

SOA: Don't Start From Scratch

By leveraging Medicaid's flexible IT architecture, the U.S. Substance Abuse and Mental Health Services Agency discovered ways to share data across boundaries, setting an example for other behavioral health agencies.

By Rick Friedman, CMS/US DHHS

HALF TO THREE-QUARTERS OF ADULTS WITH SUBSTANCE abuse and mental health needs receive services from state Medicaid and behavioral health agencies, according to the U.S. Department of Health and Human Services. Yet, fewer than one in five of these individuals seek mental health services from Medicaid alone. As a result, Medicaid agencies that rely only on information from their own claims history files have an incomplete understanding of the full range of services provided to this population.

At a time when state budgets are stretched to the breaking point, government programs can't afford to waste millions of dollars on unnecessary or duplicative services due to their inability to share data. Moreover, with today's emphasis on improving patient outcomes, agencies need a more comprehensive understanding of the full range of services provided to their clients from outside, as well as inside, their own funding streams.

The only way to achieve these goals is to build systems capable of sharing data across organizational boundaries.

Two federal agencies—the Centers for Medicare and Medicaid Services (CMS) and the Substance Abuse and Mental Health Services Administration (SAMHSA)—have been working together to build such interoperable systems. Their approach can serve as a model for other human service organizations whose clients receive services from multiple state agencies.

SOA to the Rescue

The key to interoperable data systems is service-oriented architecture (SOA). SOA is an approach to building information systems that allow organizations to leverage existing assets, respond to the inevitable changes required to support the programs, and move from fixing problems on the fly to delivering information as a service. Viewing information as a service loosens the tight connections between data and applications so data can be controlled and shared across the enterprise. This approach allows agencies to achieve a consistent view of enterprise-wide information previously unavailable.

In 2004, CMS began to re-think the transaction-processing systems states had used for 30 years to process claims and capture critical program information. While there had been many changes to the systems over that time, the basic approach relied on point-to-point transactions that required extensive and costly revisions to the underlying codes. The result was that such systems were unable to adapt quickly to the constantly changing regulatory environment. Such systems also could not share data across organizational silos with other trading partners serving the same clients.

Consequently, CMS adopted an SOA approach, similar to that being used by banks, airlines and others in the private sector to communicate quickly without the need to rip-and-replace entire systems when business environments change.

Referred to as the Medicaid Information Technology Architecture (MITA), the framework enabled all states to describe the core features of their business in terms of business processes. Business processes can have other business processes nested inside them. Gains in efficiency come when a process is automated from end-to-end, although this is not always practical.

Go to www.cms.hhs.gov/MedicaidInfoTechArch for more information on MITA.

The BH-MITA Project

In October 2007, SAMHSA/CMS hosted a small group of state managers from both programs to explore ways the MITA framework could be adapted for behavioral health (BH) agencies. Called BH-MITA, the joint venture examined options for adapting both the structure and methodologies of MITA to the BH business model. It used many MITA artifacts that were also applicable in the BH world, while the unique features of the BH environment were created from scratch using MITA's counterparts, which served as a starting point for templates or models.

While many administrative processes in the two programs were virtually identical, key distinctions were in care management, provider/contractor management, program integrity/accountability and funding functions. The bulk of the MITA model, however, proved applicable to BH agencies.

Don't Start From Scratch

All agencies are interdependent and need information from multiple sources to develop holistic views of the people they serve. Using SOA to achieve this outcome is a proven approach.

Agencies that would like to build on successful models without having to spend limited resources re-inventing the wheel should consider the Medicaid Information Technology Architecture (MITA) as a place to start.

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Paving the SOA/MITA Path

Here are five steps to a successful integration transformation.

Step 1: Create a Landscape Document

A landscape document provides a high-level view of agency operations, organization, information systems and information exchanges, all in the context of the agency's mission, goals and objectives. It highlights current agency systems, identifies examples of multiple agency interfaces relative to common client needs, and introduces SOA concepts to facilitate understanding and participation by multiple stakeholders.

Step 2: Develop a Concept of Operations

The concept of operations (COO) describes a vision of future business operations and technology. It addresses not only how things work currently but where the agency intends to be in five or 10 years, and provides a transformation pathway through a series of stages that set the foundation for the maturity model (see Step 3).

The COO is not a roadmap, implementation or transition plan. It does not contain detailed planning steps for the transition nor does it describe or limit the solutions or technologies that may be used to reach the vision. But it does describe the destination.

Step 3: Build an Agency-Specific Maturity Model

The maturity model describes evolutionary steps in a high-level roadmap projecting how business and technology will change as they progress toward transformation. SAMHSA found the MITA maturity model extremely useful as a benchmark for developing its own maturity model. The model serves as a guidebook for developing business capabilities and services, and documents the relationship between the mission and the vision and the progression in business capabilities needed to get there.

Step 4: Delineate the Business Process Model

The business process model provides a baseline description of the business processes used in the agency's day-to-day operations. Business processes vary from agency to agency. In Medicaid, for example, "claims handling" is a business process. In a behavioral health agency, "patient care management" is sometimes a business process. Over time, the model can be expanded to encompass additional processes that develop as the business matures, dropping processes that have been replaced or become obsolete. Descriptions are process-oriented, view the business cross-functionally and focus on the activity, not how it is performed. They provide a foundation on which states can self-assess their current and projected business process capabilities.

Step 5: Conduct a State Self-Assessment

Once the basic activities on which the agency relies to achieve its mission have been delineated, a state self-assessment (SS-A) pinpoints where each activity falls along a continuum of progress relative to the maturity model. In essence, an SS-A provides an agency with its own highly specific footprint showing how its business and technical functions stack up compared with these mutually developed "yardsticks."