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Service Oriented Infrastructure for Enterprise Architecture

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Content Summary

Service Oriented Infrastructure (SOI) as part of Enterprise Architecture is to apply Service Oriented Architecture concept to IT infrastructure

- The changing roles of IT and IT infrastructure
- IT infrastructure, as a new line of business (LoB) in Enterprise Architecture
- Apply SOA concept to IT Infrastructure -> Service Oriented Infrastructure (SOI)
- SOI framework

The Changing Role of IT and IT Infrastructure

- **IT in Business**

- Past

- Operation support
 - Individual project based decision
 - Ad hoc and technology driven implementation

- Current

- Involved into business strategies and decisions
 - Have long-term blueprint and big pictures as guidance

- **IT Infrastructure**

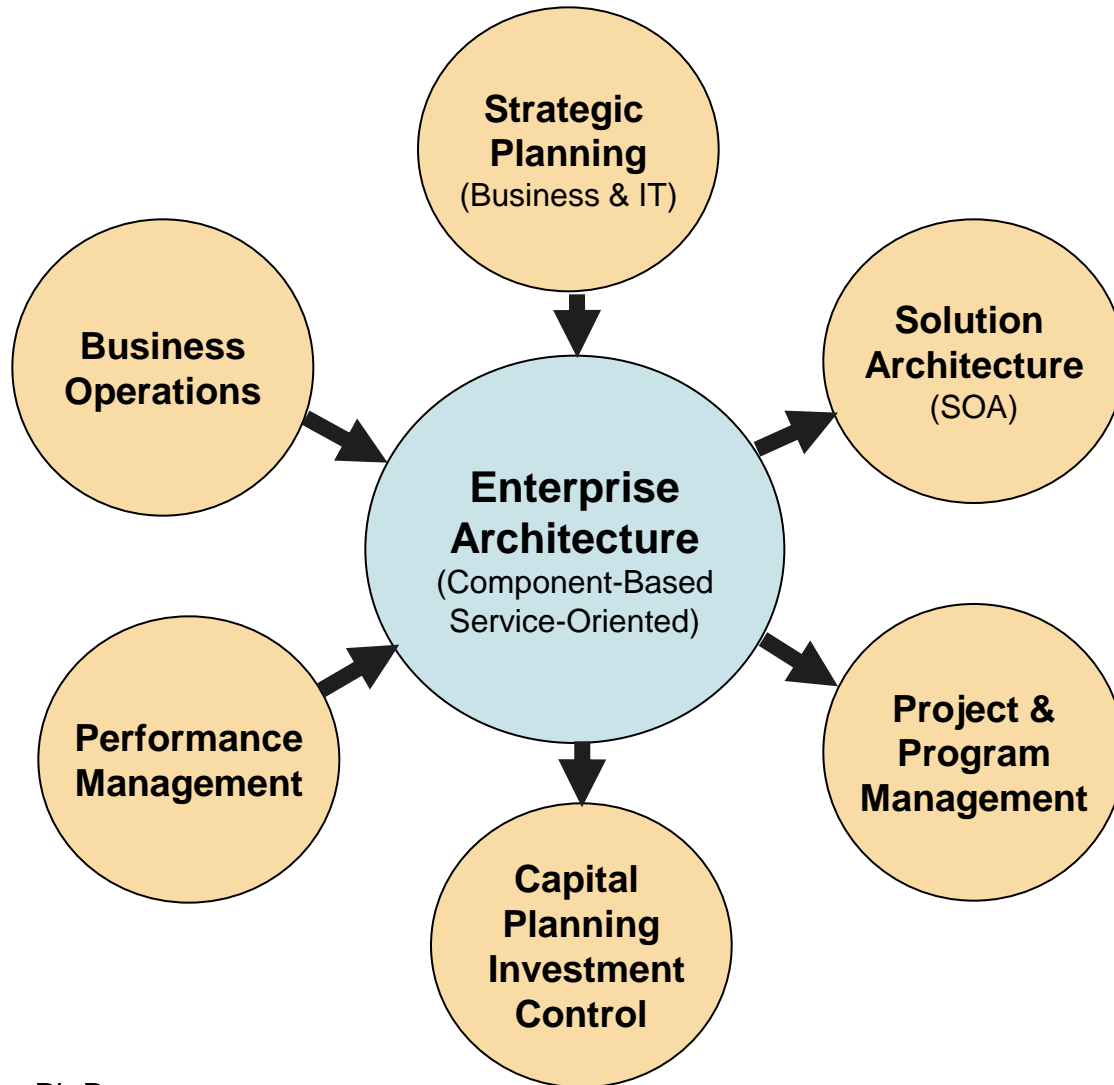
- Past: hardware, software, and network components
 - Current: as a line of business

- **Enterprise Architecture for IT Infrastructure**

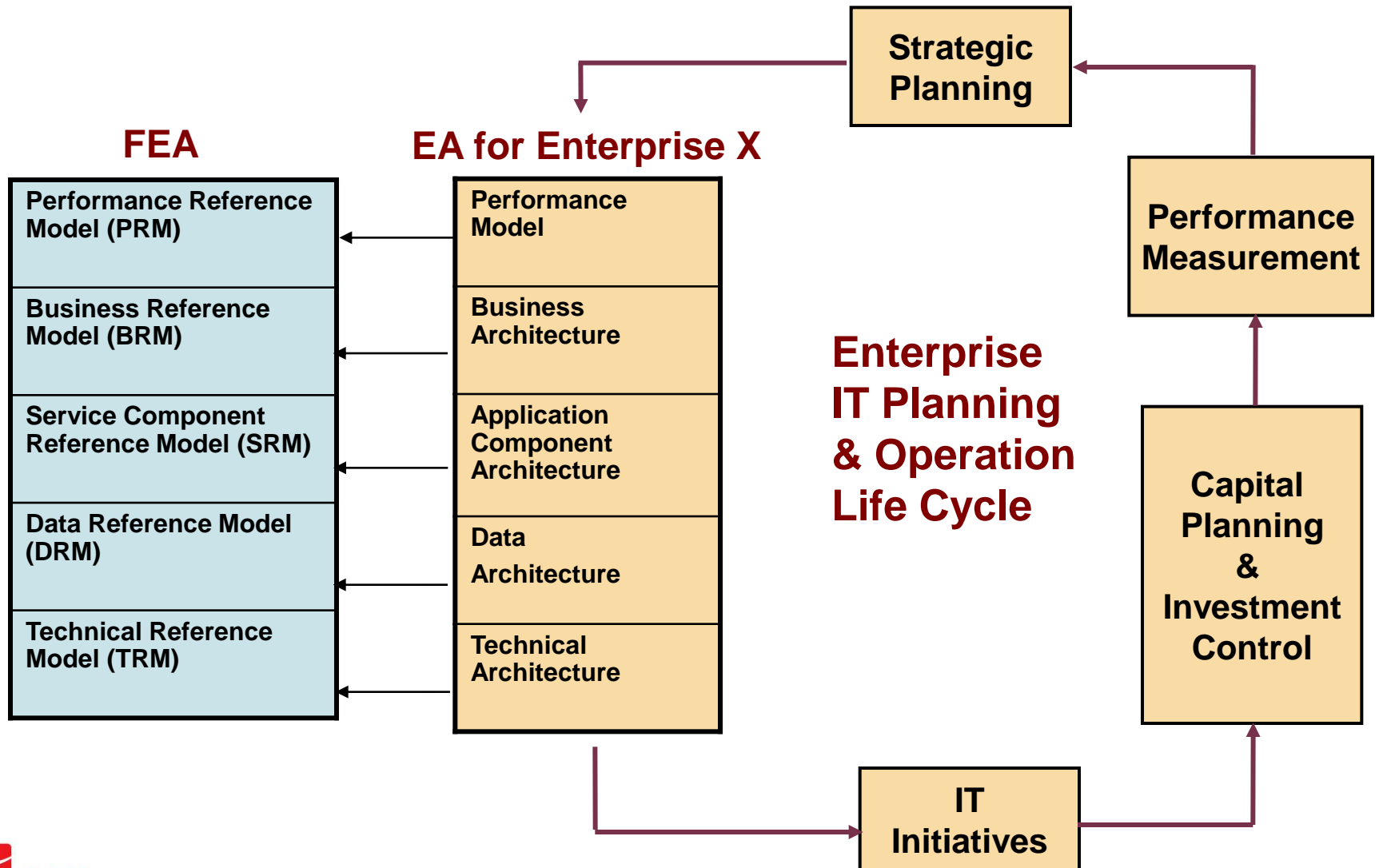
The Purpose of Enterprise Architecture

- Have a blueprint and long-term guidance
- Facilitate decision making
- Support enterprise modernization efforts
- Enable collaboration and interoperation
- Streamline business processes and technology implementations across the enterprise
- Enable resource sharing and cost efficiency by identify common and sharable components and services
- EA for an enterprise .vs. city planning for a city

Enterprise Architecture in Context



Enterprise Architecture Components and Life Cycle



The Progress of Federal Enterprise Architecture

- **Federation**

- The federation model fits federal government organization structure
- It provides horizontal partition to the complete EA domain

- **Segmentation**

- Segments are defined based on the lines of business (LoB)
- It provides vertical partition to the complete EA domain

- **Service Orientation**

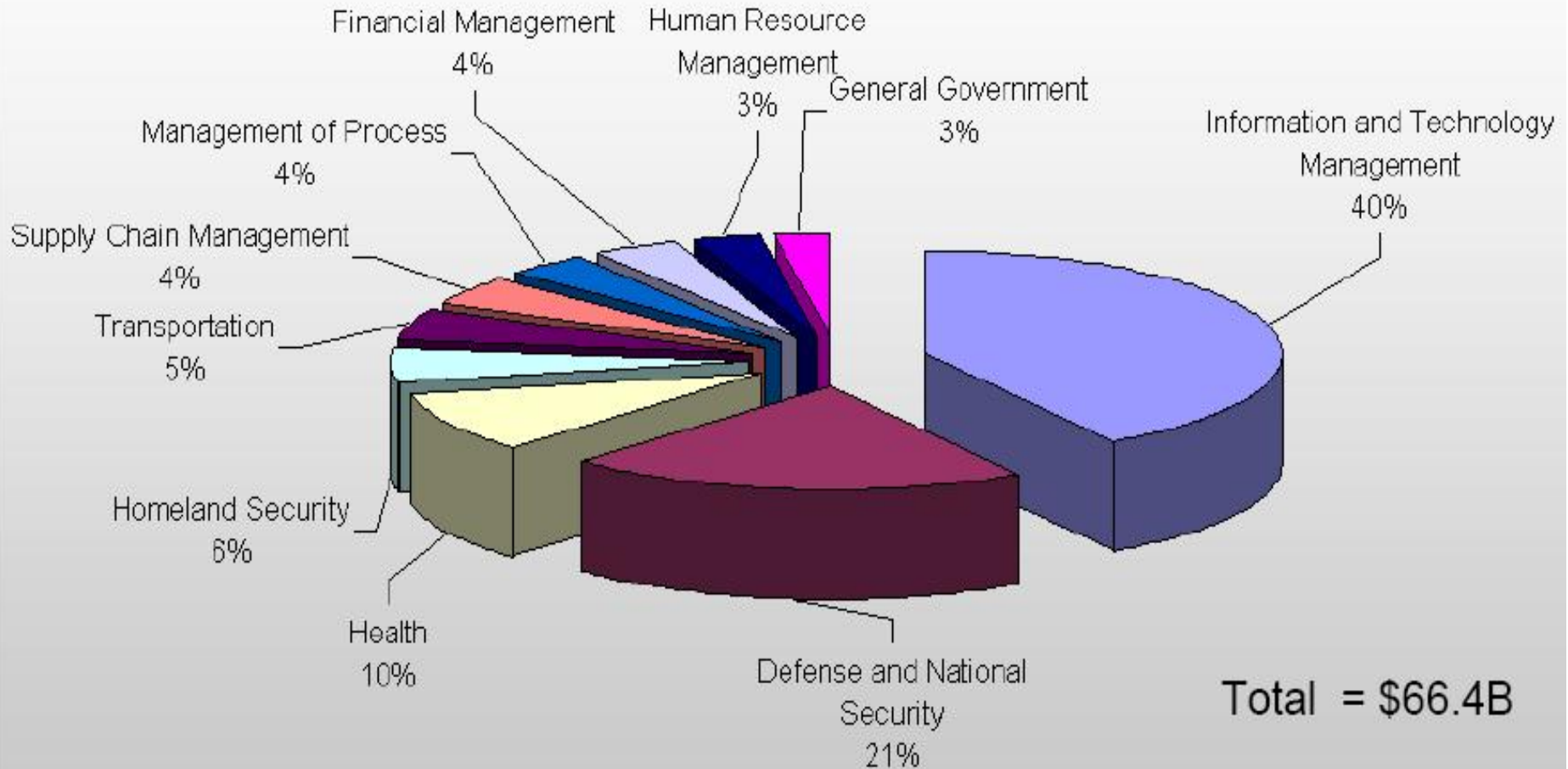
- A practical approach for architecture modeling and implementation

Line of Business across Federal Government

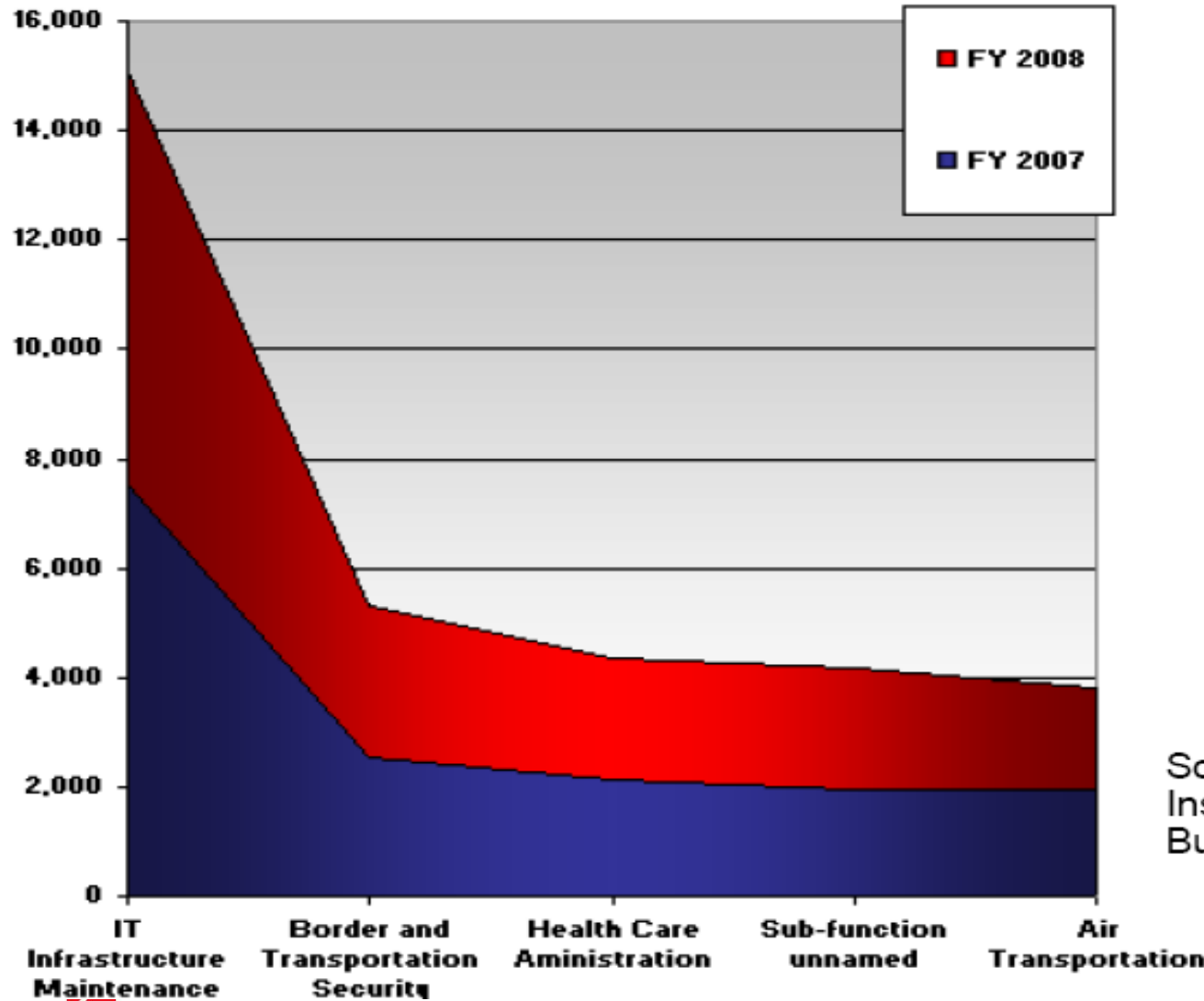
OMB has identified nine LOBs cutting across federal government:

- Budget Formulation and Execution (BFE)
- Case Management (CM)
- Federal Health Architecture (FHA)
- Financial Management (FM)
- Geospatial
- Grants Management (GM)
- Human Resources Management (HRM)
- Information Systems Security (ISS)
- Infrastructure Optimization Initiative (IOI)

Top 10 LoBs in 2008 IT Budget



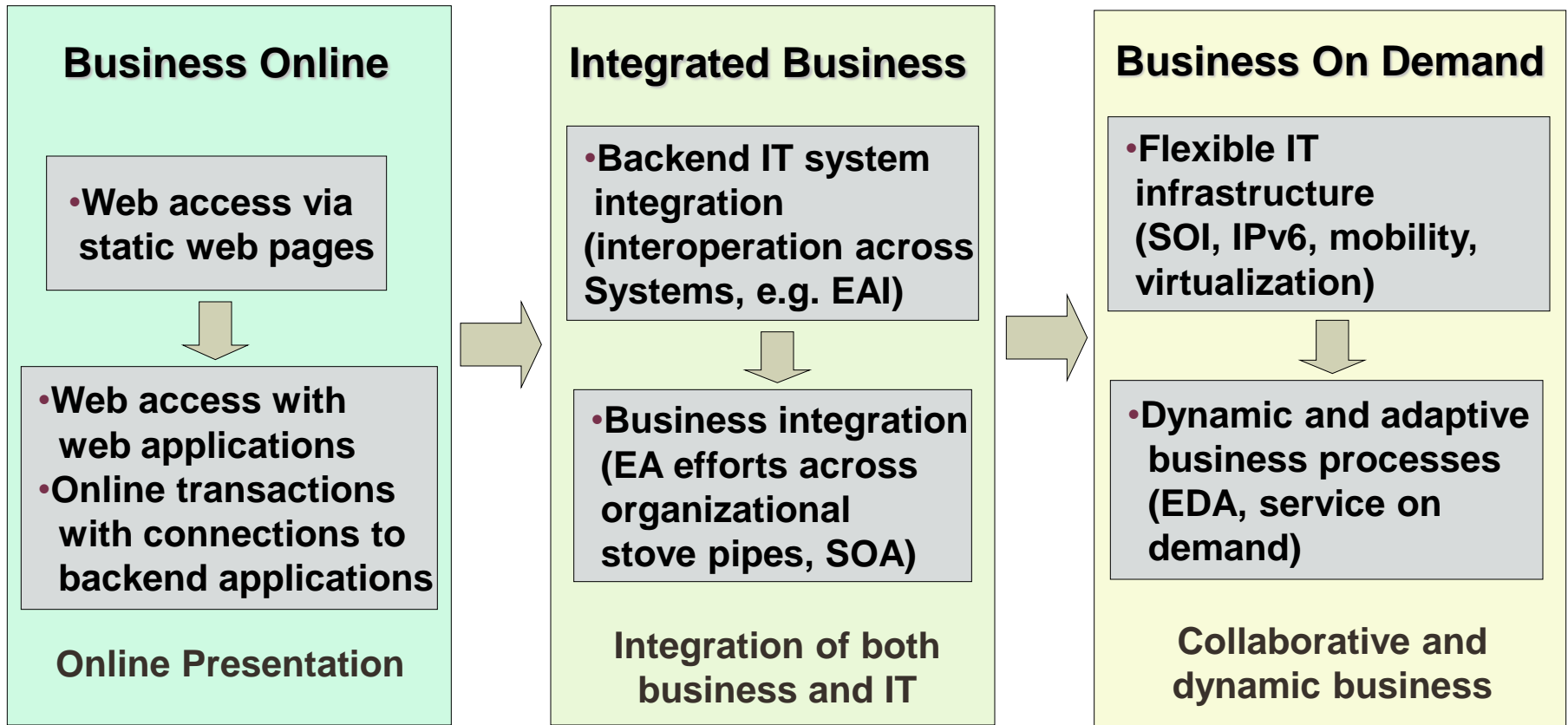
Top Civilian Agency Sub-functions



Number = \$ Millions

Source: IDC, Government Insights: US Federal Line of Business Budget Guide, 2007

Business Evolution Associated with IT



The Evolution Path

EA, SOA, and Service Oriented Infrastructure

- SOA is a practical modeling approach for EA
- SOA bridge EA with solution architectures
- SOI is to apply SOA to IT Infrastructure
- SOI facilitates the implementation and operation of SOA-based applications and shared services

Service Oriented Infrastructure Framework

Service Oriented Infrastructure

Service Planning (Strategy, Architecture)	Service Systems (System Architecture & Implementation)	Service Management (Deployment & Operation)	Service Stakeholders (Cross All Services)
<ul style="list-style-type: none"> • External and Internal drivers • Strategies and objectives • Economics and business cases • Business plan and models • LoB Enterprise Architectures • Performance measurement model 	<ul style="list-style-type: none"> • Business processes and services • Application services • Data services • Infrastructure services • Servers, storages, networks • Data center facilities 	<ul style="list-style-type: none"> • System operation management • IT service management (ITIL) <ul style="list-style-type: none"> • Business transformation and change management • Contractual management 	<ul style="list-style-type: none"> • Business decision makers • Service providers • Service consumers • Elected officials and regulatory bodies • Industry associations and standards groups
Security			
Governance			

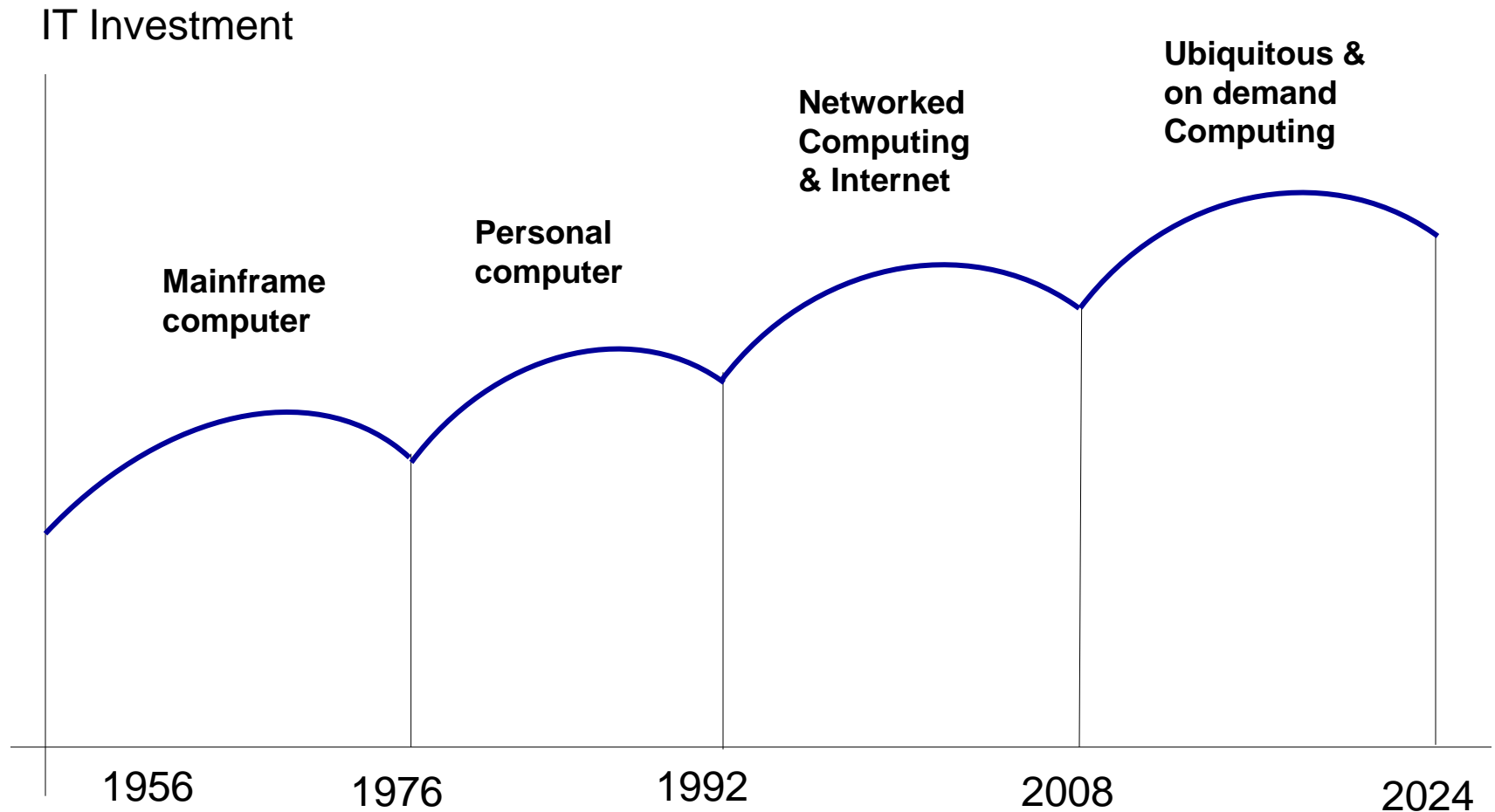
Service Planning

- Plan IT infrastructure as a line of business, and create LoB enterprise architecture accordingly
 - Establish vision, strategies, architecture for enterprise Information Management (IM) and Information Technology (IT)
 - Create a viable plan, including business models, roles and responsibilities, transition roadmap, cost model, etc.
 - Create performance measurement model based on strategic plan, which provide measurement guidance for operation.
- Governance and security processes should be applied across board
- COBIT (Control Objectives for Information and related Technology) can be a best practice reference for IT Governance

Service Systems

- **Provide system services to support**
 - Business processes and services
 - Application and data services
 - Infrastructure services
- **Strong influence from new technologies, currently in:**
 - Mobile Computing
 - Internet IPv6
 - Virtualization
- **Business oriented**
 - Support business strategies and models
 - Enable business cases
 - Facilitate business processes and operations
- **Performance driven**
 - Establish performance matrix
 - Monitor via a performance measurement system
 - Life cycle review and performance improvement

Technology Life Cycle Drives IT Investment



Service Management

- **System operation management**
 - IT Portfolio Management
 - Management of service systems (including data centers, HW, SW, networks, etc.), as well as applications and information that resides on them
- **IT service management via ITIL**
 - **Management of IT service life cycle:** service strategy, design, transition, operation, and improvement
 - **Service Strategy:** management of service model, portfolio, economics, demands, acquisition, etc.
 - **Service Design:** management of service catalog, availability, continuity, security, suppliers, sourcing alternatives, standards, as well as contractual management in licensing, SLA, costing, etc.
 - **Service Transition:** business transformation and change management, configuration management, knowledge management, deployment and evaluation management; and to ensure business continuity for the involvement of new vendors, new tools, new operation environment, etc.
 - **Service Operation:** management of incidents, requests, problems, services in all level
 - **Service Improvement:** an iterative and continuous process based on service life cycle

Service Stakeholders

- **Identify service stakeholders across board**
 - Identify all stakeholders who are relevant to IT infrastructure, such as internal and external drivers, business decision maker, service provider, service consumer, etc.
- **Separate stakeholders from structure definition**
 - Architectures, business operation processes are created independent of stakeholders
 - Perform mapping of stakeholders to individual infrastructure elements

Conclusion

This presentation discussed:

- The changing roles of IT and IT infrastructure
- The progress of Federal Enterprise Architecture, with IT Infrastructure as a new Line of Business
- Business evolution associated with IT
- SOI: apply SOA to IT infrastructure
- SOI is part of Enterprise architecture, for IT infrastructure LoB
- SOI Framework