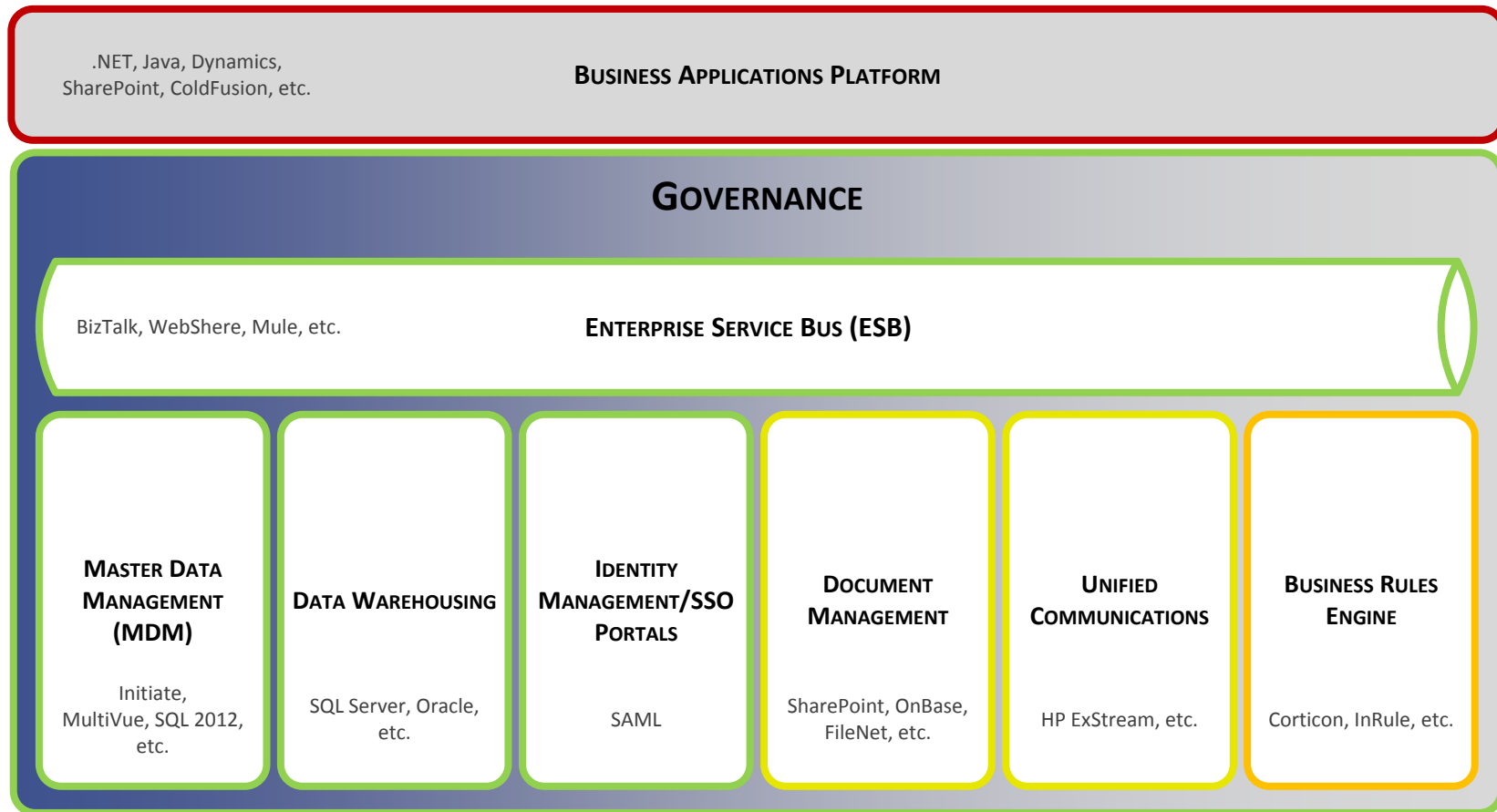


# POTENTIAL DHH TECHNICAL ARCHITECTURE

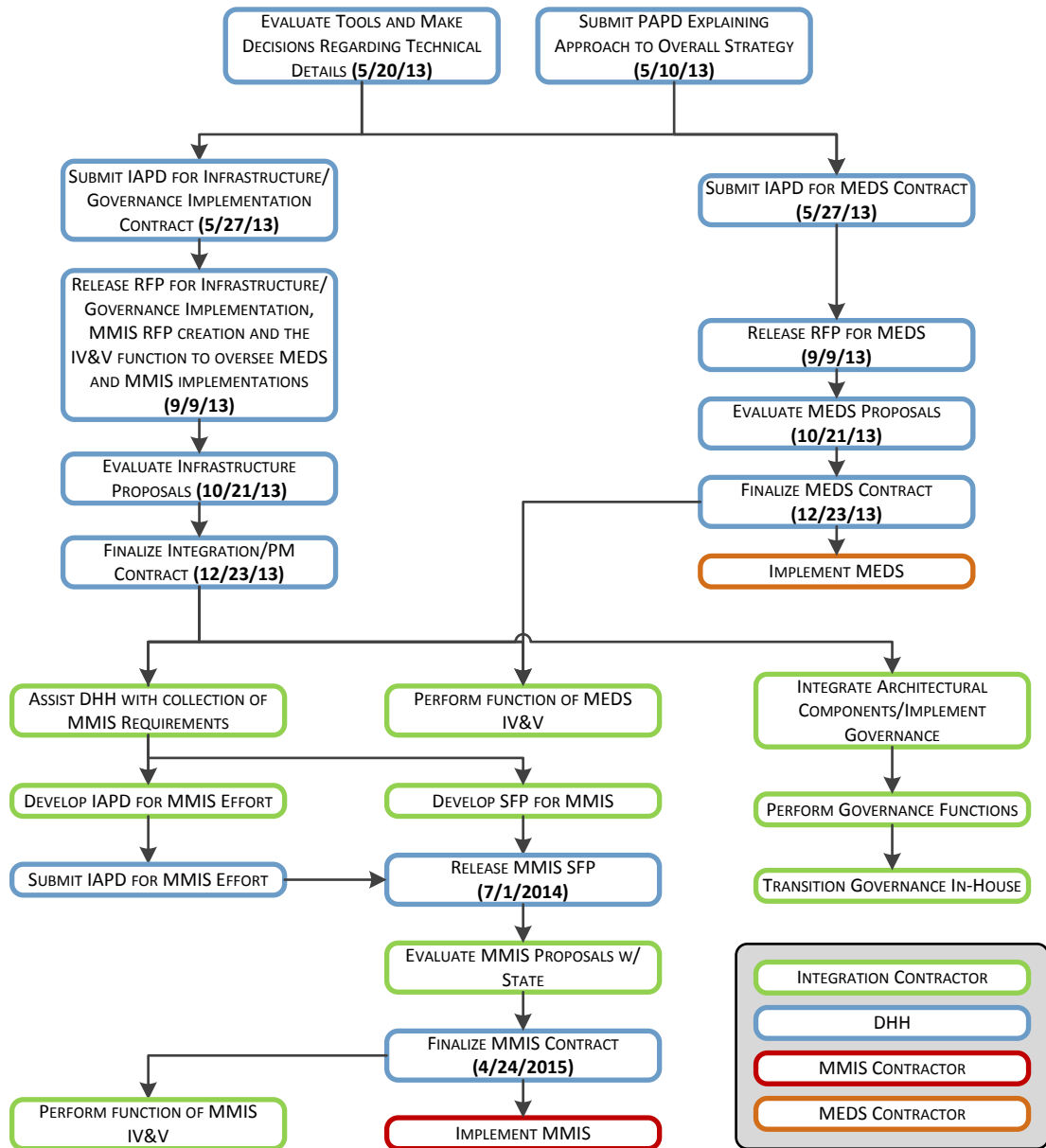
SPECIFICALLY FOR CONSIDERATION REGARDING IMPLEMENTATIONS OF MEDS AND MMIS



**DEGREE OF FLEXIBILITY AROUND USE OF SPECIFIC ARCHITECTURAL COMPONENTS:**



# MEDICAID SYSTEMS PROCUREMENT FLOW



# MASTER DATA MANAGEMENT

## TRANSACTIONAL MDM



### Data Stewardship Team

RESPONSIBLE FOR:

- Approving normalized schemas for systems needing access to MDM indexes
- Creating and maintaining all synchronization rules and processes between MDM indexes and participating systems
- Defining key DHH entities with their relationships and attributes
- Working with data owners on establishing validation, matching, and security rules around key DHH entities

Ability for each system to access data on an as needed basis via web services

### MDM Governance

WHAT?

- Entities, relationships, and attributes that are critical to DHH and foundational to key business processes and application systems

HOW?

- Awareness of the key DHH entities maintained within the MDM Hub
- Work with the Data Stewardship Team to gain access to and establish data synchronization processes and define search, creation and match'n'merge rules and workflows between the system and MDM Hub



Master data access web-services (via ESB)



Master data synch rules and processes

CRUD

CRUD

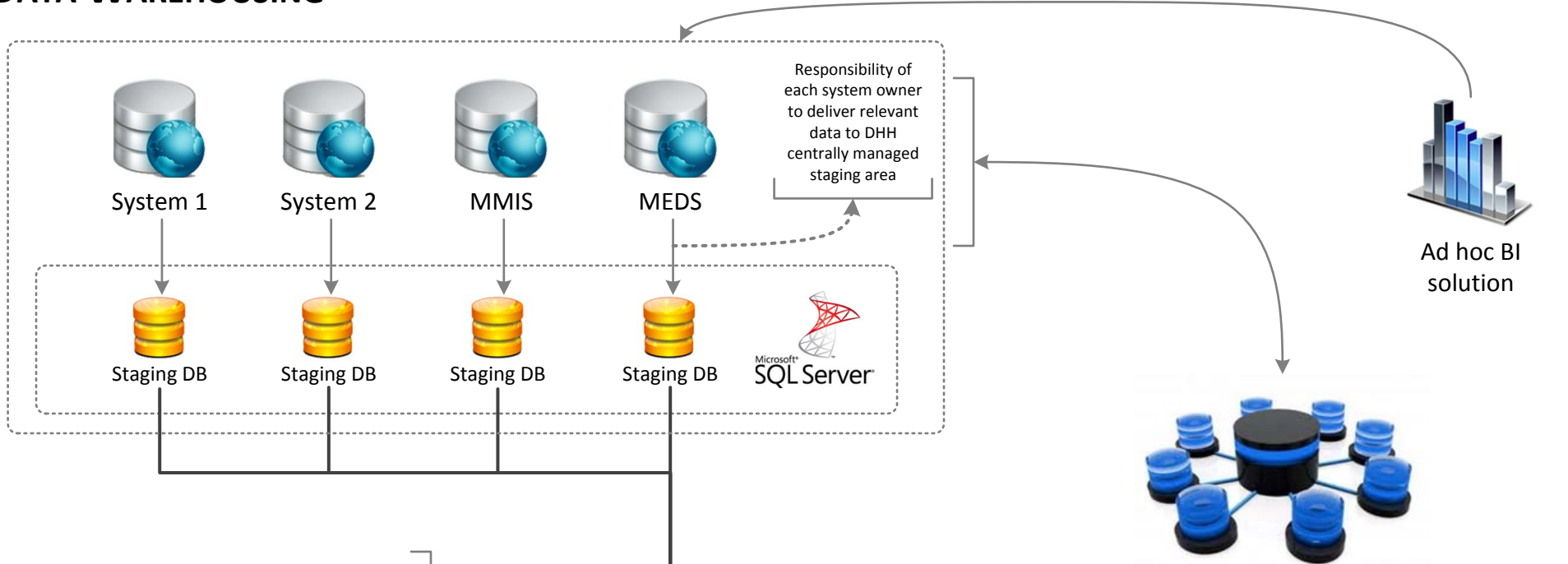
- Defined rules and scheduled processes for synchronization of local entities with master data index.
- Contains ability to share master data with systems solely through database integration.



### Master Data Indexes/Hub

PEOPLE  
PROVIDERS  
FACILITIES

# DATA WAREHOUSING



## Data Warehousing Governance

### WHAT?

- Data proprietary to each system that is deemed relevant by system owner for analytics

### HOW?

- Delivery of relevant data by system owner to staging ground
- With approval of Data Warehousing Team

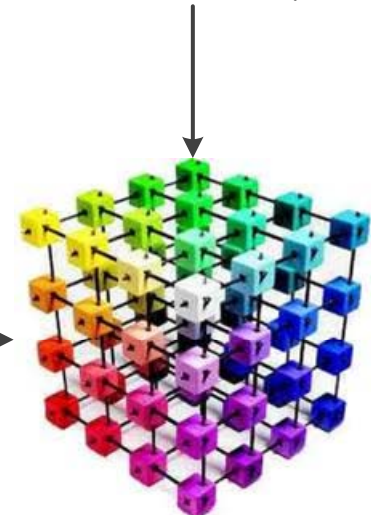


## Data Warehousing Team

Responsible for:

- Creating and maintaining all ETL's from staging into DWHouse
- Maintaining DWHouse
- Approving normalized and denormalized schemas for each contributing system

## Master Data Indexes/Hub

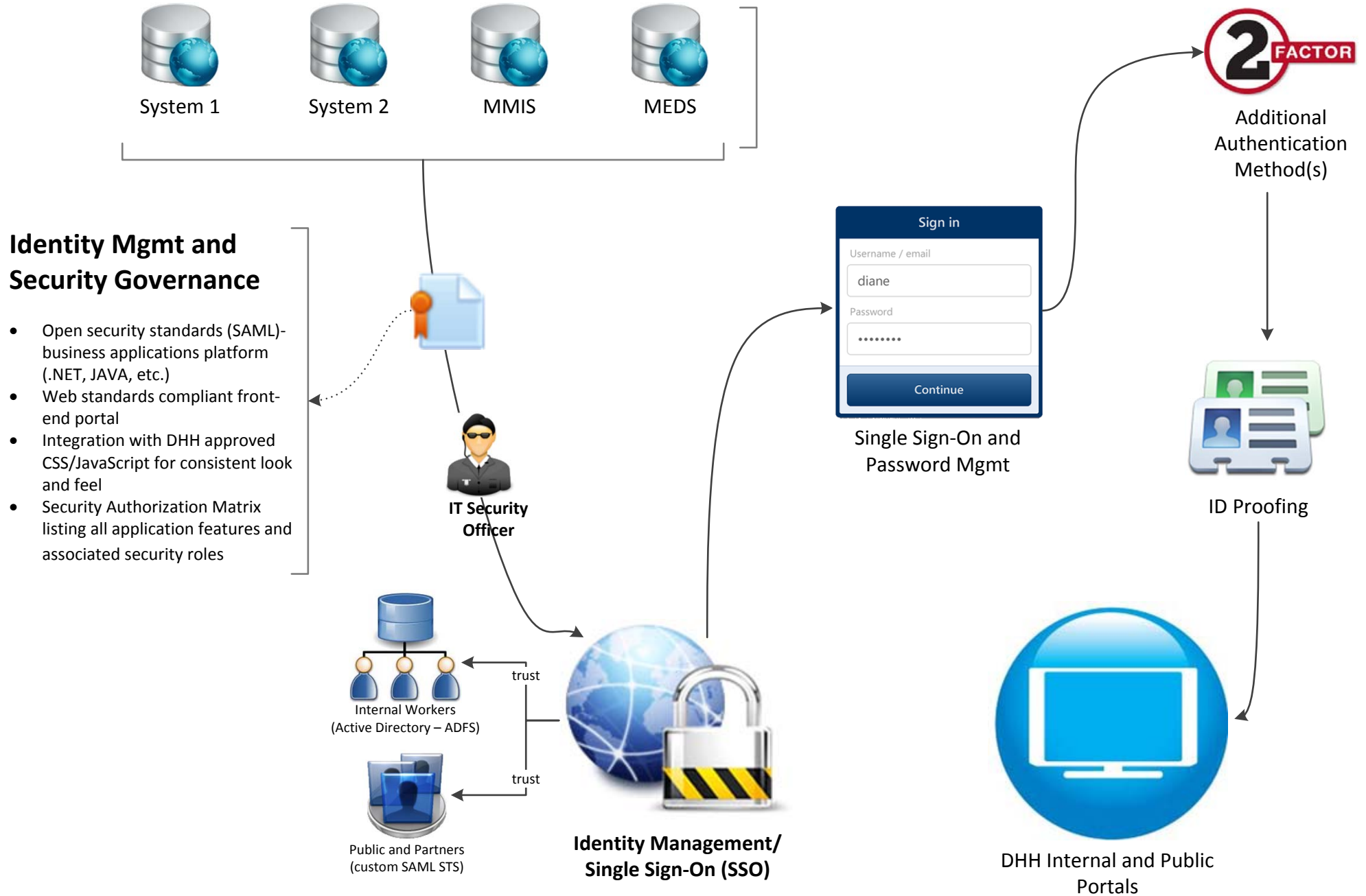


## Data Warehouse



Business Intelligence (BI) Tools  
Advanced Analytics Tools  
BI Portal

# IDENTITY MANAGEMENT/SINGLE SIGN-ON (SSO) PORTALS



# Requirements for Technical Components

## General Requirements

Instances/Environments:

- Development,
- System/Integration Testing,
- UAT,
- Training,
- Production

For each of the above environments/instances, we'd use recommended server specifications for a 5K+ employee enterprise deployment

## Enterprise Service Bus (ESB)

- Standalone ESB (not coupled)
- Routing
- Messaging
- Transformation
- Orchestration
- Service Publishing (WS Security)
- UDDI
- Do you have any SLA Support features?
- Adapters:
  - IBM WebSphere MQ
  - ODBC
  - Web Service (WS-\*, REST, ODATA)
  - MS SQL
  - Oracle
  - FTP, SFTP
  - MSMQ
  - MS File System
  - Do you have any Application Adapters?
- Declarative Programming (Drag and Drop UI)
- High Availability, Scalability, DR
- Security/SSO (Impersonation)
- Rules Engine / BRE Integration
- Monitoring & Fault Management
- Lifecycle Management (versioning, etc)
- Free Developer License is a plus

## Master Data Management (MDM)

- Operational/transactional MDM
- MDM Domain/Entities:
  - People/Clients/Recipients (3+ million records)
  - Health Providers/Facilities/Partners/Vendors (100K+ records)
- 10+ systems serving as either the data source for the above entities or the data sink, or both
- Data Modeling and Metadata
- Hierarchy Management
- Data Quality
- User Interface including Data Maintenance and Data Stewardship capabilities
- Data Loading, Integration and Synchronization
- Business Services and Workflow
- System Architecture, Security and Administration

## Identity Management/Single Sign-on

- Auditing of IAM operations (when/who changed account info etc.) and auditing of system access through IAM SSO (when was the last time someone logged into system1 etc.)
- Must be SAML-compliant (i.e. must be easily usable by any of the most commonly used app platforms: .NET, JAVA, PHP, etc.)
- Must have Active Directory (AD)/LDAP integration (including synchronization)
- Having better AD/LDAP management UI is a plus
- Administrative User Account Provisioning (admins should be able and create user accounts for users; approval process for new user registration; on- and off-boarding workflows)
- User account/Password management/self-service (admins/end-users should be able to create and edit their user accounts including passwords)
- OpenID/OAuth compatibility/support is a plus
- Access Control is a must (ability to manage roles/groups/claims in addition to basic Identity Management; limited application specific administration)
- Identity Profile customization is a plus (ability to store custom data in user profiles/accounts, like Department, Address, Position, etc.)
- Per-user/application multi-factor authentication, native/free + 3rd party
- ID Proofing integration points is a plus (ability to proof user's true identity as part of the registration process – think Experian ID Proofing services).
- Developer effort to integrate into solution.
- Want to integrate into Active Directory for internal users (approximately 5,000).
- We need a way to provision user accounts for public users (from 100,000 to 1M +)

## Document Management

- Can store 30+ Tb of documents (scalability)
- Ability to publish libraries/subsets of documents publicly
- Affordable when publishing docs publicly
- Box.com-like functionality
  - External access to documents
  - Fine-grained control and access of Doc security
- Built-In no-plugins (web-based) view for all doc types
- Search
- Support for all common doc types (Word, PDF, etc)
- Document editing features (Rotate, merge, split, annotate)
- Ability to associate metadata with docs
- SOA APIs to all functionality
- SAML security compatible
- Simple Integration with scanning solutions (support for bulk-scanning)
- Access Auditing
- Edit Auditing and Versioning
- Retention policies
- Ability to build workflows around docs with digital signature support (ex: scan notifications)
- Ability to eliminate all internal and external file sharing mechanisms (FTP, file shares, proprietary custom-app stores)
  - Support for FTP protocol is a plus
- Encryption capabilities both transmission and storage (FIPS, etc)
- Simple 3rd party app embedding/integration
- Virus scanning
- Ability to publish libraries/documents to 1M+ public users with limited document management functionality (viewing of documents, downloading of documents). However, costing should not be per public user.