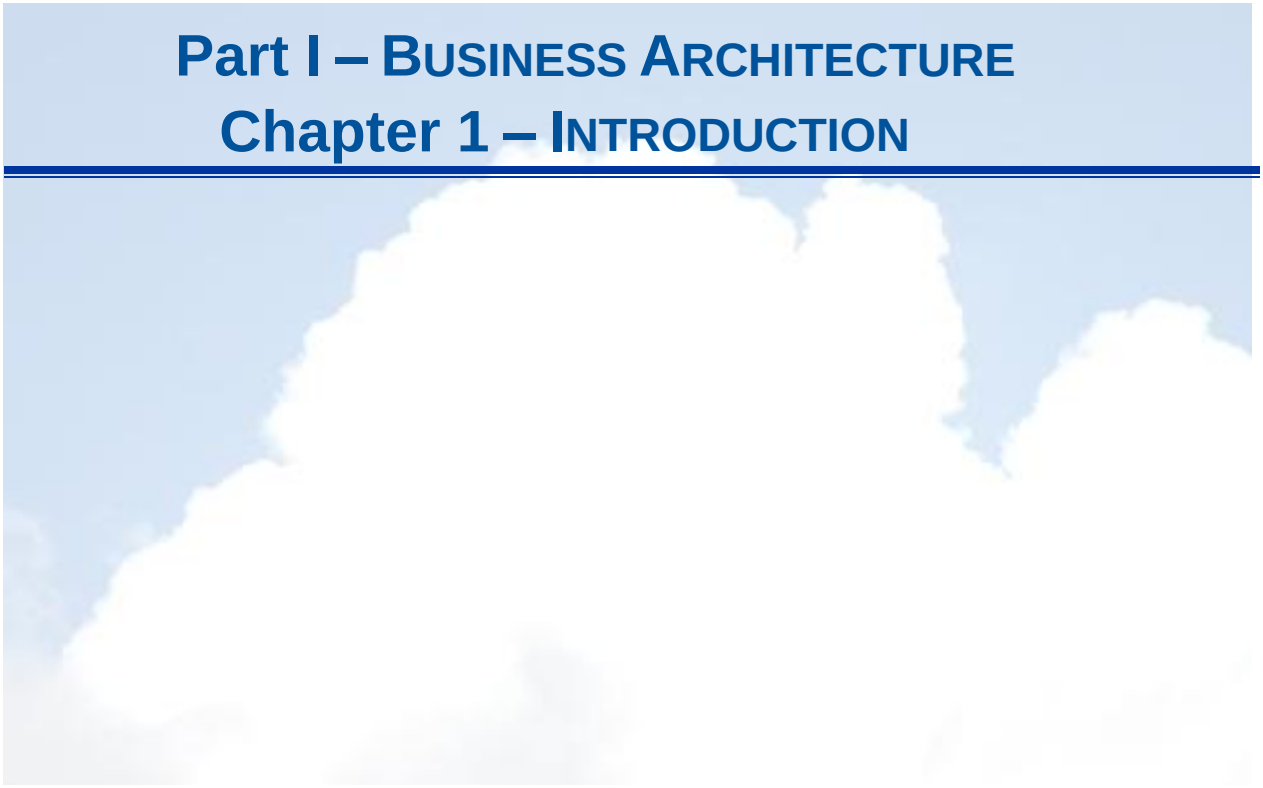
Part I – BUSINESS ARCHITECTURE
Chapter 1 – INTRODUCTION



CMS
CENTERS for MEDICARE & MEDICAID SERVICES

MITA
Medicaid Information
Technology Architecture

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Introduction

The Medicaid IT Architecture (MITA) Framework contains three (3) interrelated architectures: Business Architecture (BA), Information Architecture (IA), and Technical Architecture (TA) shown in **Figure 1-1**. The business capabilities from BA define the data strategy of IA and design the business and technical services of TA. MITA uses all three (3) architectures to develop a business-driven enterprise to provide consistency across the State Medicaid Enterprise.

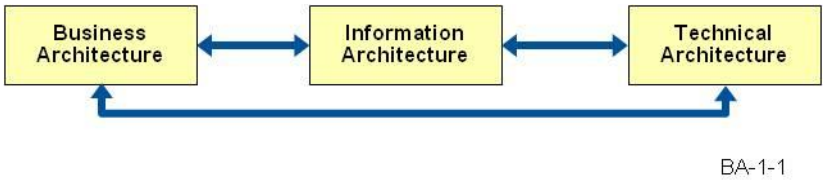


Figure 1-1. MITA Framework Relationship Diagram

The topics covered in this chapter include:

- BA Seven Standards and Conditions
- Business Architecture Components
- Business Architecture Component Relationships
- Connection Between Architectures
- Using the Business Architecture
- Next Steps in Developing the Business Architecture

Purpose

In keeping with the guiding principle that MITA represents a business-driven enterprise transformation, the BA is the starting point of the MITA Framework. The BA describes the needs and goals of the individual State Medicaid Enterprise, and presents a collective vision of the future.

The BA will accomplish the following:

- Establish a generic business framework for all States while recognizing their differences.
- Describe how each state Medicaid Program can mature over a given period with the help of stakeholders, leadership, enabling legislation, and technology.
- Provide a baseline for the State Medicaid Agency (SMA) to assess their current business capabilities and measure progress toward improved capabilities.

Scope

The BA focuses on the State Medicaid Enterprise that centers on the Medicaid environment including leveraged systems and interconnections among Medicaid stakeholders, providers, beneficiaries, insurance affordability programs (e.g., CHIP, tax credits, Basic Health Program), Health Insurance Exchange (HIX), Health Information Exchange (HIE), other state and local agencies, other payers, Centers for Medicare & Medicaid Services (CMS), and other federal agencies. The MITA context defines the Medicaid Enterprise as:

- The domain where federal matching funds apply.
- The interfaces and bridges among Medicaid stakeholders, including providers, beneficiaries, other state and local agencies, other payers, CMS, and other federal agencies.
- The sphere of influence touched by MITA (e.g., national and federal initiatives such as the Nationwide Health Information Network [NwHIN]). (See Front Matter, Chapter 6, Overview of the MITA Initiative, for a discussion of the Medicaid Enterprise.)

Enterprise can have other meanings. For instance, Enterprise Architecture (EA) defines an enterprise-wide integrated set of components that incorporates strategic business thinking, information assets, and the technical infrastructure of an enterprise to promote information sharing across agency and organizational boundaries.

The BA acknowledges technology as one of several enablers that are important to growth and transformation, but it does not introduce technical implementations or solutions into the BA components. All technical references are found in Part III, Technical Architecture.

Background

States, territories, and the District of Columbia (hereinafter referred to as States) are responsible for their individual State Medicaid Enterprise, and all entities are different in important ways. Differences include:

- Organizational structure, covered programs, and lines of business
- Business rules, policies, and procedures affecting stakeholders
- Relationships with other state and local agencies
- Revenue sources
- Location of business units
- Workflow
- Range of outsourcing
- Technical solutions

These entities also differ in their concept of an enterprise, the roles and responsibilities of one or more Chief Information Officers (CIO), adoption of data and technical standards, and the use of legacy versus state-of-the-art applications.

Given these differences, it is not possible or desirable, in the context of the MITA Framework, to develop a standalone business and technical model for each individual Medicaid Enterprise. Instead, MITA establishes a national framework of common processes and enabling technologies to support improved program administration in all States.

The BA focuses on areas of common ground (e.g., that all States will enroll providers and pay for services rendered to eligible beneficiaries and that all States seek to improve health care outcomes and improve administrative processes).

There is no ready-made methodology for building the MITA Framework to accommodate the business needs and transformation strategies of the States. To meet the special needs of MITA, the components included in the BA draw upon methodologies commonly in use today across industries as diverse as financial, transportation, and defense. The MITA team designed templates and models to help States identify and prioritize their specific business needs.

The BA section of the MITA Framework shows how MITA incorporates business-driven design to accomplish the following:

- Support state needs.
  - Align with state strategic goals.
  - Align with state or Medicaid Agency enterprise architecture.
- Support the CMS and common state goals.
  - Align state approaches with MITA.
  - Accommodate multi-state collaborative initiatives.
- Support national goals through alignment with national initiatives, such as the Office of the National Coordinator for Health Information Technology (ONC) and federal guidelines (e.g., Federal Health Architecture (FHA), the Federal Enterprise Architecture Framework (FEAF), and national/international data standards).

Funding Requirements

The Health and Human Services (HHS) CMS 42 CFR Part 433 Medicaid Program; Federal Funding for Medicaid Eligibility Determination and Enrollment Activities modifies Medicaid regulations for Mechanized Claims Processing and Information Retrieval Systems effective April 19, 2011. The Medicaid Management Information System (MMIS) is a mechanized claims processing and information retrieval system used by the States for Title XIX of the Social Security Act (The Act); therefore, the guidance set forth in CMS 42 CFR Part 433 applies to the MMIS as well as the Medicaid eligibility determination and enrollment activities as set forth in the Affordable Care Act of 2010.

CMS expects States to meet the standards and conditions specified in §433.112(b)(10) through §433.112(b)(16). The standards and conditions are descriptive in nature; however, CMS recognizes that in order for the States to meet these standards and conditions it is necessary to provide additional guidance that clearly articulates its criteria for meeting them

in terms of timeliness, accuracy, efficiency, integrity, and performance standards for mechanized claims processing. In response to this need, additional guidance materials include:

- Enhanced Funding Requirements: Seven Conditions and Standards (a.k.a. Seven Standards and Conditions)
- Guidance for Exchange and Medicaid Information Technology (IT) Systems (a.k.a. IT Guidance)

CMS will continue to refine, update and expand this guidance in the future, based on feedback from stakeholders and with experience over time.

BA Seven Standards and Conditions

The MITA team evaluated and incorporated the 42 CFR Part 433 Medicaid Program; Federal Funding for Medicaid Eligibility Determination and Enrollment Activities in the BA for purposes of guiding the MITA stakeholders to apply the guidance to the Medicaid Enterprise.

Each of the architectures aligns with the Seven Standards and Conditions. By utilizing best practices, industry standards, and technology advancements, the processes, and planning guidelines that build the MITA framework provide a cohesive method for meeting Medicaid objectives.

Table 1-1 depicts the impact of the Seven Standards and Conditions on the MITA BA, IA, and TA.

Table 1-1. Correlation of Seven Standards and Conditions with MITA

Correlation of Seven Standards and Conditions with MITA Architectures			
Standards and Conditions	***Business Architecture***	***Information Architecture***	***Technical Architecture***
Modularity Standard	X	X	X
MITA Condition	X	X	X
Industry Standards Condition	X	X	X
Leverage Condition	X	X	X
Business Results Condition	X	X	X
Reporting Condition	X	X	X
Interoperability Condition	X	X	X

The BA includes:

- **Modularity Standard** – Uses 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 States commit to formal system development methodology and open, reusable system architecture.
- **MITA Condition** – States align to and advance increasingly in MITA maturity for business, architecture, and data.
- **Industry Standards Condition** - Ensures alignment with, and incorporation of, industry standards: the Health Insurance Portability and Accountability Act of 1996 (HIPAA) security, privacy and transaction standards; accessibility standards established under section 508 of the Rehabilitation Act, or standards that provide greater accessibility for individuals with disabilities, and compliance with Federal Civil Rights laws; standards adopted by the Secretary under section 1104 of the Affordable Care Act; and standards and protocols adopted by the Secretary under section 1561 of the Affordable Care Act.
- **Leverage Condition** – States solutions should promote sharing, leverage, and reuse of Medicaid technologies and systems within and among States.
- **Business Results Condition** – Systems should support accurate and timely processing of claims (including claims of eligibility), adjudications, and effective communications with providers, beneficiaries, and the public.
- **Reporting Condition** – Solutions should produce transaction data, reports, and performance information that contribute to program evaluation, continuous improvement in business operations, and transparency and accountability.
- **Interoperability Condition** – Systems must ensure seamless coordination and integration with the Exchange (whether run by the state or federal government), and allow interoperability with health information exchanges, public health agencies, human services programs, and community organizations providing outreach and enrollment assistance services.

Business Architecture Components

The BA is a conceptual construct that encompasses models, matrices, and templates. These components derive from a variety of industry standards because no single methodology exists that meets the scope of MITA. The MITA Framework breaks new ground and is a model for other federal, state, and local entities.

The MITA BA contains the following components:

- Concept of Operations
- MITA Maturity Model
- Business Process Model
- Business Capability Matrix

These are living models that evolve with the MITA Framework life cycle. The MITA team tailored the level of detail in each model to meet the specific needs of the intended audience. **Figure 1-2** provides an overview of the components of the BA. See Part I, Chapters 2 through 5 for a more detailed description for each of these components.

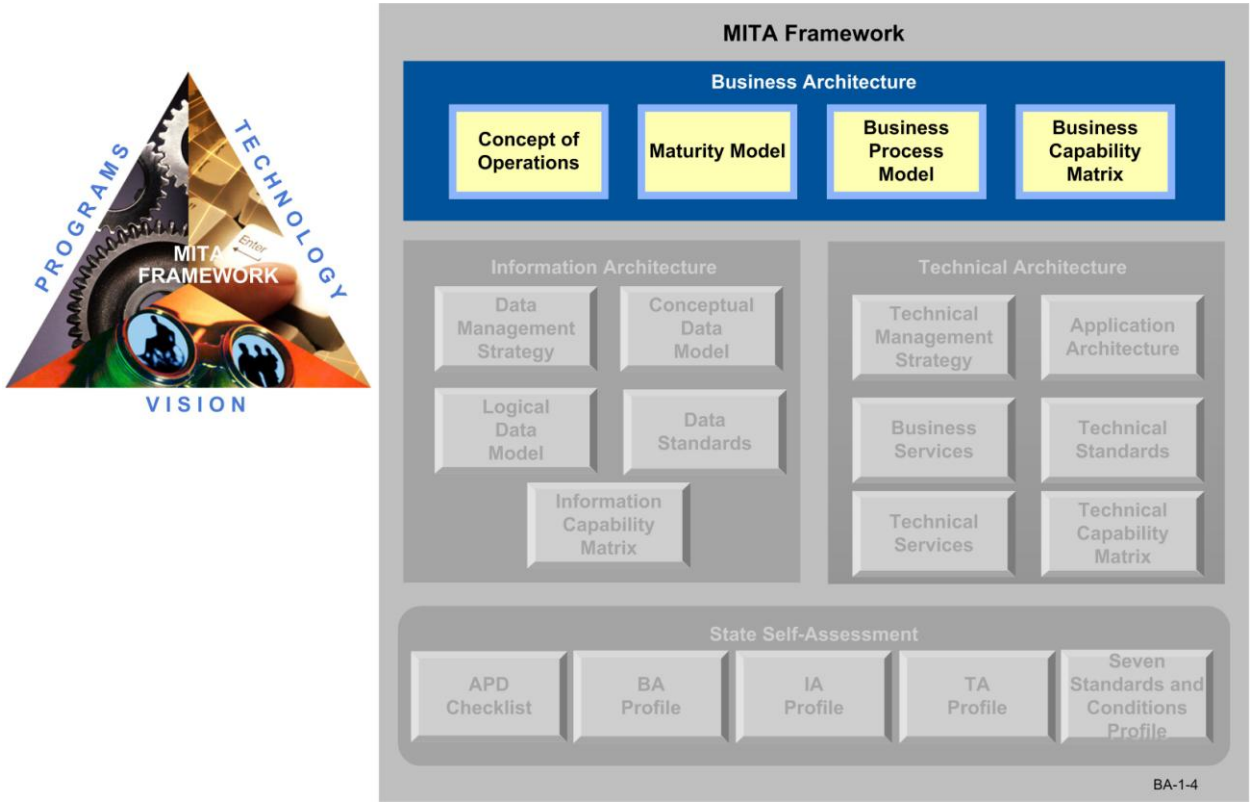
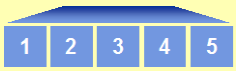


Figure 1-2. BA in the Context of the MITA Framework

The MITA Framework focuses on the common ground shared by various distinct State Medicaid Enterprises and yet accommodates their differences. The BA consists of four (4) components that are summarized in **Table 1-2**. The BA is a composite of interrelated models and templates.

Table 1-2. The Four Components of the Business Architecture.

Business Architecture Components			
Component	***Type of Model***	***Function***	***Relationship***
Concept of Operations (COO) 	The COO describes current operations, a vision of transformation, transformations to stakeholder roles and information exchanges, and the influence of enablers (e.g., new policy, legislation, technology).	• Establishes a vision for transformation of the State Medicaid Enterprise. • Links enablers to the improvements in business processes. • Shows how stakeholders' roles change. • Shows how processes and data change. • Focuses on improvements in the SMA operations.	• Establishes the targets and vision that other BA components will address. • Provides a platform and grounding for the MMM and the Business Capability Matrix (BCM).
MITA Maturity Model (MMM) 	Subdivided into five (5) levels of progressive maturity, the MMM illustrates how to transform goals, objectives, and business capabilities progress.	• Shows how to meet State Medicaid Enterprise goals and objectives and how to improve business areas. • Provides base, consistency, and measures for specifying detailed business capabilities as they mature.	• MMM provides structure to the COO vision to build the BCM. • Provides a framework and model for the business capabilities. • MMM aligns with the Seven Standards and Conditions requirements.
Business Process Model (BPM)	The BPM is a collection of common business processes for the operation of Medicaid Programs.	• Provides a model of major business areas and subareas. • Provides detailed	• Originates from the Systems Technical Advisory Group (S-TAG) redesign of the Medicaid

Business Architecture Components			
Component	***Type of Model***	***Function***	***Relationship***
	A template captures the description of each business process. The business processes cover current and near-term operations.	definitions of common business processes. • Describes business processes using a common vocabulary. • Renders some business processes obsolete at higher levels of maturity.	Management Information System (MMIS) model, various state models, and the Medicaid HIPAA-Compliant Concept Model (MHCCM) and federal regulation. • Business processes under review by the National Medicaid EDI Healthcare (NMEH) workgroups. • Review and refinement process under continual review by States.
Business Capability Matrix (BCM) 	Subdivided into five (5) levels of maturity, the BCM applies the MMM to the BPM to derive capabilities for each business process at each maturity level. The BCM describes how to transform and improve a business process.	• Shows how each business process can improve. • Provides consistency and a model for the SMA to use in measuring their own levels of maturity for each business process.	• The BCM defines six (6) business capabilities across five (5) levels of maturity for each business process. • Aligns with the MMM for the description of the characteristics of the maturity levels. • Forms the evaluation criteria for the State Self-Assessment (SS-A).

The Concept of Operations

The COO is a tool used to describe current business operations and to develop a future transformation that meets the needs of stakeholders and responds to enablers (e.g., new policy, legislation, and technology). Other industries (e.g., the Department of Defense (DOD) or National Aeronautics and Space Administration (NASA)) use the COO as a strategic-planning device to capture the As-Is (i.e., current) operations, create the To-Be (i.e., future) environment, and level-set expectations before engaging in major transformation projects. The COO provides a structure to place information gathered from interviews with States and visioning sessions conducted at MMIS conferences. The COO structure provides key information including:

- Definition of the scope of the Medicaid Enterprise.
- Description of the As-Is (current) operations in terms of business, architecture, and data.
- Description of the drivers and enablers that propel and support transformation.
- Description of the To-Be environment in terms of business, architecture, and data.
- Description of operational scenarios with sequence of events and activities carried out by stakeholders and the State Medicaid Enterprise.
- Description of the impacts on each stakeholder.
- Description of a summary of the improvements to the State Medicaid Enterprise and stakeholders.

The goal of the COO is to project changes, transformations, and provide visions of To-Be operations, new roles and data exchanges for stakeholders. The MITA COO provides a common vision shared by CMS and the States that preserves individual adaptations at the state level.

Part I, Chapter 2, Concept of Operations, provides more information on the Medicaid Enterprise COO. Part I, Appendix A, Concept of Operations Details, contains additional information.

MITA Maturity Model

The MMM originates from industries that use such models to illustrate how a business can mature. The MMM adapts the industry model to the Medicaid Enterprise by describing Medicaid Program goals and objectives and the maturation of the MITA technical principles. The transformation through each of the five (5) levels represents significant business capabilities advances over the previous period.

The MMM describes the five (5) levels of maturity and the measurable qualities that each level demonstrates. The general description is at a high enough level to apply to most aspects of State Medicaid Enterprise operations. For example, the MMM defines, at Level 1, the business area or process is in compliance with current regulations. At Level 2, the process matures because of pressures for cost containment and availability of newer tools. At Level 3, noticeable improvement occurs in the standardization and sharing of information

and processes among multiple entities, including the beneficiary. At Level 4, instant availability of clinical information increases the transformation. By Level 5, States and local agencies have become interoperable across the United States.

The MMM is the point of reference for the BCM. The BCM aligns with the MMM to maintain consistency of definition. Part I, Chapter 3, Maturity Model, presents details of the MMM, and Part I, Appendix B, Maturity Model Details, contains the complete detailed text.

Business Process Model

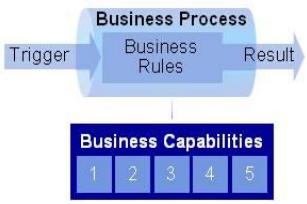
The BPM is a collection of common business processes for the operation of Medicaid Programs. A template describes those processes, including current and near-term operations as defined in Level 3 of the BCM. The MITA Framework BPM derives from multiple sources that create a common model that reflects most State Medicaid Enterprises – notable sources include the S-TAG *Redesign of the Medicaid Management Information System (MMIS),* and the CMS MHCCM, that consolidates business processes from a dozen States.

States should develop business workflows for the different business functions of the state to advance the alignment of the state's capability maturity with the MMM. These business workflows should align to any provided by CMS in support of Medicaid and Exchange business operations and requirements. States should work to streamline and standardize these operational approaches and business workflows to minimize customization demands on technology solutions and optimize business outcomes.

There are those business processes that all States perform (e.g., Enroll Provider) and those that are voluntary and depend on implementation of special programs within a state (e.g., pay Managed Care Organization capitation or enrollment of member in a special program). The BPM defines common business practices across all State Medicaid Enterprises. The MITA Framework BPM offers a hierarchy of Tier 1 business areas, Tier 2 business categories and Tier 3 business processes. The MITA Framework contains ten (10) business areas divided into twenty-one (21) business categories with eighty (80) individual business processes. See Part I, Appendix C, Business Process Model Details.

The BPM provides a Business Process Template (BPT) for describing each business process. The BPT provides a summary of the business process, trigger event and result, activity steps, data requirements, predecessor and successor processes, failure points, and other elements. The NMEH workgroups review business processes, and they stand to benefit from ongoing review by state workgroups. See Part I, Chapter 4, Business Process Model, for a detailed presentation of the BPM and Part I, Appendix C, Business Process Model Details, for the complete set of business area definitions and business process descriptions.

Business Capability Matrix



Applying the MMM to each business process yields the BCM that shows how the business process matures. The BCM defines six (6) business capabilities with five (5) levels of maturity to each business process. The BCM assigns capabilities to an individual business process rather than to SMA operations taken as a whole. In reality, no SMA is "all Level 1" or "all Level 2," but rather having

a blend of different levels of capability. An example of the relationship among the business process, the MMM, and the BCM is shown in **Table 1-3.**

Part I, Chapter 5, Business Capability Matrix, presents more information on the BCM and Part I, Appendix D, Business Capability Matrix Details, lists the capabilities defined for business processes contained in MITA Framework.

Table 1-3. Business Process Example: Authorize Service

Authorize Service Business Process		
Level No.	***MITA Maturity Model Definition***	***Business Capability***
1	Complies with regulations; mostly manual activities; delays in communicating results.	Receipt of and response to requests are primarily via paper, fax, and phone; apply policy guidelines manually; complies with regulations on turnaround time and accuracy.
2	Improvements spearheaded by cost management goals; improvements made in speed of communication and response.	Authorization of service given greater priority as a cost-management tool; improvements made in communications; receipt of and responses to requests made via portal; adopt HIPAA standards.
3	Information and services shared with other agencies and beneficiary; streamlined process; improved results.	Solutions become reusable and sharable because of adoption of standards by state agencies and data-sharing agreements to collaborate on authorization of services.
4	Incorporates clinical information into the process to further improve results.	Direct access by the authorizing agency to access to clinical information; automation of requests; render decisions by payer automatically as provider updates beneficiary's electronic health record; improve accuracy because provider bases decisions on clinical evidence; limits manual intervention to exceptions.
5	Demonstrates widespread interoperability to achieve maximum improvements envisioned at this time.	Direct access by the authorizing agency to clinical and administrative information anywhere in the country to confirm or deny the authorization for a service.

Business Architecture Component Relationships

The four (4) components of the BA are interrelated:

- The COO serves as a model to frame a vision for Medicaid Program health care outcomes and operational efficiencies. It establishes the To-Be environment that becomes the goal of the Medicaid Enterprise transformation. The COO provides the vision for the MMM. It also supplies an overview for the BPM.
- The MMM uses a common industry approach to describe the differences between five (5) levels of progressive maturity, ranging from As-Is operations to the To-Be environment. The MMM is the point of reference used by the BCM to describe the levels of maturity for a business process.
- The BPM describes As-Is (i.e., current) Medicaid operations as defined for Level 3 of the BCM.
- The BCM uses the five (5) levels of maturity described in the MMM and the To-Be environment defined in the COO to create definitions for business capabilities at five (5) levels of maturity for each business process.

Figure 1-3 shows the relationship among the various components of the BA.

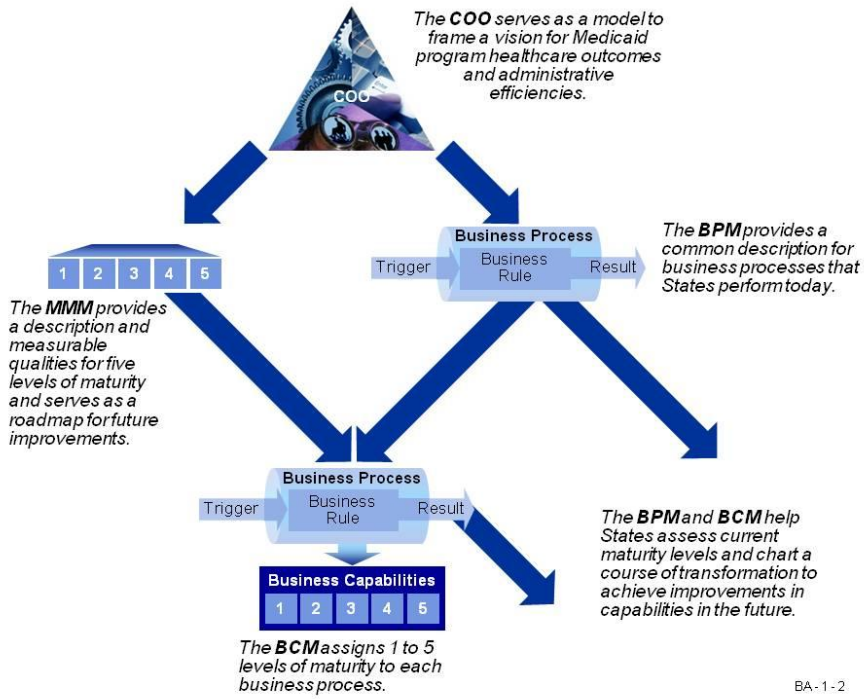


Figure 1-3. Relationship Among the Components of the Business Architecture

Connection Between Architectures

The MITA Framework consists of three (3) interrelated BA, IA, and TA components that work together to define a business-driven enterprise transformation. The BA describes the business process activities along with data input, data output, and required shared data. The IA provides the bridge between the business need of information and the technical solution data. The TA describes the technology enablers associated with the business capabilities and their varied levels of maturity.

Figure 1-4 illustrates how BA, IA, and TA components interrelate. This is a high-level view of the primary components within each architecture. Front Matter, Chapter 6, Introduction to the MITA Framework, presents a detailed discussion on the inter-relationship of all three (3) architectures. The BA categorizes the business processes as business capabilities and assigned a level of MITA maturity. Based on the level of maturity, the IA defines the Conceptual Data Model (CDM) and Logical Data Model (LDM) with necessary data attributes for the design of technical capabilities. The TA defines the resulting business services and technical services for the To-Be environment of the State Medicaid Enterprise.

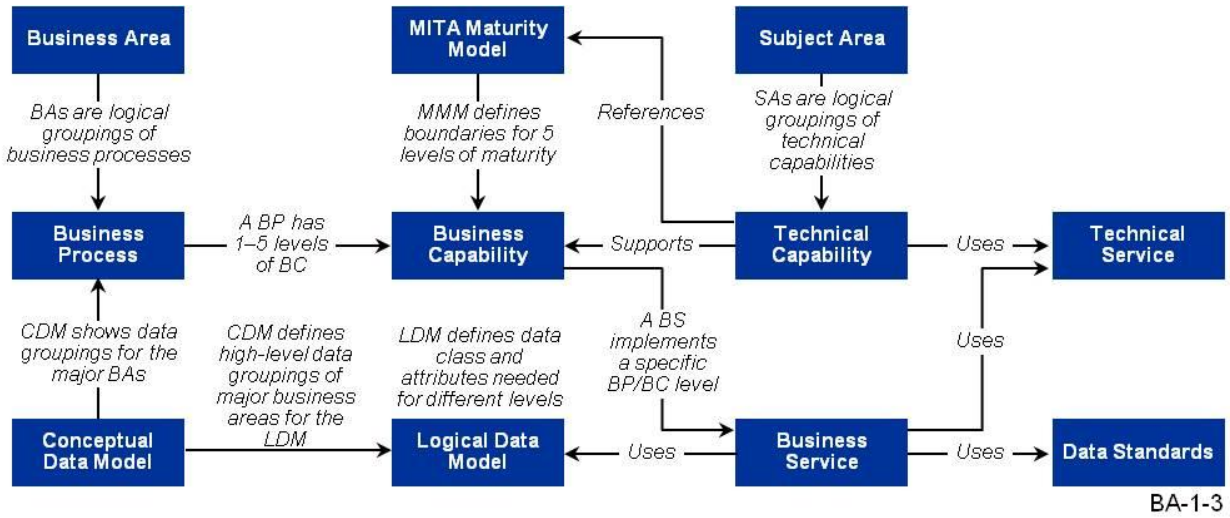


Figure 1-4. Relationships Among Components of the BA, IA, and TA

The BA does not present specific technical solutions or detailed data requirements. Some of its components, however, point to specific companion components in the IA and TA sections of MITA Framework (Parts II and III, respectively). **Table 1-4** describes the name of the BA Component and its relationship to the other architecture component as well as its MITA Framework 3.0 documented location.

Table 1-4. Component Relationships of the BA, IA, and TA

BA, IA, and TA Component Relationships		
Business Architecture Component	***Other Architecture Component***	***Relationship***
COO – Data Exchanges	IA (Part II) – All chapters	IA chapters provide details regarding the transformation of data and information identified in the COO.
COO – Drivers and Enablers	TA (Part III), Chapter 2, Technical Management Strategy; Chapter 7, Technical Capability Matrix	Service-Oriented Architectures (SOA) and Technical Capabilities are enablers referenced in the COO.
BPM – Trigger Event, Result, and Shared Data in each business process describe in general terms the kind of data received by, used by, and resulting from each business process	IA (Part II), Chapter 2, Data Management Strategy; Chapter 3, Conceptual Data Model	Data Management Strategy (DMS) explains how the data supports the business processes. The CDM identifies groupings of information common to Medicaid business areas and clusters of business processes.
BCM	IA (Part II), Chapter 4, Logical Data Model; Chapter 6 Information Capability Matrix	The LDM defines data classes and attributes needed to support different levels of maturity. A business process described at a Level 3 business capability requires Level 3 data attributes.
BCM	TA (Part III), Chapter 7, Technical Capability Matrix	The BCM drives the Technical Capability Matrix (TCM). TA associates technical capabilities with the BCM level where specific technology is necessary to support the business process.
BCM – Level 3 and above	TA (Part III), Chapter 2 Technical Management Strategy; Chapter 3, Business Services	A business service is an implementation of a specific business process at a specific level of capability. TA associates business services and SOA with BCM Level 3 and above.

Using the Business Architecture

CMS requires States to align to and advance increasingly in MITA maturity for business, architecture, and data. CMS expects States to use the BA components to plan for improvements in the State Medicaid Program, both in the delivery of services to providers and beneficiaries, and in its internal operations and exchanges of information with the other external stakeholders. BA provides the COO and the MMM as background material. States and vendors use the BPM and the BCM tools. **Table 1-5** summarizes how stakeholders use the BA.

Table 1-5. Stakeholder Use of the Business Architecture

Stakeholder Use of the Business Architecture	
Stakeholder	***How Stakeholders Use BA***
SMA	The SMA maps their operations to the BPM and then assesses the level of maturity using the BCM. When the SMA requires information technology upgrades to support program improvement, the SMA uses the SS-A to show how it will use the enhanced funding to achieve a specific result (e.g., moving from Level 1 or 2 to Level 3).
CMS	CMS provides leadership in establishing the MITA guidelines and promoting them among States. Through the release of the MITA Framework, special workshops with States, Medicaid conference material, and working with early adopter States, CMS provides guidance and principles to achieve the Medicaid vision.
Vendors	The vendor community uses the MITA Framework as a reference in planning their research and development activities. They use the BA, in particular, to determine the maturity level of functions supported by their systems. They have a common understanding of the CMS direction for the Medicaid Program, and they can show how their products support MITA capabilities.
Providers	Providers play an active role in the exchange of information with the SMA. They can look at the SMA BA to understand what direction the SMA is taking and to keep this in mind as they invest in information technology upgrades and reengineer their practices. In some cases, the SMA involve providers directly in planning a Medicaid Program transformation.
Beneficiaries	The BA supports the SMA person-centric outreach, eligibility and enrollment activities across the health and human services spectrum. Beneficiaries and consumer groups are able to look at the SMA BA and identify the benefits. At Level 3 business capability maturity, beneficiaries are participants in self-directed health care decisions.
Legislators, Governors	States develop presentations based on the BA to show the governor and legislators what goals CMS is establishing for States that request enhanced

Stakeholder Use of the Business Architecture	
Stakeholder	***How Stakeholders Use BA***
	funding.
Other Payers and Other Agencies	The MITA team invites other payers and other agencies to review the MITA Framework, especially the BA, to learn about the Medicaid Enterprise transformation.

In general, MITA supports stakeholder roles and access to information, technology that eliminates most manual activities, and the transformation of the Medicaid business with the assistance of the CMS, the SMA, providers, and beneficiaries. In addition, MITA supports providers with instant access to patient records no matter what their location is, patients can view their Personal Health Information (PHI) and make informed decisions regarding treatment, and payers can view clinical records nationally to expedite decisions on prior authorization and payment.

Next Steps in Developing the Business Architecture

The MITA Framework delivers the starter kit for a controlled State Medicaid Enterprise transformation. MITA will continue to evolve over time. The business process defines the input and output of information but not the details of the process; however the business community will still decide the requirements for standardized triggers and results. The CMS MITA team continues to support SMA efforts by serving as a conduit for improvements to MITA models that all States and vendors can access.

The MITA Framework and the BA are ever evolving so that the SMA can continuously improve the way they deliver services to beneficiaries and providers, account for outcomes, reward participants based on performance, and respond dynamically to requests for information.

BA-1-5