
Part I - BUSINESS ARCHITECTURE

Chapter 2 - CONCEPT OF OPERATIONS



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Introduction

This chapter presents the Medicaid IT Architecture (MITA) Concept of Operations (COO) and explains its role in the MITA Framework. The MITA Initiative challenges us to look to the future to achieve a vision of transformation. The COO provides a framework for describing the As-Is operations and the To-Be environment. The State Medicaid Agency (SMA) is familiar with As-Is and To-Be models as tools to describe current operations and future improvements. The MITA team chose the COO model as the best approach for communicating future capabilities and identifying transition plans for States as they leverage technical solutions to improve their business operations. The focal point of the COO is to provide a collective vision of the future Medicaid Enterprise.

The topics covered in this chapter include:

- ❖ Concept of Operations
- ❖ Concept of Operations within the MITA Framework
- ❖ Medicaid and MITA Visions
- ❖ Stakeholder Roles Transformed
- ❖ Information and Communications Transformed
- ❖ Primary Enablers of the Transformation
- ❖ State Medicaid Agency Operations Evolve
- ❖ Using the COO

Purpose

The purpose of the COO is to document the Medicaid Enterprise vision of the future and describe the impact of planned improvements on stakeholders, information exchanges, Medicaid operations, and health care outcomes.

Scope

The COO helps frame the vision and showcase the target To-Be environment. It does not describe the transformation pathway. As with any vision, short-term gains are more concrete than long-term achievements. The To-Be COO depends on enablers that are and will be available in the foreseeable future. The MITA Framework will adapt as these changes occur.

Concept of Operations

A COO is a structure that helps organizations document their As-Is (current) operations and define To-Be (future) transformations. The MITA COO describes required improvements to stakeholder interactions, the quality and content of data exchanges, and the SMA business capabilities. A COO is a well-thought-out vision of the future with stakeholders' interactions in mind.

Concept of Operations within the MITA Framework

The COO within the MITA Framework synthesizes the To-Be vision that States, the territories, and the District of Columbia (hereinafter referred to as States) have provided for improvements in the Medicaid Program and in agency operations. The COO encompasses the individual operations of Medicaid Agencies for the States. It reflects different organizational structures, policies, procedures, business rules, and data. **Table 2-1** summarizes the key components of the MITA Framework COO.

Table 2-1. Summary of Key Components of the MITA COO

Summary of Key Components of the MITA COO		
Component	Description	Impact on Transformation
Vision for the Medicaid Enterprise	Describes a future that meets Medicaid goals as defined by the SMA and Centers for Medicare & Medicaid Services (CMS). The vision draws from many sources, including interviews with States and other agencies. It includes a statement about the Medicaid Program mission and goals and about MITA mission, goals, and objectives.	The vision lays the foundation for the transformation of the Medicaid Enterprise by setting targets for the MITA Maturity Model (MMM) and business capability improvements discussed in connection with the MITA Business Architecture (BA).
Stakeholders	Identifies major stakeholders (e.g., beneficiaries, providers, payer agencies, regulators, legislators, and the public) and describes their roles now and in the future.	Stakeholders and the roles they play change, and new stakeholders emerge. Some changes bring paradigm shifts in the ways individuals and organizations participate in Medicaid.
Information and Data	Addresses data exchanges that occur among stakeholders now and in the future. It includes all data required by the Medicaid Enterprise for its operations and all data shared or exchanged with other parties.	Information and data continuously undergo change. The MITA Framework presents a structure for ensuring that evolving data standards and new requirements for information meet objectives of higher levels of business maturity.
Drivers and Enablers	Summarizes drivers or enablers that propel and support the transformation (e.g., new legislation and regulations, new standards and technology, and shifts in demographics and revenue).	Enablers are external to the business operations, but are major drivers for change. Part II and Part III of the MITA Framework identify enablers and show their association with the MITA Business Capability Matrix (BCM).

Summary of Key Components of the MITA COO		
Component	Description	Impact on Transformation
As-Is Operations	As-Is operations are the levels of operational maturity found in States today.	As-Is operations are the starting point for the transformation.
To-Be Environment	Describes the target vision over a time frame. Graphics supplement the narrative description.	To-Be environment reflects changes we can expect to see over the short term and dramatic changes – paradigm shifts – we can expect to see over the long term in the way the SMA does business.
Business Improvements	Describes the impacts of the transformation to each of the stakeholders and provides operational scenarios.	A stakeholder can understand and validate how the transformed Medicaid Enterprise affects their operations.

Medicaid and MITA Visions

This section provides a high-level view of the Medicaid of the future to show the possibilities of transformation that the MITA framework provides. The next section identifies sources for the vision and provides some examples of the transformation.

High-Level View of the Future

The MITA Framework defines a future in which health care stakeholders (e.g., policy makers, taxpayers, consumers, providers, public health and oversight agencies, and health plans) participate in achieving the objectives of improving health outcomes of the population served by providing the right services at the right time at the right cost in a timely and accountable way. Stakeholders are able to apply for health assistance and receive an eligibility determination in real-time. Stakeholders benefit from improvements in information sharing and exchange that enable caregivers, payers, and patients to view appropriate clinical information immediately and use this information to make appropriate health care decisions. Providers and payers are able to focus on their primary functions of care giving, benefit plan monitoring and evaluation as most of the administrative burden of information capture, processing, and reporting are obsolete with the usage of direct messaging between data exchange partners.

Realizing these benefits requires an underlying infrastructure that can support the use of patient-focused electronic health information, and information that goes beyond the limitations of a specific provider, health plan or delivery system. It also includes the process of sharing health-related information in a secure manner, protecting the confidentiality of the information. The building blocks associated with this infrastructure are the Electronic Medical Record (EMR) and the Electronic Health Record (EHR) for health care professionals, Personal Health Record (PHR) for individuals, and Health Information

Exchange (HIE) used to tie the infrastructure together. A Regional Health Information Organization (RHIO) organizes all of these components into a local infrastructure.

Additionally, the stakeholders establish a competitive, consumer-centered health insurance marketplace to compare and buy insurance, increasing individuals and small businesses control. The Health Insurance Exchange (HIX) provides an infrastructure that offers plans, determines eligibility and provides enrollment to support one-stop shop entry points for affordable coverage.

Aggressive federal initiatives to improve the quality of care as well as streamline the administration of health services are influencing the Health Care and Health Insurance industries. Relevant federal regulations such as Health Insurance Portability & Accountability Act (HIPAA) of 1996, American Recovery and Reinvestment Act (ARRA) of 2009, Health Information Technology for Economic and Clinical Health (HITECH) of 2009, Children's Health Insurance Program Reauthorization Act (CHIPRA) of 2009, and the Affordable Care Act of 2010, (among others) are changing the administration of health care and insurance. It is vital that the MITA Framework supports the changes in securing information, sharing resources and enhancing the stakeholder's experience.

NOTE: Due to the regulation rule-making efforts underway at CMS, the MITA Framework 3.0 does not include the Eligibility & Enrollment (Member), the Member Management business processes or business capability matrices, and a portion of the Concept of Operations (COO) outlining the "to-be" for eligibility, enrollment, and insurance exchange information. CMS will update the MITA Framework 3.0 with appropriate information from the final rules in 2012.

Medicaid Mission and Goals

The first step in the development of the COO is to frame the vision, as shown in **Table 2-2**. The MITA team distilled these statements from visioning sessions and interviews.

These high-level statements provide the foundation for all components of the MITA Framework. The Business, Information, and Technical Architectures are traceable to this initial framing of the improvements and transformation of the Medicaid Enterprise. The MITA Framework is a series of versions of the original framework, each supplying more detail.

Table 2-2. Medicaid Mission and Goals

Medicaid Mission and Goals	
Mission & Goals	Description
Medicaid Mission	To provide quality health care to members by providing access to the right services for the right people at the right time for the right cost.
Medicaid Goals	To improve health care outcomes for Medicaid members. To ensure efficient, effective, and economical management of the Medicaid Program.

The COO establishes a baseline of current As-Is operations. It also describes the To-Be environment. **Table 2-3** illustrates the Medicaid mission – to provide quality health care to beneficiaries by providing access to the right services for the right people at the right time for the right cost – in the As-Is, at Level 3 & 4 maturity target, and at Level 5 maturity target.

Table 2-3. The Medicaid Mission To-Be Target

Medicaid Mission		
As-Is	Level 3 & 4 Targets	Level 5 Target
Agencies comply with state regulations to maintain an adequate provider network and pay claims promptly to encourage provider participation and ensure access to care. Many steps require manual intervention. Data content is nonstandard. Appropriateness of care assessed retrospectively.	Agencies coordinates with other payers to offer one-stop shop entry points to applicants for service and provider enrollment, provider reimbursement, and coordination of benefits. Patients make personal health care decisions. Agencies accommodate cultural, linguistic, and health needs. Agencies use national standards for data content and exchange. Coordination and collaboration across health care programs intrastate contributes to improved outcomes.	Agencies can directly access clinical and administrative records nationally through a network of RHIOs and other interoperable hubs. Agencies make informed, automated decisions regarding most enrollment and payment interactions. Agencies can assess appropriateness of care at the point of service. Agencies can access necessary data to compare services and outcomes across a broad spectrum of agencies and States. Access to and use of clinical data increases the efficiency and effectiveness of decision-making.

MITA Mission, Goals, and Objectives

MITA, a primary enabler of the Medicaid mission, has its own mission, goals, and objectives, as shown in **Table 2-4**. **Table 2-5** and **Table 2-6** shows the way MITA achieves those goals today and the way it can support Medicaid in the future.

Table 2-4. MITA Mission, Goals, and Objectives

MITA Mission and Goals	
Mission, Goals, and Objectives	Description
MITA Mission	To establish a national framework of enabling technologies and processes that support improved program administration for the Medicaid Enterprise and for stakeholders dedicated to improving health care outcomes and administrative

MITA Mission and Goals	
<i>Mission, Goals, and Objectives</i>	<i>Description</i>
	procedures for Medicaid members.
MITA Goals and Objectives	- Develop seamless and integrated systems that communicate effectively to achieve common Medicaid goals through interoperability and common standards. - Promote an environment that supports flexibility, adaptability, and rapid response to changes in programs and technology. - Promote an enterprise view that supports enabling technologies aligned with Medicaid business processes and technologies. - Provide data that is timely, accurate, usable, and easily accessible in order to support analysis and decision making for health care management and program administration. - Provide performance measurement for accountability and planning. - Coordinate with public health and other partners, and integrate health outcomes within the Medicaid community.

Table 2-5. The MITA Goals To-Be Target (Example 1)

Develop seamless and integrated systems that effectively communicate to achieve common Medicaid goals through interoperability and common standards.		
<i>As-Is</i>	<i>Level 3 & 4 Targets</i>	<i>Level 5 Target</i>
The original model of six-plus integrated subsystems representing the Medicaid Management Information System (MMIS) persists. The system dictates data standards. Data exchanges are point-to-point (i.e., not interoperable).	Agencies share some business processes and adopt national standards. Statewide or regional data exchanges facilitate communications. Intrastate agencies coordinate and collaborate on common benefit plans and business services (e.g., Enroll Member).	Agencies seamlessly integrate clinical and administrative information. This signifies a paradigm shift, as providers, beneficiaries, and payers gain access to clinical information for instant decision-making. The agency accesses the Nationwide Health Information Network (NwHIN). Medicaid goals merge with national health care goals and those of public health, public safety, and anti-bioterrorism.

Table 2-6. The MITA Goals To-Be Target (Example 2)

Provide data that is timely, accurate, usable, and easily accessible to support analysis and decision making for health care management and program administration.		
As-Is	Level 3 & 4 Targets	Level 5 Target
The source of data is primarily the claim. Data is accessible via a request/response process that meets current regulations, but management experiences delays and inconsistencies in acquiring data. Data is nonstandard, and the SMA uses it primarily to manage operations.	The SMA adopts nationally recognized data standards. Shared repositories of data improve efficiency of access, which improves data accuracy, accessibility, and program administration.	Virtual access to standardized clinical data across States through a network of regional data exchange hubs greatly enhances the decision-making process. Clinical evidence makes decisions consistent and well grounded.

Transformation from As-Is to To-Be

The Medicaid mission and MITA goals provide the platform for a transformation as called for in the COO. Transformation is the modernization of information systems to meet current business needs. With systems transformation, States can meet coverage goals, minimize duplication, ensure effective reuse of infrastructure and applications, produce seamlessness for consumers, and ensure accuracy of program placements. **Table 2-7** shows different examples of the transformation.

Table 2-7. Examples of Transformation from As-Is to To-Be

Example of Transformation	
As-Is	To-Be
Providers and Beneficiaries Interact with the Medicaid Program.	
Currently, applicants for public services will often go to several different offices and file several applications to receive benefits from programs and providers. There is no consistent means of communication. Services may overlap; there may contraindicated treatments; resources may waste time; beneficiaries may miss opportunities for health improvements; providers do not know what other services the patient is receiving; and the money for payment “follows the program, not the beneficiary,” which requires beneficiaries to chase programs. States have difficulty accounting for quality of health services or payment accuracy.	An individual or agent/caregiver can access any public or community service agency (i.e., through centralized state resource centers in person, by telephone, online, or through a consumer portal) and receive standardized prompts to information on available benefits and next steps. Information provided by the individual or provider can initiate applications for appropriate benefits. The program establishes an optimal benefit hierarchy for the beneficiary, eliminates language, cultural, and geographic barriers, and accommodates functional challenges. Funding follows the beneficiary.

Example of Transformation	
As-Is	To-Be
Clinical Information Is Necessary to Complete the Business Process.	
Currently, clinical information on a patient's treatment history and outcomes arrives in a paper format to support service authorizations, payment of claims, and review or audit of the services rendered. The information is nonstandard and the process is labor intensive, inconsistent, and slow. Administrative, financial, and public health reporting derived from clinical data collected at the provider site and reported (redundantly) to secondary stakeholders (e.g., public health, immunization registry) diminishes data quality and timeliness.	Standardized and protected clinical information is immediately accessible to the patient and other authorized parties from the point of service, including clinical decisions. There is a virtual complete record of every beneficiary, including all health plan records, clinical protocols, and standardized business rules definitions pertaining to service coverage. Generation of all relevant clinical, administrative, financial, and public health information from the point of care and shared with providers and payers reduces provider reporting burdens and improves patient safety. Immediate access to clinical data improves health outcomes by reducing administrative burdens for providers, payers, and patients. It allows providers to focus on treatment and patients to participate in the process. Improvements radiate throughout Medicaid operations. For example, prior authorization occurs automatically as the provider enters the treatment plan information into the medical record, and the Health Information Exchange (HIE) notifies Medicaid of treatment. Applies standardized business rules definitions and alerts the provider regarding the status of the service. Medicaid operations need to review only exceptional prior-authorization cases. Operations staff can focus on performance standards and outcome analysis.
Collaboration Improves Public Health Outcomes.	
Currently, Medicaid, public health, and other agencies communicate ad hoc, with little or no interoperability. Providers and payers report service information for multiple purposes (e.g., payment, encounter reporting, disease reporting, and Medicaid Statistical Information System [MSIS] reports); therefore, there is redundancy.	Medicaid, public health, and other agencies collaborate formally on the reporting of infectious disease, bioterrorism threats, immunizations, and other health care events. Collecting information at the point of service and storing it in a medical record automatically notifies payers, registries, alert systems, and reporting systems, that new service information is available. Collaboration improves health outcomes, promotes public safety, and increases operational efficiency.

Example of Transformation	
<i>As-Is</i>	<i>To-Be</i>
	Operations staff no longer chases information and complete redundant reports, but instead focus on assessing information that is readily available and collaborate with other agencies to understand health trends and develop strategic and tactical responses.

Stakeholder Roles Transformed

This section illustrates how the transformation of the Medicaid Program affects stakeholders (e.g., beneficiaries, providers, state and local agencies, federal agencies, etc.). **Table 2-8** summarizes the roles of stakeholders for the To-Be environment.

Currently, Medicaid agencies interact with stakeholders through both traditional and new channels, including Electronic Data Interchange (EDI) and web portals. These are point-to-point transactions that differ from state to state. Stakeholders in these transactions typically maintain a passive relationship with Medicaid – applicants wait for enrollment and providers wait for payment.

In the future, however, stakeholders become more active participants. Beneficiaries, for example, are able to make more health care choices and maintain personal electronic records that follow them. Providers communicate directly with other providers to initiate referrals and receive outcome information. Other agencies and payers become true Medicaid partners in a collaborative environment in which they share information.

Table 2-8. Transformation of Stakeholder Roles

Roles of Stakeholders – As-Is and To-Be		
<i>Primary Actor/As-Is</i>	<i>To-Be</i>	<i>Change</i>
Beneficiaries – Applicants for State Medicaid Program benefits.	States coordinate benefits of applicants for State Medicaid Program with other programs (e.g., Medicare, Children's Health Insurance Program (CHIP), and Basic Health Program).	- Employers Beneficiaries proactively participate in their health care regimens. They benefit from “no wrong door” entry points and administrative efficiencies with shared eligibility services. - Benefits follow the person; beneficiaries take proactive part in managing their health care benefits by self-directing their care.

Roles of Stakeholders – As-Is and To-Be		
Primary Actor/As-Is	To-Be	Change
Providers – Providers of services including pharmacists, case managers and home and community-based care givers serving the Medicaid population.	The Health Information Exchange (HIE) links all participating providers to each other and the beneficiary populations. A National Provider Registry using the National Provider Identifier (NPI) is available.	- Providers are free from administrative functions (e.g., eligibility and service authorization requests, claims preparation) and can concentrate on the delivery of care, beneficiary education, and prevention. - Primary, referring, tertiary providers communicate with each other via the Health Information Exchange (HIE). Appropriate information is available on demand. There is a reduction in redundant data storage. - The Health Information Exchange (HIE) enables authorized providers' Electronic Health Record System (EHRS) to access patient identification, demographics, program-specific benefits, treatment history and clinical protocols.
Providers - Providers submit claims by mail, EDI, or web portals to streamline claims processing and meet deadlines for producing checks.	Multiple agency collaboration improves efficiency for the provider and payer through a payment and coordination-of-benefits hub.	Providers update medical records and thereby send a message automatically to the payer, who validates the service and authorizes payment.
SMA – By law, the designated single state agency responsible for administering the Social Security Act Title XIX medical assistance program (Medicaid).	The single state agency collaborates with intrastate agencies, the interstate and federal agencies through information exchange agreements.	- The SMA creates “no wrong door” entry points for applicants and aligns individuals with coordinated services to optimize health outcomes through flexible programs. The SMA focuses on achieving program efficiencies and accountability, and contributes to safeguarding the health of the population. There are significant reductions of manual operations and enhanced strategic functions. - The SMA has immediate access to all appropriate information

Roles of Stakeholders – As-Is and To-Be		
Primary Actor/As-Is	To-Be	Change
		available for strategic planning, outcome measurements, and oversight. System-to-system communications replace manual operations.
CMS – CMS staff and regional office staff oversee state adherence to Medicaid program compliance for service delivery, operation of Medicaid systems, administrative services, and Federal Financial Participation (FFP). CMS role is reactive, focusing on compliance.	The Federal Medicaid Enterprise – defined as a collaboration among Health & Human Services (HHS) agencies who exchange information with State Medicaid Enterprises.	- Federal agencies collaborate to improve health outcomes nationally. - Federal agencies implement information exchanges that include the SMA, or, at a minimum, enter into agreements to participate in State Medicaid Enterprise exchanges.
Regional Health Information Organization (RHIO) – A health information organization that brings together health care stakeholders within a defined geographic area and governs health information exchange among them for the purpose of improving health and care in that community.	The RHIO serves as a conduit for information exchange between participating providers and agencies. RHIOs represent the interests of providers, payers, and consumers.	Interoperable RHIOs that consent to standardized data content and communication protocols constitute NwHIN, which allows queries and information exchange across the country for authenticated subscribers.
Other Payers – Other benefit programs with liability to cover medical costs for Medicaid beneficiaries.	Other benefit programs share benefit coverage with Medicaid via the Health Insurance Exchange (HIX). Embedded rules automatically perform coordination of benefits. Health Insurance Exchange (HIX) participants benefit from an immediate cascade of liability calculations.	Health Insurance Exchange (HIX) contains all programs in which a patient is a participant. The various programs' eligibility, benefits, treatment histories, and clinical protocols required for payment are available to the providers' EHRS during an encounter. Programs' systems share coordination of benefits, payment liability information and apply liability rules prior to transferring funds to the provider's bank accounts for payment at the conclusion of the encounter.

Roles of Stakeholders – As-Is and To-Be		
Primary Actor/As-Is	To-Be	Change
		Apply a single set of standardized business rules definitions for coordination of benefits.
Other Agencies – State, local, federal agencies that exchange information with Medicaid using different media, connectivity, format and data content. Often agencies report the same data in multiple ways multiple times. Most critical is the untimely secondary reports of clinical information to public health.	Others agencies collaborate with the SMA to automate access to data of record, permitting authorized stakeholders to build virtual data records, perhaps from multiple data sources such as Health Information Exchange (HIE), whenever necessary.	- Establish agreements for the exchange of information between the SMA and its partners, including collaboration amongst intrastate agencies, the interstate and federal agencies, the Health Insurance Exchange (HIX) and the Health Information Exchange (HIE). - Collaborated agencies have access to required information to monitor fraud and abuse, treatment outcomes, provider performance, Key Performance Indicators (KPI), service utilizations, patient safety and other analysis. - Promotion of sharing, leverage and reuse of Medicaid technologies and systems within and among States.
General Public, Legislators, Regulators, and others – Other stakeholders can request and receive information from the SMA.	Other stakeholders can access information directly through RHIOs, subject to access restrictions and authentication.	Other stakeholders can access information directly through RHIOs nationally through NwHIN, subject to access restrictions and authentication. Information includes health outcomes and provider performance.

Information and Communications Transformed

Table 2-9 summarizes the changes and improvements in information exchanges and data content among stakeholders within the Medicaid Enterprise. The major changes are:

- ❖ Data standardization for exchange purposes (or at least participants are able to “read” the same data, even if translated).
- ❖ Providers and beneficiaries use information to improve treatment and outcomes.
- ❖ Machine-to-machine “conversations” replace data used for routine operations.

- ❖ The Medicaid Enterprise transforms the information into a knowledge base that lets the SMA focus on strategic planning, thereby improving performance and outcomes, and collaborating nationally to improve health and safety.

In the As-Is operations, data primarily supports Medicaid operations. The claim is the primary source of that data. Standardization of data content is only internal and in transactions that comply with HIPAA. The SMA has no external interoperability. Information retrieval can be time consuming and expensive.

In the To-Be environment, semantic interoperability facilitates data sharing on a national scale. Requesters can view data integrated from many sources while the data remains “at home.” Clinical data supplements administrative data. The primary use for data is in strategic planning. The SMA automates operations and runs in real time as provider systems communicate directly with payer systems, and payer systems communicate with other payers and agencies.

Table 2-9. Data and Communications To-Be Target

Data and Communication Targets		
As-Is	Level 3 & 4 Targets	Level 5 Target
General characteristics of As-Is data content and exchanges: • Transaction-based. • Electronic (under HIPAA rules). • Mapping to internal systems and between standards (which degrades data integrity). • Widespread use of mail, fax, telephone, and Automated Voice Response (AVR). • Clinical data supplied on paper on request. • Limited consumer access to any information, which hinders the Explanation of Benefits (EOB) and responses to requests. • Slow and inefficient data collection, evaluation, and analysis process (and data is often not comparable)	General improvements of data content and exchange: • Transactions replaced by standardized messages governed by service agreements between data exchange parties. • Data exchange standards are applicable to all data exchange parties. • Manual exchange of information is obsolete and exceptional. • Subsets of clinical data become available (e.g., claim attachment). • Beneficiaries have access to some health information online. • Improved decision maker access to meaningful and reliable data. • Virtual information access independent of mega data warehouses.	Possibilities for data content and exchange in the long term: • Transactions replaced by messages brokered through RHIOs and later by “sessions” of “peer-to-peer” communications directly between the parties who share the information (i.e., “system-to-system” and provider-to-payer). • NwHIN links to RHIOs across the country to provide national interoperability. • Data exchange standards are applicable to all data exchange parties. • Manual exchange of information is obsolete and exceptional. • Clinical data readily available to authorized stakeholders. • Beneficiaries have access

Data and Communication Targets		
As-Is	Level 3 & 4 Targets	Level 5 Target
because it comes from different systems with incompatible record formats and content). - Burdensome reporting because information is duplicative, semi-automated, and error prone. - Data content includes claims, encounters, provider enrollment data, and beneficiary enrollment data.		to personal health information, treatment plans, and preventive health guidelines. - Decrease in redundant reporting (and collection of redundant data). Shared metadata enables alignment of disparate formats and data content. - Key health data available instantly to authorized stakeholders through dynamic information sharing. - Data exchanges are semantically interoperable.
Beneficiary and Population Data		
Data collected primarily from the eligibility determination process, subsequent enrollment in special programs, claims, returned Explanations of Medicare benefits (EOMBs), and communications from the beneficiary. There are no standardized cultural and linguistic indicators.	Standardized data collected from “one-stop shop” eligibility and enrollment functions, shared eligibility services between agencies, augmented by beneficiaries, who can make provider and treatment choices. New information includes consumer satisfaction, outcome measures, and provider performance rating. Cultural, linguistic, and diagnostic indicators help deliver the right care.	- Clinical data supplements demographic data on the beneficiary. Population health and safety information is a national focus. - The SMA answers questions about trends and changes in demographics, improvements in health care indicators and outcomes, and beneficiary satisfaction. Focus is on meeting needs and determining future needs.
Provider and Contractor Data		
Data collected primarily from enrollment applications and claims, Surveillance and Utilization Review (SUR) profiles, error reports, and other interactions with the provider.	NPI and taxonomy is in use nationally. A collaborative effort of CMS and States results in NPI and taxonomy codes for atypical providers. Local programs share information on provider enrollment and	- Access to clinical data greatly improves information and provider performance. Provider information is available nationally to authenticated and authorized requesters. - The SMA answer questions

Data and Communication Targets		
As-Is	Level 3 & 4 Targets	Level 5 Target
	demographics. Collect and compare payment and Coordination of Benefit (COB) data across multiple agencies.	about demographics and distribution of the provider population and research changes in levels of participation by various specialties. The SMA bases Provider payment on performance.
Health Benefit Plan Data		
Information on covered benefits, restrictions, and fees stored for use in payment processing and reporting.	All agencies with Health Insurance Exchange (HIX) share health benefit information. Applicants and providers have “one-stop shop” to view benefit plans. System updates service data dynamically as standard-making organizations make changes.	Nationally linked Health Insurance Exchange (HIX) share information on benefit packages with all interested parties, who can compare benefit plans across the country.
Health Care Service Data		
Data collected primarily from claims.	Clinical information from claims attachments is available. Comparison of service profiles, provider performance, and outcomes improves locally. Fraud detection improves.	Service data communicated to the payer dynamically from the provider’s EHRs. Clinical data supplements administrative data. The SMA understands how beneficiaries are using benefits, what the outcomes associated with services are, and where to make improvements. Agencies can predict utilization and measure changes.
Financial Data		
Data collected from claims and remittance advices.	Collaboration between programs and payers improves COB. Virtually all payment is automatic. National standards apply.	Flow of payment and remittance information moves from payer system to payee bank. Agency knows how it is using its funds and what changes are occurring.
Strategic and Performance Information		

Data and Communication Targets		
As-Is	Level 3 & 4 Targets	Level 5 Target
Special reports and labor-intensive surveys required.	Coordination, adoption, and use of national standards improve information used for strategic planning.	Agency can access relevant data anywhere in the nation for strategic planning and performance evaluation.
Interoperability and Data Sharing		
Blend of standard and nonstandard data.	Intrastate collaboration and adoption and use of national standards improve data sharing.	Semantic interoperability becomes a national standard. Any authorized requester can view information anywhere in the nation, in accordance with service agreements.

Primary Enablers of the Transformation

This section discusses technical, legislative, and policy enablers and other drivers that facilitate the transformation of the Medicaid Enterprise and support the vision of the future.

Legislative, Funding, Federal Initiative, and Demographic Drivers

States respond to many enablers and drivers that require the Medicaid Program to change. Some enablers come from HHS strategic plans and directives. Others come from state political and consumer pressures. Still others come from external sources, such as federal initiatives and legislation, rises or falls in revenue, demographic shifts, medical breakthroughs, and pandemic threats. Enablers considered in the MITA Framework include the following:

- ❖ HIPAA – Provides rights and protections for participants and beneficiaries in group health plans.
- ❖ Increasing use of waiver programs – Puts pressure on the SMA to collaborate on benefit design and processing to standardize data.
- ❖ Federal and national initiatives, such as the Federal Enterprise Architecture (FEA), and Office of the National Coordinator for Health Information Technology (ONC) – Establishes frameworks for the architecture of the future.
- ❖ Revenue limitations for public agencies – Increases the need to find administrative efficiencies, shift money to pay for benefits, and get better results for the money spent.
- ❖ Demographic shifts (e.g., aging populations, new immigrants) – Continues to bring new pressures on the health care delivery system.

- ❖ Pandemic threats (e.g., bird flu, bioterrorism, and natural disasters) – Demands new methods to capture and access critical clinical data in a timely manner.
- ❖ Children's Health Insurance Program Reauthorization Act of 2009 (CHIPRA) – Goals are to continue coverage for the millions of children who rely on CHIP today and provide the resources for States to reach millions of additional uninsured children.
- ❖ Affordable Care Act of 2010 – Development of a statewide system to enable consumers to access all long-term services and support through an agency, organization, coordinated network, or portal, in accordance with such standards as the state shall establish and that shall provide information regarding the availability of such services, how to apply for such services, referral services for services and support otherwise available in the community, and determinations of financial and functional eligibility for such services and support, or assistance with assessment processes for financial and functional eligibility.
- ❖ President's Council of Advisors on Science and Technology (PCAST) – An advisory group of the nation's leading scientists and engineers who directly advise the President and the Executive Office of the President.
- ❖ American Recovery and Reinvestment Act of 2009 (ARRA) – Goals are to create new jobs and save existing ones, spur economic activity, invest in long-term growth, and foster unprecedented levels of accountability and transparency in government spending.
- ❖ HITECH – Part of the ARRA that promotes the adoption and meaningful use of health information technology and widens the scope of privacy and security protections.

Technology Drivers and Enablers

New technologies and standards developed after several years of evolution enable the improvements forecasted for the Medicaid Enterprise. The MITA Framework takes advantage of key technical architecture features that allow the SMA to evolve to a secured, open, and transparent enterprise.

Reference to specific technical enablers does not mean that CMS recommends them or that MITA requires them. They are examples that appear viable today; however, evolution of technology may replace them since MITA is always a dynamic and flexible work in progress.

ENTERPRISE ARCHITECTURE

The Medicaid Enterprise has evolved beyond the individual state MMIS. MITA defines the Medicaid Enterprise in the MITA context as three spheres of influence:

1. Domain of State Medicaid operations to which federal matching funds apply.
2. Interfaces and bridges between the SMA and Medicaid stakeholders, including providers, beneficiaries, other state and local agencies, other payers, CMS, and other federal agencies.

3. Sphere of influence that touches MITA (i.e., national and federal initiatives, Development Standards Maintenance Organizations (DSMO), and other federal agencies).

Enabler

The three architectural components of the MITA Framework provide the States with the business methods, analytical techniques, and conceptual tools to understand and document the structure and dynamics of an enterprise.

SERVICE-ORIENTED ARCHITECTURE

Architects and designers use Service-Oriented Architecture (SOA) during the software development life cycle as a flexible set of design principles to package functionality as a set of interoperable services within multiple separate systems from several business domains.

The incorporation of SOA within the Medicaid Enterprise provides a method for web-based applications to bridge the gap between different implementation languages using Extensible Markup Language (XML) for common interfaces.

SOA services define interfaces in terms of protocols and functionality as opposed to externally facing Application Programming Interface (API) services, based on particular rule sets and specifications to facilitate communication needs. Since SOA services provide a control on how to process and record data within the organization, the SOA services are ideal for reuse purposes. On the other hand, API services satisfy a different need in that they extend the capabilities and features of systems to create new partnership opportunities with outside entities.

Enabler

A hub architecture (messaging service) is a communications center that subscribers use to send and receive messages or connect to external data. A RHIO is an entity that operates a hub architecture.

- ❖ Hubs provide common services needed by all subscriber systems.
- ❖ Hubs let systems share distributed data without having to move it to a central location.
- ❖ Hubs, like telephone companies, use centralized capabilities that allow multiple systems to communicate without having to coordinate with each other separately.
- ❖ The MMIS can have multiple hubs that can communicate with hubs external to the Medicaid Enterprise.

Utility services are the common capabilities that systems need to communicate through hubs. Centralizing and standardizing commonly used services such as security, access rules, and data descriptions reduces redundant capabilities and facilitates interoperability of system components and applications. Utility services are adaptable and extensible to support state-specific needs.

CLOUD COMPUTING

Cloud Computing is a design principle that provides resources on demand via a computer network, regardless of the location or owner of the data.

Traditionally, the MMIS relied on a centralized model with the applications, databases, email and other services contained on the stakeholder's computer or through a sign-on to a

centralized server. States should pursue a service-based and cloud-first strategy for system development. States will identify and discuss how they will identify, evaluate, and incorporate commercially or publicly available off-the-shelf or open source solutions, and discuss considerations and plans for cloud computing.

Cloud Computing converts this paradigm to using the stakeholder's computer as a vehicle to access multiple applications and/or data sources without changing from systems or software. Similar to the internet search engines, the stakeholder navigates through the network accessing services as needed.

This model introduces layers to system design:

- ❖ **Client** – Consists of the software and hardware layer designed for delivery of services within the network.
- ❖ **Application** – Introduces the concept of Software as a Service (SaaS) that delivers software over the internet, rather than installing the software on the stakeholder's system, which simplifies maintenance and support.
- ❖ **Platform or Platform as a Service (PaaS)** – Creates a computing platform and/or solution stack that deploys applications without cost and complexity of individual licenses installed on computers.
- ❖ **Infrastructure or Infrastructure as a Service (IaaS)** – Also referred to as virtual platforms. Rather than multiple, individualized state-focused MMIS systems, States may collaborate to deploy a single MMIS or eligibility system with each state paying for resources consumed.

Enabler

An API is a particular set of rules and specifications that facilitate communication between computers and/or networks. An API facilitates communication between software. Architects and designers create them for applications, operating systems, and libraries of programming languages.

COMMON INTEROPERABILITY AND ACCESS SERVICES

State Medicaid Enterprises will ensure seamless coordination and integration with the Health Insurance Exchange (HIX) (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.

CMS expects that a key outcome of the government's technology investments will be a much higher degree of interaction and interoperability in order to maximize value and minimize burden and costs on providers, beneficiaries, and other stakeholders.

HITECH is orchestrating the coordination of electronic health records. The Affordable Care Act of 2010 has established Health Insurance Exchanges (HIX) for one-stop shopping of health plans and shared eligibility services. This legislation drives changes to the Health Care and Health Insurance industries to include the utilization of performance standards and beneficiary-centric operations.

Enabler

A web service is any output from an application received as input by another application or stakeholder (service consumer).

The service consumer sends a service request message to the service provider. The service provider returns a response message to the service consumer. The stakeholder defines the request and subsequent response connections in a way that is understandable to both the service consumer and service provider. A service provider can also be a service consumer.

CUSTOMER RELATIONSHIP MANAGEMENT APPLICATION

Customer Relationship Management (CRM) is a strategy that uses technology to organize, automate, and synchronize business processes. Originally, applied in the private sector to track the needs of company clients, this concept also pertains to the health care insurance industry. As it relates in the MITA Framework, this concept focuses on:

- ❖ Beneficiary and provider access to EHR data
- ❖ Individual access to health insurance alternatives

Enabler

An EHRS that supports;

- ❖ Longitudinal collection of electronic health information for and about persons.
- ❖ Immediate electronic access to person and population level information by authorized, and only authorized, stakeholders
- ❖ Provision of knowledge and decision-support that enhance the quality, safety, and efficiency of patient care.
- ❖ Efficient processes for health care delivery.

Simple Object Access Protocol (SOAP) specifies the exchange structured information for web-based computer networks. SOAP relies on Extensible Markup Language (XML) for messaging, applications layer protocols, such as Hypertext Transfer Protocol (HTTP) for negotiation and transmission of messages.

State Medicaid Agency Operations Evolve

The COO describes the vision for the MITA Framework. The final component in the COO compares the As-Is operations with the projected To-Be environment. See Part, Appendix A, Concept of Operations Details, for more information on the As-Is and To-Be perspectives.

As-Is Operations

The As-Is COO shown in **Figure 2-1** describes the Medicaid operations of many States today. Several separate staff units perform many activities to support the Medicaid Enterprise. States still perform many operations manually, or have isolation of automated processing. Stakeholders interact with many of these business operations.

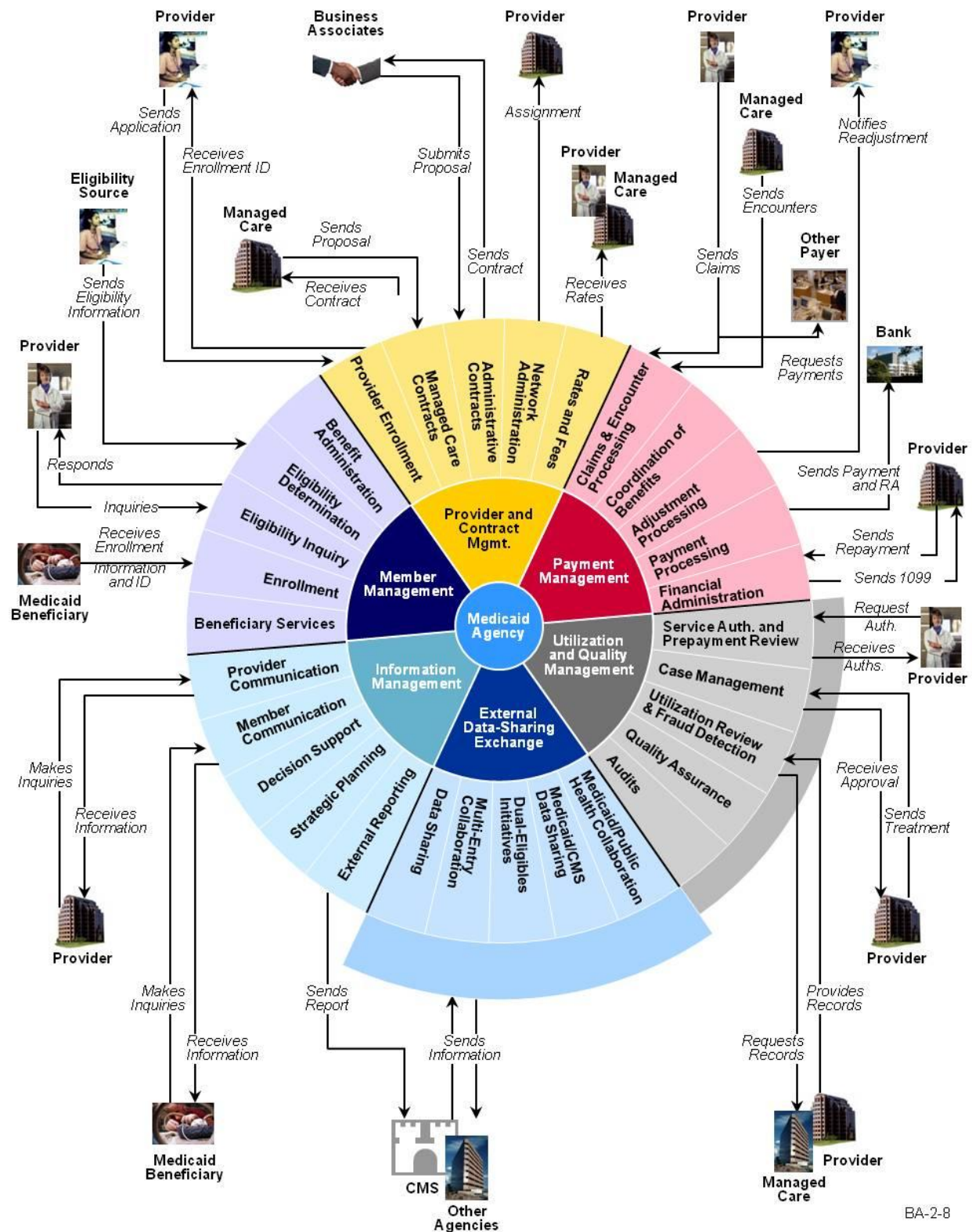


Figure 2-1. As-Is Concept of Operations

As-Is operations consist of hundreds of individual business processes, each requiring a staff unit to complete the process. In all States, the actual adjudication of the claim is a highly automated process. Furthermore, many States automate receipt and response to standard transactions (e.g., eligibility inquiry, receipt of a claim, or response to prior authorization request) via EDI and web-based exchange of information. Many States use web portals for provider enrollment and beneficiary applicant inquiries. Despite widespread automation, the SMA spends the bulk of its time and energy on administrative operations, which means that less time and resources are available for tactical and strategic decision making, as shown in **Figure 2-2**.



Figure 2-2. Most Medicaid Resources Conduct Operational Functions

To-Be Environment

The vision of the To-Be environment, Strategic functions (on top of pyramid) dominate and subordinate basic operations (at bottom of pyramid). In future Medicaid operations, a control center of executive staff monitors indicators from various dashboards that track enrollment of providers and beneficiaries, the delivery of services to the covered population, and the outcomes, trends, and changing needs of the enterprise. The SMA establishes or uses exchanges, which serve as conduits for information with participants in the local or regional health care delivery system.

External entities (e.g., other payers and agencies across the country) can also participate, through agreements and payments of usage fees, under a utility model that leverages the FFP and covers the non-Medicaid incremental costs of development and maintenance. In certain States or regions, individual provider locations store information regarding an individual's health status and services received, viewable as needed and according to data sharing agreements with any appropriate entity, including the patient, guardian, caregiver, referral service, supplier, payer, or quality-assurance organization.

The Medicaid Program can summarize information accessed through the exchange and make it available to external entities such as CMS. The exchange responds to specified trigger information to send notifications of disease or bioterrorism to appropriate local or

national agencies, as prescribed by local public health jurisdictions, and national health initiatives (e.g., for management of a pandemic). In turn, public health agencies can use the exchange to issue alerts to payers and providers regarding public health and national safety issues that affect the populations they serve.

In this future, the primary stakeholders are able to concentrate on their core competencies, which then frees them from the current burden of recording, storing, and sending redundant data. Providers focus on diagnosing, treating, and preventing illness, instead of spending time seeking approval for treatments and payments for services. Payers such as Medicaid can concentrate on analysis of trends, policy making, quality assurance, and strategic planning, instead of paying claims and premiums and pursuing fraud and third-party liability, and beneficiaries can participate proactively in health care treatment decisions, instead of playing a passive role, as they do currently.

Figure 2-3 shows the new order of business.

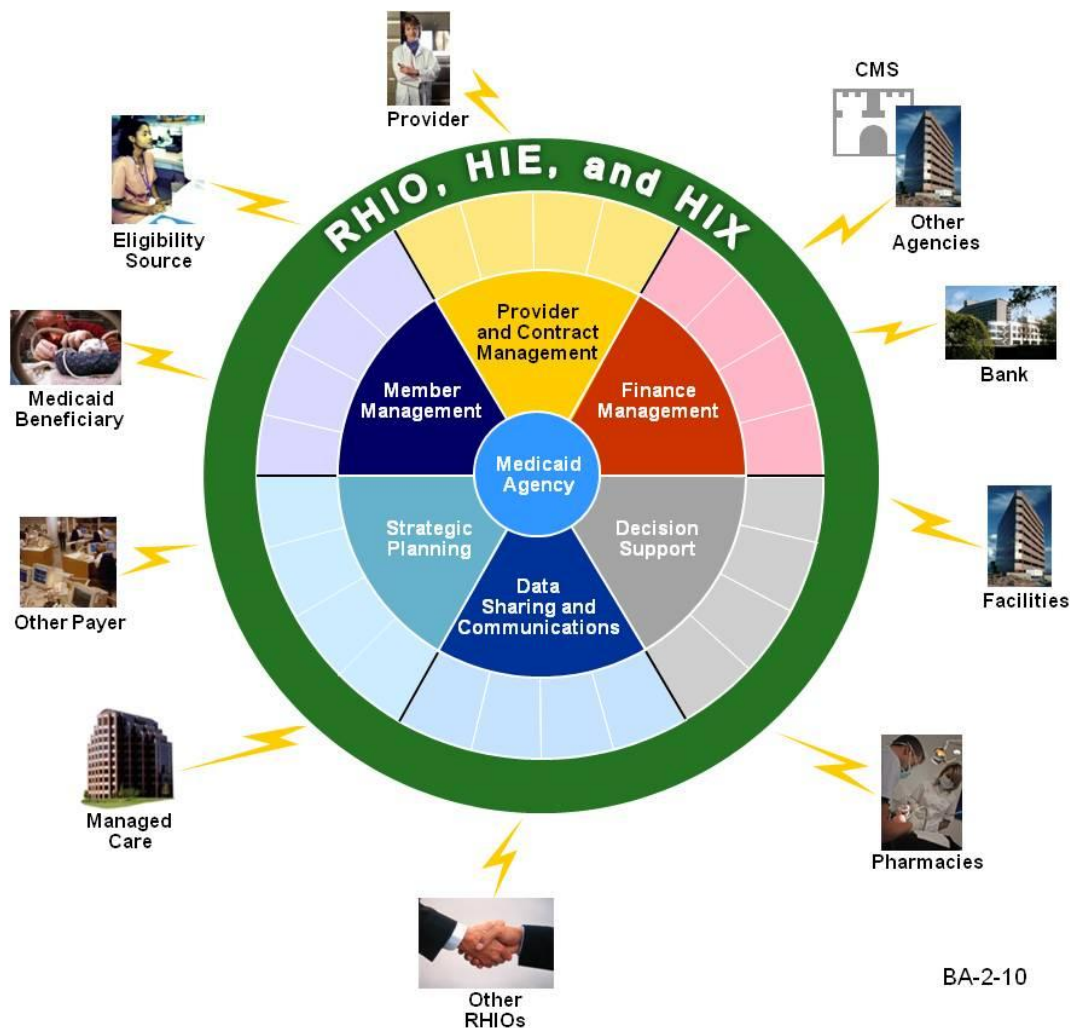


Figure 2-3. To-Be Concept of Operations

Figure 2-3 presents a view of the future in which the SMA reduces the bulk of the manual operational tasks today to a minimum, and only a small strategic and executive team manages the Medicaid Program. The workforce needed to process transactions today is no longer necessary. Machines talk to machines and execute the standardized business rules definitions agreed to by the stakeholders. The agency is transforming from clusters of busy operational staff to a think tank that focuses on research, planning, outreach, and communications. The simplicity of **Figure 2-3** represents this concept in contrast to the complexity of **Figure 2-1**. It also reflects the contrast in priorities and resources between **Figure 2-2** and **Figure 2-4**, in which strategic functions dominate in the To-Be model.



Figure 2-4. Strategic Functions Dominate in the To-Be Model

Using the COO

The MITA COO is a description of the enterprise As-Is (current) operations and defines the To-Be (future) environment. It is non-technical and presents the viewpoints of the various stakeholders. The COO is an agreement on how the State Medicaid Enterprise will operate, who is responsible for what, and what the lines of communication are. It defines the high-level concepts and business-driven requirements. A COO will contain criteria to validate whether the SMA achieves a goal or objective.

A COO is a stakeholder-oriented document that describes system characteristics for a proposed system from the stakeholders' viewpoint. The SMA uses the COO to communicate the overall quantitative and qualitative system characteristics to the stakeholder, buyer, developer and other organizational elements (e.g., procurement). The COO describes the State Medicaid Enterprise organization(s), mission(s), and organizational objectives from an integrated systems point of view.