Arizona DES Technology Modernization Roadmap

Executive Summary

29 December 2020
Project No: 330062743

Background and Context

- Gartner developed a **Technology Modernization Roadmap** (Roadmap) for the Arizona Department of Economic Security (DES). The effort included surveys, interviews and workshops with business and technology stakeholders across DES.

- Gartner found that **IT costs are high** and **the quality of IT applications and infrastructure is poor**

  - 40% of the application portfolio requires immediate replacement and another 16% has weak business fitness (see chart)

  - Security is insufficient with a large portion of servers off support and a network not well designed to contain the "blast radius" of an attack.

  - Disaster recovery capabilities are also incomplete

- There are **two primary causes**: (1) **Duplicate functionality** in the application portfolio (i.e., multiple applications doing the same or similar things) and (2) **IT investments overly focused on technical outcomes** (e.g., replace system) rather than business outcomes (time to benefits…etc.)

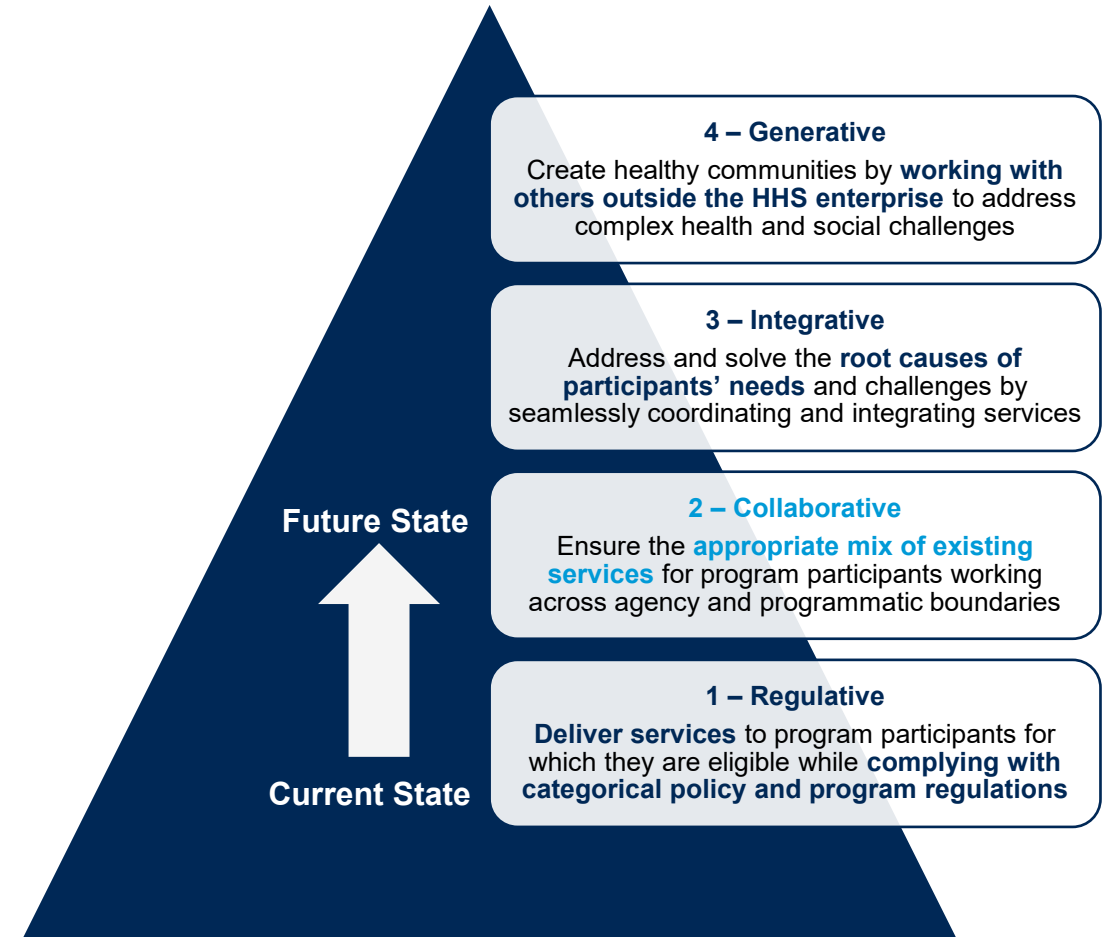### Application Portfolio Analysis

Gartner.
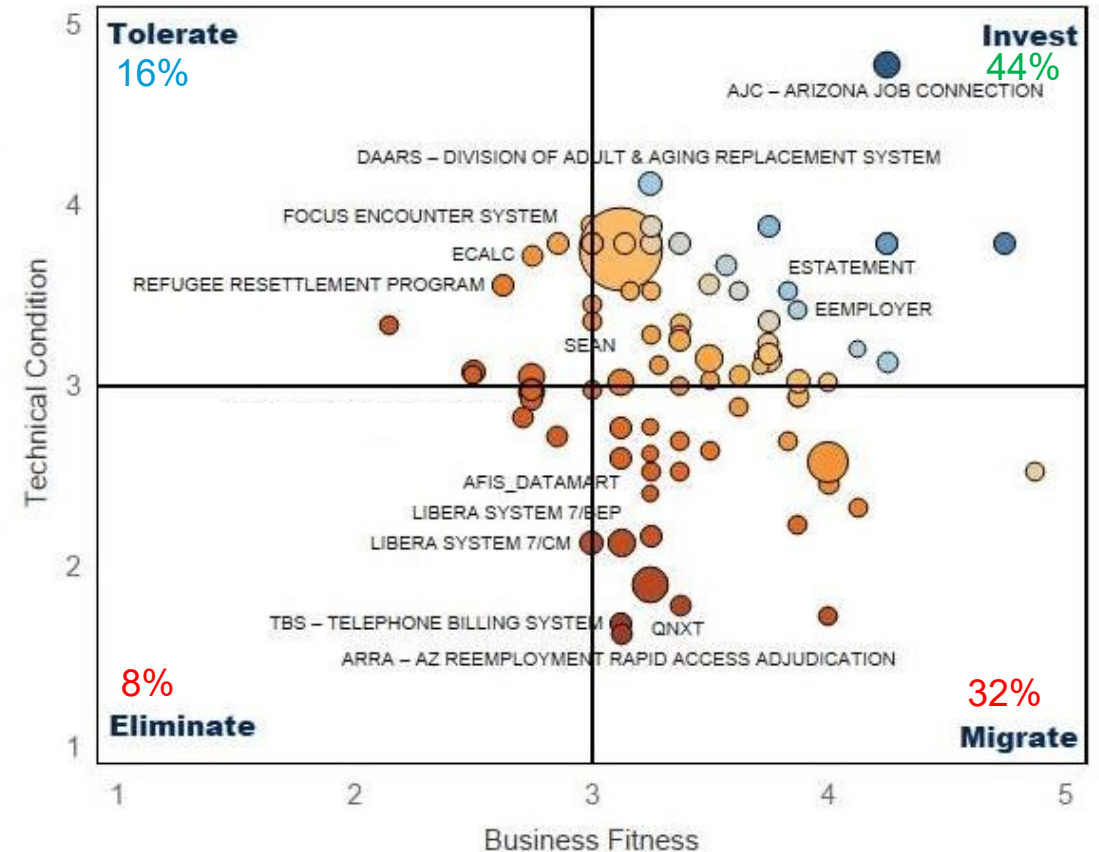
How will technology at DES evolve over the next few years?

Our Vision

Over the next few years, **DES will transform from a "Regulative" approach** where services are delivered by individual programs and divisions **to a "Collaborative" approach where DES will** work across programmatic boundaries to **ensure the appropriate mix of services for program participants**.

The **Technology Modernization Roadmap will support the implementation of this business vision** by modernizing applications, providing the required enabling technologies and enhancing IT capabilities to support the migration to the desired future state.
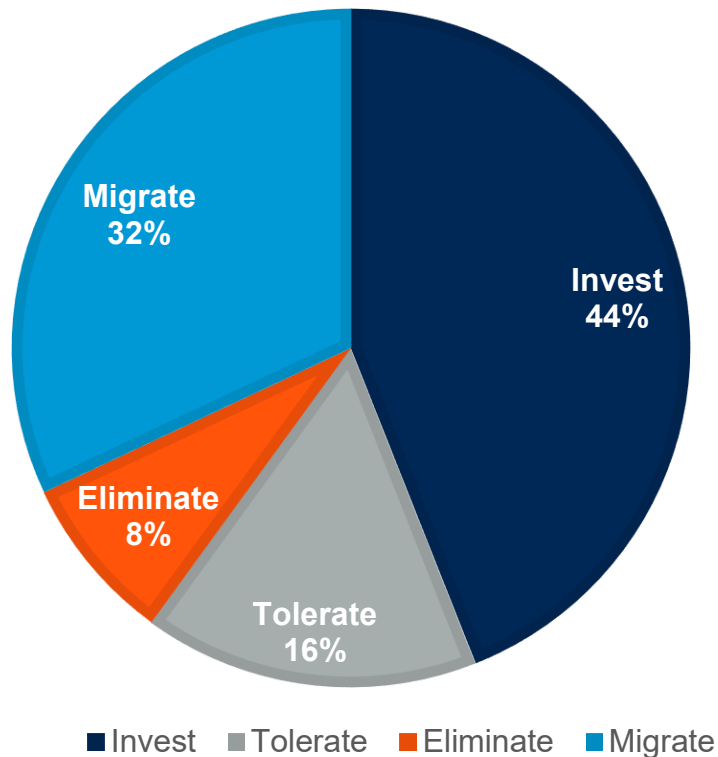
Health and Human Services Integration Maturity Model*

4 – Generative
Create healthy communities by **working with others outside the HHS enterprise** to address complex health and social challenges

3 – Integrative
Address and solve the **root causes of participants' needs** and challenges by seamlessly coordinating and integrating services

2 – Collaborative
Ensure the **appropriate mix of existing services** for program participants working across agency and programmatic boundaries

1 – Regulative
Deliver services to program participants for which they are eligible while **complying with categorical policy and program regulations**

Future State

Current State

* From American Public Human Services Association

Gartner.

What is the barrier to getting this done?

Percent of Applications by Classification

Legend: ■ Invest ■ Tolerate ■ Eliminate ■ Migrate

Pie chart values: Invest 44%, Migrate 32%, Tolerate 16%, Eliminate 8%

Gartner analyzed the DES application portfolio to understand the business fitness and technical quality of application infrastructure.
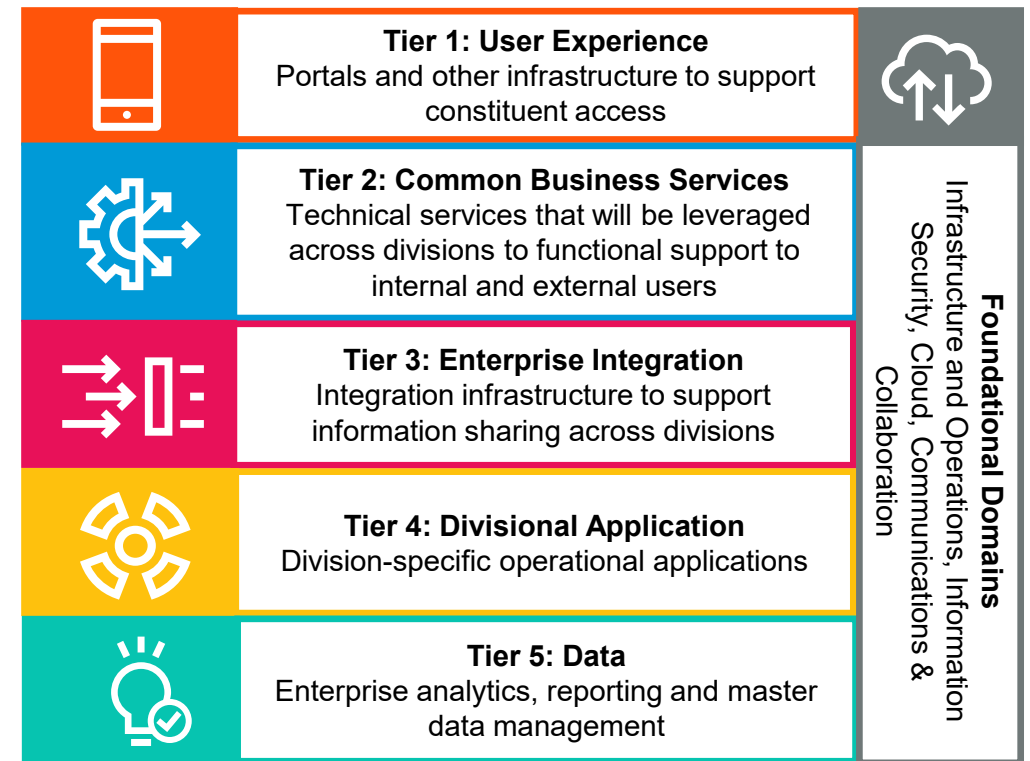
○ **Today, only 44% of the applications in the portfolio are in sufficient condition to warrant continued investment** ("Invest" in the graphic to the left). Another 16% have reasonable technical quality but weak business fitness ("Tolerate") and **40% of the applications portfolio requires immediate replacement** due to technical deficiencies ("Migrate") or both technical and business deficiencies ("Eliminate"). As a result:

  – Many **business processes are paper-based manual processes** that require re-entry of data across systems degrading productivity and delaying time to benefits for citizens

○ The **application portfolio is also expensive to maintain** as it includes **redundant capabilities** across systems (intake, eligibility determination, servicing…etc.) that suppress business functionality (i.e., investment is not leveraged across programs) while escalating maintenance costs (due to redundant systems).

○ There are also **challenges with skills** as there are talent gaps in enterprise architecture cloud architecture, and security and other areas.
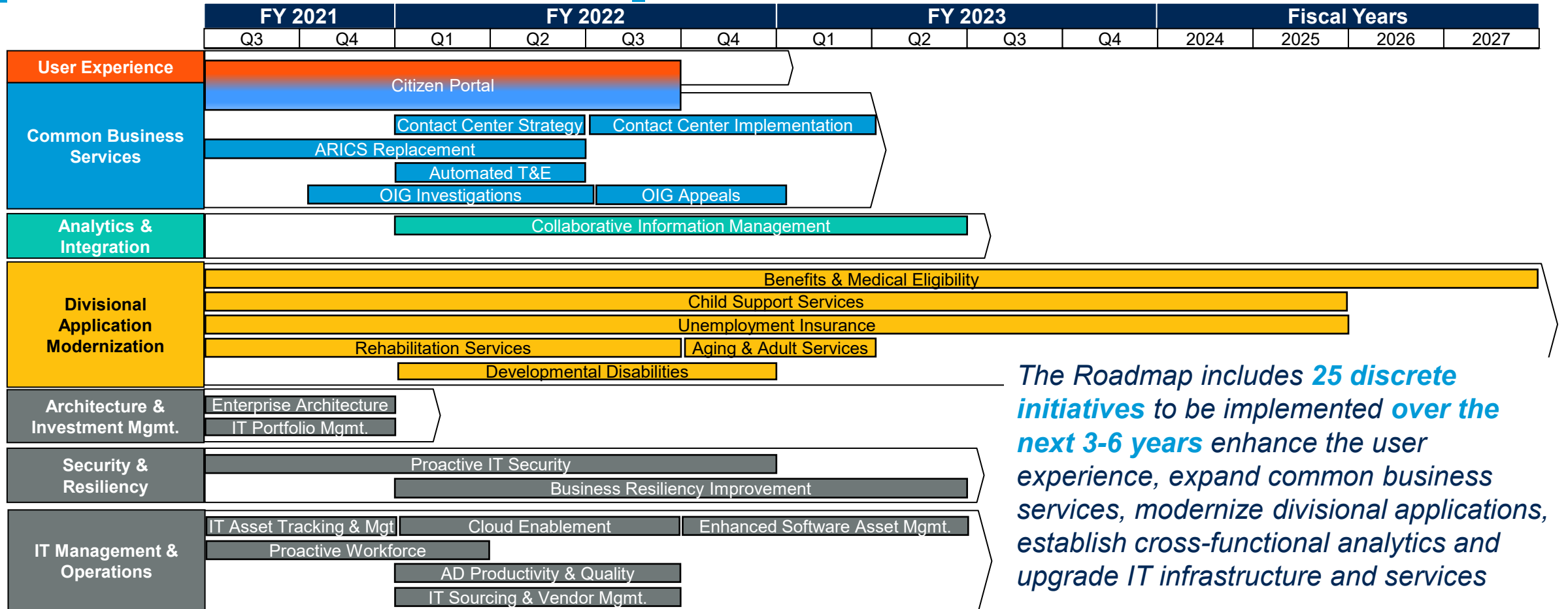
Gartner

What is being planned?

The Roadmap is a **comprehensive plan to change the way DES selects, deploys and manages technology**

- The foundation is a **comprehensive future-state architecture ("city plan")** to guide the deployment and management of technologies

- DES will **rebalance the technology investment portfolio** from a focus on division-specific applications and technologies (Tier 4) to deployment of **common business services** (Tier 2) that will be leveraged across divisions **to provide greater functionality to internal and external users at reduced cost** (by removing duplication)

- This will be supported by **enterprise integration infrastructure** (Tier 3) and a **common user experience layer** (Tier 1) that provides a richer and more consistent user experience for citizens and other constituents (vendors…etc.)

- An **enterprise analytics capability** (Tier 5) will provide the foundation for determining the appropriate mix of services for DES' clients

- This will be supported by improvements to **foundational domains** to improve security and resiliency and support the transition to cloud

DES Future-State Technology "City Plan"

Tier 1: User Experience
Portals and other infrastructure to support constituent access

Tier 2: Common Business Services
Technical services that will be leveraged across divisions to functional support to internal and external users

Tier 3: Enterprise Integration
Integration infrastructure to support information sharing across divisions

Tier 4: Divisional Application
Division-specific operational applications

Tier 5: Data
Enterprise analytics, reporting and master data management

Foundational Domains
Infrastructure and Operations, Information Security, Cloud, Communications & Collaboration

Gartner.

How will we get there?

	FY 2021		FY 2022				FY 2023				Fiscal Years			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2024	2025	2026	2027

User Experience
- Citizen Portal

Common Business Services
- Contact Center Strategy
- Contact Center Implementation
- ARICS Replacement
- Automated T&E
- OIG Investigations
- OIG Appeals

Analytics & Integration
- Collaborative Information Management

Divisional Application Modernization
- Benefits & Medical Eligibility
- Child Support Services
- Unemployment Insurance
- Rehabilitation Services
- Aging & Adult Services
- Developmental Disabilities

Architecture & Investment Mgmt.
- Enterprise Architecture
- IT Portfolio Mgmt.

Security & Resiliency
- Proactive IT Security
- Business Resiliency Improvement

IT Management & Operations
- IT Asset Tracking & Mgt
- Cloud Enablement
- Enhanced Software Asset Mgmt.
- Proactive Workforce
- AD Productivity & Quality
- IT Sourcing & Vendor Mgmt.

*The Roadmap includes **25 discrete initiatives** to be implemented **over the next 3-6 years** enhance the user experience, expand common business services, modernize divisional applications, establish cross-functional analytics and upgrade IT infrastructure and services*

What will it cost?

- The cost of the program is estimated to be **$16-$60 million per year over the next 6.5 years**

  - Costs include hardware, software, implementation services and internal labor needed to support the Roadmap initiatives

  - Costs include incremental support costs after the one-time effort is complete

  - FY 2021 only includes the last two quarters

- The largest share of costs is for Divisional Modernization initiatives which are 82% of total cost due to the need to replace much of the existing application portfolio.

- The **two largest initiatives, AAL Modernization and ATLAS Replacement represent 76% of the cost of the entire program** (AAL = 47%; ATLAS = 29%)

Costs by Year
(dollars in thousands)
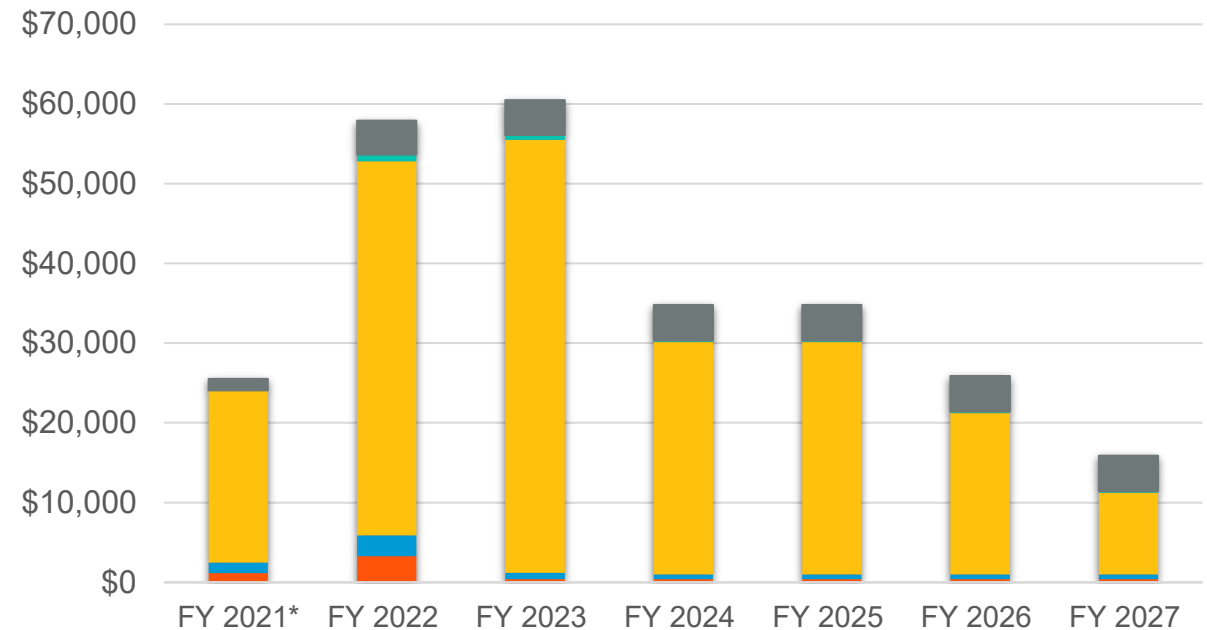
Legend:
- User Exp
- Common Bus Serv.
- Divisional Modernization
- Analytics & Integ.
- Foundational

* Q3 and Q4 only

Gartner

What are the benefits?

- **The Roadmap will enable DES to** work across agency and programmatic boundaries to **ensure the appropriate mix of services for program participants**. This means:
  - A citizen portal to provide a richer and **more consistent "customer experience"** and identify opportunities across programs
  - Information-sharing between programs to **eliminate the need to provide information more than once**
  - Cross-functional analytics to **measure what is working and identify service optimization opportunities**
- The Roadmap will improve functional support to the business and reduce long-term technology cost by establishing **common business services that can be leveraged across programs** rather than having to build and maintain the same capabilities (e.g., intake, eligibility inquiry, service inquiry…etc.) within each program or division.
- The Roadmap will also **address technical risks** around legacy applications and infrastructure and improve foundational capabilities in IT (security, resiliency, architecture management…etc.)

	Current State ➡	Future State
Focus / Vision	Deliver services to program participants for which they are eligible while **complying with categorical policy and program regulations**	**Ensure the appropriate mix of existing services** for program participants working across agency and programmatic boundaries
Client Engagement	**Participants initiate engagement** or are <u>referred</u> to a program within the agency	Participants initiate engagement or are referred, but there are <u>hand-offs</u> **to other programs** within the agency, with a sister agency or partner organization
Client Experience	**Clients must apply** for each program	**"Warm" hand-off** between programs
	Separate dialogue with each program. Quality of "customer experience" varies by program	**Information-sharing** between programs eliminates the need to provide information more than once

Gartner

What will this mean to citizens?

The planned changes will provider **faster time to benefits**, **more comprehensive support** to citizens and **reduce the need to visit DES offices**

- A **richer and more consistent digital customer experience** will ease navigation and help citizens find what they need faster and resolve outstanding issues sooner

- **Proactive evaluation of the applicability of available services** will provide citizens with more comprehensive service and assistance

- **Information-sharing between programs** will eliminate need to provide information more than once

- **Improved support for mobile devices** will enable citizens to provide the required documents at the day and time of their choosing without having to visit a DES office

- **Proactive reminders** of missing documents and information will accelerate time to benefits

- Overall benefits include **faster time-to-benefits, reduced recidivism** and **improved well-being**

Gartner

What are next steps?

Critical Near-Term Success Factors

○ Ensure near-term application replacement projects **drive measurable improvements in business outcomes** (i.e., deliver measurable change in business performance; not just a new system)

○ Identify opportunities to **streamline IT support costs** as new applications are deployed

○ Establish enhanced **architecture** capabilities to ensure near-term initiatives confirm to enterprise technology "city plan" and **identify opportunities to establish common services**

○ Proactively **manage changes to client touchpoints** to provide a cohesive customer experience

○ Bolster **security** to protect against increased threat environment

1 **Confirm near-term priorities**

2 **Flesh out project charter** in alignment with initiative specifications in Technology Modernization Roadmap

3 Confirm **client personas and develop journey maps** to define future-state customer experience

4 **Retrofit in-flight initiatives** to ensure alignment with planned changes to portfolio management and benefits realization (define metrics to track benefits, develop forecast of expected improvement, validate that the technical outcomes the project intends to deliver enable the planned improvement…etc.)

Gartner

Appendix

Gartner.

Objectives & Scope

- Gartner will work collaboratively with AZDES' Business and Technology teams to set a clear direction for AZDES's investments in developing modern technology and cloud capabilities.

  - Design a business capability model to anchor the technology ecosystem in business strategy and outcomes;

  - Baseline the technology inventory, validate capabilities (applications, organization, infrastructure) and map to business capabilities;

  - Utilize Gartner's technology rationalization frameworks, including Application Optimization, Cloud and Security, to guide AZDES; and

  - Leverage Gartner's best practices in operating model and organizational design in determining an efficient target state for AZDES.

- This engagement is critical to support AZDES's Digital Business and Technology Transformation efforts:

  - In the short-term, to guide the investments in pilots and projects that are currently being launched and which require cloud guidance, organizational aspects and capabilities early in 2020; and

  - In the longer-term, to ensure that all Run/Grow/Transform investments that leverage suitable delivery platforms (e.g. Cloud) are being developed in a strategically aligned manner that meets the needs of the State and constituents without further propagating technical debt.
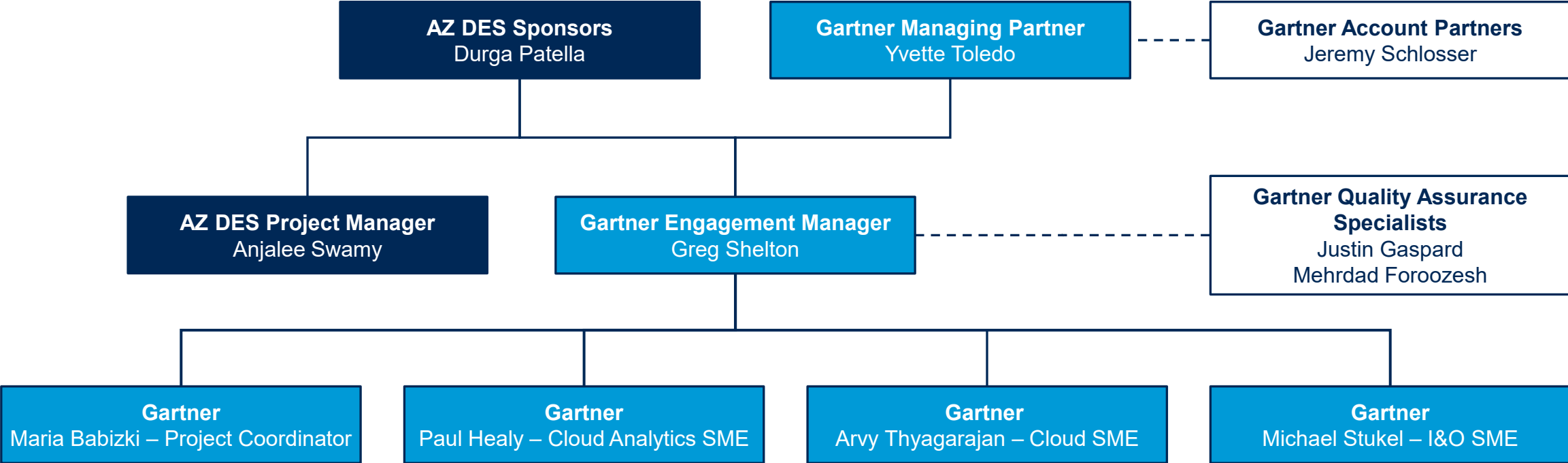
Gartner

Approach and Methodology

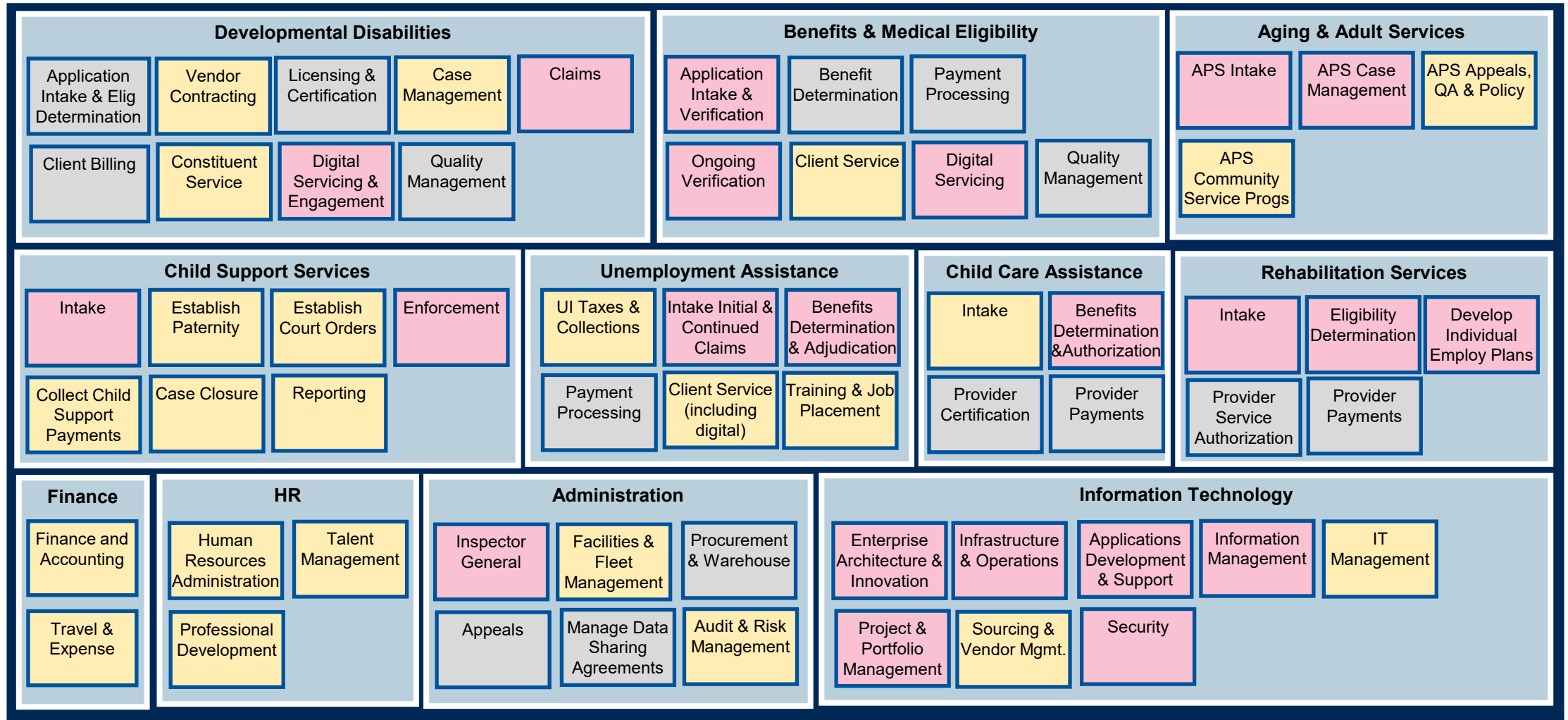|	1 Project Initiation & Discovery	2 Develop Technology Strategy and Security Capabilities	3 Technology Portfolio & Cloud Suitability Analysis	4 TCO Analysis and Model	5 Technology Reference Architectures & Migration Planning	6 Finalize Operating Model & Security considerations	7 Roadmap & Recommendations
Gartner Activities	• Work closely with the core team to set the foundation for a successful project • Obtain understanding of existing strategies, vision, governance models, initiatives, applications portfolio, security, infrastructure, etc. • Initiate data gathering sessions • Document initial findings • Conduct Findings Workshop to review and validate the capability model and initial findings	• Assess the technology strategy for alignment to the existing IT direction/strategy, industry best practices, security considerations and market insights • Assess organizational readiness across Gartner's Technology Adoption model • Identify strategic and operational technical, security, and business capabilities required to be successful • Identify strategies and operating models best suited to meet agency needs	• Analyze application portfolio information and determine application investment & disposition • Assess workload suitability for re-hosting (IaaS), re-building (PaaS), or replacing (SaaS) major enterprise and business unit applications. • Conduct scalable online application assessment • Analyze quality, results and trends • Develop a Pace Layer a two-tier business capability model	• Collaborate work with finance stakeholders to obtain current cost information • Compare cloud costs to the current market pricing to deliver the organizations identified services, capabilities, components and workloads through the leading public cloud providers • Utilize Gartner's benchmark database to compare cloud costs with peers • Conduct validation workshops to validate cost models as well as application portfolio cost information	• Deliver a time-sequenced technology migration and portfolio management strategy with the associated service models (including on-premises), delivery models, security posture & considerations, cost, staff and architecture implications Articulate target technology reference architectures including • Security Reference models (IAM, CASB* etc.) • Service Delivery models • Hybrid Models • Security/Risk alignment	• Update Business Capability Model • Develop Governance Framework, including decision rights and responsibilities • Analyze complexities based on capabilities (Heat Map) • Update Security monitoring & incident response criteria • Conduct a workshop with stakeholders from across functions and organizations to socialize findings	• Articulate an operational 12-18 month and a 3 to 5-year strategic roadmap of detailed and actionable initiatives • Presentation of engagement deliverables and key recommendations • Incorporate any additional security recommendations as required by the agency • Design and present communications plan to stakeholders and executives
Deliverables	• Kickoff Presentation • Capability Model • Initial Findings	• Current State Assessment	• Application Portfolio Rationalization and Cloud Suitability Assessments • Technology Standards Definition • Technology Component Strategies	• TCO Analysis & Model	• High-Level Cloud I&O Architecture • Technology Reference Architectures Migration Plan	• Operating Model (e.g., org structure, org chart, roles, skills) • Governance Framework	• 12-18 month operational & 3-5-year Strategic Roadmap (Including Portfolio optimization, Cloud Strategy Components and Security) • Executive Summary • Technology Strategy & Roadmap

DES Business Vision

| | **Current State** | **Strategic Ambition** | | |
	1 – Regulative	**2 – Collaborative**	**3 – Integrative**	**4 – Generative**
Focus/Vision	**Deliver services** to program participants for which they are eligible while **complying with categorical policy and program regulations**	Ensuring the **appropriate mix of existing services** for program participants working across agency and programmatic boundaries	Addressing and solving the **root causes of participants' needs** and challenges by seamlessly coordinating and integrating services	Creating **healthy communities** by **working with others outside the HHS** enterprise to address complex health and social challenges
Client Engagement	**Participants initiate engagement or are <u>referred</u>** to a program within the agency	Participants initiate engagement or are referred, but there are **<u>hand-offs</u> to other programs** within the agency, with a sister agency or partner organization	Program participants are **proactively engaged** by the HHS enterprise	Program participants are proactively engaged by the HHS enterprise and external agencies by **anticipating current and future needs**
Business Capabilities	**Separate** business capabilities for each program	Some **central capabilities to identify opportunities across programs and coordinate hand-offs** (i.e., hand-off; not referral) and **administer information governance** around data sharing	**Central capabilities to manage client experience and orchestrate and operationalize engagement across programs** (combined messaging, coordinated timing to avoid conflicting messages, defined "next best action" at any point of contact…etc.)	**Central data science team** leverages internal and external data to predict future needs and measure results of interventions to support continuous improvement
IT Infrastructure	**Separate systems** for each program **Separate client databases**	Some **common components** and **integration infrastructure** to enable data sharing between systems, facilitate handoffs and avoid the need to capture the same information multiple times	**Multi-channel campaign management capabilities** to orchestrate engagement **Cross-functional analytics** to identify root causes and measure campaign results	Advanced analytics to support **predictive models** **Event monitoring** to operationalize predictive models Strong "B2B" integration
Client Experience	**Client must apply** for each program **Separate dialogue** with each program. Quality of "customer experience" varies by program	**"Warm" hand-off** between programs **Information-sharing between programs** eliminates the need to provide information more than once	**Cohesive dialogue across programs** to maximize engagement (right message, right time, right channel, agency speaks with single voice)	HHS **agency is one step ahead, predicts needs,** and **seamlessly coordinates with external entities** to provide required services

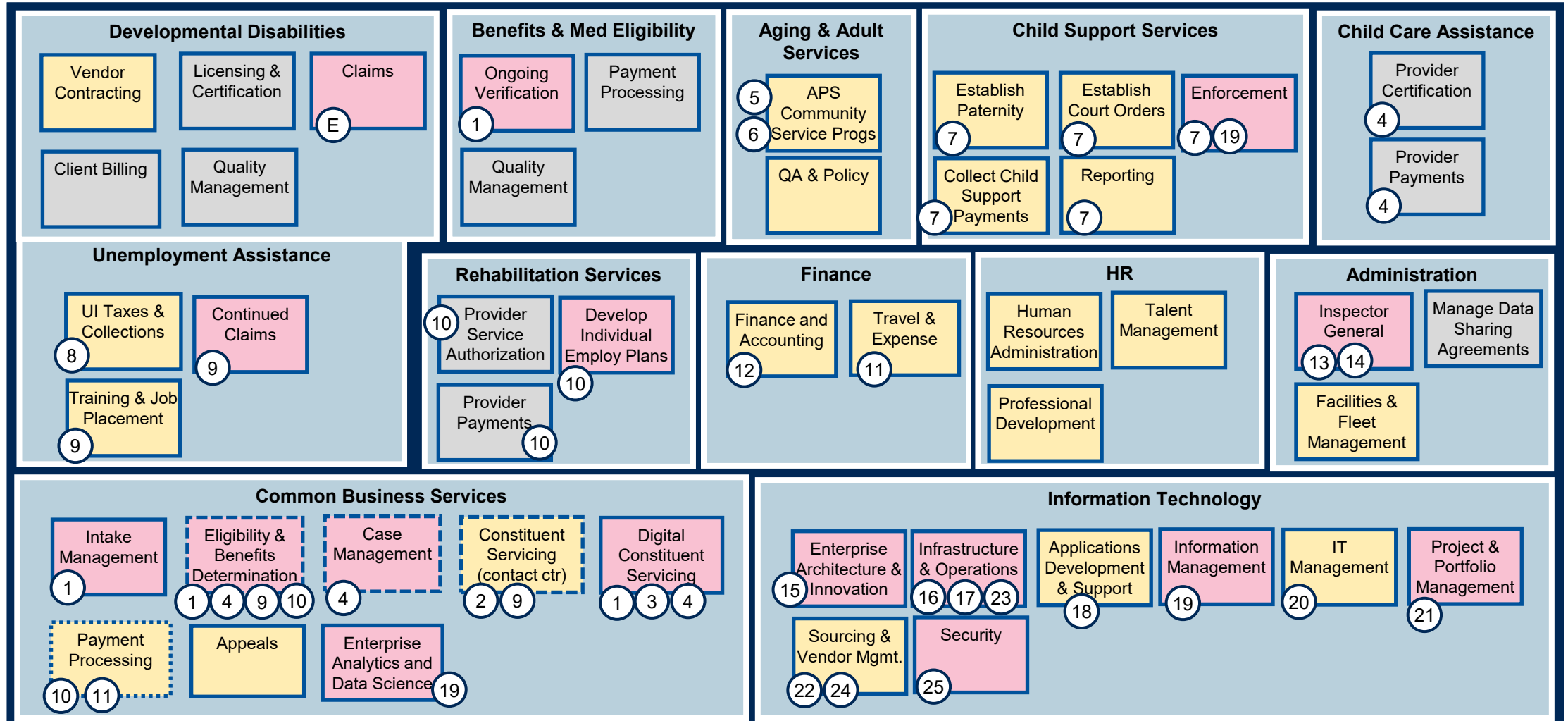**Gartner**

Introductions

AZ DES Sponsors
Durga Patella

Gartner Managing Partner
Yvette Toledo

Gartner Account Partners
Jeremy Schlosser

AZ DES Project Manager
Anjalee Swamy

Gartner Engagement Manager
Greg Shelton

Gartner Quality Assurance Specialists
Justin Gaspard
Mehrdad Foroozesh

Gartner
Maria Babizki – Project Coordinator

Gartner
Paul Healy – Cloud Analytics SME

Gartner
Arvy Thyagarajan – Cloud SME

Gartner
Michael Stukel – I&O SME

Gartner.

Current-State Business Architecture

Developmental Disabilities

Application Intake & Elig Determination	Vendor Contracting	Licensing & Certification	Case Management	Claims
Client Billing	Constituent Service	Digital Servicing & Engagement	Quality Management	

Benefits & Medical Eligibility

Application Intake & Verification	Benefit Determination	Payment Processing
Ongoing Verification	Client Service	Digital Servicing
		Quality Management

Aging & Adult Services

APS Intake	APS Case Management	APS Appeals, QA & Policy
APS Community Service Progs		

Child Support Services

Intake	Establish Paternity	Establish Court Orders	Enforcement
Collect Child Support Payments	Case Closure	Reporting	

Unemployment Assistance

UI Taxes & Collections	Intake Initial & Continued Claims	Benefits Determination & Adjudication
Payment Processing	Client Service (including digital)	Training & Job Placement

Child Care Assistance

Intake	Benefits Determination &Authorization
Provider Certification	Provider Payments

Rehabilitation Services

Intake	Eligibility Determination	Develop Individual Employ Plans
Provider Service Authorization	Provider Payments	

Finance

Finance and Accounting
Travel & Expense

HR

Human Resources Administration	Talent Management
Professional Development	

Administration

Inspector General	Facilities & Fleet Management	Procurement & Warehouse
Appeals	Manage Data Sharing Agreements	Audit & Risk Management

Information Technology

Enterprise Architecture & Innovation	Infrastructure & Operations	Applications Development & Support	Information Management	IT Management
Project & Portfolio Management	Sourcing & Vendor Mgmt.	Security		

Legend:
- ☐ = Low Opportunity
- ☐ = Medium Opportunity
- ☐ = High Opportunity

Gartner

Future-State Business Architecture

Developmental Disabilities
- Vendor Contracting
- Licensing & Certification
- Claims (E)
- Client Billing
- Quality Management

Benefits & Med Eligibility
- Ongoing Verification (1)
- Payment Processing
- Quality Management

Aging & Adult Services
- APS Community Service Progs (5) (6)
- QA & Policy

Child Support Services
- Establish Paternity (7)
- Establish Court Orders (7)
- Enforcement (7) (19)
- Collect Child Support Payments (7)
- Reporting (7)

Child Care Assistance
- Provider Certification (4)
- Provider Payments (4)

Unemployment Assistance
- UI Taxes & Collections (8)
- Continued Claims (9)
- Training & Job Placement (9)

Rehabilitation Services
- Provider Service Authorization (10)
- Develop Individual Employ Plans (10)
- Provider Payments (10)

Finance
- Finance and Accounting (12)
- Travel & Expense (11)

HR
- Human Resources Administration
- Talent Management
- Professional Development

Administration
- Inspector General (13) (14)
- Manage Data Sharing Agreements
- Facilities & Fleet Management

Common Business Services
- Intake Management (1)
- Eligibility & Benefits Determination (1) (4) (9) (10)
- Case Management (4)
- Constituent Servicing (contact ctr) (2) (9)
- Digital Constituent Servicing (1) (3) (4)
- Payment Processing (10) (11)
- Appeals
- Enterprise Analytics and Data Science (19)

Information Technology
- Enterprise Architecture & Innovation (15)
- Infrastructure & Operations (16) (17) (23)
- Applications Development & Support (18)
- Information Management (19)
- IT Management (20)
- Project & Portfolio Management (21)
- Sourcing & Vendor Mgmt. (22) (24)
- Security (25)

Legend:
- ☐ = Low Opportunity
- ☐ = Medium Opportunity
- ☐ = High Opportunity
- ⊡ = Long-term common service target
- (n) = Corresponding improvement initiatives
- (E) = There is an existing initiative to address gap

Gartner

DES Future-State Technology Architecture ("City Plan")

Core Components / Tiers of the City Plan

	Definition	Responsibilities
Tier 1 User Experience	▪ Provides a seamless and consistent user experience ▪ Provides role and function specific user interface	▪ Enables processing of user input for the underlying tiers ▪ Enables ubiquitous user access ▪ Executes security for user authentication and authorization ▪ Supports implementation of GUI standards ▪ Enables UI enrichment through adhering to usability concerns
Tier 2 Common Business Services	▪ Capabilities that are common across the business divisions ▪ Commonality is based on inferring the business capabilities across divisions	▪ Enables a shared service approach where multiple divisions are reusing business logic and capabilities ▪ Rules and policies ties to individual divisions should seamlessly be added and modified to support DES common goals and objectives
Tier 3 Enterprise Integration	▪ Manages communication across tiers or across systems within a tier ▪ Ties everything together to deliver business capabilities to the end-user	▪ Enables enterprise vision of data model exchange ▪ Orchestrates business processes and workflows ▪ Provides capabilities of validation, enrichment, transformation, and routing of information ▪ Enables encapsulation of individual business capabilities ▪ Enables services orchestration ▪ Executes policy-driven enterprise services security ▪ Enables and enforces enterprise standards for integration ▪ Enables cross solutions collaboration to achieve business goals
Tier 4 Application	▪ Provides core business functionality	▪ Delivers execution of rules and logic to support business and technology capabilities ▪ Delivers solution's functionality by performing detailed processing ▪ Delivers logical decisions, evaluations, calculations, and data processing
Tier 5 Data	▪ Houses structured and unstructured data and defines the System of Records' location and ownership resides	▪ Enables simplified access to data stored in persistent storage ▪ Allows for high availability (e.g. caching) and enhanced performance ▪ Enables real-time indexes for real time analytics ▪ Enables data lifecycle management ▪ Enables enterprise views, e.g., 360 degree view of clients and service

Gartner

Application Pattern Criteria Comparison

Conditions	Patterns			
	Traditional N-Tier App	**Portal App**	**Composite App**	**SOA / MASA App**
Enterprise Applicability	Low	High	Medium	High
High Degree of U/X Dev. Control	High	Low	Medium	High
Fast Initial Time to Market	High	Low	Medium	Low
Multiple Sources	Low	Medium	High	High
Ongoing Flexibility / Scalability	Low	High	Low	High
Comments	• Enable fit-for-purpose departmental functional need. • Application logic is tightly-coupled.	• Dashboard enabler • Ideal for reference or collaboration content • Emphasis on UX integration.	• Ideal for business process across multiple processing logic services. • Emphasis on logic integration	• Ideal for business process across multiple processing logic services where more UX control and source flexibility is needed

Potential DES Patterns

Gartner

Master Data Management: MDM Pattern Applicability

Conditions	Patterns			
	MDM Registry	**MDM Consolidation**	**MDM Centralized**	**MDM Coexistence**
Best-Fit for Operational Use Cases	Low	Medium	High	High
High Consistency Required	Medium	High	High	Low
Dispersed Data Sovereignty	High	Medium	Low	Medium
Fast Time to Market	High	High	Low	Medium
Comments	• Changes to registry do not impact edge applications. • Emphasis is on remote data and application-to-application integration • Distributed governance for business data and central governance for registry.	• Nonintrusive to the business, business data model remains unchanged. • MDM is the foundation for the BI platform • No attempt to clean up source data	• Hugely invasive to the business data model. • Centralized governance • Focus on common services and standardization across the enterprise	• Greatest need to replicate data • Global and local governance • Focused on shared services • Authorship occurs in multiple places

Potential DES Pattern

Gartner

BI & Analytics: Descriptive & Predictive Pattern Applicability

Data

Conditions	Patterns					
	Repository DW	Repository DM		Virtualized DM		Data Lake Data Store
		Dependent	Conditional	Integration	Delivery	
Experimental / Ad-Hoc Use Cases	Low	Low	Medium	High	High	High
Enterprise Wide Scope	High	High	Medium	Low	Low	Medium
Fast Time to Market	Low	Low	Medium	High	High	High
High Demand for Supplemental Data	Low	Medium	Medium	High	High	High
Low Run-Time Latency Tolerance	High	High	Medium	Low	Low	Low
Comments	• Shared and central storage of data • Best fit for consistent and standard enterprise data model	• Data aggregation in support of multiple business domains • Conditional is useful for quickly altering or enriching the Data Model. • Dependent is useful for extending a standard enterprise data model while consistent with the enterprise model		• Appropriate for temporary views generated at run-time where analytics are not critical to run the business operations. • Integration – DM is used for integration where metadata is applied at ingest • Delivery – DM is used for delivery where metadata is applied at delivery		• Data is consumable (can be accessed) from both the Data Lake and DW. • Best fit for well-defined, known and repeatable data use cases and reporting.

Potential DES Pattern

Gartner.

Data & Message Integration Pattern Applicability

Cross-Tier

Conditions	Patterns			
	Data Synchronization / Replication	**Batch / Bulk Data Movement**	**Data Virtualization**	**Message Oriented Movement**
Large Payloads	Medium	High	High	Low
High Reliability Requirement	High	High	Medium	High
Low Latency Tolerance	High	Low	High	Medium
Low Source Impact	High	Medium	Low	High
Adv. Translation Required	Low	High	Medium	High
Data Security	Medium	Low	Medium	High
Comments	• Typically has lower overhead than the direct SQL approach • Replication is often used as an HA solution	• Supports high data quality with built-in transformation capabilities • high performance and scalability during runtime	• Does not experience data latency within the DF/DV platform unless caching is used • Reduced potential data sprawl	• Ability to reduce processing times by creating micro batches • Creates less data latency compared to Batch/Bulk pattern

Potential DES Pattern

Gartner

Digital App Overview

Application

Solution Set		ETA Patterns	
• Digital Channel App		• Digital User Channel • Composite U/I	
Reference Architecture Capability Detail		**ETA Sub-Patterns**	
• Light Browser Client & Heavy Server Processing		• Light Browser Client, • Heavy Server Processing • Traditional Web U/I	**Potential DES Pattern**
• Heavy Browser Client & Light Server Processing		• Heavy Browser Client • Light Server Processing • Modern Web U/I	

ETA Pattern Description

- Modern Web app architecture treats the browser as a full-blown runtime, calling into question the need for many features of traditional server-side presentation frameworks.

- Typically have narrow scope, single-page designs, new UI patterns and new distribution options require radically new competencies from traditional Web development teams.

- Require organizational discipline, strong expertise with HTML5, Cascading Style Sheets 3 (CSS3) and JavaScript, as well as new tools and frameworks.

Gartner.

Security Architecture

Enterprise Security Architecture ("City Plan")

Security Zones ("Zoning Regulations")

General Business Systems
App   App   App

Sensitive or Critical Systems
App   App   App

General Systems in Cloud
App   App   App

Sensitive or Critical in Cloud
App   App   App

End User Devices
Device   Device   Device

Backup Systems / SOC
Tool   Tool   Tool

Security Tools ("Infrastructure")

IAM Security	End User Device Security	App Dev Security
Network Security	Remote Access Security	Cloud Security
Physical Data Center Security	Servers/Storage Security	Integration Security
Data Security		

Internal Users
- Access systems via desktops, laptops, portals and DES mobile devices
- Access systems using personal computers and mobile devices

Attackers
- Most common attack pattern is cyber espionage
- Most common attack patterns for public sector organizations were privilege misuse (55% of incidents) and crimeware (20% of incidents)
- Most commonly targeted assets were user devices (58%) and servers (24%)
- Ransomware attacks increasing
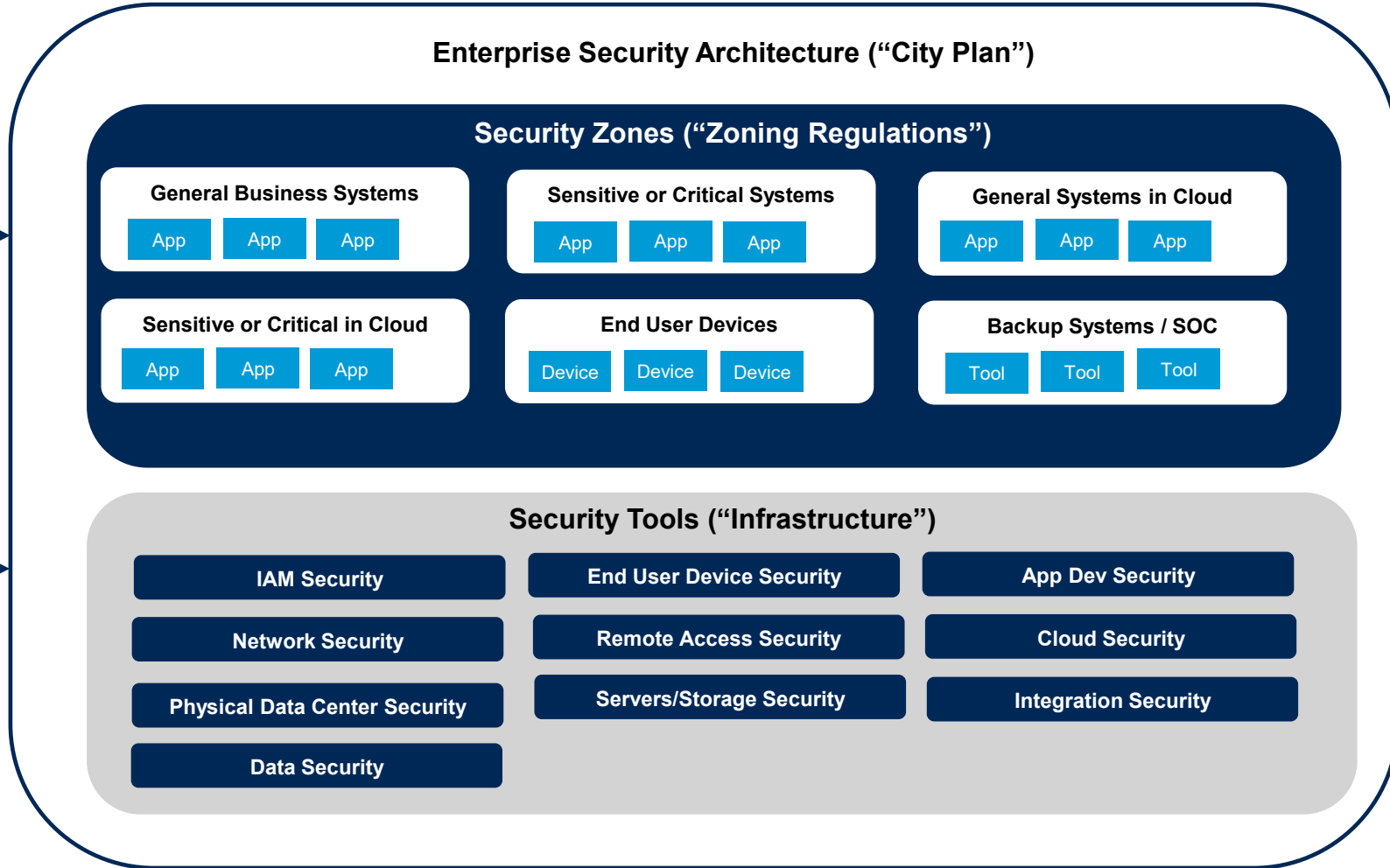
Constituents
- Access business systems via portals

Business Partners
- Access systems via portals and APIs
- Require DES to comply with PCI

Regulators
- Require healthcare systems comply with Health Insurance Portability and Accountability Act (HIPAA) requirements, CJIS, NIST SP 800, MARS-e and IRS Pub 1075

Gartner.

Gartner's Assessment of IT Cost Benchmark Results

IT Spending Per Employee

Category	Value	
Peer Max	$18,534	
Peer 90th	$16,474	
AZ DES	$15,821	+58% vs. peers
Peer 75th	$13,155	
AZ DES Excl. HEA+	$11,813	+18% vs. peers
Peer Avg	$10,016	
Peer 25th	$6,548	
Peer 10th	$5,459	
Peer Min	$5,095	
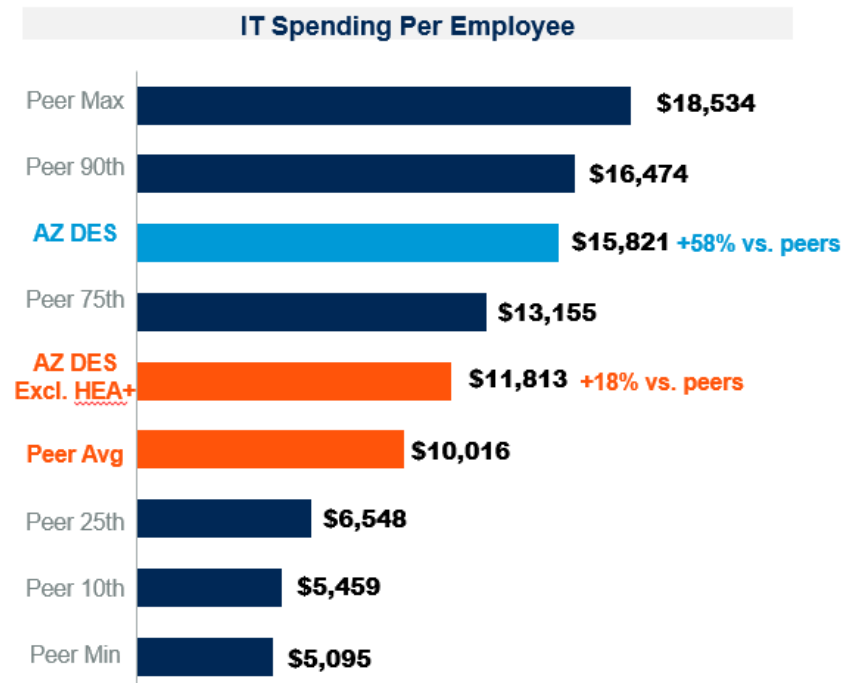
- The IT cost **benchmark shows mixed results**:
  - IT cost as a percent of operating expense is less than peers (4.6% vs. 7%)
  - However, IT spending per employee is 18%-58% greater than peers depending on whether HEAPlus is included (see chart)
- **Gartner believes IT spending per employee is a more reliable comparison** as DES operating expense per employee is more than double peers and cost per end user is also significantly greater than peers
- The total cost gap is $15 million excluding HEAPlus. The **gap is primarily driven by personnel cost**; particularly in applications
  - Personnel costs represent $12 million of the gap as DES has 50% more staff than peers (466 vs. 311 excluding HEAPlus)
  - The personal gap is primary driven by business analyst staffing which is 4 times greater than peers
- **Business unit IT spend is 58% of IT costs** vs. 30% at peers
- **Operating expense is 98% of budget** vs. 76% at peers implying ongoing accumulation of technical debt (servers off support, gaps in disaster recovery…etc.)

Gartner.

Roadmap Details

The future-state IT governance for DES will enable IT to manage the transition to the service-optimizing operating model and support the strategic program
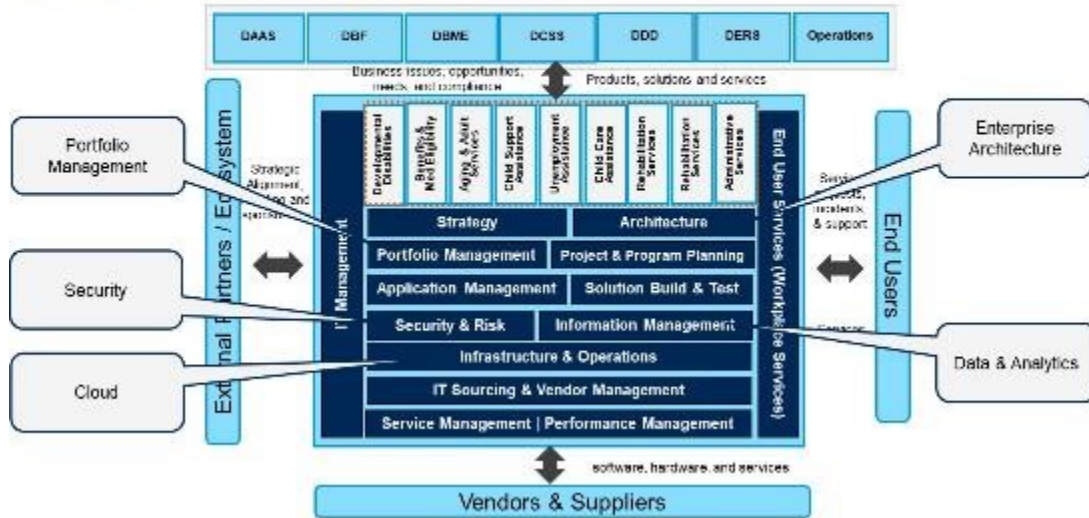
Security Governance
Information Security Advisory Boards

Entity
- Information Security Advisory Boards

Membership:
- CISO
- Enterprise Architect
- IT Admin (if applicable)
- Technology Managers
- IT Governance, Risk & Compliance Manager

Chairperson
- CISO

Typical Meeting Cadence
- Monthly

Specific Responsiblities
- Develop policies and establish security standards (controls) in particular domains

Decision Rights
- Recommend policies
- Recommend priorities and investments
- Define & approve security controls in particular domains

Gartner

Improvement Scenario

Gartner.

Technology Modernization Improvement Scenario

Area	Initiatives
Collaborative Initiatives	1. **Citizen Portal** – Reduce cost, compliance risk and client satisfaction and enable DES to ensure the appropriate mix of existing services for program participants by establishing digital intake and servicing capability 2. **Contact Center Strategy** – Provide the opportunity to reduce cost and improve client service quality by developing a contact center strategy
Developmental Disabilities	3. **FOCUS Cloud Migration & Digital Servicing Enhancement** – Reduce cost and improve timeliness and quality of services by establishing process and tools to ensure that vendors report on services and status in real-time and establishing a member portal
Benefits & Med Eligibility	4. **AAL Modernization** – Improve efficiency by replacing the core systems used for SNAP/TANF, Child Care Program and Low-Income Energy Assistance Program
Aging & Adult Services	5. **Refugee Resettlement System Enhancement** – Reduce compliance risk and improve client satisfaction by implementing targeted enhancements to the Refugee Resettlement system 6. **AZAPSS Replacement** – Improve business efficiency and effectiveness by replacing AZAPSS
Child Support Services	7. **ATLAS Replacement** - Reduce cost and increase business effectiveness by migrating from the current ATLAS system to a system built on a modern platform that enables real-time information gathering, easy data entry, better integration with other State organizations and effective mobile workforce support

Gartner

Technology Modernization Improvement Scenario

Area	Initiatives
Unemployment Assistance	8. **UI Tax Application Strategy & Selection** – Reduce IT and business cost and support risks and improve DES' ability to support emerging requirements by developing an application strategy for unemployment tax processing 9. **UI Benefits and Workforce Application Strategy & Selection** – Provide the opportunity to reduce cost, compliance risk, improve client satisfaction and enable DES to ensure the appropriate mix of existing services for program participants by developing an application strategy for unemployment insurance and workforce
Rehabilitation Services	10. **Rehabilitation Services Application Strategy & Selection** – Reduce cost, compliance risk and operational risk to the program by migrating from the current system to a solution that provides effective support for staff in the field
Finance	11. **Automated T&E Processing** – Reduce cost, compliance risk and security risk and improve staff satisfaction by implementing automated T&E processing 12. **ARICS Replacement** – Reduce support risks by migrating from the current Account Receivable Integrated Collections System (ARICS) to a new solution built on top of Salesforce
Administration	13. **OIG Investigations Application Strategy & Selection** – Improve the productivity and effectiveness of the investigation unit by developing an application strategy and selecting a new system for the OIG investigations teams 14. **OIG Appeals Application Strategy & Selection** – Reduce security risk by migrating Appeals to a new solution

Gartner

Technology Modernization Improvement Scenario

Area	Initiatives
Information Technology	15. **Enterprise Architecture Enablement** – Reduce cost and improve business productivity, business effectiveness and IT agility by establishing an effective enterprise architecture capability 16. **Cloud Enablement** – Improve operational reliability and provide the opportunity to provision, manage and secure resources in the cloud by implementing targeted improvements to infrastructure and operations 17. **Business Resiliency Improvement** – Protect non-mainframe critical systems by establishing a tested disaster recovery capability for critical systems 18. **Application Development Productivity & Quality Enhancements** – Increase application development productivity and availability and reduces the number of defects in production by improving requirements specification, testing, version control and performance monitoring 19. **Collaborative Information Management** – Provide the opportunity to improve the "customer experience" for DES clients and enable the Department to ensure the appropriate mix of services for program participants by establishing a central information management capability and developing an architecture and roadmap for information management 20. **Proactive Workforce Planning & Fulfillment** – Improve IT effectiveness and reduce IT cost by establishing proactive approach for talent acquisition and retention for staff in critical roles 21. **Proactive IT Portfolio Management** – Reduce IT costs, increase the return from IT investments and provide the opportunity to effectively manage enterprise-wide initiatives by establishing enterprise-wide governance capability and more robust financial management for all large IT projects

Gartner

Technology Modernization Improvement Scenario

Area	Initiatives
Information Technology	**22. IT Sourcing Enhancement** – Reduce IT cost, reduce risk of vendor performance shortfalls and support the transition to cloud by establishing an effective central IT sourcing and vendor management capability **23. Robust IT Asset Tracking and Management** – Reduce cost and compliance risk by establishing a robust asset management capability for IT assets **24. Enhanced Software Asset Management** – Reduce IT cost and reduce risk of software penalties and true up fees by establishing reasonable software asset management capabilities **25. Proactive IT Security** – Reduce the risk of gaps in the security program leading to a breach that disrupts services to clients or exposes confidential or protected information by establishing essential security management capabilities

Gartner.