

ITIP Planning Resource – Federal Enterprise Architecture (FEA) Reference Model (RM) Overview

The Information Technology Investment Planning (ITIP) application provides a screen to capture potential alignments from an IT project to three of the reference models of the Federal Enterprise Architecture (FEA). This ITIP planning resource provides background information about the FEA reference models so that agency planners can understand the scope and definitions of these models. The ITIP application requires a Business Reference Model (BRM) alignment and encourages any applicable alignments to the other two models.

FEA Overview:

During the last three planning cycles, OIT supported agency planners with the ePlanningIT application. One core capability of the application was the alignment of agency IT projects with selected categories and sub-classifications. Unfortunately, the alignment categories changed with each planning cycle. Long-term planning requires stability in this classification process. The FEA has been in existence for over five years, and provides this stability with five RMs as displayed in figure 1.

(Note – for this planning period, the Performance Reference Model (PRM) and Data Reference Model are not used.)

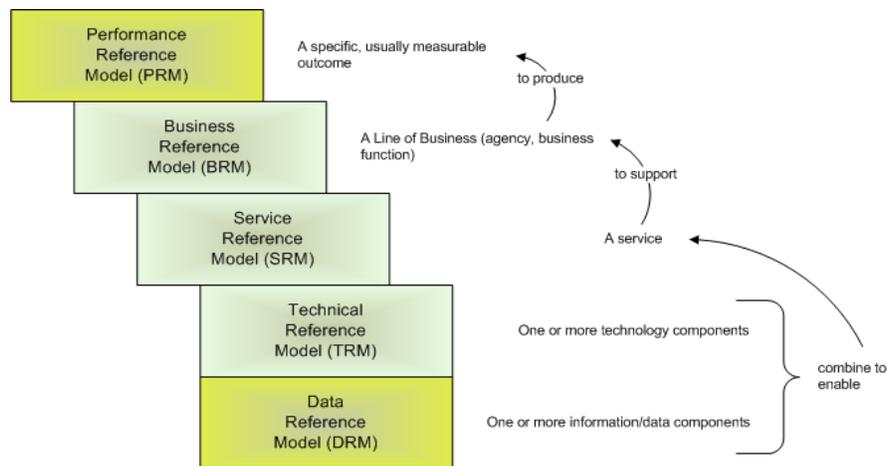


Figure 1 – FEA Reference Model Context

The best way to read this figure is to trace from bottom upward – technology components (TRM) use information/data components (DRM) to enable services (SRM) that support business

functions (BRM) to achieve or produce performance results (PRM). This “line-of-sight” perspective provides linkage of IT assets to business functions and their results.

At its’ core, these reference models provide a taxonomy or classification structure for all five areas. Therefore, any catalog of business functions, IT applications, IT projects, or other IT assets can be aligned with these reference models. Figure 2 outlines for each of the three reference models their hierarchical structure, and example classifications at each level.

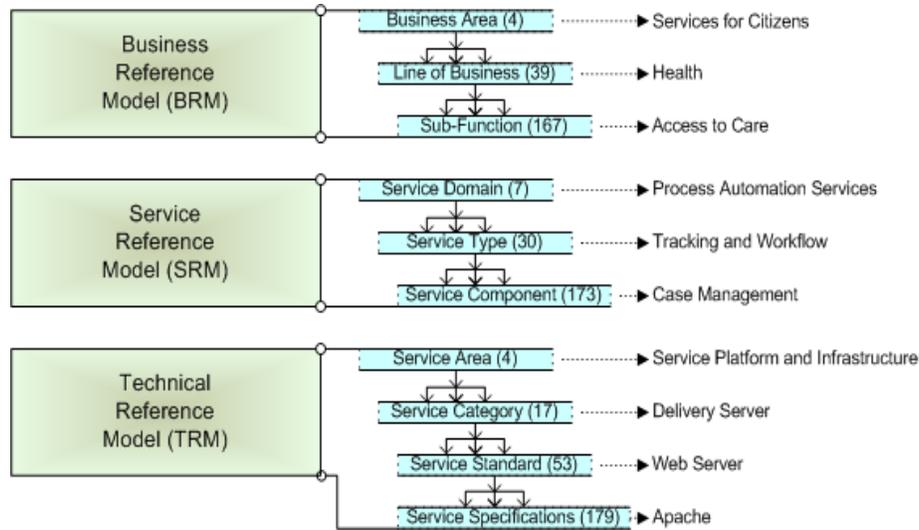


Figure 2 – Reference Model Structure and Example

Following this figure, the BRM contains four business areas (one of which is *Services for Citizens*), which consist of thirty-nine lines of business (LoB) (with *Health* being one of the LoBs under *Services for Citizens*), and these LoBs have one hundred sixty-seven sub-functions (with *Access to Care* being one sub-function of the *Health* LoB). The SRM contains seven service domains (one of which is *Process Automation Services*), which consist of thirty service types (with *Tracking and Workflow* being one of the service types under *Process Automation Services*), and these service types have one hundred seventy three service components (with *Case Management* being one service component of the *Tracking and Workflow* service type). Finally, the TRM contains four service areas, containing seventeen service categories, consisting of fifty-three service standards, with one hundred seventy-nine service specifications associated with some of those service standards (following the same linkage for the *Service Platform and Infrastructure*, *Delivery Server*, *Web Server*, and *Apache* examples).

Section I – Business Reference Model (BRM)

Four different business areas compose the BRM as follows:

- Services for Citizens
- Mode of Delivery
- Support Delivery of Services
- Management of Government Resources

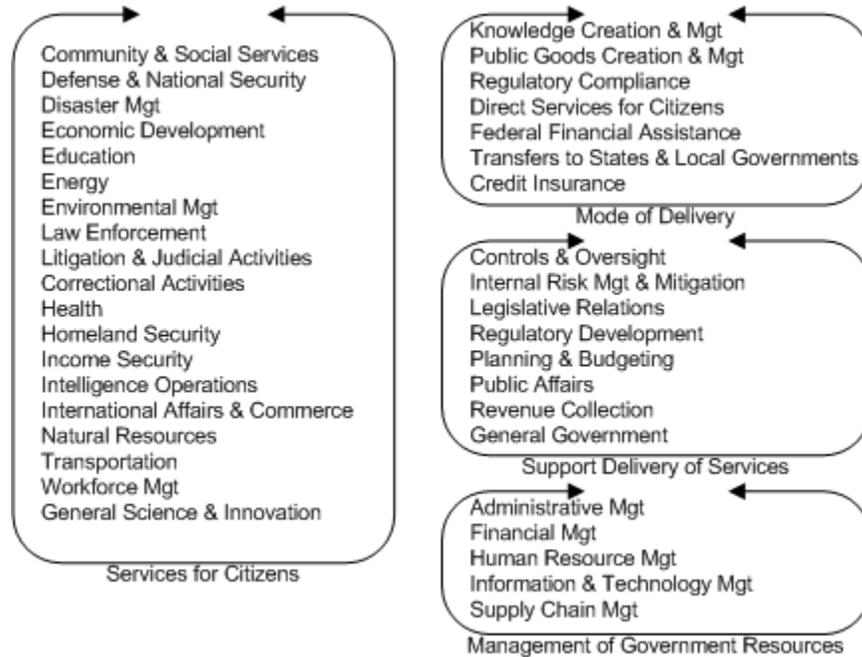


Figure 3 – BRM Business Areas with their Lines-of-Business

The diagram above displays the four business areas and the lines-of-business associated with each business area. Each IT project exists to support one or more business functions, and this alignment and classification structure provides sufficient coverage for State of Ohio agencies. The business sub-functions that exist for each line-of-business are documented in the Line of Business tables that follow in this section.

According to the BRM, if an alignment exists to a *Services for Citizens* Line-of-Business (LoB), a *Mode of Delivery* alignment must also exist. For this planning period, agencies are encouraged, but not required to do the same. As agency planners review the potential alignments with IT projects, select the LoB(s) that most closely matches their state-level business function. If agency planners do not see a sub-function that matches their business function, annotate and forward to OIT Investment Planning for review. For the remaining portion of the BRM section, context diagrams and definition tables are provided for business areas and line-of-business components. Note that the order of the tables follows the order of figure 3, and are not listed alphabetically.

Services for Citizens Assignment

The figure below provides a visual breakdown for each of *Services for Citizens* lines-of-business. The definitions for each and their sub-functions are provided in the tables that follow.

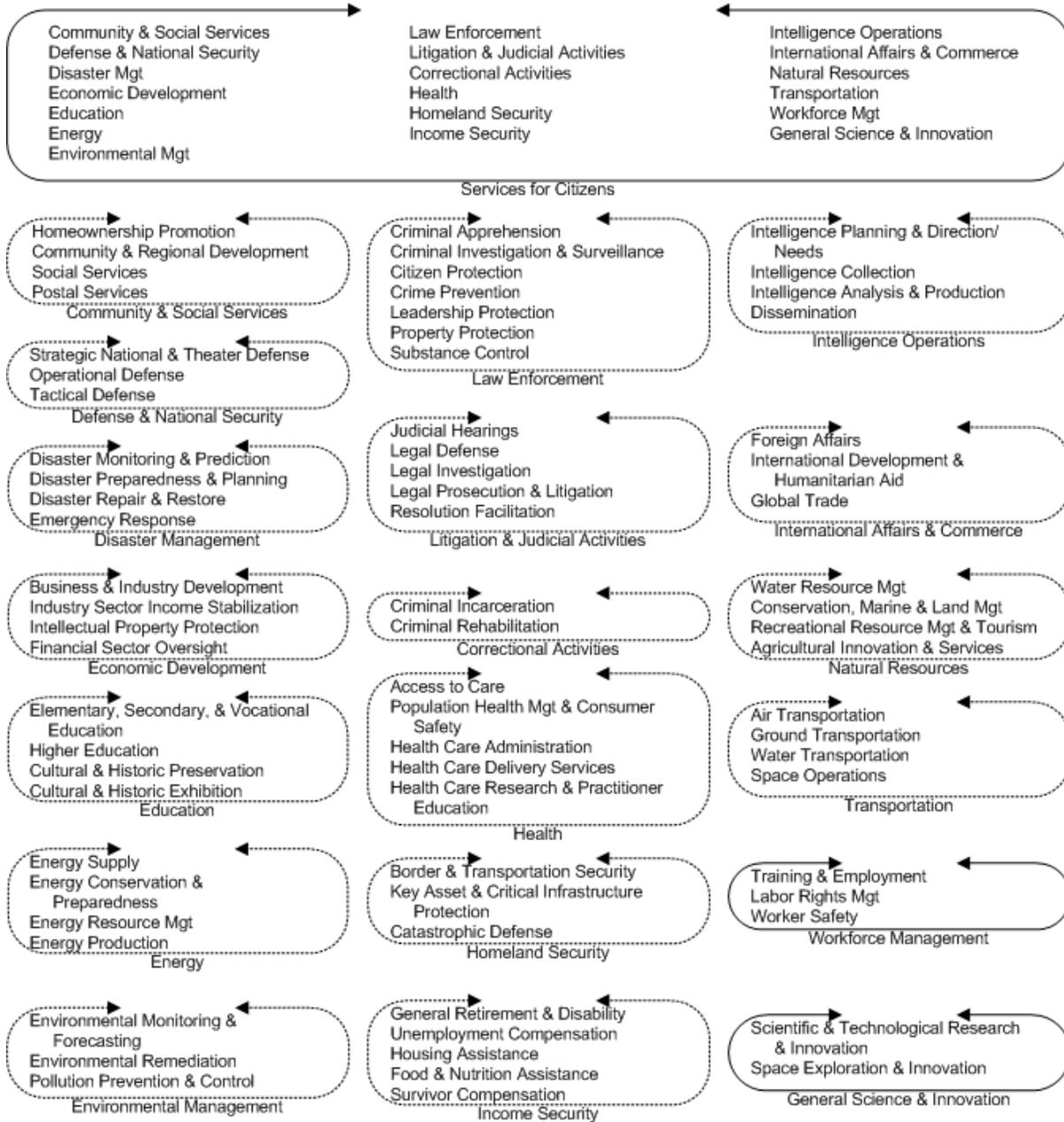


Figure 4 – Services for Citizens Line-of-Business with Sub-Functions

Line of Business Table – Community and Social Services

Community and Social Services (Services for Citizens) – includes all activities aimed at creating, expanding, or improving community and social development, social relationships, and social services in the United States. This includes all activities aimed at locality-specific or nationwide social development and general social services. This Line of Business includes general community development and social services programs, as well as earned and unearned benefit programs that promote these objectives.

Homeownership Promotion – includes activities devoted to assisting citizens interested in buying homes and educating the public as to the benefits of homeownership. NOTE: Activities devoted to the provision of housing to low-income members of the public are located in the Housing Assistance Sub-Function.

Community and Regional Development – involves activities designed to assist communities in preventing and eliminating blight and deterioration, assist economically distressed communities, and encourage and foster economic development through improved public facilities and resources.

Social Services – are designed to provide meaningful opportunities for social and economic growth of the disadvantaged sector of the population in order to develop individuals into productive and self-reliant citizens and promote social equity. Included in this category are social welfare services extended to children and adults with special needs, such as the orphaned, neglected, abandoned, disabled, etc. Such services include family life education and counseling, adoption, guardianship, foster family care, rehabilitation services, etc. Note: This Sub-Function does not include services that are primarily for income support (Income Security) or are an integral part of some other Line of Business (e.g., Health, Workforce Management, etc.). For mapping purposes, this category should only include IT systems that support programs mapped to the “Social Services” budget functional classification.

Postal Services – provide for the timely and consistent exchange and delivery of mail and packages between businesses, organizations, and residents of the United States or between businesses, organizations, and residents of the United States and the rest of the world. It also includes the nation-wide retail infrastructure required to make Postal Services easily accessible to customers. (Note: The commercial function of mail is more closely aligned with the “Business and Industry Development” Sub-Function in the “Economic Development Line of Business.” The international commercial function of mail is more closely aligned with the “Global Trade” Sub-Function in the “International Affairs” Line of Business).

Line of Business Alignment Table – Defense and National Security

Defense and National Security (Services for Citizens) – Protect and advance U.S. national interests and, if deterrence fails, decisively defeat threats to those interests.

Strategic National and Theater Defense – involves establishing national and multinational military objectives; sequencing initiatives; defining limits and assess risks for the use of military and other instruments of national power; developing global plans or theater war plans to achieve these objectives; and providing military forces and other capabilities in accordance with strategic plans.

Operational Defense – involves linking tactics and strategy by establishing operational objectives needed to accomplish the strategic objectives, sequencing events to achieve the operational objectives, initiating actions, and applying resources to bring about and sustain these events.

Tactical Defense – involves focusing on the ordered arrangement and maneuver of combat elements in relation to each other and to the enemy to achieve combat objectives.

Line of Business Table – Disaster Management

Disaster Management (Services for Citizens) – involves the activities required to prepare for, mitigate, respond to, and repair the effects of all disasters whether natural or man-made.

Disaster Monitoring and Prediction – involves the actions taken to predict when and where a disaster may take place and communicate that information to affected parties. Note: Weather forecasting, while central to Disaster Monitoring and Prediction, is more closely aligned with the “Environmental Monitoring and Forecasting” Sub-Function in the Environmental Management Line of Business.

Disaster Preparedness and Planning – involves the development of response programs to be used in case of a disaster as well as pre-disaster mitigation efforts to minimize the potential for loss of life and property. This involves the development of emergency management programs and activities as well as staffing and equipping regional response centers, and mitigation focused construction and preparation.

Disaster Repair and Restore – involves the cleanup and restoration activities that take place after a disaster. This involves the cleanup and rebuilding of homes, buildings, roads, environmental resources, or infrastructure that may be damaged due to a disaster.

Emergency Response – involves the immediate actions taken to respond to a disaster. These actions include, but are not limited to, providing mobile telecommunications, operational support, power generation, search and rescue, and medical life-saving actions.

Line of Business Table – Economic Development

Economic Development (Services for Citizens) – includes the activities required to promote commercial/industrial development and to regulate the American financial industry to protect investors. It also includes the management and control of the domestic economy and the money supply, and the protection of intellectual property and innovation.

Business and Industry Development – supports activities related to the creation of economic and business opportunities and stimulus, and the promotion of financial and economic stability for corporations and citizens involved in different types of business.

Industry Sector Income Stabilization – involves all programs and activities devoted to assisting adversely impacted industrial sectors (farming, commercial transportation, etc.) to ensure the continued availability of their services for the American public and the long-term economic stability of these sectors.

Intellectual Property Protection – involves all activities to protect and promote the ownership of ideas and control over the tangible or virtual representation of those ideas, including inventions and discoveries; literary and artistic works; and symbols, names, images, and designs used in commerce.

Financial Sector Oversight – involves the regulation of private sector firms and markets (stock exchanges, corporations, etc.) to protect investors from fraud, monopolies, and illegal behavior. This also includes deposit protection.

Line of Business Table – Education

Education (Services for Citizens) – refers to those activities that impart knowledge or understanding of a particular subject to the public. Education can take place at a formal school, college, university or other training program. This Line of Business includes all government programs that promote the education of the public, including both earned and unearned benefit programs.

Elementary, Secondary, and Vocational Education – refers to the provision of education in elementary subjects (reading and writing and arithmetic); education provided by a high school or college preparatory school; and vocational and technical education and training.

Higher Education – refers to education beyond the secondary level; specifically, education provided by a college or university.

Cultural and Historic Preservation – involves all activities performed by the federal government to collect and preserve information and artifacts important to the culture and history of the United States and its citizenry and the education of U.S. citizens and the world.

Cultural and Historic Exhibition – includes all activities undertaken by the U.S. government to promote education through the exhibition of cultural, historical, and other information, archives, art, etc.

Line of Business Table – Energy

Energy (Services for Citizens) – refers to all actions performed by the government to ensure the procurement and management of energy resources, including the production, sale and distribution of energy, as well as the management of spent fuel resources. Energy management includes all types of mass-produced energy (e.g., hydroelectric, nuclear, wind, solar, or fossil fuels). Also included in this Line of Business is the oversight of private industry.

Energy Supply – involves all activities devoted to ensuring the availability of an adequate supply of energy for the United States and its citizens.

Energy Conservation and Preparedness – involves protection of energy resources from over-consumption to ensure the continued availability of fuel resources and to promote environmental protection. This Line of Business also includes measures taken to ensure the provision of energy in the event of an emergency.

Energy Resource Management – involves the management and oversight of energy producing resources including facilities, dams, land, and offshore resources.

Energy Production – involves the transformation of raw energy resources into useable, deliverable energy.

| Line of Business Table – Environmental Management | |
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| Environmental Management (Services for Citizens) – includes all functions required to monitor the environment and weather, determine proper environmental standards and ensure their compliance, and address environmental hazards and contamination. | |
| | <p>Environmental Monitoring and Forecasting – involves the observation and prediction of environmental conditions. This includes but is not limited to the monitoring and forecasting of water quality, water levels, ice sheets, air quality, regulated and non-regulated emissions, as well as the observation and prediction of weather patterns and conditions.</p> <p>Environmental Remediation – supports the immediate and long-term activities associated with the correcting and offsetting of environmental deficiencies or imbalances, including restoration activities.</p> <p>Pollution Prevention and Control – includes activities associated with identifying appropriate pollution standards and controlling levels of harmful substances emitted into the soil, water and atmosphere from man-made sources. Environmental mitigation projects are also included in this business line.</p> |

| Line of Business Table – Law Enforcement | |
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| Law Enforcement (Services for Citizens) – involves activities to protect people, places, and things from criminal activity resulting from non-compliance with U.S. laws. This includes patrols, undercover operations, response to emergency calls, as well as arrests, raids, and seizures of property. | |
| | <p>Criminal Apprehension – involves activities associated with the tracking, arrest, detention, and transportation of groups or individuals believed to be responsible for committing federal crimes.</p> <p>Criminal Investigation and Surveillance – includes collecting evidence required to determine responsibility for a crime and monitoring and questioning affected parties.</p> <p>Citizen Protection – involves all activities performed to protect the general population of the United States from criminal activity.</p> <p>Crime Prevention – entails all efforts designed to create safer communities through the control and reduction of crime by addressing the causes of crime and reducing opportunities for crimes to occur.</p> <p>Leadership Protection – involves all activities performed to protect the health and well being of the president, vice-president, their families, foreign leaders and dignitaries, and other high-level government officials.</p> <p>Property Protection – entails all activities performed to ensure the security of civilian and government property as well as foreign diplomatic missions.</p> <p>Substance Control – supports activities associated with the enforcement of laws regarding legal substances (i.e., alcohol and tobacco) and illegal narcotics including trafficking, possession, sale, distribution, and other related activities.</p> |

| Line of Business Table – Litigation and Judicial Activities | |
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| Litigation and Judicial Activities (Services for Citizens) – refers to those activities relating to the administration of justice. | |
| | <p>Judicial Hearing – includes activities associated with proceedings (usually by a court of law) where evidence is taken for the purpose of determining an issue of fact and reaching a decision based on that evidence.</p> <p>Legal Defense – includes those activities associated with the representation of a defendant in a criminal or civil proceeding.</p> <p>Legal Investigation – includes activities associated with gathering information about a given party (government agency, citizen, corporation) that would be admissible in a court of law in an attempt to determine a legal question or matter.</p> <p>Legal Prosecution and Litigation – includes all activities involved with presenting a case in a legal proceeding both in a criminal or civil court of law in an attempt to prove guilt/responsibility.</p> <p>Resolution Facilitation – refers to those activities outside a court of law, such as mediation and arbitration, that may be used in an attempt to settle a dispute between two or more parties (government agency, citizen, corporation).</p> |

| Line of Business Table – Correctional Activities | |
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| Correctional Activities (Services for Citizens) – involves all Federal activities that ensure the effective incarceration and rehabilitation of convicted criminals. | |
| | <p>Criminal Incarceration – includes activities associated with the housing, custody and general care of criminals serving time in penitentiaries.</p> <p>Criminal Rehabilitation – includes all government activities devoted to providing convicted criminals with the educational resources and life skills necessary to rejoin society as responsible and contributing members.</p> |

| Line of Business Table – Health | |
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| <p>Health (Services for Citizens) – involves Federal programs and activities to ensure and provide for the health and well being of the public. This includes the direct provision of health care services and immunizations as well as the monitoring and tracking of public health indicators for the detection of trends and identification of widespread illnesses/diseases. It also includes both earned and unearned health care benefit programs.</p> | |
| | <p>Access to Care – focuses on the access to appropriate care. This includes streamlining efforts to receive care; ensuring care is appropriate in terms of type, care, intensity, location and availability; providing seamless access to health knowledge, enrolling providers; performing eligibility determination, and managing patient movement.</p> <p>Population Health Management and Consumer Safety – assesses health indicators and consumer products as a means to protect and promote the health of the general population. This includes monitoring of health, health planning, and health management of humans, animals, animal products, and plants, as well as tracking the spread of diseases and pests. Also includes the evaluation of consumer products, drug, and foods to assess the potential risks and dangers; education of the consumer and the general population; and facilitation of health promotion and disease and injury prevention.</p> <p>Health Care Administration – assures that federal health care resources are expended effectively to ensure quality, safety, and efficiency. This includes managing health care quality, cost, workload, utilization, and fraud/abuse efforts.</p> <p>Health Care Delivery Services – provides and supports the delivery of health care to its beneficiaries. This includes assessing health status; planning health services; ensuring quality of services and continuity of care; and managing clinical information and documentation.</p> <p>Health Care Research and Practitioner Education – fosters advancement in health discovery and knowledge. This includes developing new strategies to handle diseases; promoting health knowledge advancement; identifying new means for delivery of services, methods, decision models and practices; making strides in quality improvement; managing clinical trials and research quality; and providing for practitioner education.</p> |

| Line of Business Table – Homeland Security | |
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| <p>Homeland Security (Services for Citizens) – involves protecting the nation against terrorist attacks. This includes analyzing threats and intelligence, guarding borders and airports, protecting critical infrastructure, and coordinating the response emergencies. The Homeland Security Line of Business is defined by the President’s Strategy on Homeland Security. Note: Some of the Critical Mission Areas from the President’s strategy have already been identified in other Lines of Business in the BRM.</p> | |
| | <p>Border and Transportation Security – includes appropriately facilitating or deterring entry and exit of people, goods, and conveyances at and between U.S. ports of entry, as well as ensuring the security of transportation and infrastructure networks, facilities, vehicles, and personnel within the United States.</p> <p>Key Asset and Critical Infrastructure Protection – involves assessing key asset and critical infrastructure vulnerabilities and taking direct action to mitigate vulnerabilities, enhance security, and ensure continuity and necessary redundancy in government operations and personnel.</p> <p>Catastrophic Defense – involves the development of technological countermeasures (chemical, biological, radiological and nuclear [CBRN]) to terrorist threats, conducting laboratory testing on new and promising devices, and conducting basic and applied science that can lead to the development of countermeasures.</p> |

| Line of Business Table – Income Security | |
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| <p>Income Security (Services for Citizens) – includes activities designed to ensure that members of the public are provided with the necessary means – both financial and otherwise – to sustain an adequate level of existence. This includes all benefit programs, both earned and unearned, that promote these goals for members of the public.</p> | |
| | <p>General Retirement and Disability – involves the development and management of retirement benefits, pensions, and income security for those who are retired or disabled.</p> <p>Unemployment Compensation – provides income security to those who are no longer employed, while they seek new employment.</p> <p>Housing Assistance – involves the development and management programs that provide housing to those who are unable to provide housing for themselves including the rental of single-family or multifamily properties, and the management and operation of federally supported housing properties.</p> <p>Food and Nutrition Assistance – involves the development and management of programs that provide food and nutrition assistance to those members of the public who are unable to provide for these needs themselves.</p> <p>Survivor Compensation – provides compensation to the survivors of individuals currently receiving or eligible to receive benefits from the Federal Government. This includes, but is not limited to, survivors such as spouses or children of veterans or wage earners eligible for social security payments.</p> |

Line of Business Table – Intelligence Operations

Intelligence Operations (Services for Citizens) – involves collecting and analyzing information to meet the national security challenges of the U.S. by processing reliable, accurate foreign intelligence, and disseminating intelligence products to policymakers, military commanders, and other consumers.

- Intelligence Planning & Direction/Needs** – establishes the intelligence requirements of the policymakers the President, the NSC, military commanders, and other officials in major departments and governmental agencies.
- Intelligence Collection** – involves the gathering of raw data from multiple sources from which finished intelligence is produced.
- Intelligence Analysis & Production** – converts large amounts of data to a form suitable for the production of finished intelligence to include translation, decryption, and interpretation of information stored on film and magnetic media through the use of highly refined photographic and electronic processes.
- Dissemination** – consists of delivering the intelligence products to consumers.

Line of Business Table – International Affairs and Commerce

International Affairs and Commerce (Services for Citizens) – involves the non-military activities that promote U.S. policies and interests beyond our national borders, including the negotiation of conflict resolution, treaties, and agreements. In addition, this function includes: foreign economic development and social/political development; diplomatic relations with other Nations; humanitarian, technical and other developmental assistance to key Nations; and global trade.

- Foreign Affairs** – refers to those activities associated with the implementation of foreign policy and diplomatic relations, including the operation of embassies, consulates, and other posts; ongoing membership in international organizations; the development of cooperative frameworks to improve relations with other Nations; and the development of treaties and agreements.
- International Development and Humanitarian Aid** – refers to those activities related to the implementation of development and humanitarian assistance programs to developing and transitioning countries throughout the world. Development and aid may include technical assistance (the transfer of knowledge and expertise), and the delivery of equipment, commodities and urgent humanitarian assistance including food aid.
- Global Trade** – refers to those activities the Federal Government undertakes to advance worldwide economic prosperity by increasing trade through the opening of overseas markets and freeing the flow of goods, services, and capital.

Line of Business Table – Natural Resources

Natural Resources (Services for Citizens) – includes all activities involved in conservation planning, land management, and national park/monument tourism that affect the nation's natural and recreational resources, both private and federal. Note: Energy-related natural resources are covered in the Energy Management line of business.

- Water Resource Management** – includes all activities that promote the effective use and management of the nation's water resources. Notes: Environmental protection of water resources is included in the Environmental Management Line of Business. Hydroelectric energy production is included in the Energy Production Sub-Function.
- Conservation, Marine and Land Management** – involves the responsibilities of surveying, maintaining, and operating public lands and monuments, as well as activities devoted to ensuring the preservation of land, water, wildlife, and natural resources, both domestically and internationally. It also includes the sustainable stewardship of natural resources on federally owned/controlled lands for commercial use (mineral mining, grazing, forestry, fishing, etc.).
- Recreational Resource Management and Tourism** – involves the management of national parks, monuments, and tourist attractions as well as visitor centers, campsites, and park service facilities.
- Agricultural Innovation and Services** – involves the creation and dissemination of better methods for farming and forestry, including the development of improved and healthier agricultural and forestry products.

Line of Business Table – Transportation

Transportation (Services for Citizens) – involves all federally supported activities related to the safe passage, conveyance, or transportation of goods and/or people.

Air Transportation – involves the activities related to the safe passage of passengers or goods through the air. It also includes command and control activities related to the safe movement of aircraft through all phases of flight for commercial and military operations. Note: The protection of air transportation from deliberate attack is included in the Transportation Security Sub-Function in the Homeland Security Line of Business.

Ground Transportation – involves the activities related to ensuring the availability of transit and the safe passage of passengers and goods over land. Note: The protection of ground transportation from deliberate attack is included in the Transportation Security Sub-Function in the Homeland Security Line of Business.

Water Transportation – involves the activities related to ensuring the availability of transit and the safe passage of passengers and goods over sea and water. Note: The protection of maritime transportation from deliberate attack is included in the Transportation Security Sub-Function in the Homeland Security Line of Business.

Space Operations – involves the activities related to the safe launches/missions of passengers or goods into aerospace and includes commercial, scientific, and military operations.

Line of Business Table – Workforce Management

Workforce Management (Services for Citizens) – includes those activities that promote the welfare of the Nation’s workforce by improving their working conditions, advancing opportunities for profitable employment, and strengthening free collective bargaining.

Training and Employment – includes programs of job or skill training, employment services and placement, and programs to promote the hiring of marginal, unemployed, or low-income workers.

Labor Rights Management – refers to those activities undertaken to ensure that employees and employers are aware of and comply with all statutes and regulations concerning labor rights, including those pertaining to wages, benefits, safety and health, whistleblower, and nondiscrimination policies.

Worker Safety – refers to those activities undertaken to save lives, prevent injuries, and protect the health of America's workers.

Line of Business Table – General Science and Innovation

General Science and Innovation (Services for Citizens) – includes all Federal activities to meet the national need to advance knowledge in this area. This includes general research and technology programs, space exploration activities, and other research and technology programs that have diverse goals and cannot be readily classified into another Line of Business or Sub-function.

Scientific and Technological Research and Innovation – includes all federal activities whose goal is the creation of new scientific and/or technological knowledge as a goal in itself, without a specific link to the other Lines of Business or Sub-Functions of the BRM. NOTE: Research and development programs that directly support another Service for Citizen should not be included here.

Space Exploration and Innovation – includes all activities devoted to innovations directed at human and robotic space flight and the development and operation of space launch and transportation systems, and the general research and exploration of outer space.

Mode of Delivery Assignment

The figure below provides a visual breakdown for each of *Mode of Delivery* Lines-of-Business. The definitions for each and their sub-functions are provided in the tables that follow.

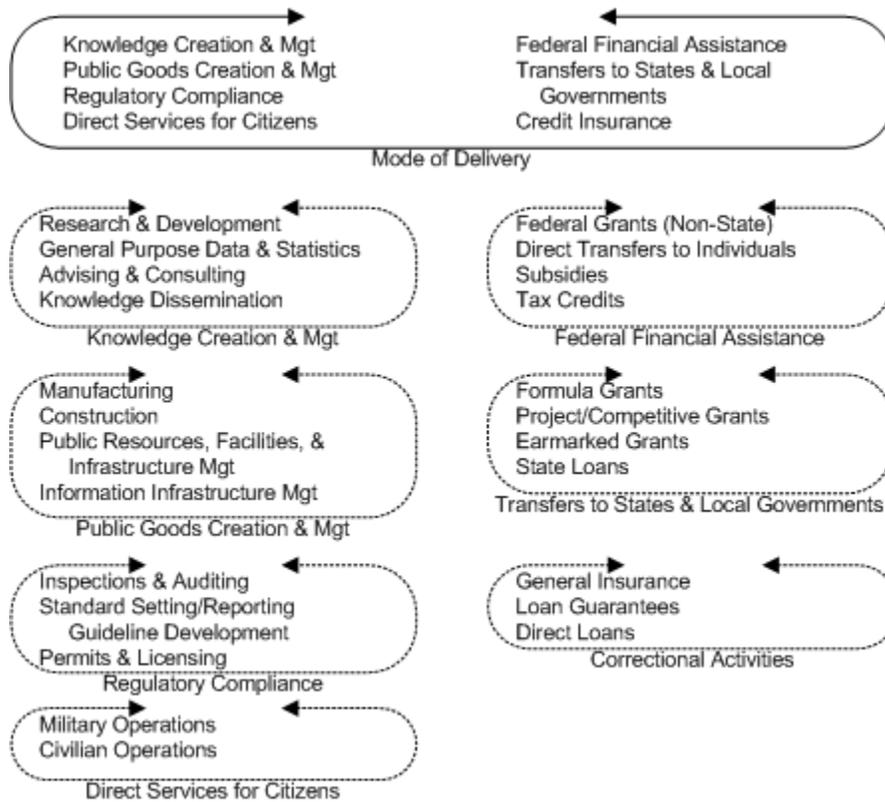


Figure 5 – Mode of Delivery Line-of-Business with Sub-Functions

Line of Business Table – Knowledge Creation and Management

Knowledge Creation and Management (Mode of Delivery) – involves the programs and activities in which the Federal Government creates or develops a body or set of knowledge, the manipulation and analysis of which can provide inherent benefits for both the Federal and private sector.

Research and Development – involves the gathering and analysis of data, dissemination of results, and development of new products, methodologies, and ideas.
General Purpose Data and Statistics – includes activities performed in providing empirical, numerical, and related data and information pertaining to the current state of the nation in areas such as the economy, labor, weather, international trade, etc.
Advising and Consulting – involves the guidance and consultative services provided by the Federal Government to support the implementation of a specific Service for Citizen.
Knowledge Dissemination – addresses those instances where the primary method used in delivering a service is through the publishing or broadcasting of information, such as the Voice of America or web-based museums maintained by the Smithsonian. It is not intended to address circumstances where the publication of information is a by-product of the actual mode of delivery. For example, an agency might perform research (the mode of delivery) addressing a particular service for citizen (for example environmental management) and as a result publish a report on the findings. In this instance, the research would be the mode of delivery and publishing the report would be a Support Delivery of Service.

Line of Business Table – Public Goods Creation and Management

Public Goods Creation & Management (Mode of Delivery) – the construction, manufacturing, administration, and/or management of goods, structures, facilities, common resources, etc. used for the general well being of the American public or society at large.

Manufacturing – involves all programs and activities in which the Federal Government produces both marketable and non-marketable goods.
Construction – involves all programs and activities in which the Federal Government builds or constructs facilities, roads, dams, etc.
Public Resources, Facilities, & Infrastructure Management – involves the management and maintenance of Government-owned capital goods and resources (natural or otherwise) on behalf of the public, usually with benefits to the community at large as well as to the direct user. Examples of facilities and infrastructure include schools, roads, bridges, dams, harbors, and public buildings. Examples of resources include parks, cultural artifacts and art, endangered species, oil reserves, etc.
Information Infrastructure Management – involves the management and stewardship of a type of information by the Federal Government and/or the creation of physical communication infrastructures on behalf of the public in order to facilitate communication. This includes the management of large amounts of information (e.g., environmental and weather data, criminal records, etc.), the creation of information and data standards relating to a specific type of information (patient records), and the creation and management of physical communication infrastructures (networks) on behalf of the public. Note: Information infrastructures for government use are not included here.

Line of Business Table – Regulatory Compliance and Enforcement

Regulatory Compliance and Enforcement (Mode of Delivery) – involves the direct monitoring and oversight of a specific individual, group, industry, or community participating in a regulated activity via market mechanisms, command and control features, or other means to control or govern conduct or behavior.

Inspections & Auditing – involves the methodical examination and review of regulated activities to ensure compliance with standards for regulated activity.
Standard Setting/Reporting Guideline Development – involves the establishment of allowable limits associated with a regulated activity and the development of reporting requirements necessary to monitor and control compliance with allowable limits. This includes the development of requirements for product sampling and testing, emissions monitoring and control, incident reporting, financial filings, etc.
Permits and Licensing – involves activities associated with granting, revoking, and the overall management of the documented authority necessary to perform a regulated task or function.

Line of Business Table – Direct Services for Citizens

Direct Services for Citizens (Mode of Delivery) – the delivery of a good or service to (or on behalf of) the citizenry by the Federal Government with no other intervening persons, conditions, or organizations.

Military Operations – TBD
Civilian Operations – describes the direct provision of a non-military service for the citizen by government employees.

| Line of Business Table – Federal Financial Assistance | |
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| Federal Financial Assistance (Mode of Delivery) – refers to the provision of earned and unearned financial or monetary-like benefits to individuals, groups, or corporations. | |
| | <p>Federal Grants (Non-State) – involve the disbursement of funds by the Federal Government to a non-Federal entity to help fund projects or activities. This includes the processes associated with grant administration, including the publication of funds availability notices, development of the grant application guidance, determination of grantee eligibility, coordination of the peer review/evaluation process for competitive grants, the transfer of funds, and the monitoring/oversight as appropriate.</p> <p>Direct Transfers to Individuals – involves the disbursement of funds from the Federal Government directly to beneficiaries (individuals or organizations) who satisfy Federal eligibility requirements with no restrictions imposed on the recipient as to how the money is spent. Direct Transfers include both earned and unearned Federal Entitlement programs such as Medicare, Social Security, unemployment benefits, etc.</p> <p>Subsidies – involve Federal Government financial transfers that reduce costs and/or increase revenues of producers.</p> <p>Tax Credits – allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of tax liability designed to encourage certain kinds of activities or to aid taxpayers in special circumstances.</p> |

| Line of Business Table – Transfers to States and Local Governments | |
|--|--|
| Transfers to States and Local Governments (Mode of Delivery) – involves the transfer of funds or financial assistance from the Federal government to State and Local governments and Indian tribes. | |
| | <p>Formula Grants – involves the allocation of money to States or their subdivisions in accordance with distribution formulas prescribed by law or administrative regulation, for activities of a continuing nature.</p> <p>Project/Competitive Grants – involves the funding, for fixed or known periods, of projects. Project/Competitive grants can include fellowships, scholarships, research grants, training grants, traineeships, experimental and demonstration grants, evaluation grants, planning grants, technical assistance grants, survey grants, and construction grants.</p> <p>Earmarked Grants – involves the distribution of money to State and Local Governments for a named purpose or service usually specifically noted by Congress in appropriations language, or other program authorizing language.</p> <p>State Loans – involve all disbursement of funds by the Government to a State or Local Government (or Indian Tribe) entity under a contract that requires the repayment of such funds with or without interest.</p> |

| Line of Business Table – Credit and Insurance | |
|---|---|
| Credit and Insurance (Mode of Delivery) – involves the use of government funds to cover the subsidy cost of a direct loan or loan guarantee or to protect/indemnify members of the public from financial losses. | |
| | <p>General Insurance – involves providing protection to individuals or entities against specified risks. The specified protection generally involves risks that private sector entities are unable or unwilling to assume or subsidize and where the provision of insurance is necessary to achieve social objectives.</p> <p>Loan Guarantees – involve any guarantee, insurance, or other pledge with respect to the payment of all or a part of the principal or interest on any debt obligation of a non-Federal borrower to a non-Federal lender, but does not include the insurance of deposits, shares, or other withdrawable accounts in financial institutions.</p> <p>Direct Loans – involve a disbursement of funds by the Government to a non-Federal borrower under a contract that requires the repayment of such funds with or without interest.</p> |

Support Delivery of Services

The figure below provides a visual breakdown for each of *Support Delivery of Services* Lines-of-Business. The definitions for each and their sub-functions are provided in the tables that follow.

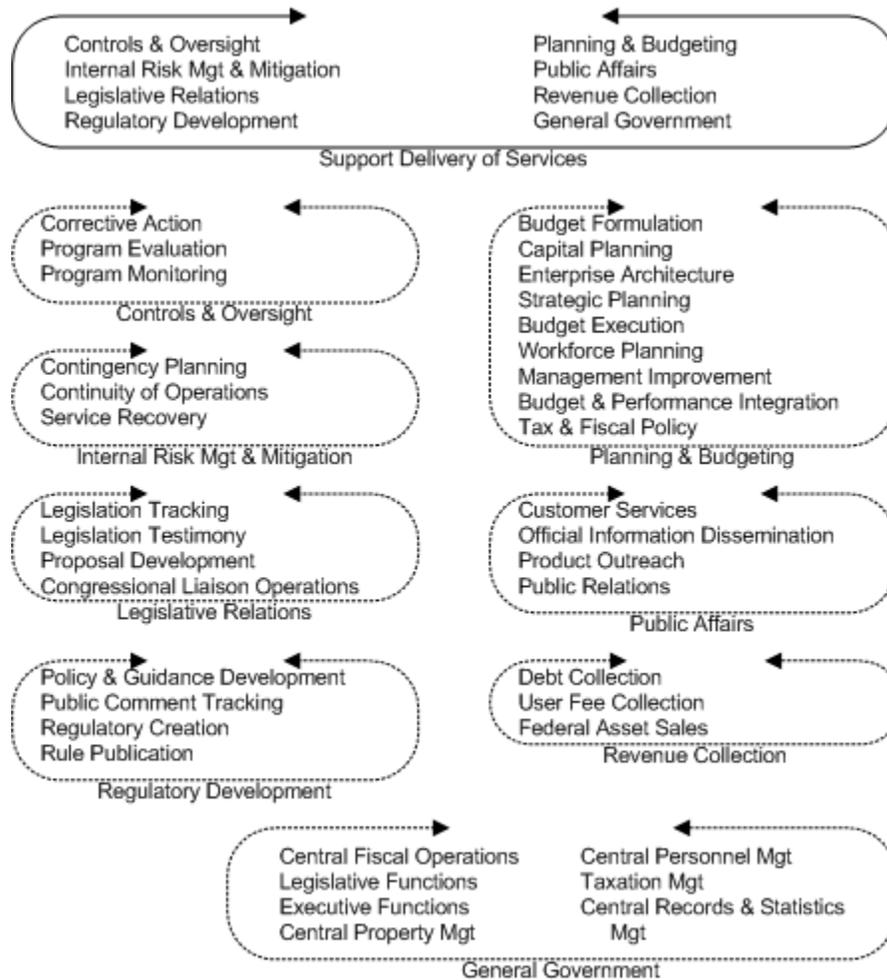


Figure 6 – Support Delivery of Services Line-of-Business with Sub-Functions

Line of Business Table – Controls and Oversight

Controls and Oversight (Support Delivery of Services) – ensures that the operations and programs of the Federal Government and its external business partners comply with applicable laws and regulations and prevent waste, fraud, and abuse.

- Corrective Action** – involves the enforcement of activities to remedy internal or external programs that have been found non-compliant with a given law, regulation, or policy.
- Program Evaluation** – involves the analysis of internal and external program effectiveness and the determination of corrective actions as appropriate.
- Program Monitoring** – involves the data-gathering activities required to determine the effectiveness of internal and external programs and the extent to which they comply with related laws, regulations, and policies.

Line of Business Table – Internal Risk Management and Mitigation

Internal Risk Management and Mitigation (Support Delivery of Services) – involves all activities relating to the processes of analyzing exposure to risk and determining appropriate countermeasures.

- Contingency Planning** – involves the actions required to plan for, respond to, and mitigate damaging events.
- Continuity of Operations** – involves the activities associated with the identification of critical systems and processes, and the planning and preparation required to ensure that these systems and processes will be available in the event of a catastrophic event.
- Service Recovery** – involves the internal actions necessary to develop a plan for resuming operations after a catastrophic event occurs.

Line of Business Table – Legislative Relations

Legislative Relations (Support Delivery of Services) – involves activities aimed at the development, tracking, and amendment of public laws through the legislative branch of the Federal Government.

- Legislation Tracking** – involves monitoring legislation from introduction to enactment.
- Legislation Testimony** – involves activities associated with providing testimony/evidence in support of, or opposition to, legislation.
- Proposal Development** – involves drafting proposed legislation that creates or amends laws subject to Congressional action.
- Congressional Liaison Operations** – involves all activities associated with supporting the formal relationship between a Federal Agency and the U.S. Congress.

Line of Business Table – Regulatory Development

Regulatory Development (Support Delivery of Services) – involves activities associated developing regulations, policies, and guidance to implement laws.

- Policy and Guidance Development** – involves the creation and dissemination of guidelines to assist in the interpretation and implementation of regulations.
- Public Comment Tracking** – involves the activities of soliciting, maintaining, and responding to public comments regarding proposed regulations.
- Regulatory Creation** – involves the activities of researching and drafting proposed and final regulations.
- Rule Publication** – includes all activities associated with the publication of a proposed or final rule in the Federal Register and Code of Federal Regulations.

| Line of Business Table – Planning and Budgeting | |
|--|--|
| Planning and Budgeting (Support Delivery of Services) – involves the activities of determining strategic direction, identifying and establishing programs and processes, and allocating resources (capital and labor) among those programs and processes. | |
| | <p>Budget Formulation – involves all activities undertaken to determine priorities for future spending and to develop an itemized forecast of future funding and expenditures during a targeted period of time. This includes the collection and use of performance information to assess the effectiveness of programs and develop budget priorities.</p> <p>Capital Planning – involves the processes for ensuring that appropriate investments are selected for capital expenditures.</p> <p>Enterprise Architecture – is an established process for describing the current state and defining the target state and transition strategy for an organization’s people, processes, and technology.</p> <p>Strategic Planning – entails the determination of annual and long-term goals and the identification of the best approach for achieving those goals.</p> <p>Budget Execution – involves the legal (apportionment) and managerial (allotment and sub-allotment) distribution of budget authority to achieve results consistent with the formulated budget.</p> <p>Workforce Planning – involves the processes for identifying the workforce competencies required to meet the agency’s strategic goals and for developing the strategies to meet these requirements.</p> <p>Management Improvement – includes all efforts to gauge the ongoing efficiency of business processes and identify opportunities for reengineering or restructuring.</p> <p>Budget and Performance Integration – involves activities that align Federal resources allocated through budget formulation, execution, and management actions with examinations of program objectives, performance, and demonstrated results such as Program Performance Assessments, Government Performance Results Act (GPRA) plans and reports, performance-based agency budget submissions, and Financial Management Cost Accounting and Performance Measurement data.</p> <p>Tax and Fiscal Policy – encompasses analysis of the implications for economic growth and stability in the United States and the world of Federal tax and spending policies. This includes assessing the sustainability of current programs and policies, the best means for raising revenues, the distribution of tax liabilities, and the appropriate limits on debt.</p> |

| Line of Business Table – Public Affairs | |
|---|---|
| Public Affairs (Support Delivery of Services) – involves the exchange of information and communication between the Federal Government, citizens and stakeholders in direct support of citizen services, public policy, and/or national interest. | |
| | <p>Customer Services – supports activities associated with providing an agency’s customers with information regarding the agency’s service offerings and managing the interactions and relationships with those customers.</p> <p>Official Information Dissemination – includes all efforts to provide official government information to external stakeholders through the use of various types of media, such as video, paper, web, etc.</p> <p>Product Outreach – relates to the marketing of government services products, and programs to the general public in an attempt to promote awareness and increase the number of customers/beneficiaries of those services and programs.</p> <p>Public Relations – involves the efforts to promote an organization’s image through the effective handling of citizen concerns.</p> |

| Line of Business Table – Revenue Collection | |
|---|--|
| Revenue Collection (Support Delivery of Services) – includes the collection of Government income from all sources. Note: Tax collection is accounted for in Taxation Management Sub-Function in the General Government Line of Business. | |
| | <p>Debt Collection – supports activities associated with the collection of money owed to the U.S. government from both foreign and domestic sources.</p> <p>User Fee Collection – involves the collection of fees assessed on individuals or organizations for the provision of Government services and for the use of Government goods or resources (i.e. National Parks).</p> <p>Federal Asset Sales – encompasses the activities associated with the acquisition, oversight, tracking, and sale of non-internal assets managed by the Federal Government with a commercial value and sold to the private sector.</p> |

Line of Business Table – General Government

General Government (Support Delivery of Services) – involves the general overhead costs of the Federal Government, including legislative and executive activities; provision of central fiscal, personnel, and property activities; and the provision of services that cannot reasonably be classified in any other Line of Business. As a normal rule, all activities reasonably or closely associated with other LoBs or Sub-Functions shall be included in those LoBs or Sub-Functions rather than listed as a part of general government. This Line of Business is reserved for central government management operations; agency-specific management activities would not be included here.

Central Fiscal Operations – includes the fiscal operations that the Department of Treasury performs on behalf of the Government. Note: Tax-related functions are included within the Taxation Management Sub-Function.

Legislative Functions – include the costs of the Legislative Branch except for the Tax Court, the Library of Congress, and the Government Printing Office revolving fund.

Executive Functions – involve the Executive Office of the President.

Central Property Management – involves most of the operations of the General Services Administration.

Central Personnel Management – involves most of the operating costs of the Office of Personnel Management and related agencies.

Taxation Management – includes activities associated with the implementation of the Internal Revenue Code and the collection of taxes in the United States and abroad.

Central Records and Statistics Management – involves the operations surrounding the management of official documents, statistics, and records for the entire Federal Government. This Sub-Function is intended to include the management of records and statistics for the Federal government as a whole, such as the records management performed by NARA or the statistics and data collection performed by the Bureau of the Census. Note: Many agencies perform records and statistics management for a particular business function and as such should be mapped to that line of business. The Central Records and Statistics Management is intended for functions performed on behalf of the entire Federal government.

Management of Government Resources

The figure below provides a visual breakdown for each of *Management of Government Resources* Lines-of-Business. The definitions for each and their sub-functions are provided in the tables that follow.

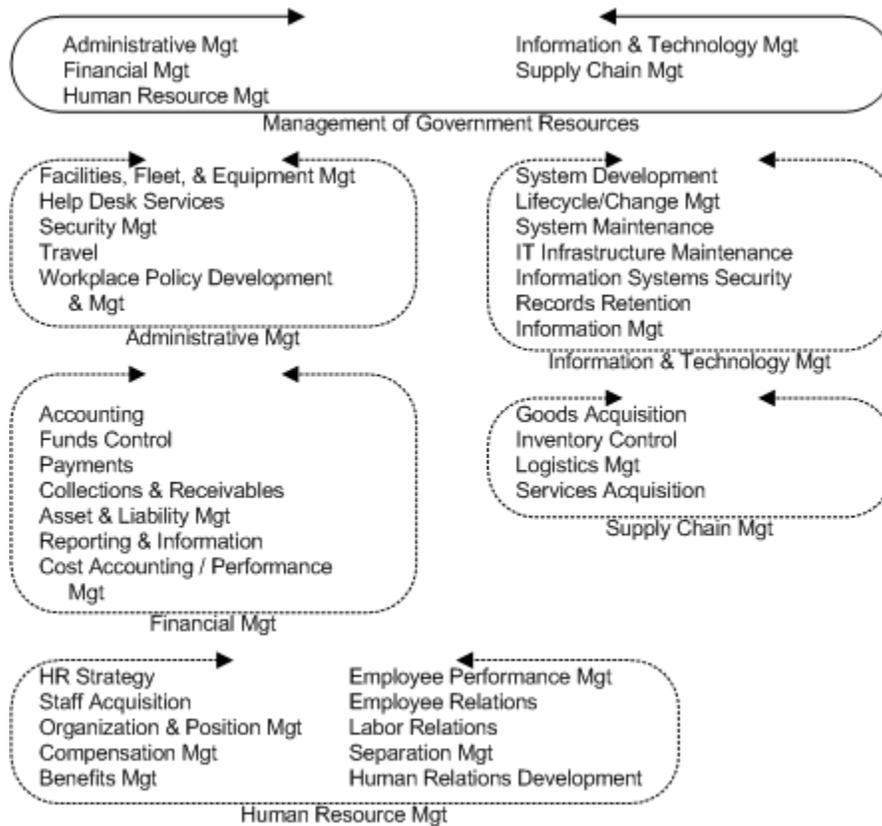


Figure 7 – Management of Government Resources Line-of-Business with Sub-Functions

Line of Business Table – Administrative Management

Administrative Management (Management of Government Resources) – involves the day-to-day management and maintenance of the internal infrastructure.

Facilities, Fleet, and Equipment Management – involves the maintenance, administration, and operation of office buildings, fleets, machinery, and other capital assets that are possessions of the Federal Government.

Help Desk Services – involves the management of a service center to respond to government and contract employees' technical and administrative questions.

Security Management – involves the physical protection of an organization's personnel, assets, and facilities (including security clearance management). Note: Activities related to securing data and information systems are addressed under the "Information Systems Security" Sub-function.

Travel – involves the activities associated with planning, preparing, and monitoring of business related travel for an organization's employees.

Workplace Policy Development and Management – includes all activities required to develop and disseminate workplace policies such as dress codes, time reporting requirements, telecommuting, etc.

Line of Business Table – Financial Management

Financial Management (Management of Government Resources) – the use of financial information to measure, operate and predict the effectiveness and efficiency of an entity's activities in relation to its objectives. The ability to obtain and use such information is usually characterized by having in place policies, practices, standards, and a system of controls that reliably capture and report activity in a consistent manner.

Accounting – entails accounting for assets, liabilities, fund balances, revenues and expenses associated with the maintenance of Federal funds and expenditure of Federal appropriations (Salaries and Expenses, Operation and Maintenance, Procurement, Working Capital, Trust Funds, etc.), in accordance with applicable Federal standards (FASAB, Treasury, OMB, GAO, etc.).

Funds Control – includes the management of the Federal budget process including the development of plans and programs, budgets, and performance outputs and outcomes as well as financing Federal programs and operations through appropriation and apportionment of direct and reimbursable spending authority, fund transfers, investments and other financing mechanisms.

Payments – include disbursements of Federal funds, via a variety of mechanisms, to Federal and private individuals, Federal agencies, state, local and international Governments, and the private sector, to effect payment for goods and services, or distribute entitlements, benefits, grants, subsidies, loans, or claims.

Collections and Receivables – includes deposits, fund transfers, and receipts for sales or service.

Asset and Liability Management – provide accounting support for the management of assets and liabilities of the Federal government.

Reporting and Information – includes providing financial information, reporting and analysis of financial transactions.

Cost Accounting/Performance Measurement – is the process of accumulating, measuring, analyzing, interpreting, and reporting cost information useful to both internal and external groups concerned with the way in which an organization uses, accounts for, safeguards, and controls its resources to meet its objectives. Cost accounting information is necessary in establishing strategic goals, measuring service efforts and accomplishments, and relating efforts to accomplishments. Also, cost accounting, financial accounting, and budgetary accounting all draw information from common data sources.

| Line of Business Table – Human Resource Management | |
|---|--|
| <p>Human Resource Management (Management of Government Resources) – involves all activities associated with the recruitment and management of personnel.</p> | |
| | <p>Human Resource Strategy – develops effective human capital management strategies to ensure federal organizations are able to recruit, select, develop, train, and manage a high-quality, productive workforce in accordance with merit system principles. This sub-function includes: conducting both internal and external environmental scans; developing human resources and human capital strategies and plans; establishing human resource policy and practices; managing current and future workforce competencies, developing workforce plans; developing succession plans; managing the human resources budget; providing human resources and human capital consultative support; and measuring and improving human resources performance.</p> <p>Staff Acquisition – establishes procedures for recruiting and selecting high-quality, productive employees with the right skills and competencies, in accordance with merit system principles. This sub-function includes: developing a staffing strategy and plan; establishing an applicant evaluation approach; announcing the vacancy, sourcing and evaluating candidates against the competency requirements for the position; initiating pre-employment activities; and hiring employees.</p> <p>Organization and Position Management – designs, develops, and implements organizational and position structures that create a high-performance, competency-driven framework that both advances the agency mission and serves agency human capital needs.</p> <p>Compensation Management – designs, develops, and implements compensation programs that attract, retain and fairly compensate agency employees. In addition, designs, develops, and implements pay for performance compensation programs to recognize and reward high performance, with both base pay increases and performance bonus payments. This sub-function includes: developing and implementing compensation programs; administering bonus and monetary awards programs; administering pay changes; managing time, attendance, leave and pay; and managing payroll.</p> <p>Benefits Management – designs, develops, and implements benefit programs that attract, retain and support current and former agency employees. This sub-function includes: establishing and communicating benefits programs; processing benefits actions; and interacting as necessary with third party benefits providers.</p> <p>Employee Performance Management – designs, develops, and implements a comprehensive performance management approach to ensure agency employees are demonstrating competencies required of their work assignments. Design, develop and implement a comprehensive performance management strategy that enables managers to make distinctions in performance and links individual performance to agency goal and mission accomplishment. This sub-function also includes managing employee performance at the individual level and evaluating the overall effectiveness of the agency's employee development approach.</p> <p>Employee Relations – designs, develops, and implements programs that strive to maintain an effective employer-employee relationship that balance the agency's needs against its employees' rights. This sub-function includes: addressing employee misconduct; addressing employee performance problems; managing administrative grievances; providing employee accommodation; administering employees assistance programs; participating in administrative third party proceedings; and determining candidate and applicant suitability.</p> <p>Labor Relations – manages the relationship between the agency and its unions and bargaining units. This includes negotiating and administering labor contracts and collective bargaining agreements; managing negotiated grievances; and participating in negotiated third party proceedings.</p> <p>Separation Management – conducts efficient and effective employee separation programs that assist employees in transitioning to non-Federal employment; facilitates the removal of unproductive, non-performing employees; and assists employees in transitioning to retirement.</p> <p>Human Resources Development – designs, develops, and implements a comprehensive employee development approach to ensure that agency employees have the right competencies and skills for current and future work assignments. This sub-function includes conducting employee development needs assessments; designing employee development programs; administering and delivering employee development programs; and evaluating the overall effectiveness of the agency's employee development approach.</p> |

| Line of Business Table – Information and Technology Management | |
|--|--|
| <p>Information and Technology Management (Management of Government Resources) – involves the coordination of information technology resources and systems required to support or provide a citizen service.</p> | |
| | <p>System Development – supports all activities associated with the in-house design and development of software applications.</p> <p>Lifecycle/Change Management – involves the processes that facilitate a smooth evolution, composition, and workforce transition of the design and implementation of changes to agency resources such as assets, methodologies, systems, or procedures.</p> <p>System Maintenance – supports all activities associated with the maintenance of in-house designed software applications.</p> <p>IT Infrastructure Maintenance – involves the planning, design, and maintenance of an IT Infrastructure to effectively support automated needs (i.e. platforms, networks, servers, printers, etc.).</p> <p>Information Systems Security – involves all functions pertaining to the protection of federal information and information systems from unauthorized access, use, disclosure, disruptions, modification, or destruction, as well as the creation and implementation of security policies, procedures and controls.</p> <p>Records Retention – involves the operations surrounding the management of the official documents and records for an agency.</p> <p>Information Management – involves the coordination of information collection, storage, and dissemination, and destruction as well as managing the policies, guidelines, and standards regarding information management.</p> |

Line of Business Table – Supply Chain Management

Supply Chain Management (Management of Government Resources) – involves the purchasing, tracking, and overall management of goods and services.

Goods Acquisition – involves the procurement of physical goods, products, and capital assets to be used by the Federal government.

Inventory Control – refers to the tracking of information related to procured assets and resources with regard to quantity, quality, and location.

Logistics Management – involves the planning and tracking of personnel and their resources in relation to their availability and location.

Services Acquisition – involves the oversight and/or management of contractors and service providers from the private sector.

Section II – Service Reference Model (SRM)

The FEA SRM consists of seven service domains, thirty service types, and one hundred seventy-three service components. This section provides a context diagram and component definitions for the service domains and service types of the SRM.

Note – The diagram and definition order is presented in the same order as documented in the SRM.

Customer Services Service Domain

The figure below provides a context for the service types in the *Customer Services* service domain.

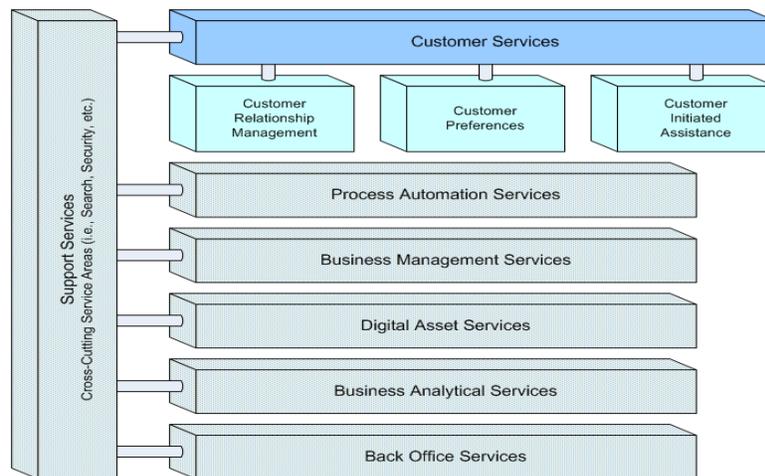


Figure 8 – Customer Services Service Types

The following service type descriptions apply to the *Customer Services* service domain:

- Customer Relationship Management – defines the set of capabilities that are used to plan, schedule and control the activities between the customer and the enterprise both before and after a product or service is offered.
- Customer Preferences – defines the set of capabilities that allow an organization's customers to change a user interface and they way that data is displayed.
- Customer Initiated Assistance – defines the set of capabilities to allow customers to proactively seek assistance and service from an organization.

Process Automation Services Service Domain

The figure below provides a context for the service types in the *Process Automation Services* service domain.

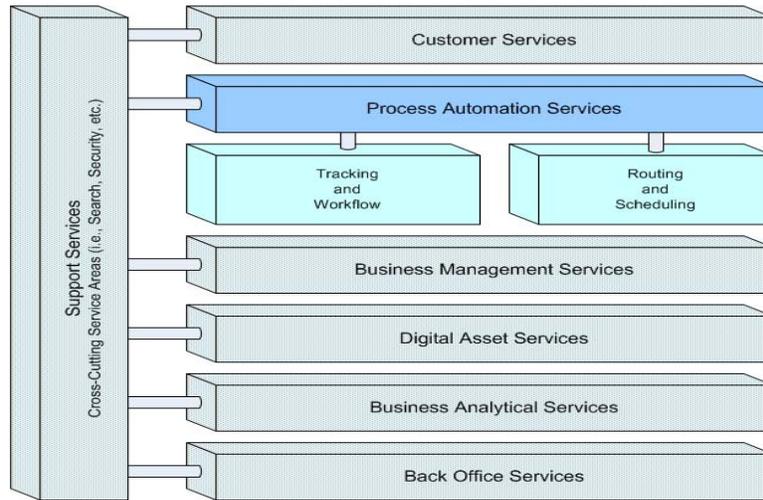


Figure 9 – Process Automation Services Service Types

The following service type descriptions apply to the *Process Automation Services* service domain:

- Tracking and Workflow – defines the set of capabilities for automatic monitoring and routing of documents to the users responsible for working on them to support each step of the business cycle.
- Routing and Scheduling – defines the set of capabilities for the automatic directing, assignment, or allocation of time for a particular action or event.

Business Management Services Service Domain

The figure below provides a context for the service types in the *Business Management Services* service domain.

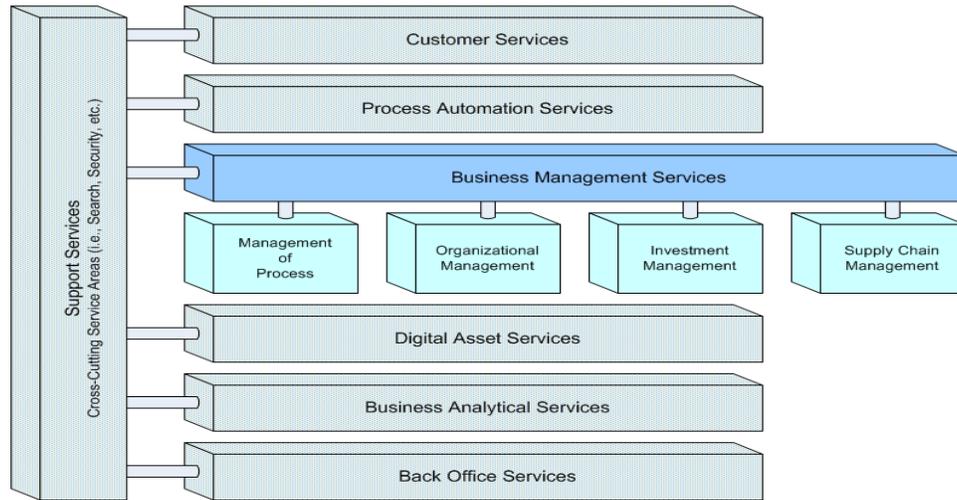


Figure 10 – Business Management Services Service Types

The following service type descriptions apply to the *Business Management Services* service domain:

- Management of Process – defines the set of capabilities that regulate the activities surrounding the business cycle of an organization.
- Organizational Management – defines the set of capabilities that support both collaboration and communication within an organization.
- Investment Management – defines the set of capabilities that manage the financial assets and capital of an organization.
- Supply Chain Management – defines the set of capabilities for planning, scheduling and controlling a supply chain and the sequence of organizations and functions that mine, make or assemble materials and products from manufacturer to wholesaler to retailer to consumer.

Digital Asset Services Service Domain

The figure below provides a context for the service types in the *Digital Asset Services* service domain.

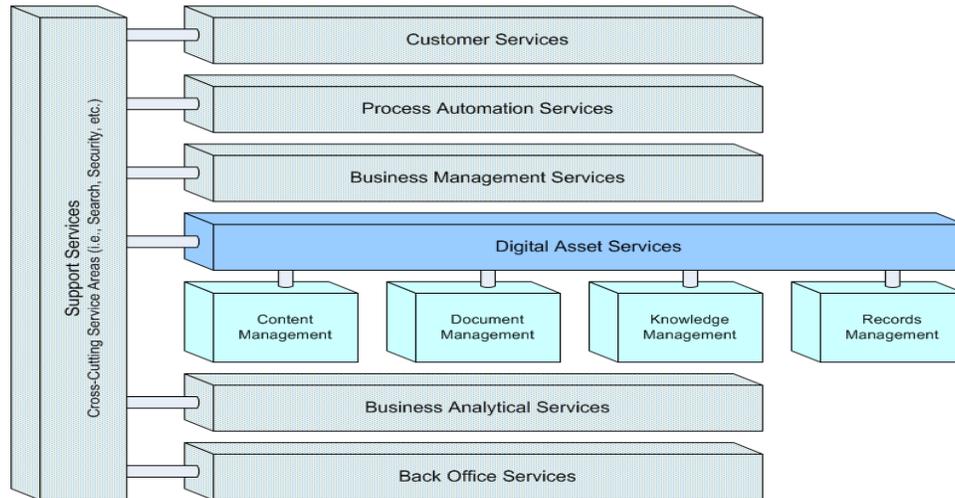


Figure 11 – Digital Asset Services Service Types

The following service type descriptions apply to the *Digital Asset Services* service domain:

- Content Management – defines the capabilities that manage the storage, maintenance and retrieval of documents and information of a system or website.
- Document Management – defines the set of capabilities that control the capture and maintenance of an organization's documents and files.
- Knowledge Management – defines the set of capabilities that support the identification, gathering and transformation of documents, reports and other sources into meaningful information.
- Records Management – defines the set of capabilities to store, protect, archive, classify and retire of documents and information.

Business Analytical Services Service Domain

The figure below provides a context for the service types in the *Business Analytical Services* service domain.

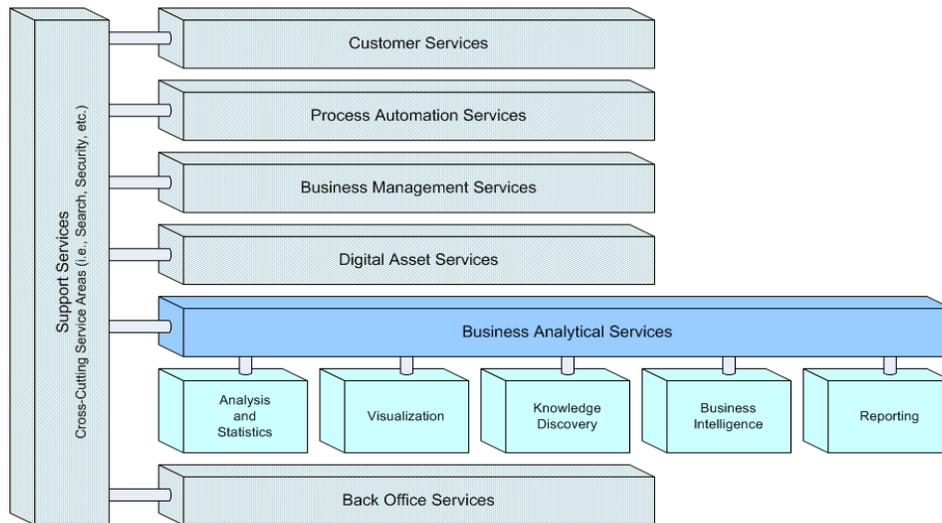


Figure 12 – Business Analytical Services Service Types

The following service type descriptions apply to the *Business Analytical Services* service domain:

- Analysis and Statistics – defines the set of capabilities to examine business issues, problems and their solutions.
- Visualization – defines the set of capabilities to convert data into graphical or picture form.
- Knowledge Discovery – defines the set of capabilities to facilitate the identification of useful information from data.
- Business Intelligence – defines the set of capabilities to provide information pertaining to the history, current status or future projections of an organization.
- Reporting – defines the set of capabilities to organize data into useful information.

Back Office Services Service Domain

The figure below provides a context for the service types in the *Back Office Services* service domain.

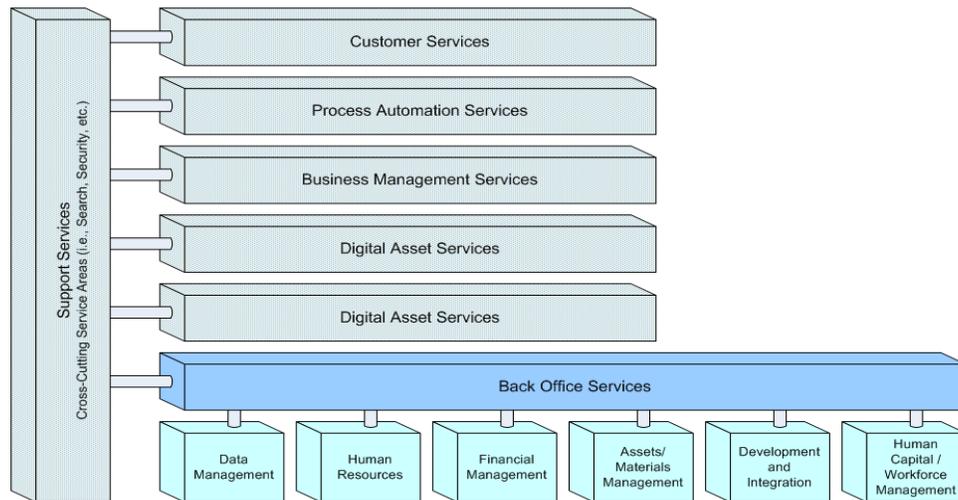


Figure 13 – Back Office Services Service Types

The following service type descriptions apply to the *Back Office Services* service domain:

- Data Management – defines the set of capabilities that support the usage, processing and general administration of unstructured information.
- Human Resources – defines the set of capabilities that support the recruitment and management of personnel.
- Financial Management – defines the set of capabilities that support the accounting practices and procedures that allow for the handling of revenues, funding and expenditures.
- Assets/Materials Management – defines the set of capabilities to support the acquisition, oversight and tracking of an organization's assets.
- Development and Integration – defines the set of capabilities to provide communication between hardware/software applications and the activities associated with deployment of software applications.
- Human Capital / Workforce Management – defines the set of capabilities to provide for the planning and supervision of an organization's personnel.

Support Services Service Domain

The figure below provides a context for the service types in the *Support Services* service domain.

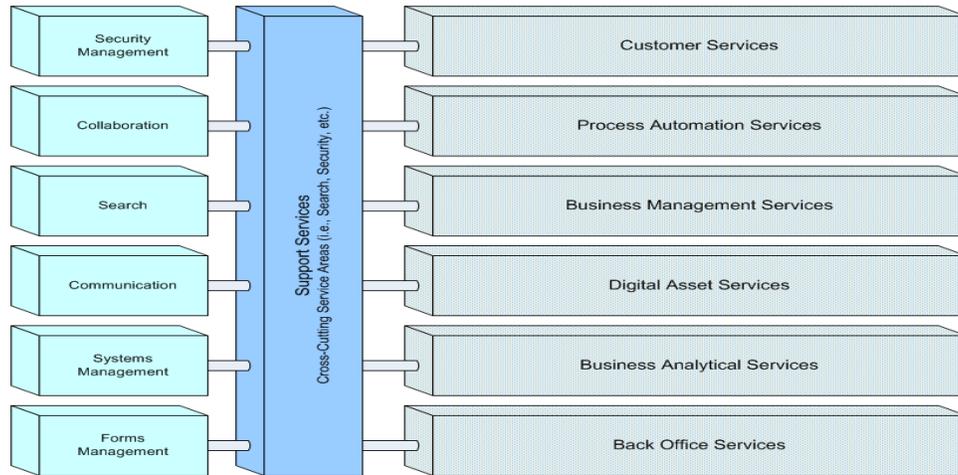


Figure 14 – Support Services Service Types

The following service type descriptions apply to the *Support Services* service domain:

- Security Management – defines the set of capabilities to protect of an organization's information and information systems.
- Collaboration – defines the set of capabilities to allow for the concurrent, simultaneous communication and sharing of content, schedules, messages and ideas within an organization.
- Search – defines the set of capabilities to provide for the probing and lookup of specific data from a data source.
- Communication – defines the set of capabilities to transmit data, messages and information in multiple formats and protocols.
- Systems Management – defines the set of capabilities to support the administration and upkeep of an organization's technology assets, including the hardware, software, infrastructure, licenses and components that comprise those assets.
- Forms Management – defines the set of capabilities to support the creation, modification and usage of physical or electronic documents used to capture information within the business cycle.

Section III – Technical Reference Model (TRM)

The FEA TRM consists of four service areas, seventeen service categories, fifty-three service standards, and one hundred seventy-nine service specifications. This section provides a context diagram and component definitions for the service areas and service categories of the TRM.

Note – The diagram and definition order is presented in the same order as documented in the TRM.

Service Access and Delivery Service Area

The figure below provides a context for the service categories in the *Service Access and Delivery* service area.

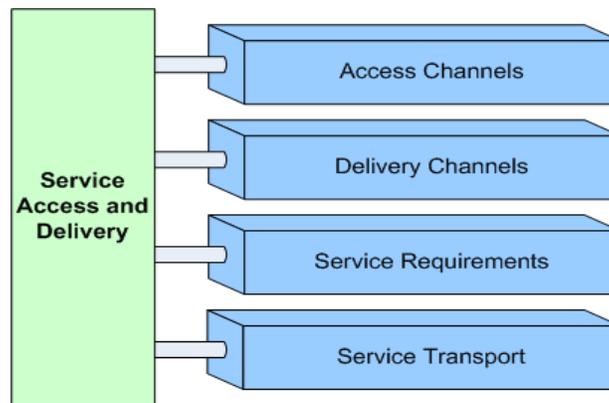


Figure 15 – Service Access and Delivery Service Categories

The following service category descriptions apply to the *Service Access and Delivery* service area:

- Access Channels – define the interface between an application and its users, whether it is a browser, personal digital assistant or other medium.
- Delivery Channels – define the level of access to applications and systems based upon the type of network used to deliver them.
- Service Requirements – define the necessary aspects of an application, system or service to include legislative, performance and hosting.
- Service Transport – defines the end-to-end management of the communications session to include the access and delivery protocols.

Access Channel Service Category:

The figure below provides a context for the service standards in the *Access Channels* service category.

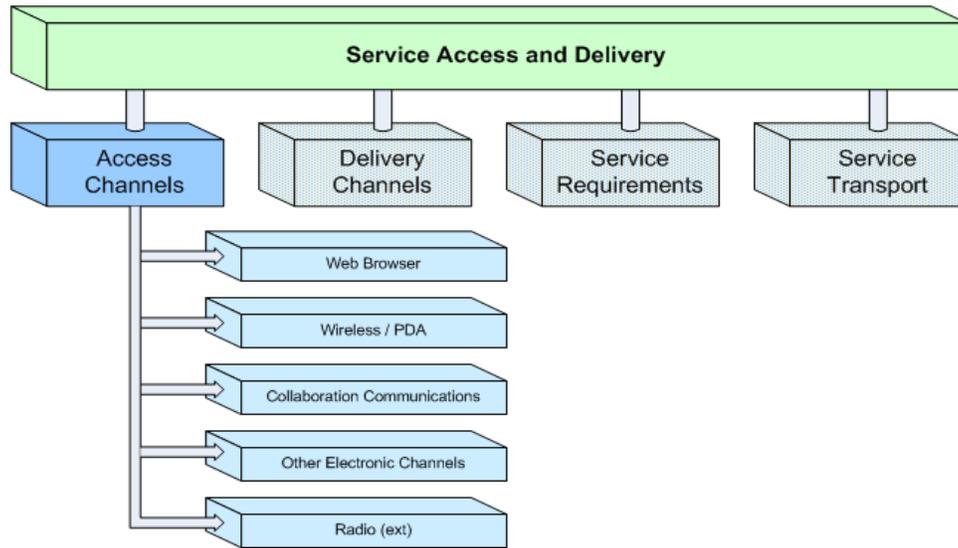


Figure 16 – Access Channels Service Standards

The following service standard descriptions apply to the *Access Channels* service category:

- Web Browser – define the program that serves as the front end to the World Wide Web on the Internet. In order to view a site, the address (URL) is typed into the browser's location field.
- Wireless/PDA – define the technologies that use transmission via the airwaves. Personal Digital Assistant (PDA) is a handheld computer that serves as an organizer for personal information. It generally includes, at a minimum, a name and address database, to-do list and note taker.
- Collaboration Communications – define the forms of electronic exchange of messages, documents, or other information. Electronic communication provides efficiency through expedited time of delivery.
- Other Electronic Channels – define the other various mediums of information exchange and interface between a user and an application.
- Radio – (Ohio extension added to accommodate the *Radio Communications* Common Functionality and the *MARCS/RFID* Common Technology in ePlanningIT.)

Delivery Channel Service Category:

The figure below provides a context for the service standards in the *Delivery Channels* service category.

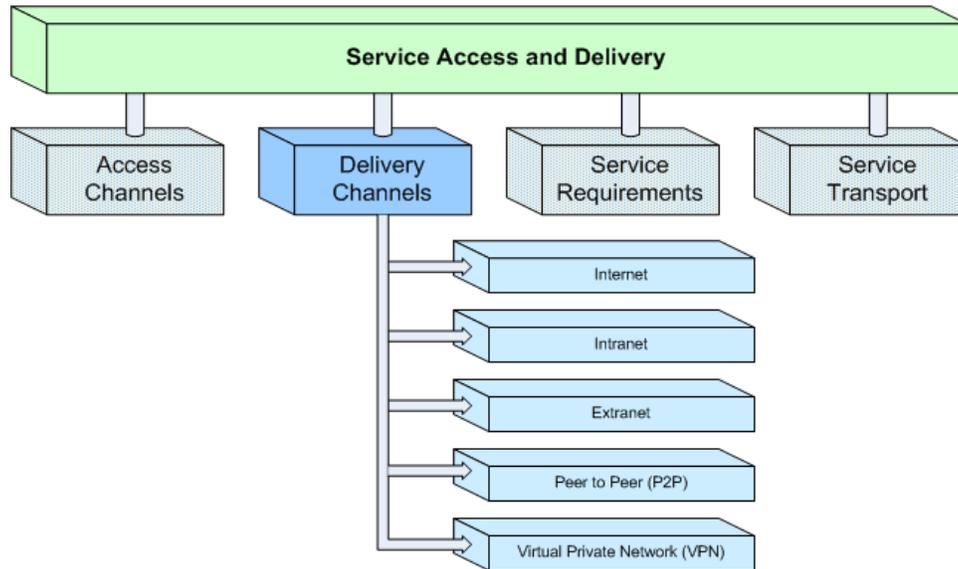


Figure 17 – Delivery Channels Service Standards

The following service standard descriptions apply to the *Delivery Channels* service category:

- Internet – is a worldwide system of computer networks in which users at any one computer can, if they have permission, get information from any other computer.
- Intranet – is a private network that is contained within an enterprise. It may consist of many interlinked local area networks and is used to share company information and resources among employees.
- Extranet – is a private network that uses the Internet protocol and the public telecommunication system to securely share part of a business's information or operations with suppliers, vendors, partners, customers, or other businesses. An extranet can be viewed as part of a company's intranet that is extended to users outside the company.
- Peer to Peer (P2P) – is a class of applications that operate outside the DNS system, have significant or total autonomy from central servers, and take advantage of resources available on the Internet.
- Virtual Private Network (VPN) – makes use of the public telecommunication infrastructure, maintaining privacy through the use of a tunneling protocol and security procedures.

Service Requirements Service Category:

The figure below provides a context for the service standards in the *Service Requirements* service category.

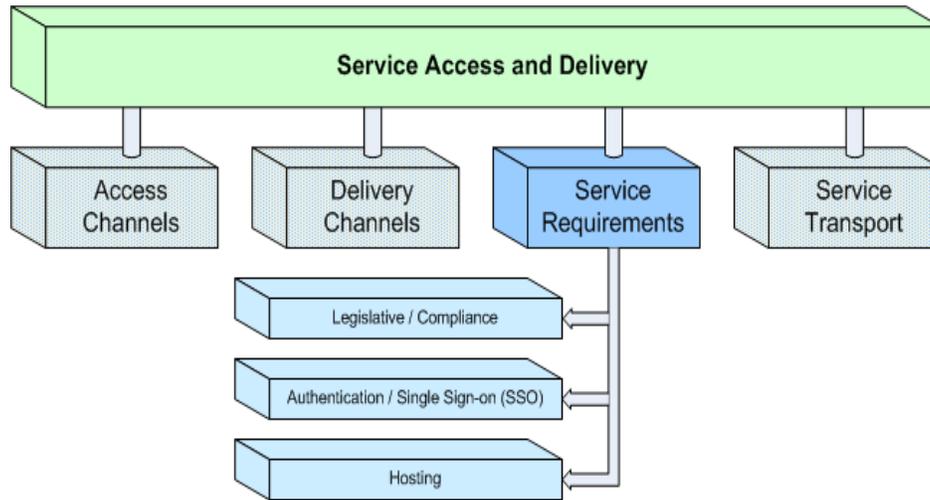


Figure 18 – Service Requirements Service Standards

The following service standards descriptions apply to the *Service Requirements* service category:

- Legislative/Compliance – defines the pre-requisites that an application, system or service must have mandated by congress or governing bodies.
- Authentication/Single Sign-on (SSO) – refers a method that provides users with the ability to login one time, getting authenticated access to all their applications and resources.
- Hosting – refers to the service provider who manages and provides availability to a web site or application, often bound to a Service Level Agreement (SLA). The Hosting entity generally maintains a server farm with network support, power backup, fault tolerance, load-balancing, and storage backup.

Service Transport Service Category:

The figure below provides a context for the service standards in the *Service Transport* service category.

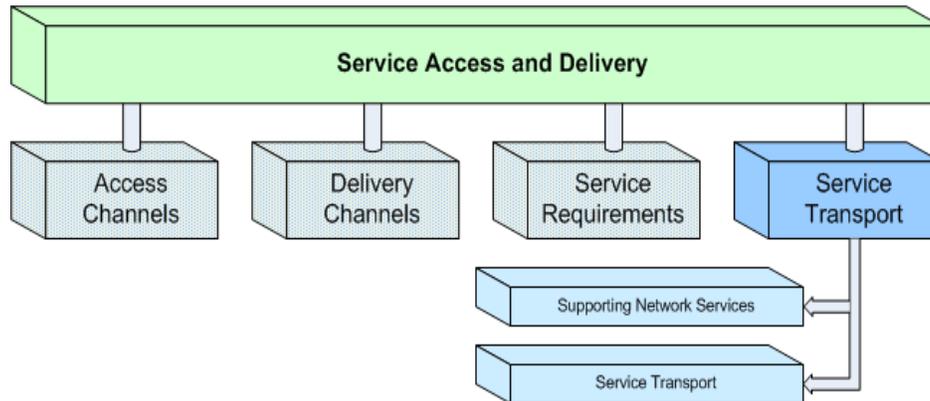


Figure 19 – Service Transport Service Standards

The following service standard descriptions apply to the *Service Transport* service category:

- Supporting Network Services – consist of the protocols that define the format and structure of data and information that is either accessed from a directory or exchanged through communications.
- Service Transport – consist of the protocols that define the format and structure of data and information that is either accessed from a directory or exchanged through communications.

Service Platform and Infrastructure Service Area

The figure below provides a context for the service categories in the *Service Platform and Infrastructure* service area.

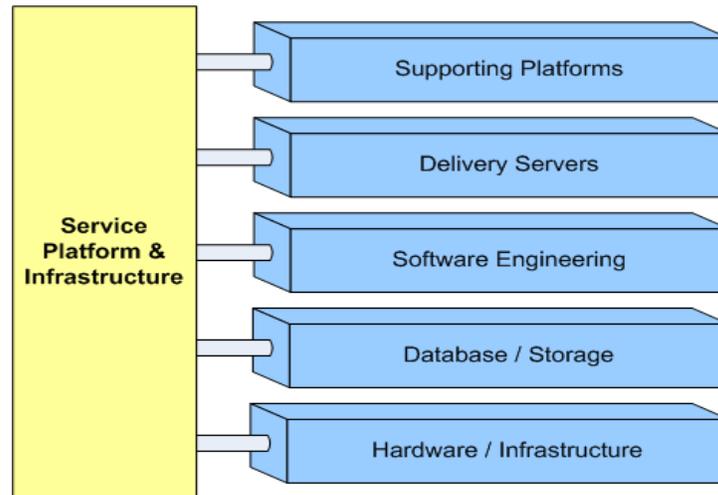


Figure 20 – Service Platform and Infrastructure Service Categories

The following service category descriptions apply to the *Service Platform and Infrastructure* service area:

- Supporting Platforms – are hardware or software architectures. The term originally dealt with only hardware, and it is still used to refer to a CPU model or computer family.
- Delivery Servers – are front-end platforms that provide information to a requesting application. It includes the hardware, operating system, server software, and networking protocols.
- Software Engineering – covers not only the technical aspects of building software systems, but also management issues, such as testing, modeling and versioning.
- Database/Storage – refers to a collection of programs that enables storage, modification, and extraction of information from a database, and various techniques and devices for storing large amounts of data.
- Hardware/Infrastructure – defines the physical devices, facilities and standards that provide the computing and networking within and between enterprises.

Supporting Platforms Service Category:

The figure below provides a context for the service standards in the *Supporting Platforms* service category.

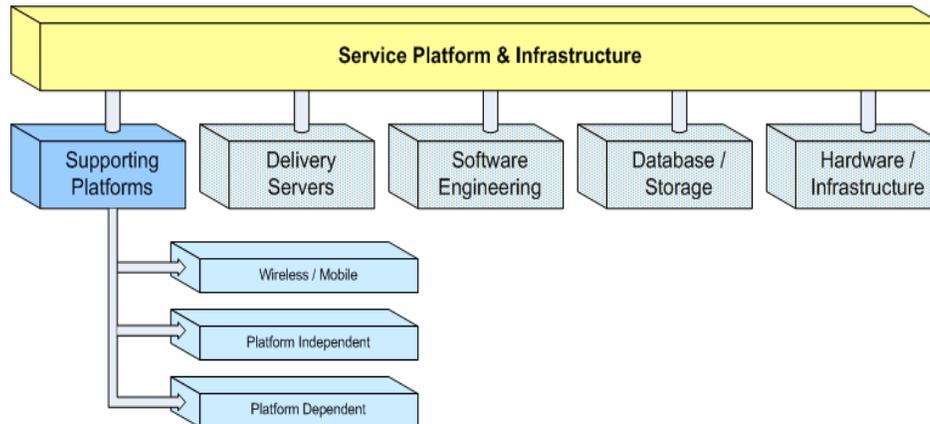


Figure 21 – Supporting Platforms Service Standards

The following service standard descriptions apply to the *Supporting Platforms* service category:

- Wireless/Mobile – radio transmission via the airwaves. Various communications techniques are used to provide wireless transmission including infrared line of sight, cellular, microwave, satellite, packet radio and spread spectrum.
- Platform Independent – defines the operating systems and programming languages that are able to execute and run on any platform or operating system. A platform is the underlying hardware and software comprising a system.
- Platform Dependent – defines the operating systems and programming languages that are able to execute and run on a specific platform or operating system. A platform is the underlying hardware and software comprising a system.

Delivery Servers Service Category:

The figure below provides a context for the service standards in the *Delivery Servers* service category.

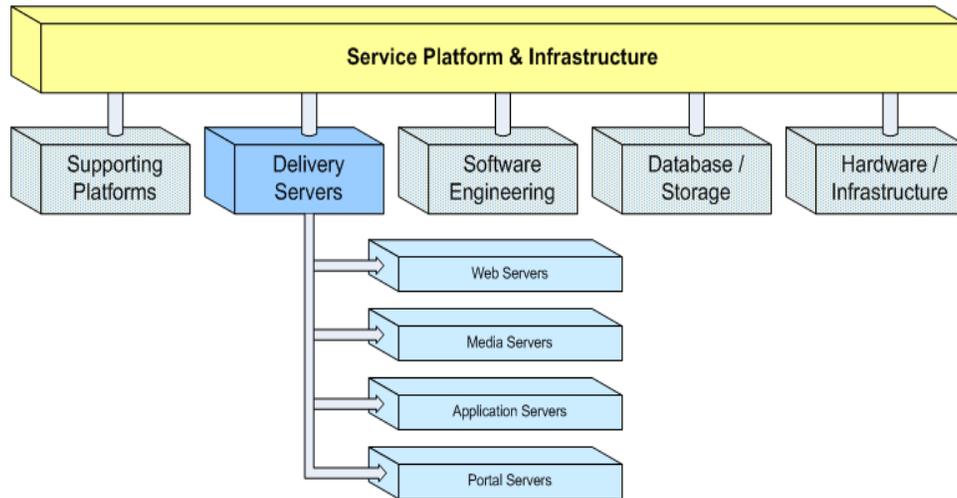


Figure 22 – Delivery Servers Service Standards

The following service standard descriptions apply to the *Delivery Servers* service category:

- Web Servers – a computer that provides World Wide Web services on the Internet. It includes the hardware, operating system, Web server software, TCP/IP protocols and the Web site content (Web pages). If the Web server is used internally and not by the public, it may be known as an "intranet server."
- Media Servers – provide optimized management of media-based files such as audio and video streams and digital images.
- Application Servers – in a three-tier environment, a separate computer (application server) performs the business logic, although some part may still be handled by the user's machine. After the Web exploded in the mid 1990s, application servers became Web based.
- Portal Servers – represent focus points for interaction, providing integration and single-source corporate information.

Software Engineering Service Category:

The figure below provides a context for the service standards in the *Software Engineering* service category.

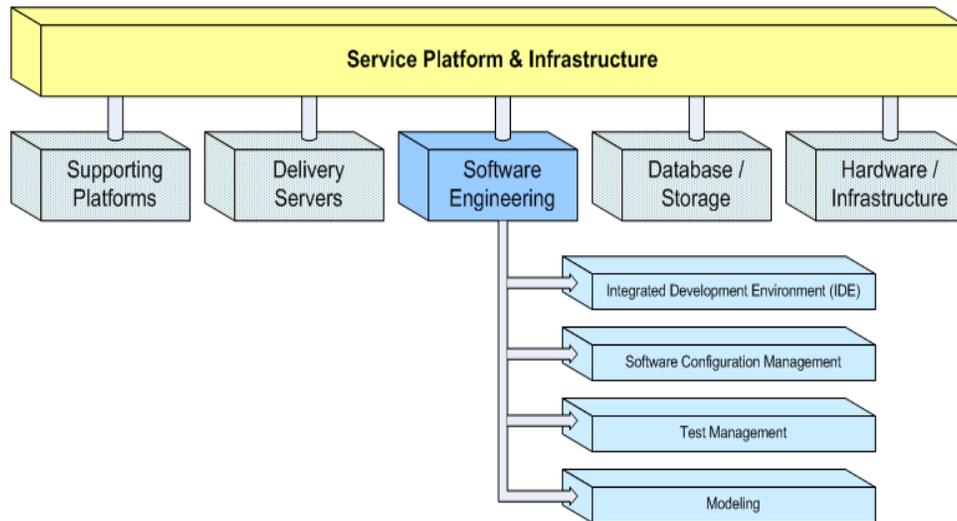


Figure 23 – Software Engineering Service Standards

The following service standard descriptions apply to the *Software Engineering* service category:

- Integrated Development Environment (IDE) – consists of the hardware, software and supporting services that facilitate the development of software applications and systems.
- Software Configuration Management – applicable to all aspects of software development from design to delivery specifically focused on the control of all work products and artifacts generated during the development process. Several solutions on the market provide the integration of the software configuration management functions.
- Test Management – the consolidation of all testing activities and results. Test Management activities include test planning, designing (test cases), execution, reporting, code coverage, and heuristic and harness development.
- Modeling – the process of representing entities, data, business logic, and capabilities for aiding in software engineering.

Database/Storage Service Category:

The figure below provides a context for the service standards in the *Database/Storage* service category.

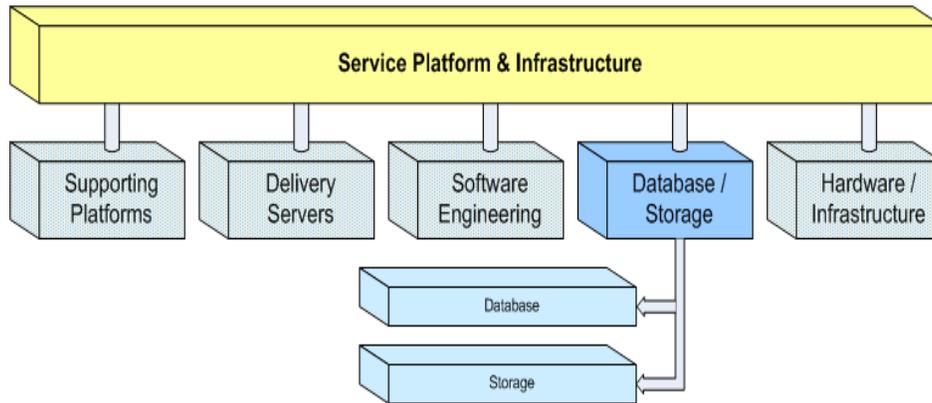


Figure 24 – Database/Storage Service Standards

The following service standard descriptions apply to the *Database/Storage* service category:

- Database – refers to a collection of information organized in such a way that a computer program can quickly select desired pieces of data. A database management system (DBMS) is a software application providing management, administration, performance, and analysis tools for databases.
- Storage – devices designed to provide shared storage access across a network. These devices provide extended storage capabilities to the network with reduced costs compared to traditional file servers.

Hardware/Infrastructure Service Category:

The figure below provides a context for the service standards in the *Hardware/Infrastructure* service category.

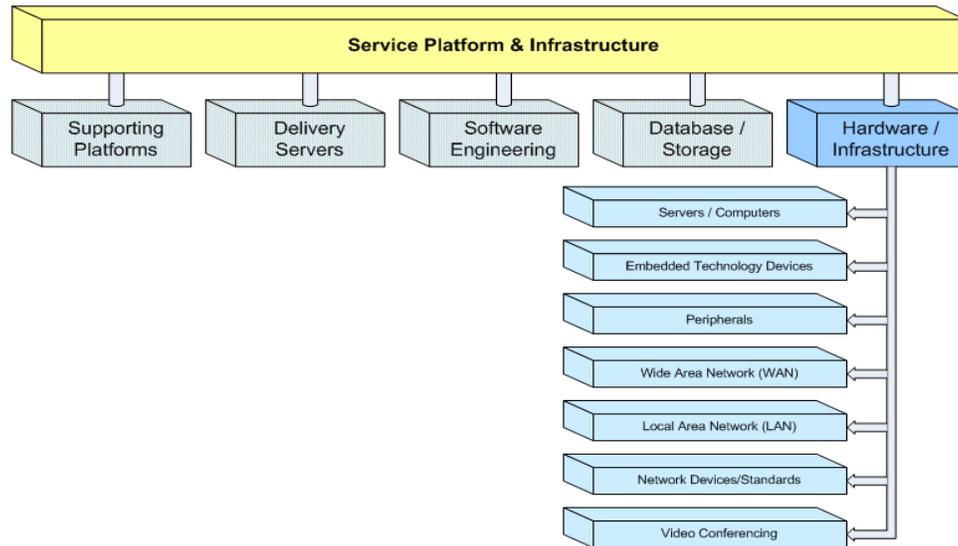


Figure 25 – Hardware/Infrastructure Service Standards

The following service standard descriptions apply to the *Hardware/Infrastructure* service category:

- Servers/Computers – refers to the various types of programmable machines which are capable of responding to sets of instructions and executing programs.
- Embedded Technology Devices – refers to the various devices and parts that make up a Server or Computer as well as devices that perform specific functionality outside of a Server or Computer.
- Peripherals – computer devices that are not part of the essential computer (i.e. the memory and microprocessor). Peripheral devices can be external and internal.
- Wide Area Network (WAN) – a data network typically extending a LAN outside a building or beyond a campus. Typically created by using bridges or routers to connect geographically separated LANs. WANs include commercial or educational dial-up networks such as CompuServe, InterNet and BITNET.
- Local Area Network (LAN) – a network that interconnects devices over a geographically small area, typically in one building or a part of a building. The most popular LAN type is Ethernet. LANs allow the sharing of resources and the exchange of both video and data.
- Network Devices/Standards – a group of stations (computers, telephones, or other devices) connected by communications facilities for exchanging information. Connection can be permanent, via cable, or temporary, through telephone or other communications links. The transmission medium can be physical (i.e. fiber optic cable) or wireless (i.e. satellite).
- Video Conferencing – communication across long distances with video and audio contact that may also include graphics and data exchange. Digital video transmission systems typically consist of camera, codec (coder-decoder), network access equipment, network, and audio system.

Component Framework Service Area

The figure below provides a context for the service categories in the *Component Framework* service area.

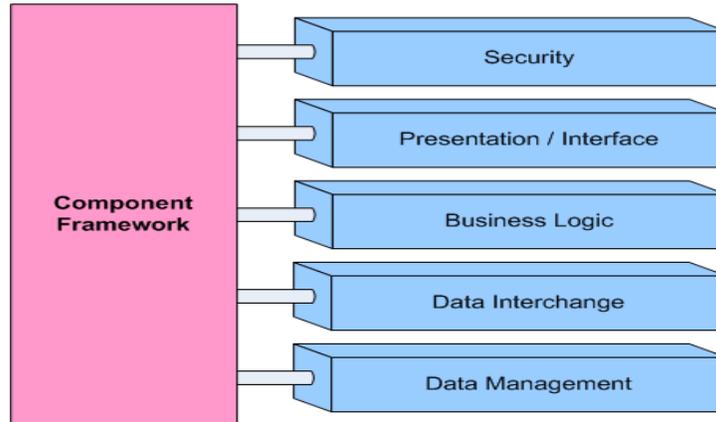


Figure 26 – Component Framework Service Categories

The following service category descriptions apply to the *Component Framework* service area:

- Security – defines the methods of protecting information and information systems from unauthorized access, use, disclosure, disruption, modification, or destruction in order to provide integrity, confidentiality and availability. Biometrics, two-factor identification, encryption, and technologies based on the NIST FIPS-140 standards are evolving areas of focus.
- Presentation/Interface – defines the connection between the user and the software, consisting of the presentation that is physically represented on the screen.
- Business Logic – defines the software, protocol or method in which business rules are enforced within applications.
- Data Interchange – define the methods in which data is transferred and represented in and between software applications.
- Data Management – the management of all data/information in an organization. It includes data administration, the standards for defining data and the way in which people perceive and use it.

Security Service Category:

The figure below provides a context for the service standards in the *Security* service category.

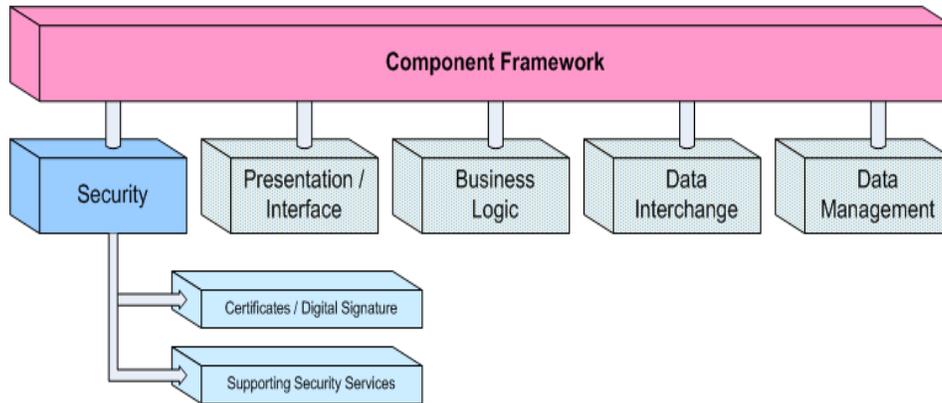


Figure 27 – Security Service Standards

The following service standard descriptions apply to the *Security* service category:

- Certificates/Digital Signature – software used by a certification authority (CA) to issue digital certificates and secure access to information. The evolution of Public Key Infrastructure (PKI) is based on the verification and authentication of the parties involved in information exchange.
- Supporting Security Services – these consist of the different protocols and components to be used in addition to certificates and digital signatures.

Presentation/Interface Service Category:

The figure below provides a context for the service standards in the *Presentation/Interface* service category.

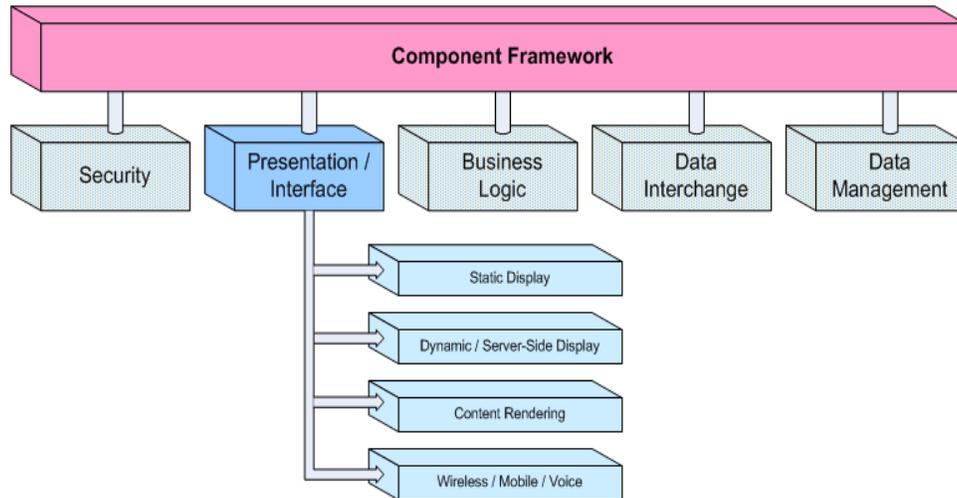


Figure 28 – Presentation/Interface Service Standards

The following service standard descriptions apply to the *Presentation/Interface* service category:

- Static Display – consists of the software protocols that are used to create a pre-defined, unchanging graphical interface between the user and the software.
- Dynamic/Server-Side Display – consists of the software that is used to create graphical user interfaces with the ability to change while the program is running.
- Content Rendering – defines the software and protocols used for transforming data for presentation in a graphical user interface.
- Wireless/Mobile/Voice – consists of the software and protocols used for wireless and voice-enabled presentation devices.

Business Logic Service Category:

The figure below provides a context for the service standards in the *Business Logic* service category.

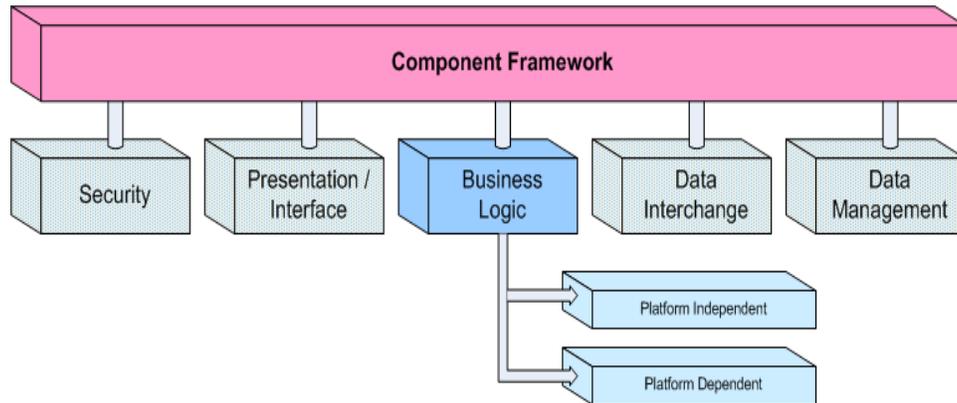


Figure 29 – Business Logic Service Standards

The following service standard descriptions apply to the *Business Logic* service category:

- Platform Independent – consists of all software languages that are able to execute and run on any type of operating system or platform.
- Platform Dependent – consists of the programming languages and methods for developing software on a specific operating system or platform.

Data Interchange Service Category:

The figure below provides a context for the service standards in the *Data Interchange* service category.

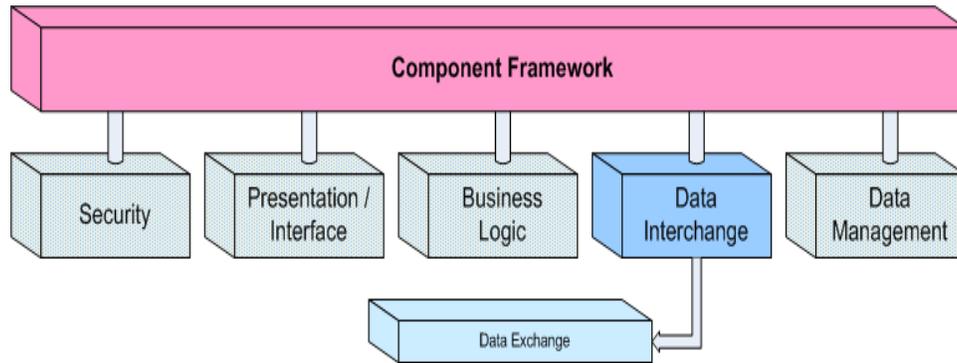


Figure 30 – Data Interchange Service Standards

The following service standard descriptions apply to the *Data Interchange* service category:

- Data Exchange – is concerned with the sending of data over a communications network and the definition of data communicated from one application to another. Data Exchange provides the communications common denominator between disparate systems.

Data Management Service Category:

The figure below provides a context for the service standards in the *Data Management* service category.

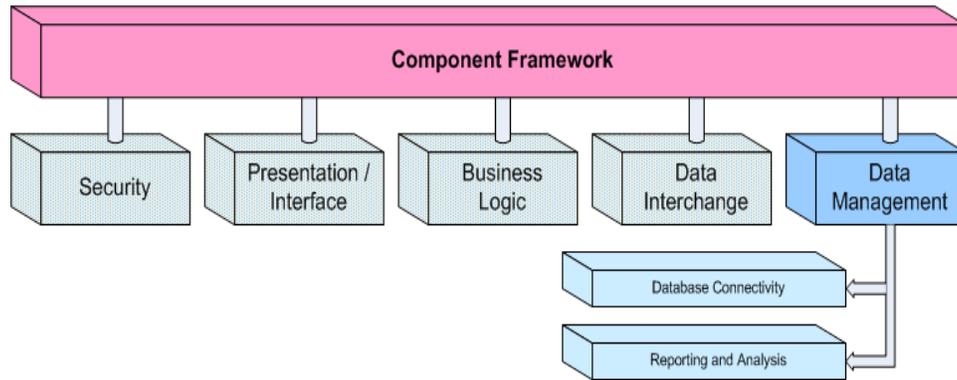


Figure 31 – Data Management Service Standards

The following service standard descriptions apply to the *Data Management* service category:

- Database Connectivity – defines the protocol or method in which an application connects to a data store or data base.
- Reporting and Analysis – consist of the tools, languages and protocols used to extract data from a data store and process it into useful information.

Service Interface and Integration Service Area

The figure below provides a context for the service categories in the *Service Interface and Integration* service area.

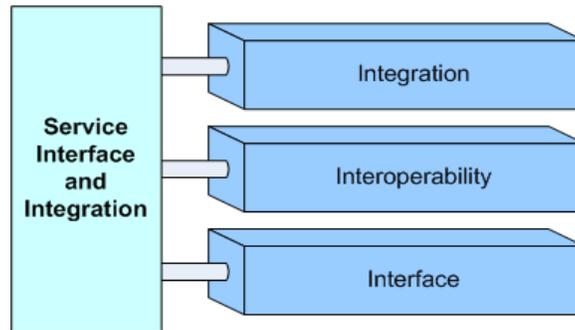


Figure 32 – Service Interface and Integration Service Categories

The following service category descriptions apply to the *Service Interface and Integration* service area:

- Integration – defines the software services enabling elements of distributed business applications to interoperate. These elements can share function, content, and communications across heterogeneous computing environments. In particular, service integration offers a set of architecture services such as platform and service location transparency, transaction management, basic messaging between two points, and guaranteed message delivery.
- Interoperability – defines the capabilities of discovering and sharing data and services across disparate systems and vendors.
- Interface – defines the capabilities of communicating, transporting and exchanging information through a common dialog or method. Delivery Channels provide the information to reach the intended destination, whereas Interfaces allow the interaction to occur based on a predetermined framework.

Integration Service Category:

The figure below provides a context for the service standards in the *Integration* service category.

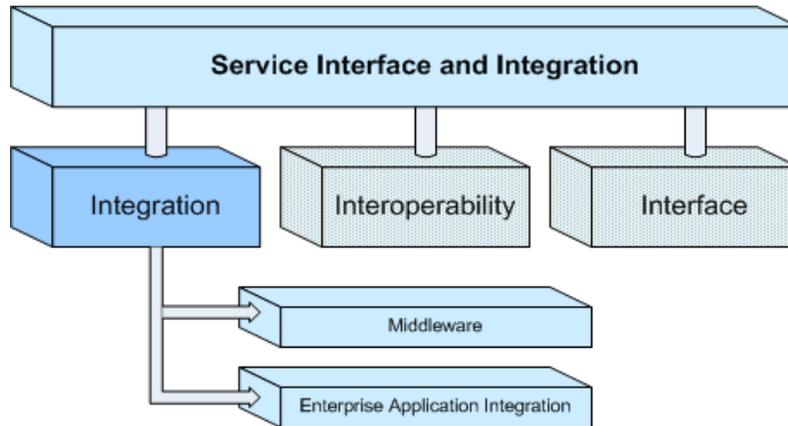


Figure 33 – Integration Service Standards

The following service standard descriptions apply to the *Integration* service category:

- Middleware – increases the flexibility, interoperability, and portability of existing infrastructure by linking or “gluing” two otherwise separate applications.
- Enterprise Application Integration – refers to the processes and tools specializing in updating and consolidating applications and data within an enterprise. EAI focuses on leveraging existing legacy applications and data sources so that enterprises can add and migrate to current technologies.

Interoperability Service Category:

The figure below provides a context for the service standards in the *Interoperability* service category.

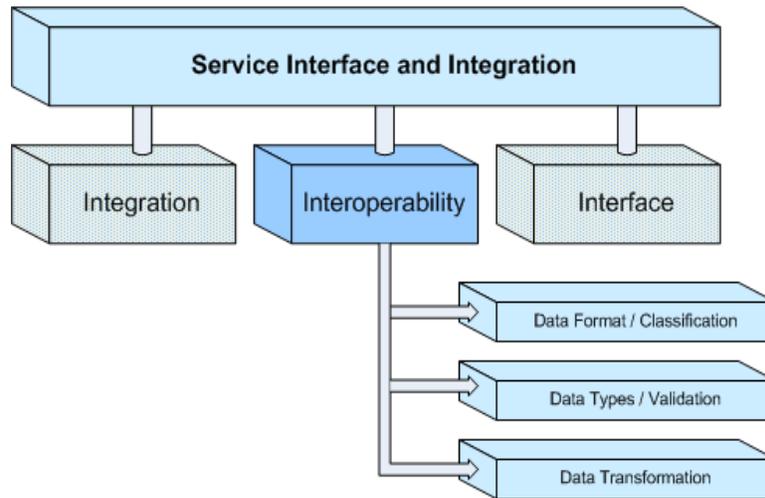


Figure 34 – Interoperability Service Standards

The following service standard descriptions apply to the *Interoperability* service category:

- Data Format/Classification – defines the structure of a file. There are hundreds of formats, and every application has many different variations (database, word processing, graphics, executable program, etc.). Each format defines its own layout of the data. The file format for text is the simplest.
- Data Types/Validation – refers to specifications used in identifying and affirming common structures and processing rules. This technique is referenced and abstracted from the content document or source data.
- Data Transformation – consists of the protocols and languages that change the presentation of data within a graphical user interface or application.

Interface Service Category:

The figure below provides a context for the service standards in the *Interface* service category.

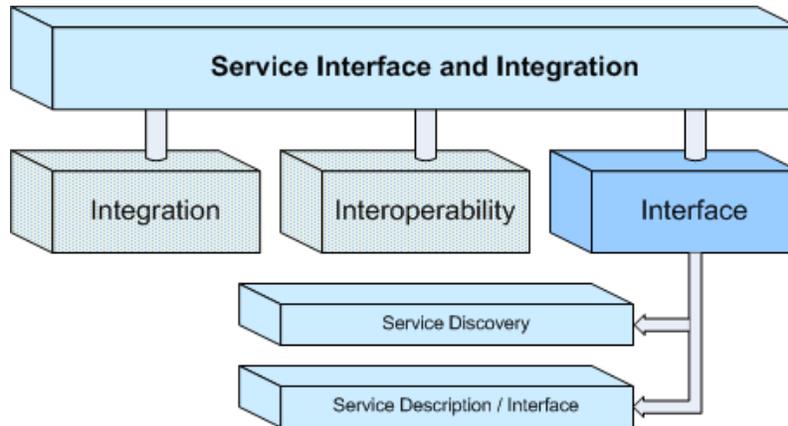


Figure 35 – Interface Service Standards

The following service standard descriptions apply to the *Interface* service category:

- Service Discovery – defines the method in which applications, systems or web services are registered and discovered.
- Service Description/Interface – defines the method for publishing the way in which web services or applications can be used.