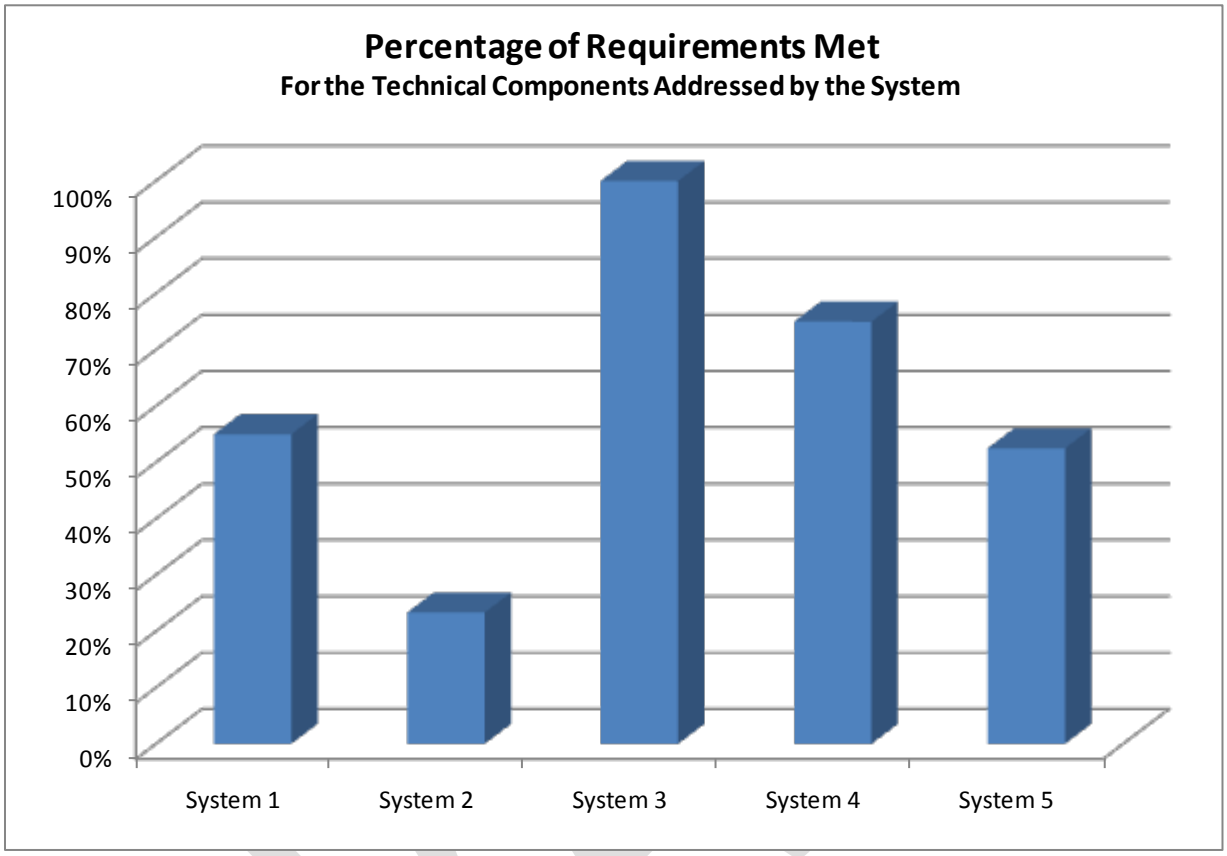
Functional Component	Current Physical Systems				
	System 1	System 2	System 3	System 4	System 5
Plan Certification & Risk Management					
Premium & Tax Credit Processing					
Eligibility Assessment					
Comparison Shopping					
Enrollment Processing					
Appeals Management					
Broker/ Navigator Relationship Management					
Marketing & Outreach					
Customer Service & Account Management					
Financial Management & Reporting					
Information Technology					
Asset Management					
HR Management					
Procurement Management					

KPMG produces a similar matrix for scoring against technical components.

Overall System Rating

Figure 2 illustrates an example of the technical quality of each system, relative to the requirements of the technical components covered by the system. It is a relative rating of how effective a system is at meeting its overall technical requirements.

Figure 14: System functional score

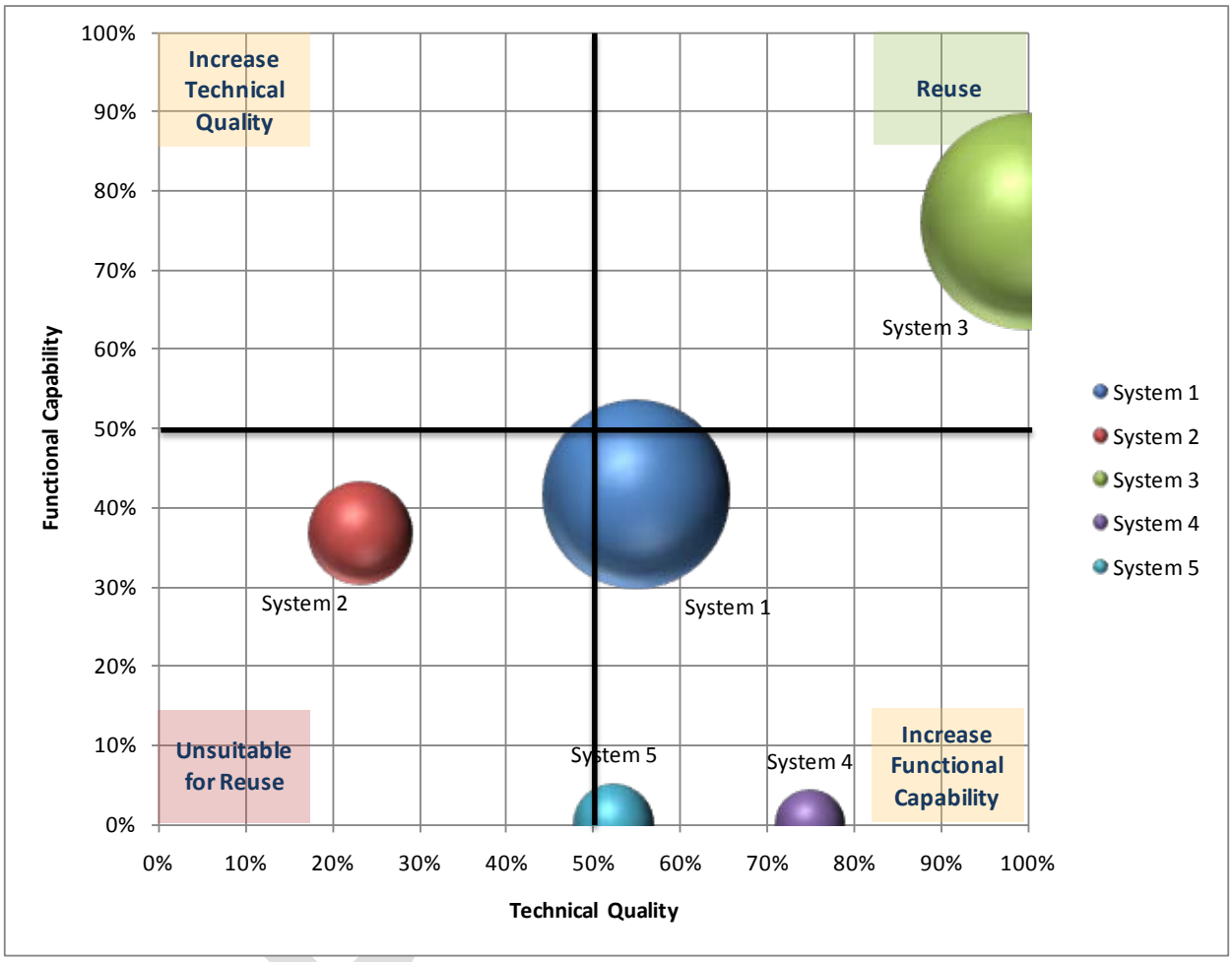


The process produces a similar graph to show how much functionality each system provides relative to the requirements of the functional components covered by the system. It indicates a relative rating of how effective a system is at meeting its overall functional requirements.

System Reusability View

Figure 10 provides at a quick glance, an example of which systems can be readily reused, which systems are unsuitable for reuse, and which systems may be made reusable by increasing its technical quality or functional capability. The size of the bubbles reflects the amount of functionality provided by the system.

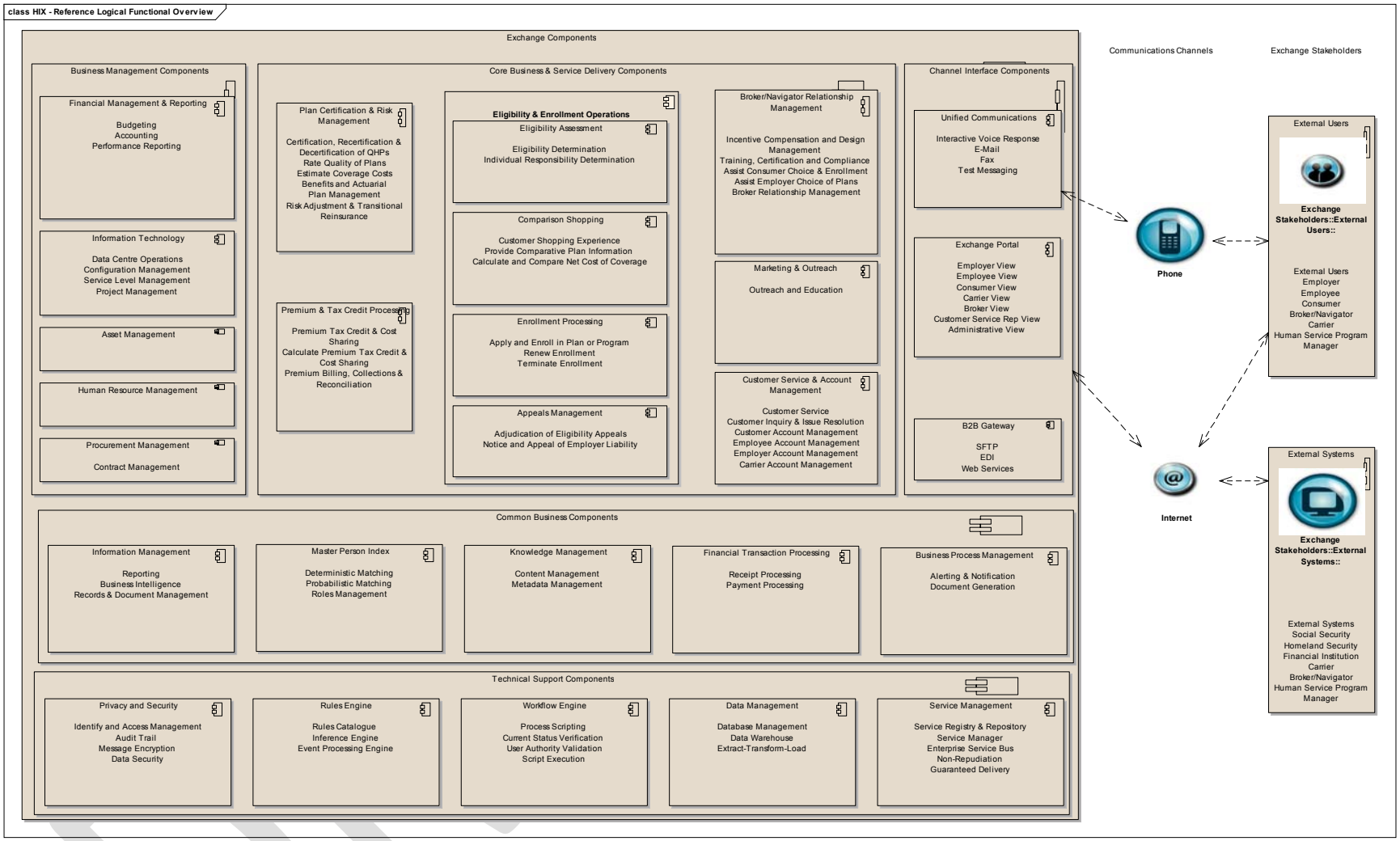
Figure 15 System Reusability View



Appendix C: Detailed HIX Logical Component Model

Figure 22 illustrates the detailed set of logical software components required to support the Rhode Island HIX. For the functional gap assessment in Section 4, the team used the Service Delivery Components and the Financial Management and Reporting component from the Business Management Components. For the technical gap assessment, the team used the Channel Interface Components, Common Business Components and Technical Support Components.

Figure 16: HIX Logical Component Model



Appendix E: IT Assets Assessment Functional Component Worksheet (Detailed View)

Functional Component / Service Performed	InRHODES			RIte Share		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Plan Certification & Risk Management	No			No		
Plan Certification						
Manage Plan Submission Process	No	N/A		No	N/A	
Certify / Recertify / Decertify Plan	No	N/A		No	N/A	
Form QHP Agreement with Issuer	No	N/A		No	N/A	
Manage Issuer and Plan Information	No	N/A		No	N/A	
Report Issuer and Plan Information	No	N/A		No	N/A	
Assign Plan Quality Rating	No	N/A		No	N/A	
Process Change in Plan Enrollment Availability	No	N/A		No	N/A	
Manage Rates and Benefits	No	N/A		No	N/A	
Monitor Plan Compliance	No	N/A		No	N/A	
Administer Transitional Reinsurance	No	N/A		No	N/A	
Adminster Risk Corridors	No	N/A		No	N/A	
Administer Plan Assessments (Surcharges)	No	N/A		No	N/A	
Risk Management						
Calculate Actuarial Risks	No	N/A		No	N/A	
Submit Transparency Information	No	N/A		No	N/A	
Manage Plan Certification Business Rules	No	N/A		No	N/A	
Manage Plan CertificationWorkflow Rules	No	N/A		No	N/A	
Premium & Tax Credit Processing	No			No		

Functional Component / Service Performed	InRHODES			RIte Share		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Automated Invoice Generation	No	N/A		No	N/A	
Automated Invoice Printing	No	N/A		No	N/A	
Capture Payment Information	No	N/A		No	N/A	
Automated Premium Reconciliation	No	N/A		No	N/A	
Determine Eligibility for Tax Credit	No	N/A		No	N/A	
Notify Individual of Tax Credit Eligibility Results	No	N/A		No	N/A	
Manage Premium & Tax Credit Processing Business Rules	No	N/A		No	N/A	
Manage Premium & Tax Credit Workflow Rules	No	N/A		No	N/A	
Identification of Delinquent Accounts	No	N/A		No	N/A	
Termination of Delinquent Accounts	No	N/A		No	N/A	
Manage Communication Business Rules	No	N/A		No	N/A	
Manage Communication Workflow Rules	No	N/A		No	N/A	
Calculate Member/Employer Premium Contributions	No	N/A		No	N/A	
Collect Employer Premium Contributions	No	N/A		No	N/A	
Collect Member Premium Contributions	No	N/A		No	N/A	
Eligibility Assessment	Yes			Yes		
Process Individual Exemption Renewal Request	No	N/A		No	N/A	
Process SHOP Employee Renewal Request	No	N/A		No	N/A	
Verify Individual Eligibility fo Public Minimum Essential Coverage	No	N/A		No	N/A	
Verify Individual Eligibility for Employer - Sponsored Minimum Essential Coverage	No	N/A		No	N/A	
Determine Eligibility	Yes	Low	Not real-time	Yes	Low	Managed care only

Functional Component / Service Performed	InRHODES			RIte Share		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Refer Potentially Eligible Individuals to Medicaid and CHIP for additional Screening	No	N/A		No	N/A	
Determine Eligibility for Advance Premium Tax Credit	No	N/A		No	N/A	
Determine Category for Cost-Sharing Reductions	No	N/A		Yes	Low	Calculates appropriate cost share
Qualify Individual for an Enrollment Period	No	N/A		No	N/A	
Verify Lawful Presence	Yes	Low	Not real-time	No	N/A	
Verify Household Income	Yes	Low	Not real-time	No	N/A	
Calculate Federal Poverty Level	Yes	Med		Yes	Low	
Verify Whether Individual is an Indian	Yes	Low	Not automated	No	N/A	
Verify Incarceration Status	Yes	Low	Not real-time	No	N/A	
Verify Individual Residency Status	Yes	Low	Not automated	No	N/A	
Verify Information Required for Exemption	No	N/A		No	N/A	
Verify SHOP Employer Identity	No	N/A		No	N/A	
Verify Employee Roster	No	N/A		No	N/A	
Verify SHOP Employee Application	No	N/A		No	N/A	
Manage Eligibility Business Rules	Yes	Low	Does not currently support ACA	No	N/A	
Manage Eligibility Workflow Rules	No	N/A		No	N/A	
Determine Insurer Eligibility	No	N/A		No	N/A	
Receive Employee List and Employer Options	No	N/A		No	N/A	
Display Eligibility Rules	No	N/A		No	N/A	
Comparison Shopping	No			No		

Functional Component / Service Performed	InRHODES			RIte Share		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Determine Plan Availability and Calculate Plan Cost	No	N/A		No	N/A	
Select SHOP Employee Qualified Health Plan	No	N/A		No	N/A	
QHP side-by-side comparison tool	No	N/A		No	N/A	
Provide Product Comparison Interface	No	N/A		No	N/A	
Enrollment Processing	Yes			Yes		
Process Employer Participation Renewal	No	N/A		No	N/A	
Accept SHOP Employer Application	No	N/A		No	N/A	
Accept SHOP Employer Application Update	No	N/A		No	N/A	
Determine SHOP Employer Contribution	No	N/A		No	N/A	
Terminate Employer Participation	No	N/A		No	N/A	
Validate Application Submission	No	N/A		No	N/A	
Review and Adjudicate Alternative Documentation	No	N/A		No	N/A	
Accept Individual Eligibility Application	Yes	Low	Specific to welfare	Yes	Low	Hard coded and program-specific
Accept Individual Eligibility Application Update	Yes	Low	Specific to welfare	Yes	Low	Hard coded and program-specific
Accept Individual Exemption Application	No	N/A		No	N/A	
Accept Individual Exemption Application Update	No	N/A		No	N/A	
Accept SHOP Employee Application	No	N/A		No	N/A	
Accept SHOP Employee Application Update	No	N/A		No	N/A	
Select Individual Qualified Health Plan	No	N/A		No	N/A	
Enroll in Medicaid, CHIP or BHP	Yes	Med	Through eligibility approval	No	N/A	
Enroll in SNAP & TANF	Yes	Med	Through eligibility approval	No	N/A	

Functional Component / Service Performed	InRHODES			RIte Share		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Process Individual Eligibility & Enrollment Renewal Request	No	N/A		No	N/A	
Assess Current Qualified Health Plan Enrollment Status	No	N/A		No	N/A	
Disenroll from Qualified Health Plan	No	N/A		No	N/A	
Store supporting document image	No	N/A		No	N/A	
Interface to Billing System	No	N/A		No	N/A	
Manage Enrollment Business Rules	No	N/A		No	N/A	
Manage Enrollment Workflow Rules	No	N/A		No	N/A	
Process Plan Enrollment Availability and Changes	No	N/A		No	N/A	
Enable Employer Product Selection	No	N/A		No	N/A	
Enable Employer Contribution Selection	No	N/A		No	N/A	
Display Employer Liability Rules (content)	No	N/A		No	N/A	
Appeals Management	Yes			No		
Implement Adjusted Eligibility Determination Resulting from Appeal	Yes	Med	Retrospective for all programs	No	N/A	
Conduct Eligibility Appeal	Yes	Low	Manual data entry - external process	No	N/A	
Conduct SHOP Eligibility Appeal	No	N/A		No	N/A	
Conduct Employer liability appeal	No	N/A		No	N/A	
Halt Appeals Processing	No	N/A		No	N/A	
Manage Appeals Business Rules	No	N/A		No	N/A	
Manage Appeals Workflow Rules	No	N/A		No	N/A	
Broker/ Navigator Relationship Management	No			No		

Functional Component / Service Performed	InRHODES			RIte Share		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Record / Modify Training	No	N/A		No	N/A	
Record / Modify Certification	No	N/A		No	N/A	
Record / Modify Compliance	No	N/A		No	N/A	
Manage Broker/ Navigator Monthly Targets	No	N/A		No	N/A	
Manage Broker Sales Objectives	No	N/A		No	N/A	
Manage Compensation	No	N/A		No	N/A	
Testing of Incentive Returns	No	N/A		No	N/A	
Online Training	No	N/A		No	N/A	
Broker/ Navigator Evaluation	No	N/A		No	N/A	
Produce Monthly Paper / E-Statements	No	N/A		No	N/A	
Self-service Broker Portal	No	N/A		No	N/A	
File Dispute	No	N/A		No	N/A	
Manage Dispute	No	N/A		No	N/A	
Manage Broker Inquiries	No	N/A		No	N/A	
Manage Broker Relationship Business Rules	No	N/A		No	N/A	
Manage Broker Relationship Workflow Rules	No	N/A		No	N/A	
Manage Navigator Relationship Business Rules	No	N/A		No	N/A	
Manage Navigator Relationship Workflow Rules	No	N/A		No	N/A	
Marketing & Outreach	No			No		
Produce Sales / Marketing Materials	No	N/A		No	N/A	
Manage Sales Leads	No	N/A		No	N/A	
Manage Marketing and Outreach Business Rules	No	N/A		No	N/A	
Manage Marketing and Outreach Workflow Rules	No	N/A		No	N/A	

Functional Component / Service Performed	InRHODES			RIte Share		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Customer Service & Account Management	No			No		
Manage Account	No	N/A		No	N/A	
Record Inquiry Information	No	N/A		No	N/A	
Manage Call Transfer Business Rules	No	N/A		No	N/A	
Administer Employer Liability	No	N/A		No	N/A	
Manage FAQs	No	N/A		No	N/A	
Manage Performance Measures / Measurements	No	N/A		No	N/A	
Manage Customer Service & Account Management Business Rules	No	N/A		No	N/A	
Manage Customer Service & Account Management Workflow Rules	No	N/A		No	N/A	
Receive complaint	No	N/A		No	N/A	
Resolve complaint	No	N/A		No	N/A	
Close complaint	No	N/A		No	N/A	
Financial Management & Reporting	Yes			No		
Automatic Data Collection (Data Feeds)	Yes	Low	Some supporting data gathered through nightly batch interfaces.	No	N/A	
Audit Collected Data	No	N/A		No	N/A	
Automated Data Mapping	No	N/A		No	N/A	
Forecasting	No	N/A		No	N/A	

Functional Component / Service Performed	InRHODES			RIte Share		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Trend Analysis	No	N/A		No	N/A	
Manage Financial Management & Reporting Business Rules	No	N/A		No	N/A	
Manage Financial Management & Reporting Workflow Rules	No	N/A		No	N/A	
Information Technology	No			No		
Asset Management	No			No		
Manage Deployment	No	N/A		No	N/A	
Manage System Specifications	No	N/A		No	N/A	
Monitor Assets	No	N/A		No	N/A	
Manage Vendor Contracts	No	N/A		No	N/A	
HR Management	No			No		
Manage Recruitment	No	N/A		No	N/A	
Manage Compensation	No	N/A		No	N/A	
Manage Job Evaluations	No	N/A		No	N/A	
Manage Performance	No	N/A		No	N/A	
Manage Time and Attendance	No	N/A		No	N/A	
Benefits, Pension, and Leave Administration	No	N/A		No	N/A	
Salary Administration	No	N/A		No	N/A	
Return to Work Administration	No	N/A		No	N/A	
Manage Professional Development	No	N/A		No	N/A	
Procurement Management	No			No		
Manage Purchase Orders	No	N/A		No	N/A	
Manage Inventory	No	N/A		No	N/A	

Functional Component / Service Performed	InRHODES			RIte Share		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Perform Cost Analysis	No	N/A		No	N/A	

Functional Component / Service Performed	MMIS			HSDW		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Plan Certification & Risk Management	Yes			No		
Plan Certification						
Manage Plan Submission Process	No	N/A		No	N/A	
Certify / Recertify / Decertify Plan	No	N/A		No	N/A	
Form QHP Agreement with Issuer	No	N/A		No	N/A	
Manage Issuer and Plan Information	No	N/A		No	N/A	
Report Issuer and Plan Information	No	N/A		No	N/A	
Assign Plan Quality Rating	No	N/A		No	N/A	
Process Change in Plan Enrollment Availability	No	N/A		No	N/A	
Manage Rates and Benefits	Yes	Low	Manual rate maintenance through administrative code tables	No	N/A	
Monitor Plan Compliance	No	N/A		No	N/A	
Administer Transitional Reinsurance	No	N/A		No	N/A	
Adminster Risk Corridors	No	N/A		No	N/A	
Administer Plan Assessments (Surcharges)	No	N/A		No	N/A	
Risk Management						

Functional Component / Service Performed	MMIS			HSDW		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Calculate Actuarial Risks	No	N/A		No	N/A	
Submit Transparency Information	No	N/A		No	N/A	
Manage Plan Certification Business Rules	No	N/A		No	N/A	
Manage Plan CertificationWorkflow Rules	No	N/A		No	N/A	
Premium & Tax Credit Processing	Yes			No		
Automated Invoice Generation	Yes	Low	More RIteShare than MMIS. Does this happen at all in this system? Invoices generated as part of Business process outsources to HP.	No	N/A	
Automated Invoice Printing	Yes	Med	Paper invoices are printed from Troy MI payment center	No	N/A	
Capture Payment Information	Yes	Med	payments can be received by mail, phone, or website. Accepts check, credit or debit	No	N/A	

Functional Component / Service Performed	MMIS			HSDW		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
			card			
Automated Premium Reconciliation	No	N/A		No	N/A	
Determine Eligibility for Tax Credit	No	N/A		No	N/A	
Notify Individual of Tax Credit Eligibility Results	No	N/A		No	N/A	
Manage Premium & Tax Credit Processing Business Rules	No	N/A		No	N/A	
Manage Premium & Tax Credit Workflow Rules	No	N/A		No	N/A	
Identification of Delinquent Accounts	No	N/A		No	N/A	
Termination of Delinquent Accounts	No	N/A		No	N/A	
Manage Communication Business Rules	No	N/A		No	N/A	
Manage Communication Workflow Rules	No	N/A		No	N/A	
Calculate Member/Employer Premium Contributions	No	N/A		No	N/A	
Collect Employer Premium Contributions	No	N/A		No	N/A	
Collect Member Premium Contributions	No	N/A		No	N/A	
Eligibility Assessment	No			No		
Process Individual Exemption Renewal Request	No	N/A		No	N/A	
Process SHOP Employee Renewal Request	No	N/A		No	N/A	
Verify Individual Eligibility fo Public Minimum Essential Coverage	No	N/A		No	N/A	
Verify Individual Eligibility for Employer - Sponsored Minimum Essential Coverage	No	N/A		No	N/A	
Determine Eligibility	No	N/A		No	N/A	
Refer Potentially Eligible Individuals to Medicaid and CHIP for additional Screening	No	N/A		No	N/A	
Determine Eligibility for Advance Premium Tax Credit	No	N/A		No	N/A	

Functional Component / Service Performed	MMIS			HSDW		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Determine Category for Cost-Sharing Reductions	No	N/A		No	N/A	
Qualify Individual for an Enrollment Period	No	N/A		No	N/A	
Verify Lawful Presence	No	N/A		No	N/A	
Verify Household Income	No	N/A		No	N/A	
Calculate Federal Poverty Level	No	N/A		No	N/A	
Verify Whether Individual is an Indian	No	N/A		No	N/A	
Verify Incarceration Status	No	N/A		No	N/A	
Verify Individual Residency Status	No	N/A		No	N/A	
Verify Information Required for Exemption	No	N/A		No	N/A	
Verify SHOP Employer Identity	No	N/A		No	N/A	
Verify Employee Roster	No	N/A		No	N/A	
Verify SHOP Employee Application	No	N/A		No	N/A	
Manage Eligibility Business Rules	No	N/A		No	N/A	
Manage Eligibility Workflow Rules	No	N/A		No	N/A	
Determine Insurer Eligibility	No	N/A		No	N/A	
Receive Employee List and Employer Options	No	N/A		No	N/A	
Display Eligibility Rules	No	N/A		No	N/A	
Comparison Shopping	No			No		
Determine Plan Availability and Calculate Plan Cost	No	N/A		No	N/A	
Select SHOP Employee Qualified Health Plan	No	N/A		No	N/A	
QHP side-by-side comparison tool	No	N/A		No	N/A	
Provide Product Comparison Interface	No	N/A		No	N/A	
Enrollment Processing	Yes			No		

Functional Component / Service Performed	MMIS			HSDW		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Process Employer Participation Renewal	No	N/A		No	N/A	
Accept SHOP Employer Application	No	N/A		No	N/A	
Accept SHOP Employer Application Update	No	N/A		No	N/A	
Determine SHOP Employer Contribution	No	N/A		No	N/A	
Terminate Employer Participation	No	N/A		No	N/A	
Validate Application Submission	No	N/A		No	N/A	
Review and Adjudicate Alternative Documentation	No	N/A		No	N/A	
Accept Individual Eligibility Application	No	N/A		No	N/A	
Accept Individual Eligibility Application Update	No	N/A		No	N/A	
Accept Individual Exemption Application	No	N/A		No	N/A	
Accept Individual Exemption Application Update	No	N/A		No	N/A	
Accept SHOP Employee Application	No	N/A		No	N/A	
Accept SHOP Employee Application Update	No	N/A		No	N/A	
Select Individual Qualified Health Plan	No	N/A		No	N/A	
Enroll in Medicaid, CHIP or BHP	Yes	Low	Direct entry for Managed Care participants	No	N/A	
Enroll in SNAP & TANF	No	N/A		No	N/A	
Process Individual Eligibility & Enrollment Renewal Request	No	N/A		No	N/A	
Assess Current Qualified Health Plan Enrollment Status	No	N/A		No	N/A	
Disenroll from Qualified Health Plan	No	N/A		No	N/A	
Store supporting document image	No	N/A		No	N/A	

Functional Component / Service Performed	MMIS			HSDW		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Interface to Billing System	No	N/A		No	N/A	
Manage Enrollment Business Rules	No	N/A		No	N/A	
Manage Enrollment Workflow Rules	No	N/A		No	N/A	
Process Plan Enrollment Availability and Changes	No	N/A		No	N/A	
Enable Employer Product Selection	No	N/A		No	N/A	
Enable Employer Contribution Selection	No	N/A		No	N/A	
Display Employer Liability Rules (content)	No	N/A		No	N/A	
Appeals Management	No		Call center captures info. Easily fixed data OK, appeals outside.	No		
Implement Adjusted Eligibility Determination Resulting from Appeal	No	N/A		No	N/A	
Conduct Eligibility Appeal	No	N/A		No	N/A	
Conduct SHOP Eligibility Appeal	No	N/A		No	N/A	
Conduct Employer liability appeal	No	N/A		No	N/A	
Halt Appeals Processing	No	N/A		No	N/A	
Manage Appeals Business Rules	No	N/A		No	N/A	
Manage Appeals Workflow Rules	No	N/A		No	N/A	
Broker/ Navigator Relationship Management	No		Demographic info on providers. Manager	No		

Functional Component / Service Performed	MMIS			HSDW		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
			cert/recert process though portal			
Record / Modify Training	No	N/A		No	N/A	
Record / Modify Certification	No	N/A		No	N/A	
Record / Modify Compliance	No	N/A		No	N/A	
Manage Broker/ Navigator Monthly Targets	No	N/A		No	N/A	
Manage Broker Sales Objectives	No	N/A		No	N/A	
Manage Compensation	No	N/A		No	N/A	
Testing of Incentive Returns	No	N/A		No	N/A	
Online Training	No	N/A	Internal training, not on-line. Separate modules?	No	N/A	
Broker/ Navigator Evaluation	No	N/A		No	N/A	
Produce Monthly Paper / E-Statements	No	N/A		No	N/A	
Self-service Broker Portal	No	N/A		No	N/A	
File Dispute	No	N/A		No	N/A	
Manage Dispute	No	N/A		No	N/A	
Manage Broker Inquiries	No	N/A		No	N/A	
Manage Broker Relationship Business Rules	No	N/A		No	N/A	
Manage Broker Relationship Workflow Rules	No	N/A		No	N/A	
Manage Navigator Relationship Business Rules	No	N/A		No	N/A	
Manage Navigator Relationship Workflow Rules	No	N/A		No	N/A	

Functional Component / Service Performed	MMIS			HSDW		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Marketing & Outreach	No		NO – Has ability to do noticing and communication, but this is more the Community Outreach program. Some between MMIS and Provider, not public	No		
Produce Sales / Marketing Materials	No	N/A		No	N/A	
Manage Sales Leads	No	N/A		No	N/A	
Manage Marketing and Outreach Business Rules	No	N/A		No	N/A	
Manage Marketing and Outreach Workflow Rules	No	N/A		No	N/A	
Customer Service & Account Management	Yes			No		
Manage Account	Yes	Low	Unclear as to what/how much data is stored in MMIS vs. interfacing systems	No	N/A	
Record Inquiry Information	No	N/A		No	N/A	
Manage Call Transfer Business Rules	No	N/A		No	N/A	
Administer Employer Liability	No	N/A		No	N/A	

Functional Component / Service Performed	MMIS			HSDW		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Manage FAQs	No	N/A		No	N/A	
Manage Performance Measures / Measurements	No	N/A		No	N/A	
Manage Customer Service & Account Management Business Rules	No	N/A		No	N/A	
Manage Customer Service & Account Management Workflow Rules	No	N/A		No	N/A	
Receive complaint	No	N/A		No	N/A	
Resolve complaint	No	N/A		No	N/A	
Close complaint	No	N/A		No	N/A	
Financial Management & Reporting	Yes			Yes		
Automatic Data Collection (Data Feeds)	Yes	Low	Some supporting data gathered through nightly batch interfaces	Yes	Med	
Audit Collected Data	No	N/A		Yes	Low	
Automated Data Mapping	No	N/A		Yes	Low	
Forecasting	Yes	Low	Externally through RIFANS	No	N/A	
Trend Analysis	Yes	Low	Externally through RIFANS	No	N/A	
Manage Financial Management & Reporting Business Rules	No	N/A		No	N/A	
Manage Financial Management & Reporting Workflow Rules	No	N/A		No	N/A	

Functional Component / Service Performed	MMIS			HSDW		
	Performs Function?	Function Imple-mentation	Comments	Performs Function?	Function Imple-mentation	Comments
Information Technology	No			No		
Asset Management	No			No		
Manage Deployment	No	N/A		No	N/A	
Manage System Specifications	No	N/A		No	N/A	
Monitor Assets	No	N/A		No	N/A	
Manage Vendor Contracts	No	N/A		No	N/A	
HR Management	No			No		
Manage Recruitment	No	N/A		No	N/A	
Manage Compensation	No	N/A		No	N/A	
Manage Job Evaluations	No	N/A		No	N/A	
Manage Performance	No	N/A		No	N/A	
Manage Time and Attendance	No	N/A		No	N/A	
Benefits, Pension, and Leave Administration	No	N/A		No	N/A	
Salary Administration	No	N/A		No	N/A	
Return to Work Administration	No	N/A		No	N/A	
Manage Professional Development	No	N/A		No	N/A	
Procurement Management	No			No		
Manage Purchase Orders	No	N/A		No	N/A	
Manage Inventory	No	N/A		No	N/A	
Perform Cost Analysis	No	N/A		No	N/A	

Appendix F: IT Assets Assessment Technical Component Worksheet (Detailed View)

	Current IT Systems		
Technical Component	**InRHODES**		
	Performs Function?	Function Implementation	Comments
Information Management	Yes	Low	Custom reporting through use of Natural programs.
Master Person Index	Yes	Low	Internal identifier used among all programs
Knowledge Management	No	N/A	
Financial Transaction Processing	No	N/A	
Business Process Management	Yes	Med	Custom coding for alerts to worker. Xerox Elixir software for generation of documents through CSE portion of system.
Privacy and Security	Yes	Low	RACF and authorization by role within the application
Rules Engine	No	N/A	
Workflow Engine	No	N/A	
Data Management	Yes	Low	Most data shared through an ETL process. Unknown database management tools.
Service Management	No	N/A	
Unified Communications	No	N/A	
Exchange Portal	No	N/A	
B2B Gateway	Yes	Low	File transfers limited to SFTP and Connect Direct.

	Current IT Systems		
Technical Component	**RIte Share**		
	Performs Function?	Function Implementation	Comments
Information Management	No	N/A	
Master Person Index	No	N/A	
Knowledge Management	No	N/A	

Financial Transaction Processing	No	N/A	
Business Process Management	No	N/A	
Privacy and Security	No	N/A	
Rules Engine	No	N/A	
Workflow Engine	No	N/A	
Data Management	No	N/A	
Service Management	No	N/A	
Unified Communications	No	N/A	
Exchange Portal	No	N/A	
B2B Gateway	No	N/A	

	Current IT Systems		
Technical Component	MMIS		
	Performs Function?	Function Implementation	Comments
Information Management	Yes	Low	1 - AMS Imaging software for ECM couple with 1 Kodak Scanner. Might be FileNet. 2 - Business Objects Xi. 3 - Print and electronic distribution through PDF. 4 - Plan to use Data Warehouse. Business Objects. Run off transactional data. Aggregate reports as well.
Master Person Index	No	N/A	Crosswalk in HSDW that links various system IDs
Knowledge Management	No	N/A	
Financial Transaction Processing	No	N/A	
Business Process Management	No	N/A	
Privacy and Security	No	N/A	Role-based table security.
Rules Engine	No	N/A	
Workflow Engine	No	N/A	
Data Management	No	N/A	Oracle
Service Management	No	N/A	
Unified Communications	No	N/A	Avaya phone system is no longer in place. Currently manual call center processes in place. Call center is external to the MMIS system. E-mail and phone are used, but not integrated. State uses GroupWise, HP uses Exchange. IVR on call center side.

Exchange Portal	No	N/A	NO. Future development of portal through pending MMIS RFP
B2B Gateway	No	N/A	Batch processes through ETL. New MMIS RFP contains requirements for ESB.

	Current IT Systems		
Technical Component	HSDW		
	Performs Function?	Function Implementation	Comments
Information Management	Yes	Med	Oracle 10 or 11, using Informatica ETL and Business Objects output, power user reports as well as reports publishable and available in Browser to wider audience. Windows Intel servers.
Master Person Index	No	N/A	
Knowledge Management	No	N/A	
Financial Transaction Procesing	No	N/A	
Business Process Management	No	N/A	
Privacy and Security	No	N/A	
Rules Engine	No	N/A	
Workflow Engine	No	N/A	
Data Management	Yes	Med	
Service Management	No	N/A	
Unified Communications	No	N/A	
Exchange Portal	No	N/A	
B2B Gateway	No	N/A	