

# **Preparing New York's Information Technology Infrastructure for Health Reform: A Gap Analysis**

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*Prepared By*



*Funded By*



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### APPENDIX A – SYSTEM REVIEW DETAILS

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## Executive Summary

### *Overview*

The Affordable Care Act (ACA) is a game changer both in terms of the culture of enrollment in public and subsidized health insurance and in terms of the infrastructure needed to support the enrollment process. Information Technology (IT) readiness will play a critical role in establishing a streamlined and integrated “no wrong door” process for accessing both public and private benefits under ACA.

NYSHealth, in partnership with New York State stakeholders, initiated a project to help New York State hone the New York vision for implementing health care reform in the most prudent and efficient way. Two national organizations, Social Interest Solutions (SIS) and The Lewin Group, were selected to do the following:

- Interview a wide range of stakeholders to gather insights and input
- Provide a detailed understanding of federal reform requirements and identify areas needing further federal clarification
- Catalog relevant New York systems for public and private programs
- Review relevant New York systems to determine functionality and potential for use in the Exchange
- Create a technology gap analysis to inform future decisions

A variety of activities took place to accomplish these tasks and work to assess the State’s readiness kept pace with new federal guidance and other environment developments.

### ***Methodology:***

A first step in the project was to review existing guidance and documentation and to meet with State leaders to understand the current New York “vision” for implementing the Exchange. One important component of this visioning session was discussing the state’s response to a U.S. Department of Health and Human Services (HHS) competitive “Early Innovators” Request for Proposals. The funding opportunity (subsequently awarded to New York) was to reward states demonstrating leadership in developing cutting-edge and cost-effective consumer-based technologies and models for insurance eligibility and enrollment in Exchanges.

State stakeholders confirmed their commitment to the elements of the Early Innovator proposal and the Project Team then conducted a series of interviews with a broad range of stakeholders to get additional perspectives and input on the evolving vision.

Through these interviews and meetings with New York leadership and key stakeholders, the Project Team identified a list of IT systems that could be relevant to the work ahead in New York. The Project Team also identified key subsystems that may have ongoing value and could potentially be leveraged for meeting federal requirements. A variety of phone, Webinar and in-

person sessions were held to narrow the list of potential candidate systems and to conduct systems demos and transactional walkthroughs.

The systems reviewed included:

### **New York State Department of Health**

- eMedNY
- Healthcare Eligibility Assessment and Renewal Tool (HEART)

### **New York State Office of Temporary Disability Assistance**

- Welfare Management System (WMS) and five sub-systems
- myBenefits
- myWorkspace

### **Hudson Center for Health Equity and Quality**

- EnrollNY
- Facilitated Electronic Enrollment Application (FEEA)

### **New York State Health Department Child Health Plus**

- Knowledge Information System (KIDS)

### **New York City Systems**

- Access NYC
- New York City EDITS
- EDITS Review
- New York City Paperless Office System (POS)

### **Other Insurance Systems**

- Liazon Bright Choices
- HealthPass NY
- HealthCare NY Web Site

The purpose of the systems reviews was to determine the current functionality and to identify assets that may be leveraged for accomplishing New York's Exchange vision. Systems on the list above were assessed for both functional (what the user needs to do via the IT system) and technical attributes (system architecture and integration capabilities) to support all or part of New York's Health Insurance Exchange system. Systems were assessed against current Federal requirements for Exchanges.

### ***Identifying Foundational Assets***

Based on analysis of New York's Early Innovator proposal, the two most valuable assets identified in the course of this assessment are:

- **The technical architecture** developed to ultimately support eMedNY and proposed as a central part of New York's Federal Early Innovator grant award. The value of this asset is its compliance with the Medicaid Information Technology Architecture (MITA) standards and its use of flexible and extendible Service Oriented Architecture (SOA) and Enterprise Service Bus (ESB) technology, all of which are required of Exchange IT systems.
- **The Medicaid Data Warehouse**, also proposed in the Early Innovator grant, which will provide robust toolsets and features that can be leveraged for the business intelligence (reporting and data analysis) requirements of the Exchange.

While enhancements and new components will be needed to make these assets comply with federal requirements, they offer a strong foundation for the proposed State Exchange. These assets are the foundational assets against which other systems (and sub systems) were assessed.

### *Identifying the Gaps*

Having confirmed the two foundational assets above, the Project Team assessed those assets against the federal requirements as of March 1, 2011 to identify the remaining gaps that need to be filled in New York. At a high level, these gaps include:

- A robust consumer and eligibility worker application (or portal) that provides a "first class customer experience" that enables real-time transactions and the exchange of information seamlessly across a number of programs.
- The limitations in terms of scalability and interoperability and the absence of an automated rules engine of the current human service eligibility and enrollment system known as Welfare Management System, or WMS. From a capacity perspective, this system will not be able to support the inclusion of additional lives anticipated in 2013 and beyond and the State will need to determine how to handle the information currently in the WMS system, which will ultimately be valuable to the Exchange.
- Needed functionality on the commercial insurance side of the house: rating and managing the offerings on the Exchange, and the small employer exchange and associated administration (i.e., Small Business Health Option Programs (SHOP) Exchange).

Drilling down on these gaps, Federal guidance specifically calls for:

- Full featured front-end web-based portal that will allow or provide for:
  - Consumers to explore the health insurance and other options available to them and to apply online for a range of benefits using a single online application
  - Community Assistors, Navigators and Brokers to help consumers apply online

- Small businesses, self proprietors and employees to explore the options available to them, to apply for the plans they select and to manage their plans and benefits
- Health Plans and Insurance Companies to set up their options in the Exchange based on required criteria set by the State
- Integration with federal and state verification and eligibility systems (such as Internal Revenue Service, Social Security Administration, Department of Homeland Security, State Eligibility systems) to verify and access information about consumers in real-time
- Eligibility determination for Medicaid (using the Modified Adjusted Gross Income rules), Subsidized Medicaid and other coverage available to consumers
- Consumers able to provide electronic point in time verification by faxing, scanning or emailing their supporting documents
- Notifications to consumers via e-mail, text messaging or paper notices about their coverage, renewals and more
- Consumers to view and manage their eligibility and enrollment information
- Electronic Recertification, Change in Circumstance and other subsequent application events
- Appeals
- Standards-based rules engine
- Document management
- Integration with other systems and services
- Accessibility and other usability standards
- Customer support
- Seamless eligibility and enrollment process with Medicaid and other State health subsidy programs and other human service programs. e.g., Supplemental Nutrition Assistance Program (SNAP – also known as Food Stamps) and Temporary Assistance to Needy Families (TANF – also known as cash assistance). Although this is not federally required by 2014, it is an objective of the ACA legislation.
- Support for consumer mediation
- SHOP Insurance Exchange offerings, employer reporting and third-party administration
- Commercial insurance offerings
  - Certification, recertification, and decertification of qualified health plans
  - Premium tax credit and cost-sharing reduction calculator
  - Quality rating system
  - Risk adjustment and transitional reinsurance
- Navigator program
- Notices
- Administration of premium tax credits and cost-sharing reductions
- Adjudication of appeals of eligibility determinations
- Information reporting to IRS and enrollees
- Outreach and education

- Free choice vouchers
- SHOP Exchange-specific functions

Given the extent of what needs to be in place by January 2013, it is likely inevitable the state will need to build elements of the Exchange from scratch to meet these and future requirements. With this in mind, the next step in this analysis was to look at existing assets that might start to close the gap.

### ***Assessing Potential Assets***

We looked at assets in addition to eMedNY and the Data Warehouse to see if they could help to fill the gaps. While we identified a number of possibilities, we did not find any asset or combination of assets that would completely fill the gaps identified above. Instead we found a variety of disconnected assets that we categorized into groups for further consideration by the state. We note that cobbling these varied assets together will be complicated and time-consuming and has some level of risk. The state will therefore need to assess the value of each asset against the potential considerations of using the asset.

The assets identified as part of the analysis were placed into several different categories for the purposes of calling out their potential contribution to the future. Asset categories include:

- Functional Asset - expertise or thought leadership
- Transitional Asset - potential temporary technical assets that could serve a bridge to more permanent solutions
- Technical Asset - code or IT services that could be consumed or repurposed by the Exchange
- Assistive Asset – support analysis and insight but might not be integrated into the Exchange

Managers and “owners” of all of the systems assessed could provide valuable insights and learnings (known as *functional* assets) to contribute to the future and implementing the Exchange. However, it is important to reiterate that the ease of accessing and using an IT or *systems* asset will be more challenging and will depend upon a variety of factors, including who (what agency, organization, company) owns or has purview of a particular asset. The state is up against an almost impossible deadline to stand up the Exchange by January 2013. State leaders will need to assess each potential asset against the considerations of time and practicality. For this reason, it is likely the State may not be able to take advantage of some of the potential assets identified in this analysis.

### ***Options and Recommendations***

In light of IT assessment findings, the report calls out five options for New York to consider in moving towards the 2013 deadline.

**Option #1** - Utilize the New York assets identified in this assessment to cobble together a solution that would work for New York (note that many assets identified were functional assets.)

**Option #2** - Look at what other states or organizations might have developed that could be leveraged for re-use in New York (note this option still must address the data structure and associated issues that arise because of WMS.)

**Option #3** – Participate in the recently announced User Experience Project. This is a project funded by national philanthropies and conducted in partnership with the Centers for Medicaid and Medicare Services (CMS) and the Center for Consumer Information and Insurance Oversight (CCIIO) to help states design state of the art, consumer-mediated, Web-based front-end interfaces to Exchanges. The project involves conducting human factors research on the consumer “psychology” in accessing health coverage and will draw on the ability of an established design firm, IDEO, in creating the blueprint for the consumer-mediated front-end system envisioned through ACA. (note: this option would still need to address considerations for supporting commercial insurance and the SHOP Exchange and dealing with the significant database issues associated with the eligibility and enrollment management.)

**Option #4** - Build everything from scratch and not leverage assets or projects supported by others.

**Option #5** - Leverage the most capable components of options #1 - #3, with the knowledge that many of these assets are functional.

The report ultimately recommends Option #5, in which New York would leverage valuable functional assets (Option #1) and build its own Exchange front-end leveraging the User Experience work (Option #3). While much of the needed functionality for the Exchange will come through this effort, it will still require New York to build robust templating capabilities to be able to consume what is set forth by the User Experience effort. It will be critical for New York to be active participants in the project.

The contribution from Option #1 in this scenario is more about the rich functional assets in New York rather than the technical assets, though certain technical assets should not be ruled out, as described in Section H. The value of the functional assets is found in the significant experience and knowledge of those who have been thinking about and working for years to develop MyBenefits, MyWorkSpace, WMS, FEEA, ACCESS NYC and learnings from the work done on the Functional Road Map. The functional expertise of these groups should be tapped as subject matter experts in the work that lies ahead while the State makes the best and most informed decisions about leveraging, building and sharing assets to meet the 2013 timeline.

Finally, the State must still address two remaining gaps: (1) New York State's need to handle the gap created by the fact WMS is not a re-usable or leveragable asset (yet it contains data for millions of individuals known to Medicaid, SNAP, TANF and more); and (2) the need for the SHOP Exchange functionalities in the Exchange. Options for filling these two gaps were not assessed as part of this project.

### A. Introduction and Project Background

Information Technology (IT) readiness will play a critical role in establishing a streamlined and integrated “no wrong door” process for accessing both public and private benefits under the Affordable Care Act (ACA). The ACA sets forth a vision that includes:

- IT systems designed to support a first-class customer experience
- Seamless coordination between Medicaid and CHIP programs and private coverage via State Exchanges
- Seamless coordination between the Exchanges and plans, employers, and navigators
- One door for consumers to access all options

To guide states in implementing this vision, the federal government has provided formal communication on IT systems development. While the ACA provides states with significant latitude in how reform is ultimately implemented, this guidance starts to set forth expectations around consumer-mediated enrollment processes, systems architecture and security, sharing of IT assets among states, and more.

NYSHealth, in partnership with State stakeholders, initiated a project to help New York State understand the breadth of federal guidance, to assess New York’s IT system readiness and to hone the New York vision for implementing health care reform in the most prudent and efficient way. Two national organizations, Social Interest Solutions (SIS) and The Lewin Group, were selected to create the Eligibility and Enrollment Systems Inventory and Plan for New York State. The project kicked off in January 2011 and concluded in April 2011. SIS conducted an eligibility and enrollment system inventory, examined the State’s existing IT assets and deficiencies, and conducted multiple interviews to garner feedback from State agencies, the Governor’s Office, New York City agencies, The Mayor’s Office, counties, health plans, consumer organizations, and many other stakeholders.

The purpose of this report is to:

- Provide a detailed assessment of federal reform requirements and identify areas needing further federal clarification
- Catalog relevant New York systems for public and private programs
- Review relevant New York systems to determine functionality and potential for use in the Exchange (mapping systems against current federal IT systems guidance)
- Create a technology gap analysis to inform future decisions

Drawing from the perspectives of various stakeholders and constituents and mapping the State’s existing IT assets to the functional requirements mandated by ACA, this report identifies the strengths, weaknesses, and disconnects with the systems currently in use or under development in New York State. This assessment of the IT system must also be reconciled with federal mandates, requirements and guidance, as well as with the vision of New York State

leadership's and key stakeholder feedback. Ultimately, this analysis should help New York to develop the best and most realistic design for adapting and extending existing systems, where practical, to meet Federal IT eligibility and enrollment mandates.

## B. Methodology

### Overall Approach

The ACA and subsequent federal guidance related to Exchanges, eligibility and enrollment systems and program integration provide an opportunity to modernize systems that will support efficient processing of public benefit and private insurance applications and management. However, in order to be successful, a state must contextualize all of this guidance in terms of the state's programs, organization structure, dynamics and consumer needs and expectations and capacity to change and adopt change. All of these local nuances provide the foundation for layering the federally required system reform prescribed in ACA.

In recognition of these critical considerations, we have developed an approach that encompasses three major components as shown in the diagram below:



Each component of our approach is critical to assessing the current capabilities as compared to requirements as well as identifying assets that may fill the “gaps” and the associated risks.

Because there is latitude in how states can assimilate the federal requirements, we met with New York leaders via group meetings and interviews to identify the areas where choices exist in an effort to establish an integrated vision with a New York twist. This vision (summarized in the Stakeholder Report), served as the basis for our methodology and associated analysis described in this gap assessment.

### **Methodology**

As noted earlier, the key steps of the project plan used to develop the findings and conclusions presented in this report were to:

1. Interview a wide range of stakeholders with both policy and technical expertise
2. Provide a detailed understanding of federal reform requirements to identify areas needing further federal clarification
3. Catalog relevant New York systems for public and private programs
4. Review relevant New York systems to determine functionality and potential for use in the Exchange (mapping systems against current federal IT systems guidance)
5. Create a technology gap analysis to inform future decisions

The methodology for each of these project components is described below.

#### **1. Stakeholder Interview Activities**

The first step in preparing to conduct stakeholder interviews was confirming the State's current vision for the Exchange with project leadership and other state stakeholders. The Early Innovator proposal formed a base for this vision, with state leadership agreeing that even if the proposal wasn't funded, the proposed approach would still be the direction the state would pursue.

Lewin and SIS (in partnership with the Core Project Team) then identified a broad list of stakeholders to interview. Groups included consumer representatives, policy experts, State and New York City officials, CMS staff, Medicaid and commercial health plans, and small business representatives. To provide stakeholders an understanding of the project and the key state and federal issues, SIS and Lewin conducted three webinars, offering an overview of relevant components of ACA and the evolving New York State vision for health care reform. The webinars offered a current New York vision as expressed through the New York Early Innovator Proposal.

Each Webinar included active discussion and questions and answers. Following the webinars, the project team conducted 11 interviews, representing 25 organizations and agencies and including almost 70 individuals. Interviews focused on the usability of the Exchange, required functionality and integration features, systems to leverage, and other recommendations for success. In each interview, individuals were asked to consider IT systems assets this initiative

should assess and business and process change considerations. Please see Appendix B for the Stakeholder Summary Report.

## **2. Provide a detailed understanding of federal reform requirements to identify areas needing further federal clarification**

The Project Team has reviewed ACA and the associated guidance, which includes:

- 1561 Standards and Protocols, Ver. 1.0, September 17, 2010  
[\[http://healthit.hhs.gov/portal/server.pt?open=512&mode=2&objID=3161\]](http://healthit.hhs.gov/portal/server.pt?open=512&mode=2&objID=3161)
- Planning Grants, September 30, 2010  
[\[http://www.healthcare.gov/news/factsheets/esthealthinsurexch.html\]](http://www.healthcare.gov/news/factsheets/esthealthinsurexch.html)
- Cooperative Agreement to Support Innovative Exchange Information Technology Systems, October 29, 2010 [\[www.hhs.gov/ociio/initiative/index.html\]](http://www.hhs.gov/ociio/initiative/index.html)
- Guidance for Exchange and Medicaid Information Technology Systems, Ver. 1.0, November 3, 2010  
[\[http://www.hhs.gov/ociio/regulations/joint\\_cms\\_ociio\\_guidance.pdf\]](http://www.hhs.gov/ociio/regulations/joint_cms_ociio_guidance.pdf)
- Notice of Proposed Rule Making, “90/10”, November 3, 2010  
[\[http://www.federalregister.gov/articles/2010/11/08/2010-27971/medicaid-federal-funding-for-medicare-eligibility-determination-and-enrollment-activities\]](http://www.federalregister.gov/articles/2010/11/08/2010-27971/medicaid-federal-funding-for-medicare-eligibility-determination-and-enrollment-activities)
- Cooperative Agreement to Support Establishment of State-Operated Health Insurance Exchanges, January 20, 2011  
[\[http://cciio.cms.gov/resources/fundingopportunities/foa\\_exchange\\_establishment.pdf\]](http://cciio.cms.gov/resources/fundingopportunities/foa_exchange_establishment.pdf)

This guidance was reviewed and discussed with federal officials at HHS and in a number of federal workgroup forums. The requirements established by these documents as well as the imbedded references therein were assimilated into a Gap Analysis Checklist. This detailed checklist was used to compare and contrast the range of capabilities of the systems that were inventoried and analyzed in New York.

The requirements set forth in the GAP Analysis Checklist served as our guide in interviewing the system “owners” for the systems reviewed in New York as well as to identify “gaps” that need to be addressed to have a fully functioning Exchange.

As with many ACA related developments, the IT guidance and information is evolving daily. A clear advantage for New York is that by being part of the Early Innovator grant project, the New York team is on frequent calls with The Center for Consumer Information and Insurance Oversight (CCIIO) as it is formulating and disseminating new guidance. Where guidance is lacking, New York has the opportunity to raise with CCIIO the need for additional guidance. New York’s participation in the Early Innovator grant will therefore not only influence other states, but likely significantly influence the federal process as well.

### **3. Catalog relevant New York systems for public and private programs**

Through interviews and meetings with New York leadership and key stakeholders the Project Team identified a list of systems that could be relevant to the work ahead in New York. The Project Team also identified key subsystems that may have ongoing value and could potentially be leveraged for meeting federal requirements. Re-use of these types of technology assets is possible because the Enterprise Service Bus architecture, proposed to meet the Early Innovator grant, provides significant capacity to re-use code, to repurpose code (by wrapping it in a “service”), to interface with multiple systems and to leverage existing data structures (such as database modules or storage).

### **4. Review relevant New York systems to determine functionality and potential for use in the Exchange (mapping systems against current federal IT systems guidance)**

We conducted a review of current state eligibility and enrollment systems identified in Section G as compared to the integrated system vision with a New York twist. The purpose of these systems reviews was to determine the current functionality of State eligibility and enrollment systems and to identify assets that may be leveraged for accomplishing New York’s vision. The reviews included identification of the technical architecture, consumer access and usability, accessibility, vertical and horizontal integration, data structure, privacy and security and rules management. The reviews also included discussion of the system with the key parties that operate and manage the system and transaction walkthroughs where we saw the system in action. Where possible and appropriate, the transaction walkthroughs allowed the Project Team to observe current users using the system in their daily activities. Throughout this process, we also identified gaps in the existing systems where they will need to be augmented to support the vision.

We reviewed the systems currently used by private insurers and/or brokers for the purpose of determining the extent to which these systems could integrate into an Exchange or require modification for that purpose. These were less intensive reviews and focused primarily on integration (i.e., interface or service level integration).

We then developed a current New York IT Map, including vertical and horizontal integration. The summary findings from this assessment are summarized in Section E.

### **5. Create a technology gap analysis to inform future decisions**

Our final step was to assess both functional and technical attributes of the potential systems for use or modification to support all or part of New York’s Health Insurance Exchange system or as part of the horizontal (system integration) solution to meet the requirements of Section 1561 of ACA. In the functional assessment, we looked at what the user needs to do via the system and described this process in non-technical language (e.g. the application needs to support address verification once an address is entered.) In the technical assessment, on the other hand, we

examined the system architecture (e.g., Cobol versus .Net, or consumer-server vs. Web-based; or transactional architecture versus Systems Oriented Architecture, etc.) and integration capabilities to meet federal and state requirements. We also reviewed potential assets from a licensing and cost standpoint.

This analysis led us to develop an overall assessment of the assets into four categories as presented below.



We also reviewed options that appear to be available from other states or activities supported by the federal government in supporting the implementation of the ACA.

The following section sets forth the findings associated with identification of the New York Systems that had relevance and could potentially help to meet the requirements of ACA.

## C: Stakeholder Interviews: Key Findings

The stakeholders interviewed varied in their familiarity with ACA and their proposed strategies and ideas for implementing an Exchange. In spite of variances, there were areas of important agreement among the stakeholders. Overall, stakeholders agreed that the Exchange should establish a simple and accessible online channel for consumers to access public and private

health insurance. Beyond the online system, stakeholders recommend that consumers have access to “navigators,” both by telephone and in-person. For both the online component and the navigation assistance, stakeholders stress that existing systems and programs (e.g., eMedNY, Health Insurance Links NYC, Facilitated Enrollers), should be leveraged as the State designs and implements the Exchange.

Stakeholders offered the following insights, comments and vision:

- The Exchange needs to be user-friendly and appealing to consumers at all income, demographic and computer-literacy levels. Stakeholders are concerned that a complicated system or a front end that resembles a welfare application will discourage consumer use of the Exchange.
- A successful Exchange will be able to interface with existing and forthcoming State, local, and Federal systems to share information effectively and securely.
- Consistency of data, such as out-of-date income information in some, but not all, databases or inconsistent listings for the same person (e.g., John Smith and John W. Smith), was cited as significant concern. Stakeholders acknowledge existing systems and databases are fraught with unclear data and finding a data “match” is challenging. They worry about this in particular when thinking about one state system.
- Stakeholders agree that public and private health care insurance options need to be offered through the Exchange (vertical integration); they disagreed as to the extent of inclusion of social services and other public assistance programs (horizontal integration). They were not all aware of inclusion of these programs in the ACA and current Federal guidance.
- Stakeholders are concerned that consumers may be uncomfortable with the personal information accessible through the Exchange and associated security and privacy concerns. An effective marketing and education campaign is recommended to alleviate these concerns.
- The “human touch” will be critical to the success of the Exchange and should include both navigational and decision-making guidance (e.g. face to face assistance, online or telephonic assistance). Several existing navigator and consumer assistance programs are in place throughout New York that should be leveraged for the Exchange.
- To assure usability of the Exchange, beta testing among users, including consumers, navigators, small businesses, and health plans is critical.
- Stakeholders believe their ongoing engagement is important to standing up a successful Exchange. Stakeholders felt a “train had left the station” with regard to the State’s Early Innovator proposal and want to be engaged moving forward.
- There is value in viewing Exchange enrollment system prototypes to better understand what 2013-14 “looks like” and to stimulate thinking and ideas.

In addition to the messages outlined above, there was skepticism that the State can successfully design and implement an Exchange that meets evolving federal requirements and participant expectations within the required timeframe. Stakeholders cite specific concern with design and

usability for consumers and other users, flexibility to truly integrate and make systems changes, and how real-time transactions, such as eligibility determinations, are handled. Despite this, all stakeholders look forward to working with the State towards the development of an effective system in a quick timeframe and see this as an incredible opportunity to improve systems.

### **D. Summary of New York's Early Innovator Solution**

An IT infrastructure that supports a consumer-mediated application will be critical to the success of any state Exchange. Recognizing this, the U.S. Department of Health and Human Services (HHS) issued a competitive "Early Innovators" Request for Proposals to reward States that demonstrate leadership in developing cutting-edge and cost-effective consumer-based technologies and models for insurance eligibility and enrollment for Exchanges.

New York State reached an important readiness milestone in being awarded a Federal Early Innovator grant. With this award, the State has provided a starting point from which to understand and examine additional IT assets and deficiencies in order to make sound decisions about how to meet the 2013 implementation timeline required of Early Innovator states.

As a grant recipient, New York has committed to support the minimum functions of the Exchange noted above with commensurate technology that must handle eligibility and enrollment in the Exchange as well as premium tax credits and cost-sharing reductions for eligible consumers. The Exchange IT systems must also be interoperable and integrated with state Medicaid programs to allow consumers to easily switch from private insurance to Medicaid and CHIP as their circumstances change. In addition, the IT systems must be able to provide data to HHS or other Federal agencies as needed.

The Principal Agency in the New York Early Innovator grant is the New York State Department of Health (DOH). The agency was awarded \$27,431,432 in federal monies and an additional amount that is allocated in a 90/10 federal/state ratio through Medicaid. New York proposed to build off of its eMedNY Medicaid Management Information System (MMIS) system to create products for the Exchange.

Today, the eMedNY MMIS system processes claims payments for approximately one of every three health care dollars paid in the state. It is also the primary source of Medicaid data used for financial reporting, program analysis, auditing, and quality measurement. This system currently processes more than 56 million transactions per month, which is an average of 470 cumulative transactions per second. This is significant processing throughput.

It is important to reiterate that it is the *technical architecture* developed to ultimately support eMedNY which was proposed as part of New York's Federal Early Innovator grant award. The value of this asset is its compliance with the Medicaid Information Technology Architecture (MITA) standards and utilizes flexible and extendible Service Oriented Architecture (SOA) and Enterprise Service Bus (ESB) technology, all of which are required of Exchange IT systems. DOH

has indicated it plans to replicate this new architecture for the purposes of establishing the Exchange.

Service Oriented Architecture is a flexible set of design principles used during the phases of systems development and integration in computing. A system based on a SOA will package functionality as a suite of interoperable services that can be used within multiple, separate systems from several business domains. So instead of building a single comprehensive system, the software is instead made up of smaller stand-alone services that can be accessed (used, shared) separately as needed. SOA is therefore more agile and efficient than traditional systems development. This flexible technology platform provides a solid foundation upon which to build or leverage the components needed to meet the Exchange requirements. Core to the IT infrastructure supporting SOA is the Enterprise Service Bus (ESB), which connects and mediates all communications and interactions between services.

In addition to the eMedNY technical architecture, the NY Early Innovator proposal includes leveraging:

- The Medicaid, MMIS and Data Center (hosting environment) to meet the standards set forth in the Health Insurance Portability Accountability Act (HIPAA), National Institute of Standards and Technology (NIST) and the Federal Information Processing Standards (FIPS) which are required by ACA and associated guidance.
- The data center hosting environment for the eMedNY (Medicaid Management Information System). This data center meets Uptime Institute's Tier III requirements; only a very small fraction of the data centers in the country meet this requirement. This data center is also ISO 9000:2000 certified.
- The Medicaid Data Warehousing system for the required business intelligence (reporting and data analysis).
- The Medicaid and Public Coverage Enrollment Center, currently under development, to provide the required customer support and call center requirements. DOH has demonstrated capacity in this area. For example, the CHIP Call Center, which was the first call center to be implemented by the Enrollment Center, handles roughly 350 calls per day and it averages 35 seconds to respond to a call. Further, the current eMedNY call center responds to more than 3,000 provider calls per day and 93% of these calls are answered in less than two minutes.

The Project Team assessed the Innovator Proposal and found that the proposed technical architecture meets the requirements under MITA and will provide a strong base for the Exchange solution. The architecture also meets the required security requirements (such as HIPAA, NIST, and FIPS). The Medicaid Data Warehouse system will serve as a strong base for the business intelligence, though it will need to be extended to support more ad hoc real-time reporting. Finally, while the Project Team did not assess the eMedNY IT architecture in the live environment, we have been advised that it is now operational.

As part of the Early Innovator's grant, New York acknowledged its commitment to the development of Exchange IT components so they are fully extensible and scalable to be "re-used" by any other jurisdictions. Additionally, New York has committed to not only meet ACA standards and requirements set forth in the Early Innovator's grant agreement and other federal guidance, but also to meet these requirements by January 1, 2013.

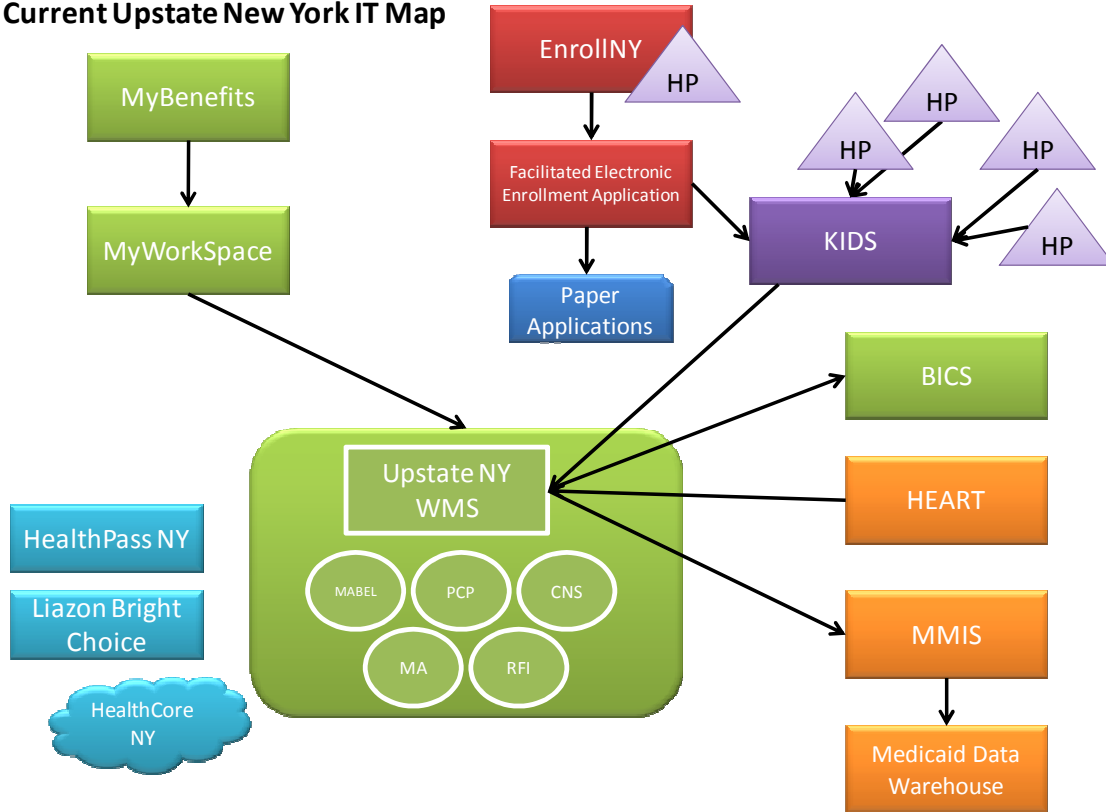
We reviewed the high-level aspects of New York's Early Innovator proposal with the State officials in a visioning session and all participants agreed the proposed solution would serve as the foundation of the New York Exchange solution – even if the grant were not awarded. With this review conducted and state commitment to this approach confirmed, eMedNY and the Data Warehouse became "core IT assets" of in this system assessment. All other "potential" assets were assessed against the proposed foundation set forth in New York's Early Innovator proposal.

The following section describes our methodology for assessing New York's technology assets in relation to the New York proposed Early Innovator solution to determine if they can be "re-used" to meet the other requirements for New York's Exchange.

### **E. Current New York IT Map**

This section provides a "map" of the current IT system layout for New York. As noted in the methodology, we identified these systems based on our team's knowledge of the IT system in New York, through information provided by project leadership and through interviews with stakeholders. In this section of the report, we have provided a graphical representation of the system using arrows to indicate how they "connect" or interface with other systems in the state. In certain instances, they do not interface to other systems in the state so there are no arrows. The first diagram provided represents the IT Map for Upstate New York.

## Current Upstate New York IT Map



The diagram above is color coded to illustrate systems operated by agency or group. The key for this diagram is below:

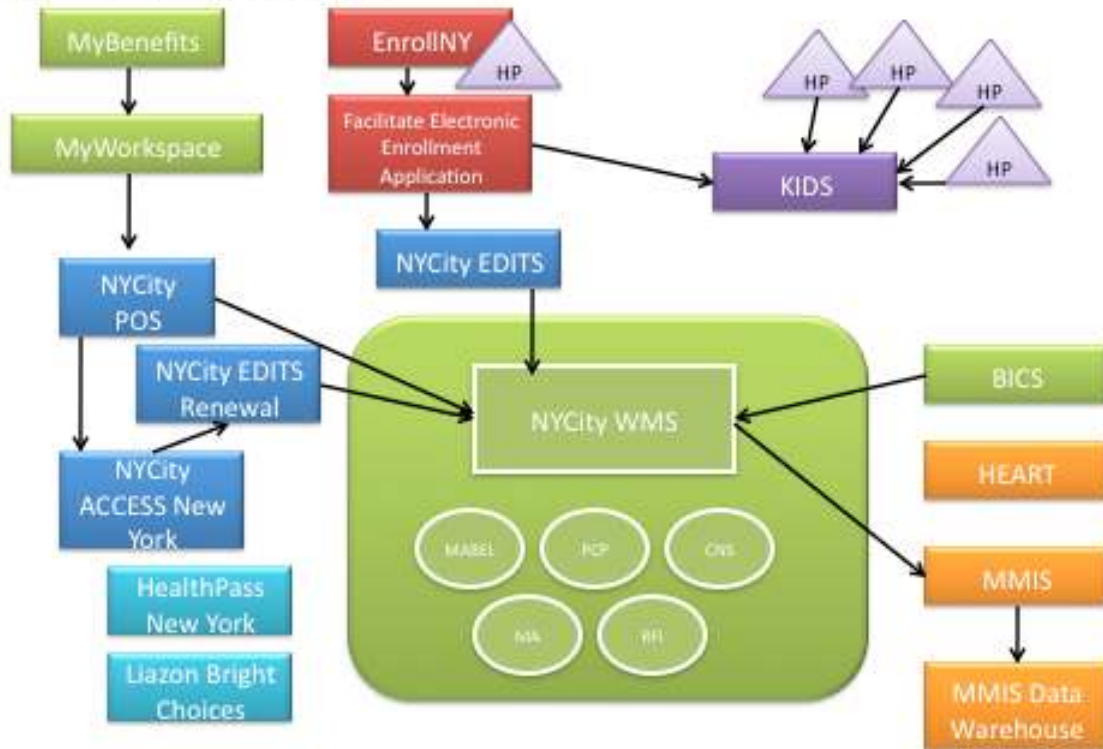


It should also be noted that there are more than 30 health plans throughout the state. The Health Plans use the same secure upload process to submit Child Health Plus data to the KIDS systems, so we did not represent every Health Plan in the diagram.

The WMS system that is operated by the Office of Temporary and Disability Assistance (OTDA) has a number of subsystems. A *subsystem* is a set of elements, which is a system itself, and a component of a larger system. The WMS subsystems are highlighted as “circles” inside the box that represents WMS. These subsystems were highlighted as each was reviewed to assess its potential to provide assets or capability to meet the needs of the Exchange.

The next diagram illustrates the IT system map for New York City. New York City has developed additional capabilities in order to meet administrative needs as well as the citizens of New York City.

**Current New York City IT Map**



The major difference between this diagram and the Upstate New York IT Map is that New York City has developed additional systems and interfaces than what are available in Upstate New York. Further, the WMS system in New York City is different than (and does not “talk to”) the WMS system used by the rest of the state. The key for this chart is presented below:

OTDA	New York State Office of Temporary and Disability Assistance
Hcheq	Hudson Center for Health Equity and Quality
NYS Health - CHP	New York State Department of Health – Child Health Plus
NYS Health - Medicaid	New York State Department of Health – Medicaid
New York City	New York City Systems
Insurance	Various Insurance Systems

The following section identifies the high-level requirements that are set forth by ACA and the subsequent guidance from the federal government. The requirements presented were used as the basis for determining whether any of the current New York IT systems provided in the maps above could meet, or help meet, these new ACA requirements.

## F. Federal Exchange Requirements

### Federal IT Requirements

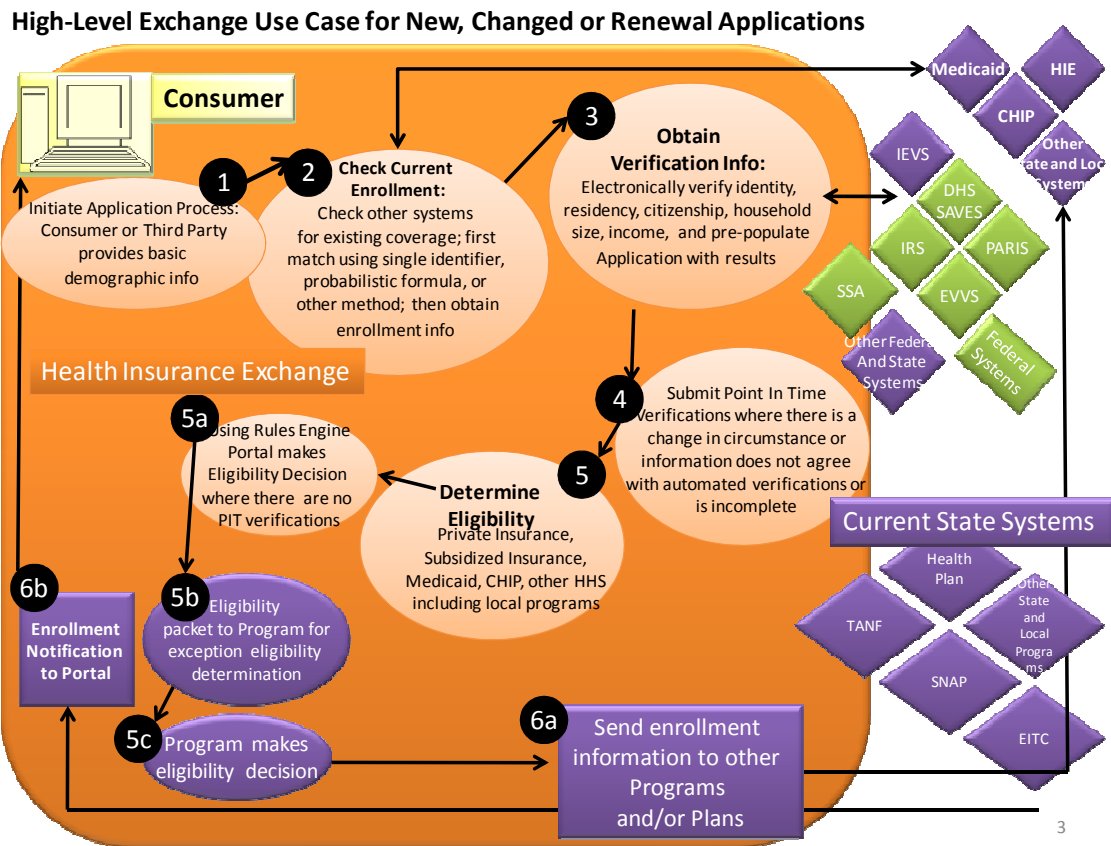
Federal guidance is both cumulative and ongoing and sets forth expectations and specific requirements around consumer-mediated enrollment processes, systems architecture and security, the sharing of IT assets among states, and more. See below for more detail on the requirements.

### Consumer Experience

The federal government requires states to develop a transparent, easy to use, online process for consumers to make choices, apply, recertify, modify and manage benefits in the Exchange. Guidance articulates a consumer *mediated* approach in which consumers own their data and make decisions about how, when and with whom it is shared. Consumer *usability* is also called out in the guidance and Exchange systems must support a range of languages and user capabilities, including usability standards under Section 508 of the Rehabilitation Act,

compliance with federal civil rights laws and standards and protocols adopted under sections 1104 of ACA.

According to guidance, consumers can expect real-time transactions, electronic verification of eligibility from federal and state databases and third party assistance in enrolling and maintaining coverage. Consumers will enter a minimal amount of personal information, and Exchange systems must provide real-time notification of eligibility and enrollment and seamless integration among all health insurance options. Systems also need to facilitate timely resolution of discrepancies for persons who cannot be handled in real-time. The Use Case provided in the graphical representation below was developed to help the ONC HIT Enrollment Workgroup consider requirements for the expected consumer experience.



In 2013 and 2014, the consumer can expect the same enrollment experience whether they enter through the Exchange, Medicaid or CHIP, SHOPS or brokers. Guidance calls for a highly responsive level of customer service, modeled on retail, banking, airlines and other industries.

## Systems Integration and Data Exchange

Seamless integration between private insurance and public health coverage options is echoed throughout all of the published guidance. Systems need to ensure seamless coordination and integration with the Exchange, and allow interoperability with health information exchanges, public health agencies, human services programs and community organizations providing outreach and enrollment. Systems are expected to connect consumers not only with health programs (vertical integration), but also with Supplemental Nutrition Assistance Program (SNAP), Temporary Aid to Needy Families (TANF) and other human services (horizontal integration). This vision, while not mandatory by 2014, suggests a high level of integration with little or no duplication.

To enable the interoperability and integration envisioned in the guidance, states are expected to use NIEM data guidelines to permit consistent, efficient and transparent data exchange between programs and states (Medicaid, CHIP, SNAP, TANF). NIEM is the National Information Exchange Model, a partnership of the U.S. Department of Justice, the U.S. Department of Homeland Security, and the U.S. Department of Health and Human Services. NIEM enables information sharing by promoting a common semantic understanding among participating organizations and data formatted in a semantically consistent manner; essentially promoting the level of standardization needed to achieve the interoperability called for in ACA guidance to date. NIEM standardizes content (actual data exchange standards), provides tools, and manages processes (see <http://www.niem.gov> for more information).

Finally, standard HIPAA transactions are required to enroll consumers into public and private health coverage programs. Guidance promotes leveraging existing HIPAA transaction standards (e.g., HIPAA 834, 270, 271) to send and respond to eligibility queries, as well as transmit enrollment data between public and private insurance programs.

### **Verification Processes**

Federal guidance requires states to utilize real-time verifications with federal and other agencies for the purposes of eligibility determination for Medicaid, CHIP and subsidies and for re-certification and change in circumstances for health insurance coverage options. Guidance recommends the development of a Federal “reference software model” to obtain verification of a consumer’s initial eligibility, renewal and change in circumstances. The Federal Government is contemplating the creation of such a “verification hub” for states to use to verify a consumer’s information against the following databases:

- Internal Revenue Service
- Homeland Security
- Social Security Administration
- National Directory of New Hires
- Electronic Verification of Vital Events Record System (EVVE)
- State Income and Eligibility Verification (IEVS) systems
- Public Assistance Reporting Information System (PARIS)
- U.S. Postal Service Address Standardization

In addition, enrollment systems should facilitate automated queries across programs to determine if a consumer is known to other eligibility and enrollment systems. If the consumer is known to another system, the Exchange system should permit for the retrieval and re-use of relevant eligibility data. Guidance also points to the use of a Web Services approach to support eligibility determinations in other health and human services programs, including Medicaid, CHIP, SNAP and TANF. States may want to use translation tools that reliably and consistently translate or transform data from various sources and formats in their implementation plans.

### **Business Rules**

Section 1561 and other federal guidance recommends that states clearly and unambiguously express their business rules outside of the transactional systems. The primary reason for this is to develop a consistent, reusable set of business logic that can be written once and applied broadly. In contrast, business rules that exist only as computer code are harder to understand, enforce, extract and modify.

A key component of the federal guidance is that Federal agencies and States express their business rules in a consistent, technology-neutral standard. The clear and unambiguous expression of business rules, as well as the output of these business rules – the eligibility finding and justification – has enormous value for both developers and consumers. Clear and consistent expression will ease development of technology solutions and facilitate seamless interoperability between programs, as developers will be able to identify and understand the rules that should be coded into new and existing systems. In addition, use of consistent rules standards would also provide maximum transparency to the consumer by providing a foundation for clear, understandable eligibility determinations.

### **Privacy and Security**

Given the unprecedented role of the consumer in enrolling in and keeping his/her public or privately financed health benefits, Federal requirements provide guidance on the need for sound privacy and security elements, with more information anticipated on this front. Current Federal guidance offers that State systems should be designed to collect and use the minimum data necessary for an eligibility and enrollment determination. This should be balanced with the desire to reuse information for multiple eligibility decisions (beyond just health coverage). Guidance calls out the need for states to have clear, transparent policies and processes for consumers about authorizing access to data. Authorization to access and data use intentions should be provided to the consumer in a Privacy Notice, presented to all consumers accessing the Exchange.

It is expected that this Privacy Notice will govern the consumer's rights to confidentiality and privacy. The Privacy Notice should be provided to the consumer *prior to or at the time of* collection of personally identified information in a method the consumer can understand. The

Privacy Notice should also clearly indicate all entities that will be permitted to use a consumer's eligibility data, as well as the permissible uses of such data.

Federal guidance outlines a scenario in which consumers have:

- Electronic access to their eligibility and enrollment data in a format they can use and reuse;
- Knowledge of how their eligibility and enrollment information will be used, including sharing across programs to facilitate additional enrollments, and to the extent practicable, control over such uses; and
- The ability to request a correction and/or update to such data;
- A consumer's ability to designate proxy (e.g., third party) access should be as specific as feasible regarding authorization

In addition, the following privacy and security safeguards are provided as a starting point for state compliance:

- FIPS (Federal Information Processing Standards)
- FIPs (Fair Information Practices)
- NIST (National Institute of Standards and Technology)
- HIPAA (Health Insurance Portability and Accountability Act)
- HITECH (Health Information Technology for Economic and Clinical Health)

Privacy guidance to date builds upon these existing practices and standards, most of which were designed to protect clinical health information but which provide a valuable starting point and framework for protecting enrollment health information. Privacy guidance was also informed by the ONC's *Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information*.

### **Systems Architecture**

In implementing ACA enrollment provisions, States must develop modular, flexible systems including open interfaces and exposed application programming interfaces. The vision is that systems are built to permit sharing (in whole or in part), and to allow for ongoing and iterative updates and enhancements. To accomplish this, systems need to be in alignment with the Medicaid Information Technology Architecture (MITA) framework and must follow the Standard Industry Lifecycle Framework (SDLC) framework. It is expected that states will take advantage of Web Services Architecture (utilizing protocols and formats such as SOAP and XML) and Service Oriented Architecture (SOA) to leverage opportunities to share and to pool configurable resources.

Systems and system components financed with federal financial participation are required to be non-proprietary, utilizing open architecture standards, to permit re-use by other states and jurisdictions. In particular, Early Innovator states must be able to produce requirement

specifications, analysis, design, code, and testing that can be easily shared with other interested and authorized parties and stakeholders, including other states.

Guidance is intended to enable states to promote, share, leverage and re-use technologies within and among states.

### **Exchange Operations**

New State responsibilities associated with the ACA include establishing Health Insurance Exchange (Exchange) operational components (e.g., authorities, organization, administration, and more), determining an approach for providing the minimum benefit package, providing an easy to use web-site for individual and small employers to evaluate and select coverage options that work for them, and providing more robust technology that supports the underpinnings or all of the Exchange responsibilities.

As ACA defines it, an Exchange is an organized marketplace to help consumers and small businesses buy health insurance in a way that permits easy comparison of available health plan options based on price, benefits, and quality. By pooling people together, reducing transaction costs, and increasing price and quality transparency, ACA envisions that an Exchange will create more efficient and competitive health insurance markets for individuals and small employers.

As required by ACA and associated federal guidance, the New York Exchange must carry out a minimum set of functions including:

- Certification, recertification, and decertification of qualified health plans
- Call center
- Exchange website
- Premium tax credit and cost-sharing reduction calculator
- Quality rating system
- Navigator program
- Eligibility determinations for Exchange participation, advance payment of premium tax credits, cost-sharing reductions, Medicaid and CHIP
- Seamless eligibility and enrollment process with Medicaid, other State health subsidy programs, and other human service programs (e.g., Supplemental Nutrition Assistance Program (SNAP) and Temporary Assistance to Needy Families (TANF). While this is not a Federal requirement for 2014, it is a goal of the ACA legislation.
- Enrollment process
- Applications and notices
- Individual responsibility determinations
- Administration of premium tax credits and cost-sharing reductions
- Adjudication of appeals of eligibility determinations
- Notification and appeals of employer liability
- Information reporting to IRS and enrollees

- Outreach and education
- Free Choice Vouchers
- Risk adjustment and transitional reinsurance
- Small Business Health Options Program (SHOP) Exchange-specific functions

### **G. Analysis of “Potential” IT Assets**

The Project Team conducted analysis of the IT systems identified in this section to assess their ability to meet the requirements outlined in Section F. This analysis included analyzing State and City systems as well as Health Plan, Private Insurance and other community based systems.

Given we had already assessed the proposed solution included in the Early Innovator grant as sound, the focus of this section of the gap analysis was to analyze and evaluate other systems in the state to identify other potential assets to fill the gaps. Evaluation and analysis were based on the following:

- Whether the system possesses any specific function or feature required in the Exchange
- Whether the system operates under an architecture that is compatible with the Exchange architecture and whether the system will be able to integrate with the Exchange
- Whether the administrative and operational structures of the system allow a cost effective way for the State to leverage its functions or features
- Other considerations include amount of retrofit required to meet the requirements, risks associated with software integration or adoption, and others
- Evaluation of possible alternatives to adoption of existing assets versus consideration of adopting new software that can assimilate functional, workflow and other capabilities learned from current software (New York assets) capabilities

Each of the assets below was thoroughly assessed and documented in terms of its specific processes, types of transactions, users, programs supported, technology architecture and integration capabilities. Findings for each system are detailed in **Appendix A**.

#### **OTHER ASSETS:**

##### **New York State Department of Health**

- eMedNY
- Healthcare Eligibility Authorization and Renewal Tool (HEART)

##### **New York State Office of Temporary Disability Assistance**

- Welfare Management System (WMS) and five sub-systems
- myBenefits
- myWorkspace

### **Hudson Center for Health Equity and Quality**

- EnrollNY
- Facilitated Electronic Enrollment Application (FEEA)

### **New York State Health Department Child Health Plus**

- Knowledge Information System (KIDS)

### **New York City Systems**

- Access NYC
- New York City EDITS
- EDITS Review
- New York City Paperless Office System (POS)

### **Other Insurance Systems**

- Liazon Bright Choices
- HealthPass NY
- HealthCare NY Web Site

This component of the analysis was conducted via introductory phone interviews followed by Web Ex demo sessions conducted for each system. If after this initial assessment, it was determined there may be potential asset, an in-person meeting that included a transaction walkthrough was conducted. A transaction walkthrough is the act of tracing a user's path through the system to complete eligibility and enrollment processes and other associated functions--a commonsense and hands on approach to learning how a process works. Finally, system documentation and other materials related to the technical architecture, volumetrics and other aspects of the systems were also reviewed.

## **H. IT Infrastructure – Gaps and Assets**

The goal of examining the IT systems above was to identify assets and to identify IT gaps and options for the state in moving towards the 2013 implementation target. With the solid foundation of eMedNY and the Data Warehouse called for in the Innovator Proposal, there still exist several significant gaps in the state's systems readiness for 2013. They include:

- A robust consumer and eligibility worker application (or portal) that provides a "first class customer experience" that enables real-time transactions and the exchange of information seamlessly across a number of programs.
- The limitations in terms of scalability and interoperability and the absence of an automated rules engine of the current human service eligibility and enrollment system known as Welfare Management System, or WMS. From a capacity perspective, this system will not be able to support the inclusion of additional lives anticipated in 2013

and beyond and the State will need to determine how to handle the information currently in the WMS system, which will ultimately be valuable to the Exchange.

- Needed functionality on the commercial insurance side of the house: rating and managing the offerings on the Exchange, and the small employer exchange and associated administration (i.e., SHOP Exchange).

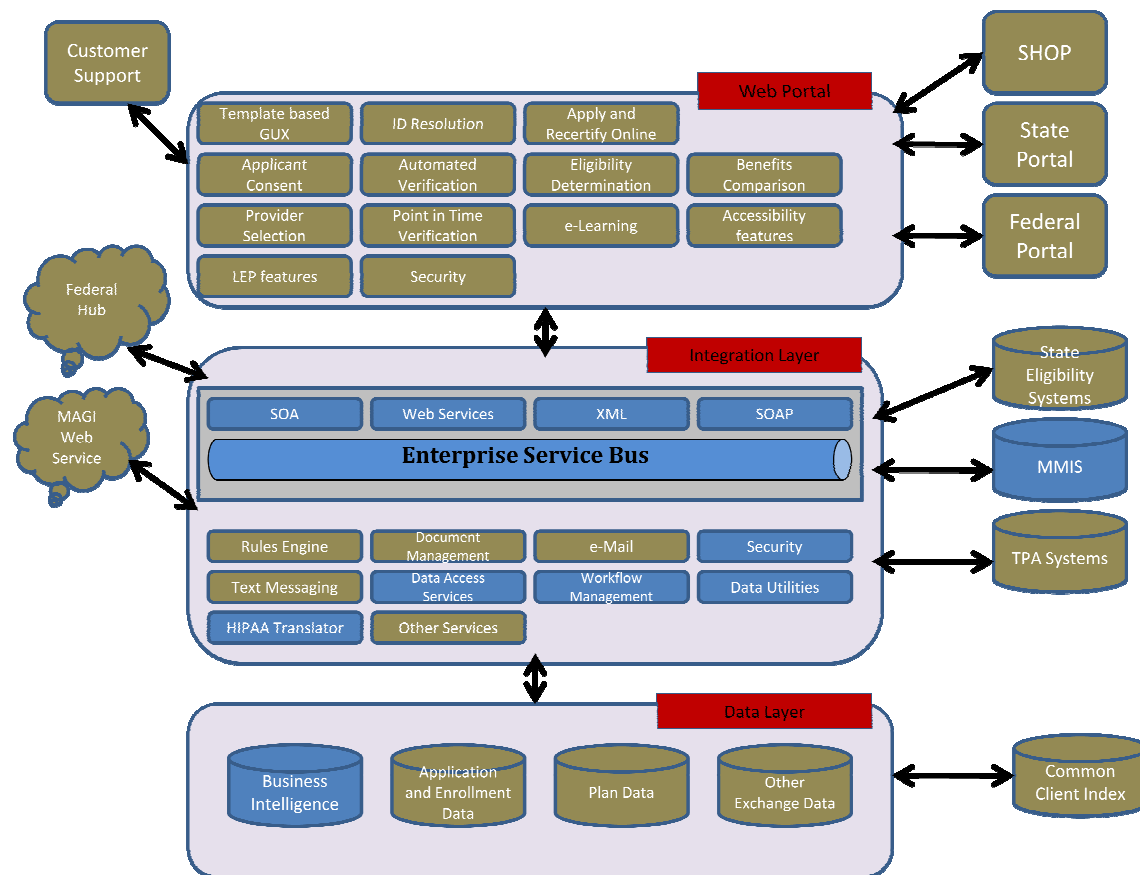
The drill-down to this high level characterization of the gaps is the list of features and functions, below, that will need to be added to the eMedNY and Medicaid Data Warehouse capabilities to meet federal requirements for the Exchange, including:

- Full featured front-end web-based portal that will allow or provide for:
  - Consumers to explore the health insurance and other options available to them and to apply online for a range of benefits using a single online application
  - Community Assistors, Navigators and Brokers to help consumers apply online
  - Small businesses, self proprietors and employees to explore the options available to them, to apply for the plans they select and to manage their plans and benefits
  - Health Plans and Insurance Companies to set up their options in the Exchange based on required criteria set by the State
  - Integration with federal and state verification and eligibility systems (such as IRS, SSA, Homeland Security, State Eligibility system) to verify and access information about consumers in real-time
  - Eligibility determination for Medicaid (using the Modified Adjusted Gross Income rules), Subsidized Medicaid and other coverage that is available to consumers
  - Consumers to provide electronic point in time verification by faxing, scanning or emailing their supporting documents
  - Notifications to consumers via e-mail, text messaging or paper notices about their coverage, renewals and more
  - Consumers to view and manage their eligibility and enrollment information
  - Electronic Recertification, Change in Circumstance and other subsequent application events
- Appeals
- Standards-based rules engine
- Document management
- Integration with other systems and services
- Accessibility and other usability standards
- Customer support
- Seamless eligibility and enrollment process with Medicaid and other State health subsidy programs and other human service programs (e.g., Supplemental Nutrition Assistance Program (SNAP) and Temporary Assistance to Needy Families (TANF)).

Although this is not federally required by 2014, it is an objective of the ACA legislation.

- Support for consumer mediation
- SHOP Insurance Exchange offerings, employer reporting and third-party administration
- Commercial insurance offerings
  - Certification, recertification, and decertification of qualified health plans
  - Premium tax credit and cost-sharing reduction calculator
  - Quality rating system
  - Risk adjustment and transitional reinsurance
- Navigator program
- Notices
- Administration of premium tax credits and cost-sharing reductions
- Adjudication of appeals of eligibility determinations
- Information reporting to IRS and enrollees
- Outreach and education
- Free choice vouchers
- SHOP Exchange-specific functions

The diagram below illustrates where and how the components of the Innovator proposal relate to the overall required functions of the Exchange.



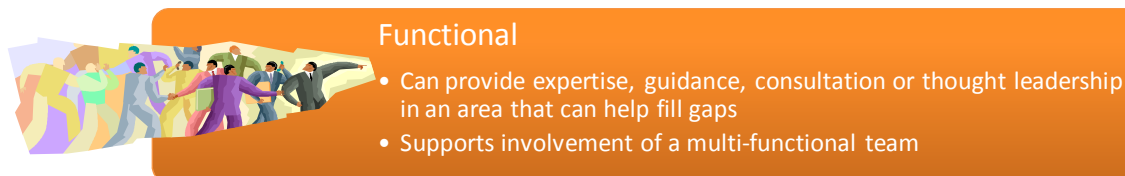
As illustrated above, there are a number of key capabilities not specifically addressed as part of New York’s Early Innovator solution (items in gray are not specifically addressed in the solution) that are required to meet the 1561 Standards and the federal guidance. The State has committed to meet these requirements.

In light of the gaps, we looked at the other assets to see where they might be used to support or fill some, or all, of these identified gaps. While we identified a number of possibilities, we did not find any asset or combination of assets that would completely fill the gaps. Instead we found a variety of disconnected assets that we categorized into groups for further consideration by the state. We note that cobbling these varied assets together will be complicated and time-consuming and has some level of risk (discussed below under Options). The state will therefore need to assess the value of each asset against the potential complications of using the asset.

The assets identified as part of the analysis were placed into several different categories for the purposes of calling out their potential contribution to the future. Asset categories are described below.



The specific assets and the rationale for their respective categorization are described below. Please refer to **Appendix A** for the detailed systems findings.



Based on our analysis, New York has a number of groups that can offer strong subject matter expertise, provide keen insights for design and adoption, and help New York avoid problematic land mines that are inherent in developing a complex system like the Exchange. The groups that we suggest can provide this functional expertise and knowledge are:

- **Hudson Center for Health Equity and Quality (Hcheq):** Hcheq has extensive knowledge about and experience with developing the consumer portal, Enroll NY, that helps individuals and families apply for a range of benefit programs. This experience could be useful in building the robust consumer front-end for the Exchange. Hcheq also has a system called Facilitated Electronic Enrollment Application (FEEA) that helps Health Plans and Facilitated Enrollment Entities (FEEs) process applications and support families who are applying. Hcheq's experience in supporting assistors could be useful in designing features to support the Community Assistors, Navigators and Brokers who will be using the Exchange. The lessons learned from developing and managing Enroll NY

and FEEA can provide real and practical insight, and make Hcheq a good candidate for participation in the functional expert group for the Exchange solution. Hcheq is a non-profit organization and the state may need to work out an appropriate approach to support their participation in this process.

- **Office of Temporary and Disability Assistance (OTDA):** The OTDA team brings valuable insight and knowledge to the table stemming from their management of the WMS systems and subsystems, as well as systems consumer-centric solutions like myBenefits and myWorkspace. OTDA's experience developing the Functional Road Map is also important as a major agency, multi-year undertaking to map the current systems and practices. While much of OTDA's work will need to be re-cast to reflect the requirements of ACA and the Early Innovators solution, there is foundational work that can be used to derive use cases, process flows, work flows and other considerations that can accelerate the work that needs to be done for the Exchange. The value of the OTDA contribution (and of all functional assets, for that matter) from the perspective of what hasn't worked for them and the kinds of challenges faced in undertaking a mapping exercise of this magnitude, may also be instructive.
- **City of New York:** The two major agencies in the City of New York (HHS Connect and HRA) have combined technology and business processes in New York City to allow families with low or no income to access the services they need. HHS Connect has developed a single online portal (Access NYC) to allow consumers to apply for benefits. Access NYC is often known for its CURAM front-end, but more relevant to the establishing an Exchange, it offers middleware technology architecture that allows seamless integration between systems. HHS Connect, and particularly its knowledge of service oriented architecture and the use of an Enterprise Service Bus, can provide important insight and experience to the planning and development of the New York State Exchange solution. We discuss Access NYC with regards to its technical assets later in this section.
- **Insurance Functional Experts:** All of three of the insurance groups we met with have experience and capability that would be very useful in building out the insurance and SHOP capabilities of the Exchange. The state will have to work with these groups to determine how and whether they would be willing to be involved in Exchange given they are for-profit businesses and their expertise may be considered proprietary. The areas of functional expertise they can offer are highlighted below.
  - **HealthCore NY:** HealthCore NY has extensive experience in working with State and Federal agencies to reduce the cost of health insurance. HealthCore NY works with State agencies and carriers on creative solutions to reduce state costs by combining revenues generated by the carriers and federal grants. The HealthCore NY team also has experience working as a broker and a Third Party Administration (TPA) agency in New York, and is currently working with the State Department of Insurance in promoting the States Healthy New York program.
  - **HealthPass NY:** HealthPass NY has experience working with business owners and self-proprietors to help them choose suitable and cost-effective private insurance solutions. HealthPass NY also has experience in working with major

carriers, health plans and brokers in New York on various insurance plans. HealthPass NY has connections and working relationships with the TPAs that operate in the state, and has expertise in the area of premium billing and collections with both the employers and individuals.

- **Liazon:** The Liazon team has developed creative solutions for business owners and self-proprietors to provide a flexible and employee choice based insurance model to their employees. Liazon also has extensive experience working with major carriers, health plans, TPAs and brokers in New York. Liazon has developed several creative tools to make the insurance choice model for the employers and their employees more efficient and effective. Liazon's work in the area of consumer insurance education could be a valuable asset in establishing the outreach and education framework required in the Exchange.



### Transitional or Temporary

- Technical assets that may fill gaps until such time as the state can replace the temporary or transitional asset
- Often times referred to as legacy (or existing) systems

Transitional or temporary assets are designed to be time limited. There is significant risk associated with adoption of this type of strategy. One risk is that the asset is designed in such a way that utilizing it would result in new systems or components not reaching their full capabilities because they had to accommodate an older, less functional system, and that the new systems would be too costly to change once the temporary asset was replaced. A second risk is that changes in funding could result in the temporary option becoming permanent, a less than ideal (and problematic) solution.

All of the assets identified below present the first risk. While the scalability and interoperability limitations could be triaged for WMS to be a temporary asset (though not without resource consumption), another major consideration is that WMS, which serves as the current central component and system of record for the eligibility and enrollment systems for Medicaid, CHP, SNAP, TANF and other programs, is a case-based system built on a hierarchical database. The Exchange absolutely needs to be person based and needs to be built on a relational database to provide the robust data management capabilities required to operate the Exchange. *Because of this risk, we would highly recommend that the state avoid consideration of using or deploying these assets on a temporary basis if at all possible.*

The reason for presenting these temporary assets is that if the state is concerned about meeting the federal deadline of January 2013 for the Exchange and needs to evaluate less optimal solutions, one alternative would be to focus on building out other aspects

of the Exchange and re-using these assets while trying to meet the Federal timelines. We want to note that when we met with New York leadership, they were clear that they did not want to compromise the Exchange solution to meet the federal timelines.

With these caveats in mind, we present the following assets that could serve as temporary gap fillers:

- **WMS Upstate and WMS New York City Version (Current Legacy Systems):**  
WMS is the current system of record for Medicaid, SNAP, TANF and other social services programs. WMS therefore has a lot of information and history that will be valuable for the Exchange. While OTDA is working on the replacement of the current WMS system, it could, if absolutely needed, serve as a temporary asset.
- **Challenges:** In order to use WMS as a database of record, the following items will need to be considered for the current WMS system.
  - **Multiple Versions:** WMS has separate versions of the system for upstate and downstate areas of New York. These two systems are separate systems and hence any change required at the WMS end will need to be done twice. A more thoughtful approach to handle the differences between these two systems will need to be addressed. In addition, the Federal government has signaled that enhanced match funds for Exchanges may not be used to support multiple state eligibility and enrollment systems. This would also need to be considered in making this decision.
  - **Database:** WMS resides on an older generation hierarchical database technology that is not ideal for the load and concurrency that is expected in the exchange solution. The OTDA team has already migrated certain features to a separate ORACLE database because of WMS' capacity issues. Appropriate capacity planning will need to happen for WMS to be a part of the exchange solution.
  - **Case vs. Person:** WMS is case based. This means that units of work are tracked by a case rather than a person. More modern systems are person based so that you can track individuals through multiple cases. This construct can be managed around to accommodate these limitations, but requires extra programming of the new systems and had inherent limitations.

If WMS is used as a temporary asset, then other temporary assets may be used to facilitate integration and capabilities on a temporary basis. These temporary assets are systems that currently integrate with Upstate WMS (i.e., myBenefits and myWorkspace which is currently only operational for SNAP) or with the New York City version of WMS (i.e., EDITS and EDITS Renew for Medicaid and

Medicaid Renewals and POS for SNAP). These systems serve to integrate key program applications with WMS. A range of temporary solutions could be used, from extracting the WMS interface logic and putting it in a service to be deployed on the Exchange to having workers use these systems as they do today to support automated integration with WMS. Clearly, this cobbling to make WMS work in the Exchange has trade-offs that the State will need to consider.

- **HEART's Rules:** HEART is a system that Department of Health has developed using Web services to support Medicaid Renewals. In order to calculate Medicaid for a renewal, one basically has to apply all the Medicaid rules. To make this more rational, HEART has developed a table-based rules set to determine eligibility for Medicaid. Although having the Medicaid rules codified in this table-based rule set will be useful, this approach to rules lacks certain key components and designs of the required rules engine for an ACA solution including:

- Being a centralized plug and play module
- Adhering to the federal standards such as Structured English, SVBR and RFI standards
- Service based architecture and design

The HEART Medicaid rules could be used temporarily for the Exchange solution while the transition to a more sophisticated rules engine is underway.

- **Challenges:** The following items will need to be considered.
  - **Expansion:** While the rules in HEART have been thoughtfully codified into a rational table-based format, the rules engine to support the Exchange will need to accommodate new Medicaid eligibility rules (i.e., MAGI) and other programs that will be supported in the Exchange. It may be practical to convert the traditional Medicaid rules logic codified in HEART to a new rules engine and then add the new Medicaid, insurance, premium tax calculations, subsidy calculations and other programs into a new rules engine.
  - **Externalization:** The HEART table-based rules set would need to be externalized to fit into the Exchange solution and offer reusability.
  - **Note:** HEART is person-based vs. case based and utilizes a relational database (required for data management capabilities under ACA.)



### Technical

- Assets where code and/or services can be used or consumed by the Exchange to meet one or more of the Federal requirement

As stated throughout this report, we believe the eMedNY MITA compliant technical architecture, the Medicaid Data Warehouse and the Medicaid Data Center proposed in the Early Innovator Grant are strong technical assets upon which to build the Exchange. In addition to these assets, our analysis identified other technical assets that we believe should be assessed further for potential re-use by New York's Exchange. As with all assets, the ease of accessing and using these IT assets will depend upon a variety of factors, including who (what agency, organization, company) owns or has purview of a particular asset and how easily and quickly it might be adopted or used by the state. State leaders will need to assess each potential asset against the considerations of time and practicality. The potential technical assets are described below.

- ***Facilitated Electronic Enrollment Application (FEEA)***

FEEA is an easy to use tool for health plans and other Facilitated Enrollment Entities (FEEs) to process applications for a range of programs. FEEA also has the technology and architectural support for integration with external systems. Some of the features that FEEA has could be beneficial for the Exchange solution, including:

- **Managing Supporting Documents:** FEEA has a simple yet sophisticated feature that allows users to separate the digitized copies of each supporting document that are received by fax and categorize them into different document types (e.g., Birth Certificate, Pay Stubs, other verification documents). This solution allows seamless integration with imaging systems, and provides a mechanism that could allow the front end users of the Exchange to work on the digitized documents in an easier way.
- **Centralized Data Validation:** FEEA has a centralized data validation feature that presents missing required information in a single view before the eligibility determination happens and allows users to navigate to the specific data elements that are missing. This feature could be a useful feature in the Exchange.
- **Common Consumer Index:** Hudson Center is working with a group of FQHCs in the state to develop a common consumer index that will be added to FEEA as a future enhancement. This common consumer index, which will store essential client data in a common repository to permit tracking and identification, could be an important and useful asset for the exchange solution in order to provide a single view of consumer information.

**Challenges:** In order to utilize any of the above-mentioned features from FEEA, Hcheq will need to transfer the technical assets for these features to the State. Because FEEA is licensed, proprietary software, appropriate considerations would need to be made to address this asset transfer.

- **HHS Connect Middleware**

HHS Connect's solutions (including Access NYC) operate on a sophisticated and robust technology middleware. This middleware is built using IBM MQ Series and I-Way Enterprise Service Bus and provides an enterprise backbone that operates on a Service Oriented Architecture. The architecture employs web services, SOAP, XML and other open standards and is MITA compliant. This middleware connects to a range of systems and services using web services and SOAP over HTTP, and has many services such as data transformation, single sign-on, access management, exception management, logging, configuration management and data filtering that could be used by external systems including the Exchange. This middleware connects to a common consumer index to provide a common view of the consumer information that is pulled from various sources. We believe this could be a significant asset for the Exchange. This middleware also employs the NIEM standard for the data housed and is capable of handling the volume and concurrency of transactions required in the exchange based on the load test results we have received from HHS Connect.

This middleware is similar to the middleware of eMedNY that the State proposes to utilize as the backbone of the Exchange solution. Although we don't propose the HHS Connect middleware to replace the eMedNY middleware, we believe that these two enterprise middleware systems could potentially supplement each other by sharing services and features. An example might be the common client index service that is operational in Access NYC and may have value for the Exchange. Because both eMedNY and Access NYC use loosely coupled web services on an Enterprise Service Bus, the likelihood of the Exchange being able to re-use a service from Access NYC is high. That said, the complications of jurisdictional ownership of IT assets may complicate the ease of such sharing.

**Challenges:** In order to leverage this middleware, the following things will need to be considered for this integration:

- **Expansion:** The HHS Connect middleware is operational in New York City only and hence will need to be expanded to accommodate the rest of the state.
- **Transfer of Assets:** HHS Connect would need to transfer services to the Exchange. These services were developed by New York City and are not part of the CURAM license. While the transfer of services would likely be allowed, the State would need to engage with New York City to insure that

the transfer could take place, if assets were determined valuable to the Exchange. The complications and time needed to accommodate a transfer, and the timing considerations for the State will be important considerations in assessing this option.

- ***Liazon Bright Choices***

Liazon Bright Choices provides a number of useful technical assets that could be adopted and adapted by the Exchange in both the public and private insurance areas.

- **On-line Insurance Portfolio Management:** Bright Choices provides on-line insurance portfolio management that allows employees and employers to select insurance options, compare plans and manage their insurance enrollments and renewals. This feature, which is simple, robust, and easy to use, would clearly be valuable for the private insurance arena of the exchange but could also be utilized to bridge the public and private options and allow consumers to manage their benefits portfolio online.
- **Online Education Subsystem:** Bright Choice's education subsystem provides a creative e-learning module through an online video library. The uniqueness of this module is that it has the intelligence to personalize the videos based on the individual user and organization and based on the user's need. Bright Choices is also working on an enhancement to this module that will have an intelligent audio component where the system can even talk to the user who is logged in. This education subsystem could be a useful asset in the Exchange to educate the consumers on various aspects of the Exchange offerings, consumer options, subsidies, premium tax calculations and so much more.
- **Advance Decision System:** Bright Choice's Advance Decision system allows users to answer certain basic questions about their health and other situation and recommends appropriate insurance options for them. This could be a useful feature to guide consumers through their choices on the Exchange or to guide small employers in selecting benefit packages for their employees.
- **Health Risk Assessment Tool:** Bright Choice's Health Risk Assessment tool allows users to answer certain basic questions about their health and get an assessment of their health risk in order to choose the right health insurance plans for themselves. This could be a useful feature in supporting consumers who will have a range of choices to consider on the Exchange.

**Challenges:** Liazon is proprietary licensed software. We discussed with Liazon the federal requirements of the Exchange and the need to have systems assets which

are transferrable to and re-usable by other states. They signaled an interest and willingness to work with the State to determine the feasibility of this.



### Assistive

- Assets that may support analysis of Exchange offerings
- These assets are used to help provide insight about a part of the system and would likely not persist once the system is implemented.

The following assets or capabilities are associated with proprietary licensed software or are service offerings that would likely also come with a charge to the State. As with other assets, the State would need to assess the value proposition for each of these before proceeding. The assistive assets that may be helpful in establishing or operating the Exchange are described below.

- ***Liazon's Advance Decision System***

Liazon's Advance Decision System allows users to provide the information about their health and other situation and recommends appropriate plan options to them. Liazon has developed an engine that supports this decision system. This engine could be used to feed certain information about the uninsured population in the State and help the State identify the specific plans and options that need to be offered in the Exchange. We understand that the State will be required to offer the minimum benefits package; this decision system could be used to establish the higher levels of coverage on the Exchange.

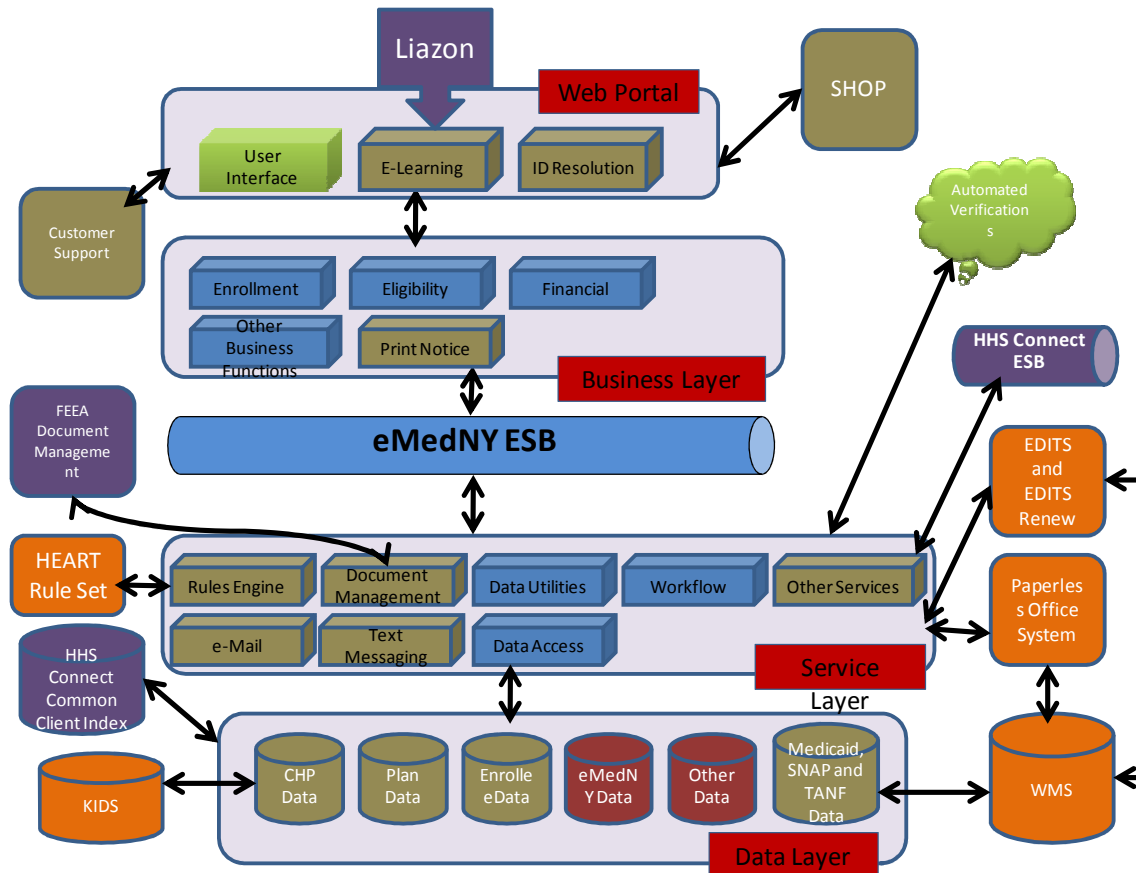
- ***Liazon's Carrier Rating Engine***

Bright Choice's carrier rating engine determines the rating of a carrier based on set criteria. The State could use this engine to have a rating mechanism for the carriers who would want to participate with offerings on the Exchange.

- ***HealthCore's Promotional Expertise***

The HealthCore team has extensive experience and expertise in promoting the Healthy New York program and several other products through mass media, radio, television, social networks and other mechanisms. This knowledge and expertise will be a useful asset for the State for the promotion of the Exchange.

This analysis identified a number of potential IT assets that could be leveraged to fill gaps in the Exchange. Taking the choices presented above and overlaying them on the solution proposed for the Early Innovator Grant, starts to paint the following picture of what this might look like:



Conceptually, some of the gaps could be filled or augmented by New York assets, but there are tradeoffs and considerations the State will need to assess in making decisions about technology and other assets. See the coding legend below for more insights and cautions regarding this diagram:

- Blue – Exchange capabilities proposed in the Early Innovator solution.
- Maroon - Potential technical assets that may serve as permanent capabilities on the Exchange depending on complexity in acquiring
- Orange – Temporary assets that we strongly advise to try to avoid using
- Gray – Assets that do not yet have a solution and would have to be developed

- **Green** – A key component asset that no solution was identified as of yet, but that may be a likely solution forthcoming from the federal government or its partners.

Even with the proposed Early Innovator solution and the assets that may be adopted from other New York systems, there are still gaps that must be filled to meet the requirements of the Exchange and the anticipation of additional Federal guidance on eligibility and enrollment for ACA.

## I. Options for Moving Toward 2013

The good news is that, however imperfect they may be, New York does have options for filling the gaps, including:

**Option #1** – As possible, utilize the New York assets (most of which are functional) identified in the previous section to cobble together a solution that would work for New York.

**Option #2** - Look at what other states or organizations might have developed that could be leveraged for re-use in New York. In this option, consideration of Exchange software or prototypes from other states (i.e., Massachusetts, Utah and Wisconsin) or those that may be developed by other innovator states and/or consideration of third party administration software to support the insurance needs of the Exchange. This option still must address the data structure and associated issues that arise because of WMS. The benefit.

**Option #3** – The recently announced User Experience Project presents an option for New York to participate with other states, CMS, CCIO, ONC and other philanthropies in a project to maximize the design integrity of health insurance exchanges. The project will conduct human factors research on the consumer “psychology” in accessing health coverage and will draw on state of the art design firms in creating the blueprint for the consumer-mediated front-end system envisioned through ACA. This option would need to address considerations for supporting commercial insurance and the SHOP Exchange and dealing with the significant database issues associated with the WMS eligibility and enrollment management.

**Option #4** - New York could also choose to build everything from scratch and not leverage assets or projects supported by others.

**Option #5** - Leverage the most capable components of options #1 - #3.

After careful consideration of these options, the strongest approach for New York would be Option #5, a combination and leveraging of components from options #1 - #3. Because the State has already agreed it will leverage the eMedNY architecture and

utilize the Data Warehouse, it has addressed the foundational requirements of systems architecture and reporting and analysis under ACA. With that as the start, the State could participate in the User Experience project to get much of what it needs to fill gaps. This option still will require work to integrate outcomes of the User Experience project in New York, but the project will produce a valuable prototype to guide the state's work on this.

As the State is participating in the User Experience Project, it should simultaneously incorporate the *functional assets found in Option #1* (here referred to as the expertise, the lessons learned and the understanding of the barriers that need to be overcome from the functional experts and organizations identified). The State should also be mindful of the several potential *technology and assistive* assets identified above. This combination option purposefully omits the *temporary* asset approach based on the considerable risks described previously. Finally, this recommendation is made with awareness that adoption of technical and assistive assets have tradeoffs and challenges, described above.

The rationale for selecting this combined option and approach is summarized as follows:

**Option #1:** As stand-alone solution, there are too many small and disparate assets identified to try to “re-use” them in an efficient manner. There is significant challenge (and risk) in trying to make sense of and understand all the current coding, and in modifying the various workflows, data structures and code to conform to the business requirements of the Exchange. The other significant challenge for solely looking to re-use New York's current assets is they have all been designed to deal with the WMS system, as it is the current center piece for eligibility and enrollment software. As stated, WMS is an out-of-date system built for a different time and different business needs. As a result, many of New York's other systems assets have been limited by having to accommodate WMS. The reason Option #1 makes it to the final recommendation is more about the rich functional assets in New York. There has been a lot of valuable thinking and work to develop WMS, MyBenefits, MyWorkSpace, FEEA, ACCESS NYC, etc. The functional expertise of these groups should be tapped as subject matter experts in the work that will be required as part of Option #5.

**Option #2:** We have reviewed all the other known state Exchange offerings and prototypes. While we believe there are lessons that can be learned from them, as they currently stand, none of them provide a complete or robust fit for New York. At a high level, the Massachusetts Exchange, for example, has very limited integration across other systems. The user experience is not seamless. If a person starts at the Massachusetts Connector and determines they are likely eligible for Medicaid, they are directed to complete a paper application for Medicaid. The Utah Exchange is for small businesses. Like the Massachusetts Connector, it does not integrate with Medicaid. Wisconsin's Exchange prototype, we believe, may come the closest to presenting a more “integrated and seamless” user experience between Medicaid, commercial and

SHOP Exchange capabilities. For example, the Wisconsin prototype has modeled features including data collection, account establishment, and supporting a variety of channels; it has not yet tackled identity resolution, data verification, and more. However, given where it is in its evolution, it may have more difficulty adopting and seizing the lessons and capabilities of User Experience project set forth in Option #3.

We do believe there are opportunities for New York to leverage capabilities of a number of insurance third party administrators to support the requirements to meet the SHOP Exchange and the qualification, rating and management of other commercial insurance offerings on the exchange. The SHOP Exchange and associated administration is one of the more complex areas that must be addressed as part of the ACA requirements. It was not in scope for SIS to evaluate these third party administrator options and alternatives in this project, but we would recommend that New York conduct this evaluation early in its Exchange project so it can determine what it is building around.

**Option 3:** This option is designed to produce a user experience vision, overall design and interactive components that would address the universal enrollment needs of state and federal Exchanges. The option and its deliverables are hoped to improve the user experience along federally required dimensions with tools that allow for state-specific situations. Further, this option is intended to introduce key efficiencies into the design process through centralization of design standards and component driven design that allows for re-use of key elements within a structure of flexibility, and broad distribution and usage at scale. The limitation of this option alone, is that it does not address some of the other major gaps such as the WMS replacement (the lives currently in WMS will ultimately need to live in a more scalable and robust database), the third party administration for SHOP and commercial insurance functionality, so it can not be a stand-alone option.

**Option 4:** Time becomes the biggest barrier to Option 4. While time is a critical factor in all these options, including Option 5, building the entire New York Exchange would be an enormous undertaking. Years have been devoted to developing the Functional Road Map for replacement of WMS, signaling this is not a flip of the switch change. In addition, this approach excludes use of third party systems that could be integrated into the infrastructure proposed for the Exchange to handle the health insurance offerings and SHOP Exchange capabilities. This may be the place to buy, versus make, so that the State's resources, subject matter experts and other capabilities can focus on the Medicaid, CHIP and other human service program offerings on the Exchange. Further, there are significant policy implications associated with shifting the eligibility and enrollment functions from WMS to the Exchange that will need to be worked through by all parties. Accordingly, we do not recommend this option.

**Option 5:** This option takes the best of breed of the other options as much as possible. New York would build its own Exchange front end leveraging the User Experience work. This will require New York to build robust templating capabilities to be able to consume

the capabilities set forth by the User Experience team. It will be critical for New York to be active participants in the User Experience project.

It is important to note that in pursuing this blended option of #1 and #3, New York will also have to build database capacity to address the shortcomings of the WMS system which has limitations in terms of interoperability, is case versus person driven and which has exceeded its capacity limitations. Part of the proposed approach to this is a common persistent data storage that tracks activity at a person or member level. In order to support the integration across a number of systems, this approach is going to be essential. It is our belief that significant database design and architecture will need to take place concomitantly with state policy and practice decisions regarding the operation and management of programs offered through the Exchange. Finally, none of these options handles the need to build out the SHOP functionality of the Exchange, which as mentioned earlier, was not in scope for this analysis.

All of these options are still going to require strong Exchange organization, strategic decisions on administrative efficiency (including program integration and management), decisions on essential benefits and insurance offerings, inclusion of SHOP Exchange operations and strong IT governance. Because the Exchange will be operational across programs and across agencies, it will require capable customer support operations including call centers, online help, navigator programs and more. There is much to do in a short time, and there are many moving parts. Given that New York is an Early Innovator Grantee, this work is supposed to be done by January 1, 2013. For each of the options presented above, we believe that meeting the January 1, 2013 deadline is a significant, and that New York, like other states will face enormous challenges in meeting the deadlines. New York and others will need to work closely with the federal government to continue to move toward an optimal technical solution, maintain the federal financing and achieve the desired outcomes for all, even if ultimately, the work is not completed by January 1, 2013.

## **J. Conclusion and Next Steps**

The technical architecture developed to support eMedNY and the Medicaid Data Warehouse (both components of the Early Innovator proposal), offer a strong foundation for the proposed State Exchange. The technical architecture described in the eMedNY solution has not yet been assessed in the live environment and will therefore need to be assessed on this front. Further, services developed as part of this architecture will need to be loosely coupled and tested for externalization. This will insure that they are “re-useable” by other jurisdictions, which is a requirement of the Early Innovator Grant.

There are a number of next steps that the State needs to initiate regardless of which options are selected from those presented above. These could include:

- Establish IT Governance appropriate for the Option selected.
- Conduct agency briefings to make sure that state agencies align and do not invest in technology strategies that are not consistent with the overall direction.
- Conduct agency impact assessment (there is considerable change for all agencies, DOH, OTDA, Insurance that must be planned for and addressed as part of the Exchange process)
- Establish the process for replacing WMS capabilities in a way that is complimentary to the Exchange capabilities and requirements. This will likely include taking advantage of the 90/10 financing that is available through the federal government.
- Promote community involvement and impact assessment (this includes assessment and engagement plan for New York City and other communities that are active in the eligibility and enrollment process.)
- Organize functional assets into subject matter expert groups to support requirements, design, testing and implementation of the Exchange.
- Develop a series of Use Cases by access channel (e.g., paper, on-line, in-person, call center, etc.); by application group (ranging from a single adult to applying groups that have a person who wants commercial insurance, a child eligible for CHIP and another adult eligible for insurance on the SHOP Exchange and so on); by user type (e.g., consumer, small employer, navigator, community assistor, health plan, eligibility worker, system administrator, etc.); by verification type (i.e., automated federal hub verification versus point in time verification); by communication protocol (e.g., text messaging, e-mail, letters, other) and so on.
- Develop a template driven, functional prototype that provides capability to manage each of the Use Cases.
- Use the prototype as the basis, conduct requirements sessions to identify what the Exchange needs to do.
- Update the prototype and associated documentation.
- Evaluate of third party software options for rules engine, commercial insurance offerings and third party administration of the SHOP Exchange.
- Complete additional steps on the system development life cycle (e.g., design, development, testing, training, implementation, post implementation support.)

While this report has focused on the technological requirements to stand up an Exchange, there are many administrative, operational and practical considerations that must be addressed. Further, there are a number of key areas of guidance that are still outstanding from the federal government, including Modified Adjusted Gross Income rules, automated verification assistance and essential benefit package. All of these decisions will have a significant impact on the Exchange. Thus, the technological approaches for the Exchange must be built in a way to accommodate flexibility and change (e.g., where rules are not certain, build the capacity to easily update the rules; or where organizational involvement is not clear, build in the capacity to easily make changes to support different organizations).

Building a new system is hard even when the environment is static. The current environment is far from static, with ongoing developments and iterative guidance anticipated. In the face of the health care reform environment, the state must be prepared for changing directions and capabilities. Adopting the strong SOA architecture operated by Medicaid in New York is a key step in moving in the new direction of flexible, changing and adaptable system approaches that are much more aligned with the programmatic needs of the state.

We have had the privilege of meeting with a strong group of functional and technical experts across the State of New York. They have been working for years trying to make the process more rational and workable for consumers and the persons who support them. They are excited about the opportunity to make significant change happen through the opportunities and financing accorded states through ACA. Our thanks to all of them for sharing insights and experience with us in completing this Gap Analysis and supporting the State of New York in its effort to set up a high quality Exchange.

### Included as Separate Documents

**Appendix A: Details of Systems Review**

**Appendix B: Stakeholder Interview Summary Report**