CMS Seven Conditions and Standards Gap Analysis Project

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Discussion Topics

• Tennessee Environment
• Project Origin and Purpose
• Approach
• Findings
• Recommendations
  – Short-term
  – Long-term
• Compliance Plan
• Moving Forward
Tennessee Environment

- Managed care Medicaid program
- Current MMIS implemented in 2004, replacing legacy mainframe system with client-server
- Other COTS and custom applications
- MMIS-centered hub and spoke architecture
- Ongoing facilities manager contract with HP
- Performed MITA 2 SSA, planning for MITA 3 SSA
- Procuring new eligibility system
Project Origin and Purpose

• In April 2011, the Seven Conditions and Standards (7C&S) were published, allowing for further guidance with respect to MMIS modularity.
• TennCare asked Cognosante to conduct a 7 C&S gap analysis in order to develop a plan to become compliant with the standards.
• The project was “sponsored” by CMS as a possible model for other states.
• TennCare plans to use the results to establish a framework for system planning and evolution.
Approach

• Planning Process
  – Developed templates for capturing findings for the requirements of each C&S

• Stakeholder Interviews
  – Stakeholders were identified for all TennCare initiatives impacted by 7 C&S
  – Interviews conducted by Modularity SME and others based on initiative specifics

• Gap Analysis
  – Documentation of current state
  – Compare current state with 7 C&S requirements
  – Provide recommendations

• Compliance Plan
Seven Conditions and Standards – Requirements by C&S

1. Modularity Standard (5)
2. MITA Condition (4)
3. Industry Standards Condition (6)
4. Leverage Condition (8)
5. Business Results Condition (6)
6. Reporting Condition (3)
7. Interoperability Condition (6)
Findings

- As anticipated, TennCare is not currently compliant with the majority of the 38 requirements associated with the 7 C&S
- TennCare could not comply with some of the requirements because compliance necessitates an action by CMS
- Others remained non-compliant because TennCare had not:
  - Implemented SOA principles
  - Upgraded its core MMIS to have open, reusable technology that separates the presentation, business and data layers
  - Completed its analysis of inter-agency operability
  - Etc.
- The following slides provide examples of CMS compliance language and the presentation of findings
Section 2.1 – Modularity Standard

“…This standard requires the use of a modular, flexible approach to systems development, including the use of open interfaces and exposed application programming interfaces (API); the separation of business rules from core programming; and the availability of business rules in both human and machine-readable formats. The commitment to formal system development methodology and open, reusable system architecture is extremely important in order to ensure that states can more easily change and maintain systems, as well as integrate and interoperate with a clinical and administrative ecosystem designed to deliver person-centric services and benefits.

CMS Seven Conditions and Standards Medicaid IT Supplement (MITS-11-01-v1.0), pages 2-3, April 2011
Section 2.1 – Modularity Standard (cont.)

- Modularity is breaking down systems requirements into component parts. Extremely complex systems can be developed as part of a service-oriented architecture (SOA). Modularity also helps address the challenges of customization. Baseline web services and capabilities can be developed for and used by anyone, with exceptions for specific business processes handled by a separate module that interoperates with the baseline modules. With modularity, changes can be made independently to the baseline capabilities without affecting how the extension works. By doing so, the design ensures that future iterations of software can be deployed without breaking custom functionality.
Section 2.1 – Modularity Standard (cont.)

- A critical element of compliance with this condition is providing CMS with an understanding of where services and code will be tightly coupled, and where the state will pursue a more aggressive decoupling strategy.

CMS Seven Conditions and Standards Medicaid IT Supplement (MITS-11-01-v1.0), pages 2-3, April 2011
### Sample Gap Analysis Findings

<table>
<thead>
<tr>
<th>Item #</th>
<th>Required States Actions to be Compliant</th>
<th>State Meets Required</th>
<th>Explanation of Findings</th>
</tr>
</thead>
</table>
| 1A     | Formal Systems development methodology in well-defined phases • Waterfall; RAD; Spiral Approach; RUP; and Agile • Structured, secure IT solutions based on SOA principles | Partially No       | • The Bureau of TennCare’s contractual relationship with their facilities manager requires the use of a Bureau-approved system development life cycle (SDLC). The Bureau’s facilities manager, Hewlett-Packard (HP) has used a modified version of the waterfall SDLC. Due to contractual requirements from the Bureau, HP has achieved an appraisal of CMMI level 2 for their SDLC.  
• In some vendor IT contracts, the Bureau requires adherence to the Information Technology Methodology (ITM) developed by OIR. However, the OIR methodology does not define a specific SDLC and the Bureau has not developed a policy that adopts the OIR methodology.  
• There are no service oriented architecture (SOA) principles currently used. However, there is a plan in the near future to apply general principles to future projects.  
• The Bureau’s management asked a consultant to present principles pertaining to SOA governance and they have discussed the formation of a SOA governance committee. |
Recommendations

- Based on the findings of the gap analysis, Cognosante made the following recommendations:
  - Develop an Information Technology (IT) architecture governance structure
  - Implement an enterprise service bus (ESB)
  - Complete the long-term compliance strategy that is defined in the Bureau’s 7 C&S Compliance Plan.

- The following slides show a sample set of compliance recommendations, and a partial timeline for compliance
- The long-term compliance strategy is included in the Compliance Plan deliverable, including dates that go out to 12/31/2017
### Sample Compliance Recommendations

| 1A | Formal Systems development methodology in well defined phases:  
|    | • Waterfall; RAD; Spiral Approach; RUP; and Agile  
|    | • Structured, secure IT solutions based on SOA principles | Create a policy that formally adopts the OIR information technology and project management standards outlined in the ITM. Where possible and feasible, use the TennCare PMO standards as well.  
|    | | Create a policy that defines the SDLC and the system documentation standards that should be used for any information technology vendor that contracts with TennCare or subcontracts with a TennCare vendor. Additionally, the Bureau should develop standard forms that are used by all vendors (e.g. status reports).  
|    | | Since the Bureau owns the license to the Rational product suite, the Bureau could implement the use of Rational and the Rational Unified Process as the SDLC for all non-facilities manager development. The Bureau could use Clear Quest to define the SDLC work flow. The Bureau would need to obtain a contract with a vendor or hire knowledgeable staff that are educated and experienced on the use of the Rational products.  
|    | | Develop a SOA governance model using the framework outlined by Cognosante (See SOA Governance presentation imbedded into this document located in Appendix A: Document References).  
|    | | Based on discussions with Bureau IT staff, a small pilot project using an ESB with well-defined services would be a good starting point for a SOA project to start the implementation of SOA governance principles. |
### Sample Compliance Recommendations

<table>
<thead>
<tr>
<th>1B</th>
<th>Identify where services and code will be tightly coupled and where state will pursue decoupling within system.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1C</td>
<td>Deploy open, reusable system architecture that separates the presentation layer business logic and data layer for greater flexibility, security, performance, and quality of design.</td>
</tr>
<tr>
<td>1D</td>
<td>Presentation components must allow for communication with disparate populations using different media formats, such as web, email, mobile and short message service (text messaging).</td>
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</tbody>
</table>

- Create a detailed analysis plan to evaluate business area modules where service orientation could be used to decouple components.
- Embrace and develop a SOA roadmap to migrate with the existing “siloed” MMIS system into separate technology modules that support separation of the user interfaces, business logic, data and infrastructure.
- Develop a communication plan for the Medicaid Enterprise that will determine cost effectiveness of using different media formats for communicating with stakeholders (e.g., providers, recipients). The plan should provide research pertaining to the available options for communication, the regulatory hurdles to using these options, an estimate of the cost or savings of using these options, and the effectiveness of the communication option.
# Short-term Compliance Timeline

<table>
<thead>
<tr>
<th>Item #</th>
<th>Milestones/Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7 C&amp;S PAPD</td>
</tr>
<tr>
<td>1.1</td>
<td>Draft PAPD</td>
</tr>
<tr>
<td>1.2</td>
<td>Submit Draft to CMS</td>
</tr>
<tr>
<td>1.3</td>
<td>Correct and Submit Final to CMS</td>
</tr>
<tr>
<td>1.4</td>
<td>PAPD Approval</td>
</tr>
<tr>
<td>2</td>
<td>Enterprise Service Bus</td>
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<tr>
<td>2.1</td>
<td>Procure ESB</td>
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<tr>
<td>2.2</td>
<td>Select Projects to Implement</td>
</tr>
<tr>
<td>2.3</td>
<td>Implement ESB</td>
</tr>
<tr>
<td>2.4</td>
<td>Developed Lesson Learned for SOA Governance</td>
</tr>
<tr>
<td>3</td>
<td>MITA State Self-Assessment</td>
</tr>
<tr>
<td>3.1</td>
<td>List and Prioritize the State’s Goals and Objectives</td>
</tr>
<tr>
<td>3.1.1</td>
<td>Plan for SS-A</td>
</tr>
<tr>
<td>3.1.2</td>
<td>Determine State Goals for Transformation</td>
</tr>
<tr>
<td>3.1.3</td>
<td>Identify and prioritize State objectives to achieve strategic goals</td>
</tr>
<tr>
<td>3.1.4</td>
<td>Establish Project Team</td>
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<tr>
<td>3.1.5</td>
<td>Develop SS-A Project Plan</td>
</tr>
<tr>
<td>Item #</td>
<td>Milestones/Deliverables</td>
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<tr>
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<tr>
<td>3.2</td>
<td>Define the State’s current As Is and future To Be Medicaid Enterprise - Business Architecture (BA) Steps</td>
</tr>
<tr>
<td>3.2.1</td>
<td>Begin populating Business Capability Matrix (BCM), BA Profile, and BA score card</td>
</tr>
<tr>
<td>3.2.2</td>
<td>Gather supporting evidence for submission with SS-A</td>
</tr>
<tr>
<td>3.2.3</td>
<td>Note Exceptions, Additions, Differences, and Non-Applicable Business Processes</td>
</tr>
<tr>
<td>3.3</td>
<td>Define the State’s current As Is and future To Be Medicaid Enterprise - Information Architecture (IA) Steps</td>
</tr>
<tr>
<td>3.3.1</td>
<td>Begin populating Information Capability Matrix (ICM), and IA score card</td>
</tr>
<tr>
<td>3.3.2</td>
<td>Gather supporting IA evidence for submission with SS-A</td>
</tr>
<tr>
<td>3.4</td>
<td>Define the State’s current As Is and future To Be Medicaid Enterprise - Technical Architecture (TA) Steps</td>
</tr>
<tr>
<td>3.4.1</td>
<td>Begin populating Technical Capability Matrix (TCM), and TA score card</td>
</tr>
<tr>
<td>3.4.2</td>
<td>Gather supporting TA evidence for submission with SS-A</td>
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Moving Forward

• Current plan status
  – Defined incremental modernization approach
  – Defining enterprise architecture
  – Implemented new systems using services, modular approach and COTS components
  – Modernizing provider registration
  – Procuring eligibility system
Moving Forward

• Plans through 2013
  – Complete MITA 3 assessment
  – Modernize notice generation
  – Implement SOA suite and other building blocks
  – Implement new eligibility system
Moving Forward

• 2014 and beyond
  – Expansion phase
  – ICD10 implementation
  – Continuing incremental modernization
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