ADM Content:
Result of Applying Methodology

The Open Group
21st Enterprise Architecture
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Agenda

- Synopsis
  - Objective: Results of applying the ADM
  - What is EA?
  - SOA Mindset
  - What is TOGAF?
- Approach
  - Preliminary Phase
  - Business Architecture
  - Information Systems Architecture (Application, Data, Security)
  - Technology Architecture
- Bringing It All Together
  - Business Perspective
  - Technical perspective
- Extras
  - Simulation Exercises
  - Implementation

Objectives

- Level-set terminology and a common understanding
  - TOGAF, SOA, EA
  - Understanding of how in can be applied and what its result will be
- Standards
  - Why do we enforce and succumb to them and *yet* we do not seem to 100% agree on the outcome of the framework we are using?
- Assess, Review & Focus
  - Apply/Engage Best Practices (TOGAF)
  - Help define a pragmatic and impactful framework:
- Insight
  - Gain an understanding of options and recommendations
    - Culture change?
    - Evangelize
- Feedback : Grow

What is EA?

- Enterprise Architecture (EA) is a complete expression of the enterprise; a master plan which acts as a collaboration force between:
  - Aspects of business planning such as goals, vision, strategies and governance principles
  - Aspects of business operations such as business terms, organization structures, processes and data
  - Aspects of computerization such as information systems and databases; and the enabling technological infrastructure of the business such as computers, operating systems and networks.

EA provides a mechanism that enables communication about the essential elements and functioning of the enterprise. EA supports the business by providing the fundamental technology and process structure for IT strategies, thereby aligning business objectives associated with organizational costs and benefits in delivering on a company's mission statement.

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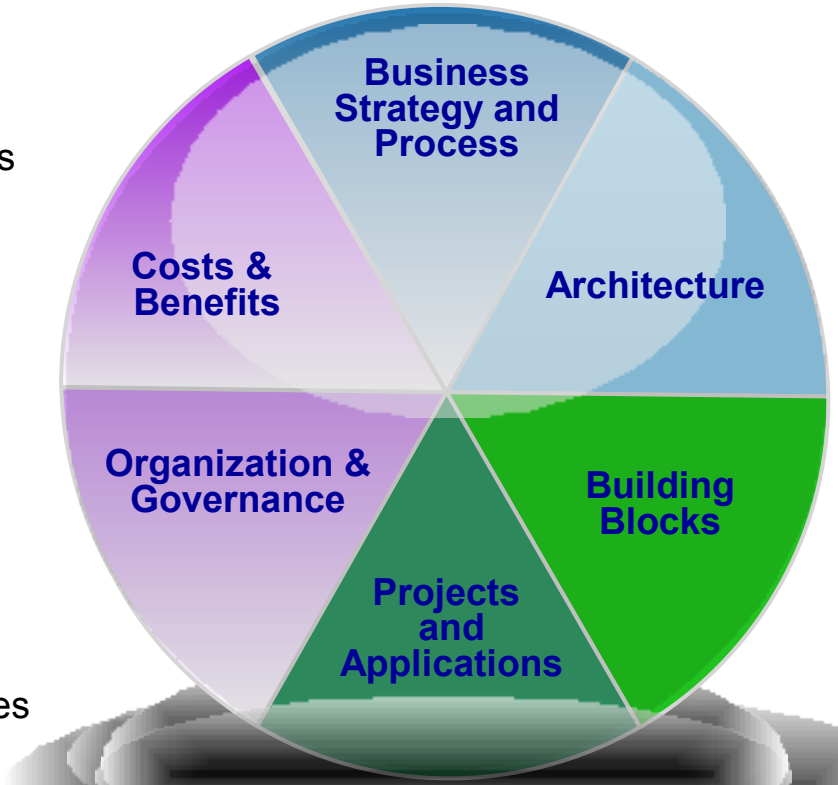
BEA Domain Schema For SOA

Overall View

- SOA-enabled Business Strategies
- Business Process Architecture

- Construction costs
- Business & IT Benefits
- Key Measures



- Reference Architectures
- Manageability/Availability
- Scalability
- Security

- Organization Design
- Funding
- Skill sets
- Roles & Responsibilities
- Standards
- Operational Processes & Tools
- Change Management

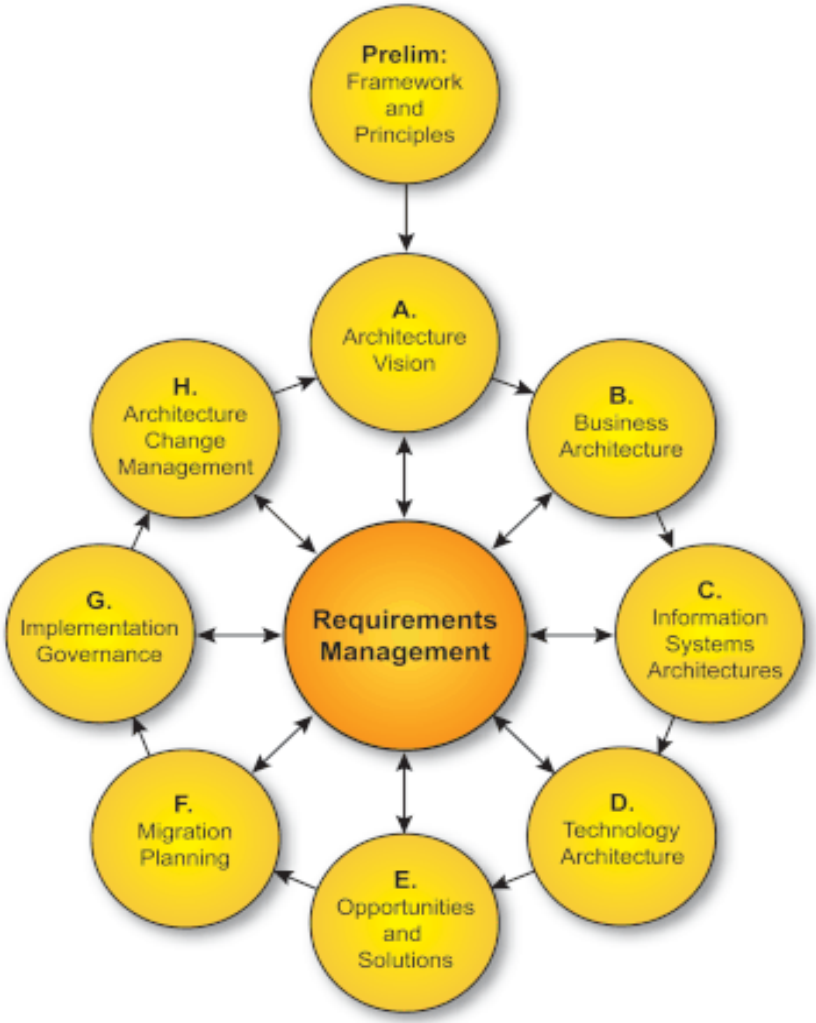
- Infrastructure Services
- Info. & Access Services
- Shared Business Services
- Presentation Services
- Composite Applications

- Existing Applications
- Key “In-flight” Projects
- Infrastructure Construction Plans

Framework - TOGAF

- A generic method for iterative, continuous development of EA through the TOGAF ADM cycle. Covers 5 architecture domains:
  - **Business Architecture**
  - **Application Architecture***
  - **Data Architecture***
  - **Security Architecture***
  - **Technology Architecture**

  * Part of Information Systems Architecture



Basic Structure of ADM:

- 1 Preliminary & 8 Iterative Phases that flow thru Requirements Management
- Need frequent validation of results against original expectations & business requirements.
- Iterative Process

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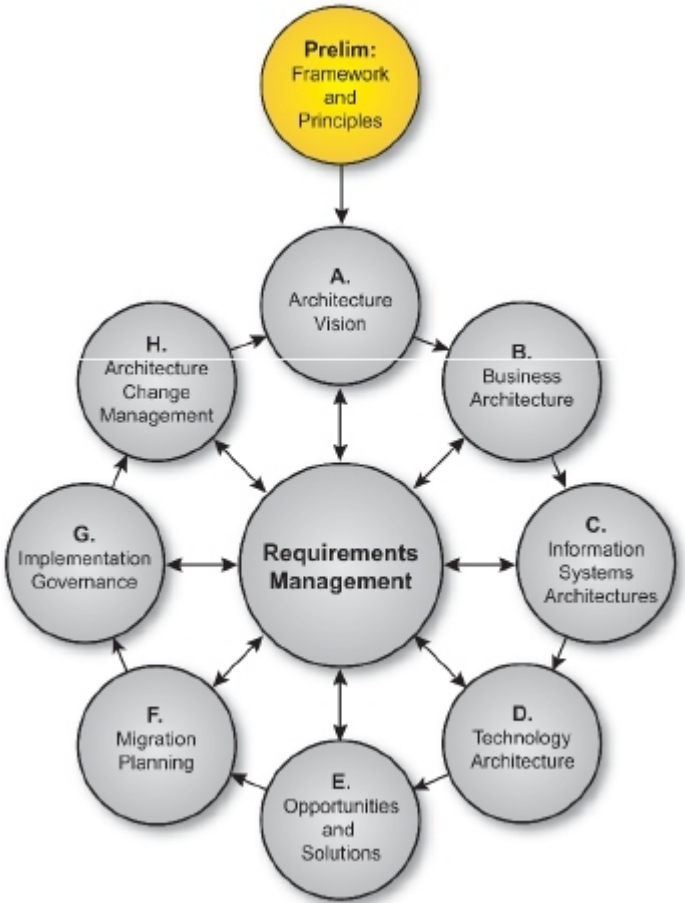
TOGAF – Preliminary Phase

This phase prepares the organization to engage in Enterprise Architecture.

- Understand business environment
- High level management commitment
- Agreement on scope
- Establish principles
- Establish governance structure



Approach

- Create an Architecture Framework for continuous, iterative development of enterprise's architecture.
- Use The Open Group Architectural Framework (TOGAF) as methodology (http://www.opengroup.org/togaf/).
- Established Business Functions for EA documentation:
  - Use-Cases. Real Live Activities
  - Meet with resident expert(s) and Develop/Determine Schema(s)
- Used Business Functions as scope for the iteration of framework.
  - Architecture Development Method (ADM) cycle
  - Enterprise Continuum (EA Repository)

Objectives, Inputs & Outputs

Business Architect

Roles and Responsibilities - Sample

bea Think liquid.

Mapping Roles with SDLC Process

This document provides a RACI matrix covering Project Approval within the organization. This info. maps directly to the **SDLC** work in progress

Role -->	Technology Architect	Product / Marketiing BPE	Product / Marketing Director	LOB VP / AVP	XXXX AVP	XXXX Design	XXXX Dev.	XXXX Test	XXXX Deploy	XXXX Project Manager	CCCC	Technology Services DMS	Technology Services System Admin.	Technology Services Support	Financial Analyst (Cal Abbot)	AAAA, Accounting & Purchasing	Senior Mgmt Team	Board of Directors
			Project Board															
1.1 Conceptual Design--System Requirements Analysi																		
1.1.1 Requirements Definition																		
1.1.1.1 Identify Business Requirements		R				C												
1.1.1.2 Identify Conceptual Database Systems Require		C				C				I		R						
1.1.1.4 Consider Buy/Build Option	C	C				C	C			R								
1.1.1.5 Review Requirements List & Acceptance Criteri	C	R				C		C		C		C	I	I				
1.2 Logical Application Design																		
1.2.1 Required Business Specification--Mandatory																		
1.2.1.1 Create Business (Functional/Logical) Specifica		C				R						C						
1.2.1.2 Define Test Strategy		C				R		C	C									
1.2.1.4 Identify Logical Database System Requirements		C				R				I		C						
1.2.1.5 Establish User Access Level Security Requirem		C				R	C			I								
1.2.2 User Interface Definition																		
1.2.2.1 Design Reports & Screens		C				R												
1.3 Finalize/Approve Conceptual & Logical Application D	C	C		A		C		C		R		C	I	I				
1.4 Logical Database Design																		
1.4.1 Data Normalization						C	C					R						
1.4.2 Data Integration Analysis		C					C					R						
1.4.3 Create/Refine Logical Data Model		C				C	C					R						
1.4.4 Refine Data Dictionary - Logical Requirements												R						
1.4.6 Logical Database Design Review		C				C	C					R						
1.5 Physical Architectural Design																		
1.5.1 Establish Base Technical Configuration for Devel	A					C			R			C						
1.5.2 Establish Development Tools & Standards							R		C			C						
1.6 Physical Application Design																		
1.6.1 Create/Refine Application Physical Model						R	R					C						
1.6.2 Create/Refine Application Physical Model Design	C					C	R											
1.7 Physical Database Design																		
1.7.1 Database Model																		
1.7.1.1 Determine Storage Requirements									C			R		C				
1.7.1.2 Create Performance Predictions	C							C				R		C				
1.7.1.5 Establish Database Procedure Utilities												R	C					
1.7.1.6 Finalize Data Dictionary Process Entries												R						
1.7.2 Conversion Design-If Applicable																		
1.7.2.1Create Data Acquisition Strategy						C	C					R						
1.7.2.2 Define Data Conversion Sources						C						R						
1.8 Physical Test Design																		
1.8.3 Define Test Plans																		
1.8.4 Review Testing Design Plan	C	C				C	C	C	C	R		C	C	C				
1.9 Physical Design Review																		
1.9.4 Finalize / Approve Physical Design	A	C						A		R		C	C	C				
2.0 Construction & Testing																		
2.1 Define Development Environment																		
2.2 User Procedures & Training Definition																		
2.2.3 Define/ Refine Access Security & Control						C												
2.2.4 Define / Refine Management Procedures																		
2.2.5 Define Organizational Impact		R		C														
2.3 Construction & Unit/Functional Testing																		
2.4 Integration & System Testing																		
2.5 User Acceptance & BETA Testing																		
3.0 System Implementation																		
3.5 Warranty Concluded/ Hand Over to Operations										R			R					

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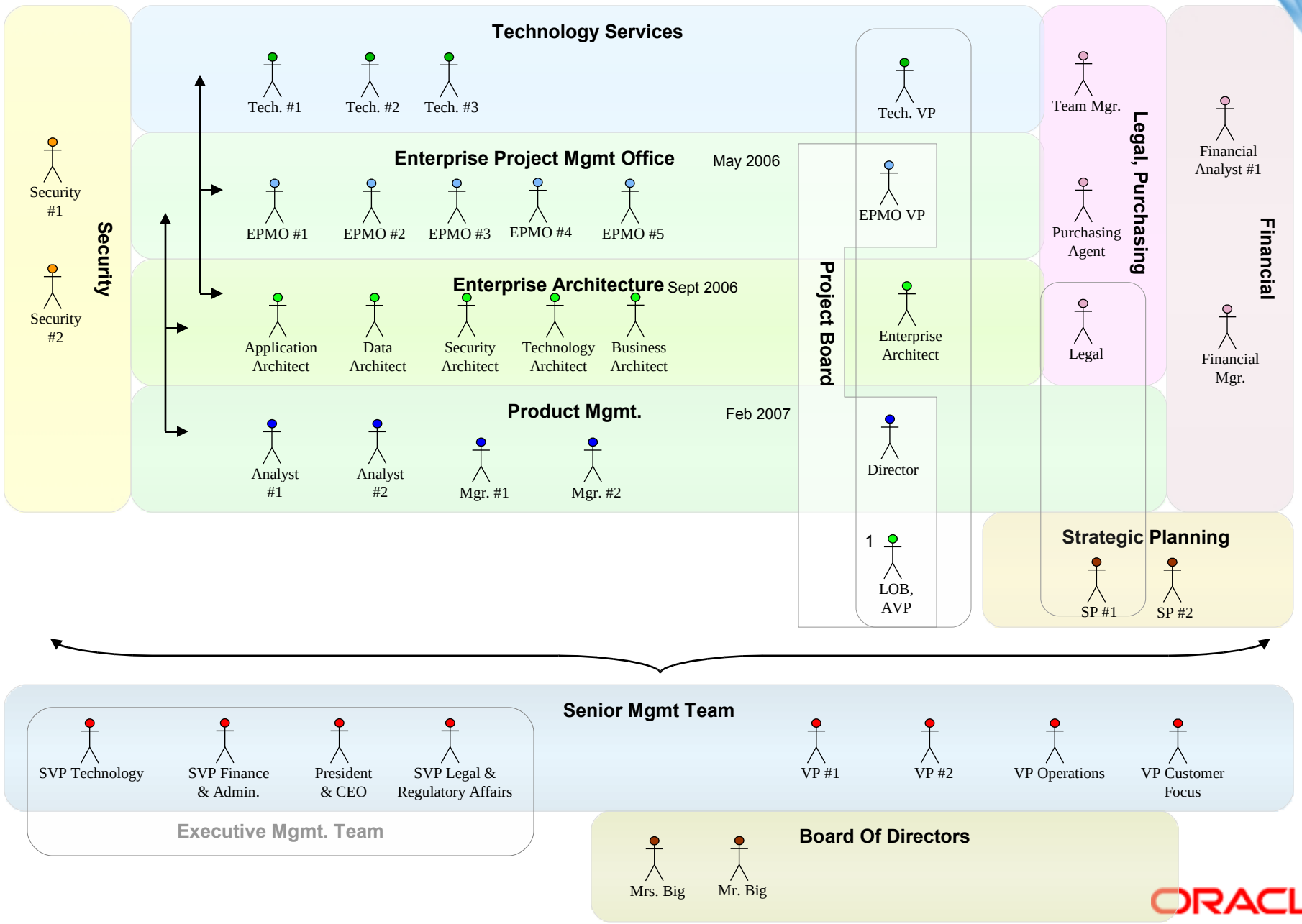
Business Architecture Organization Chart



Business Architecture

Wrap Up

There is no single Solution because…

- Existing organization structures in place
- Existing governance in place
- SOA Maturity Level
- Business & SOA Strategy
- Geographical
- Political consideration
- Size of corporation
- SOA Reference Architecture

Governance must cater for…

- What decisions needs to be made for your organization to have effective Governance?
- Who should make these Governance decisions in your organization?
- How will these Governance decisions be made and monitored in your organization
- What Structures, Process, Communication, Tools should be deployed in your organization

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Data Architecture
Accomplishments

- Identified for all Business Functions:
  - **logical data entities**
  - **Repositories**
  - **Data operations**
  - **Data services**
  - **Data interoperability - touch points**

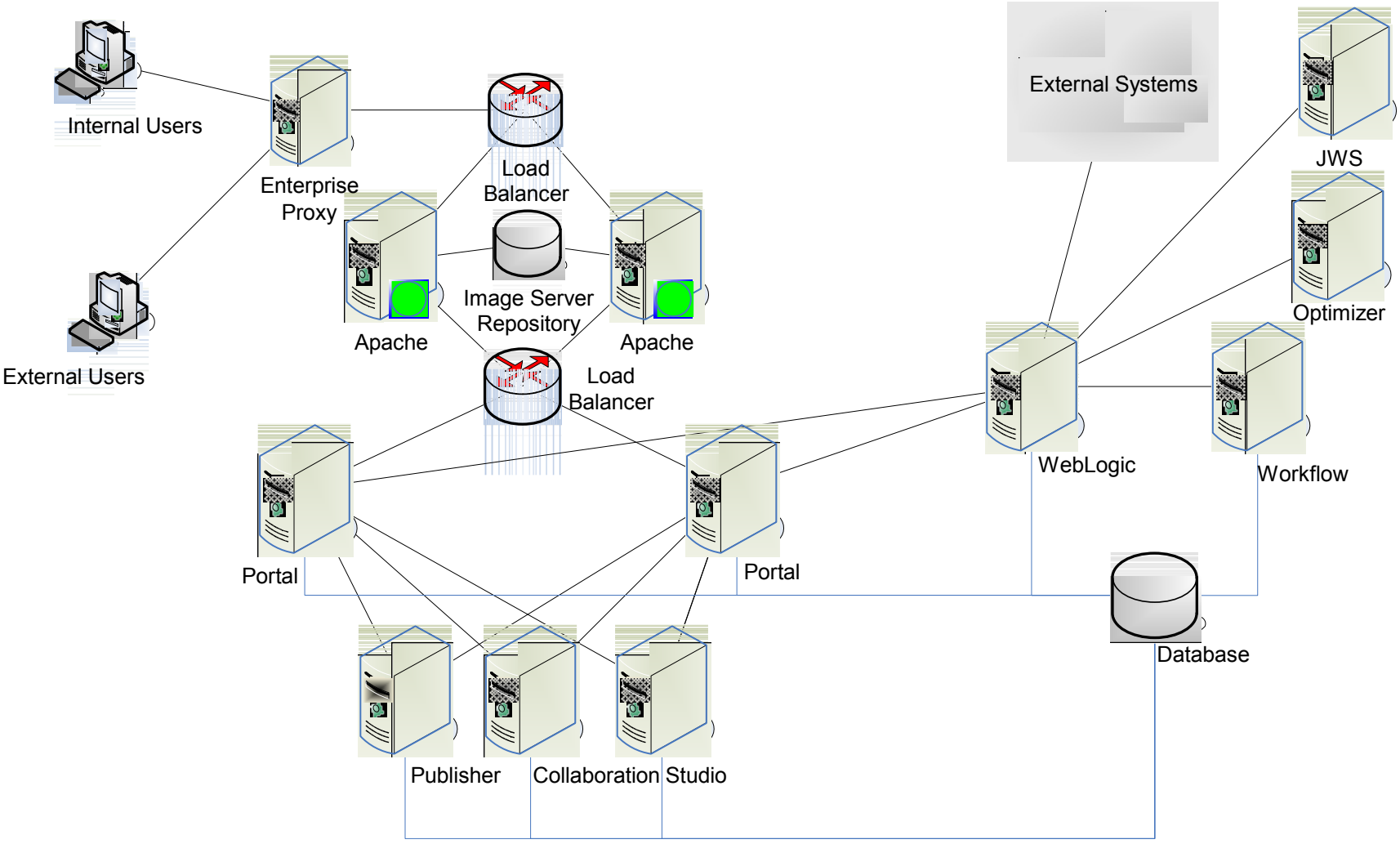
- Data Architecture Principles
- Conceptual Data Schema
- Data Services discovery meetings with EA team members

- Identified opportunities for improvement and provided Data Management Guidelines and Recommendations

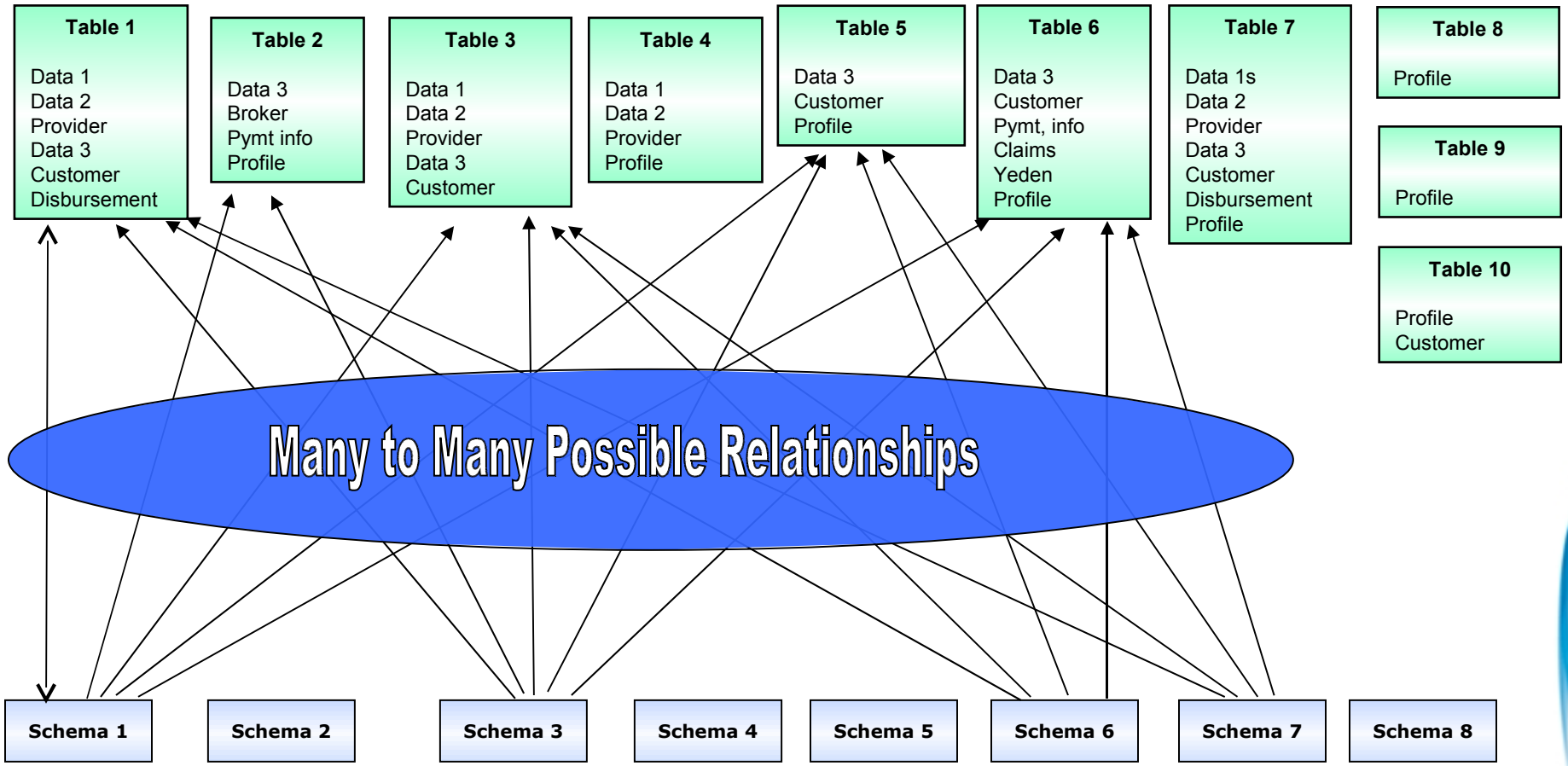
- Data Architecture should consolidate data, provide consistent schemas, classify data, and abstract data references & physical storage through

Current Architecture

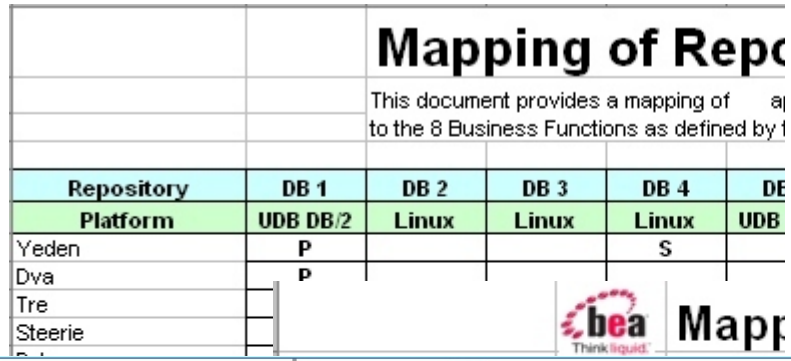
Sample Depiction

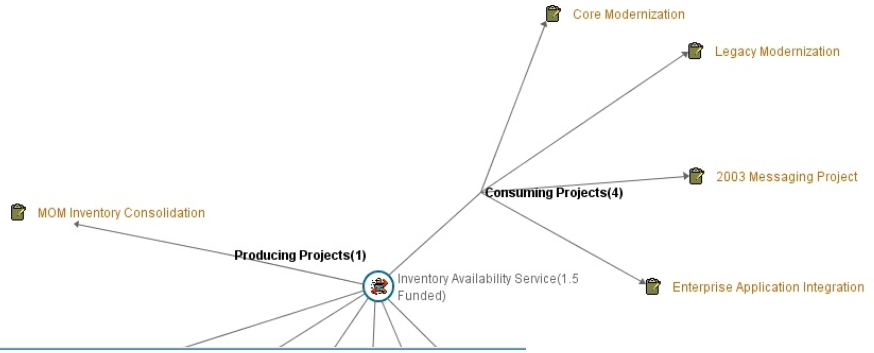


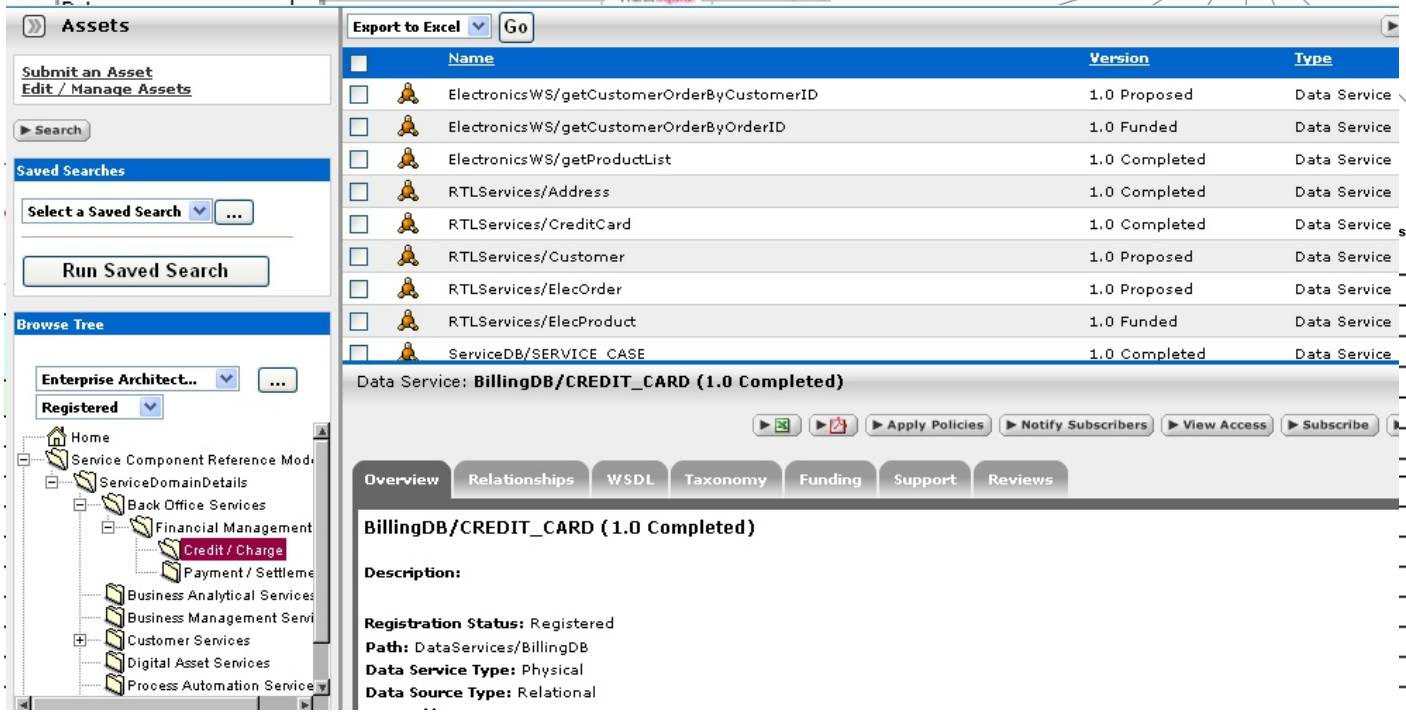
Reuse Example for Data Services



Reuse Example for Data Services







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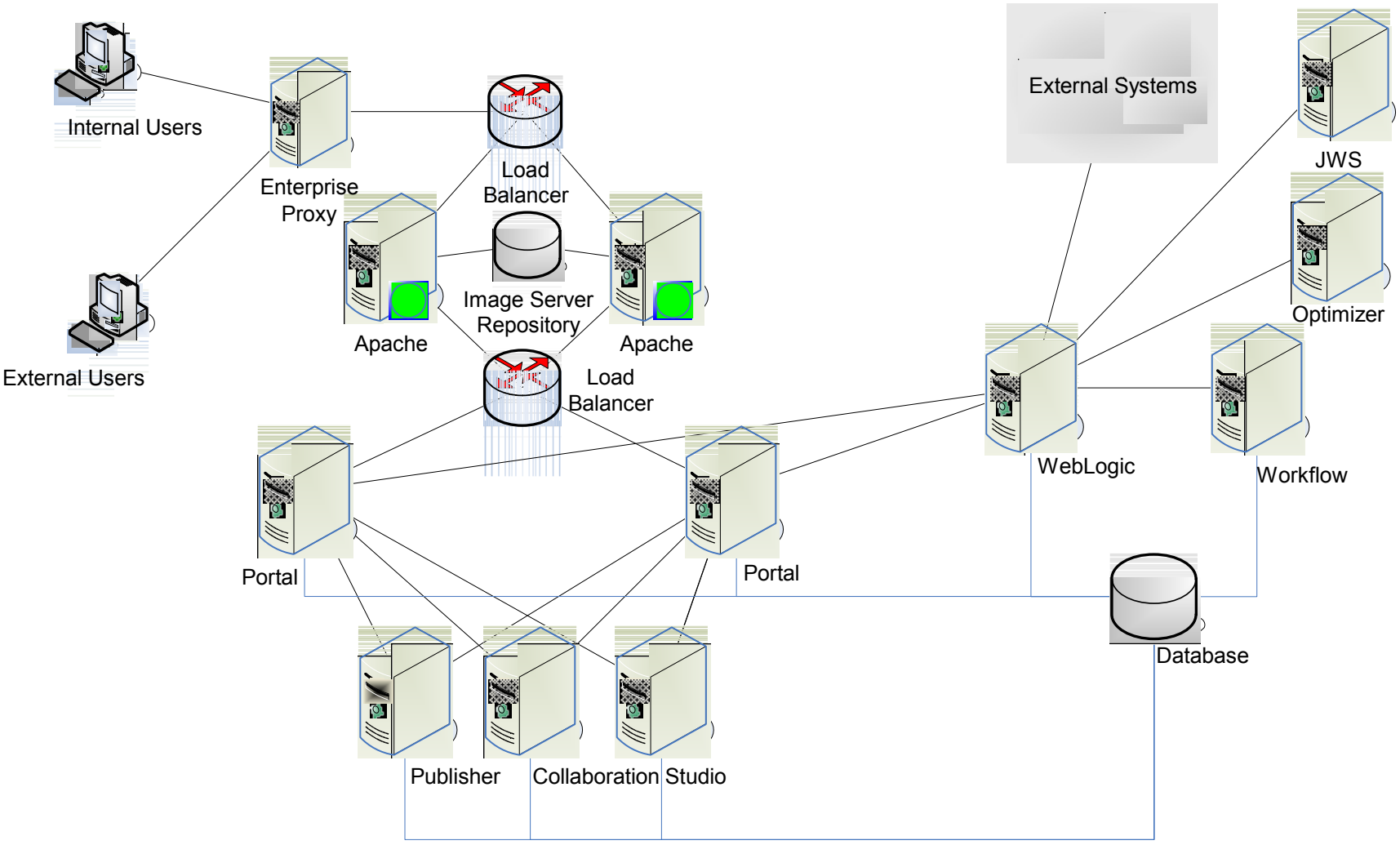
Application Architecture
Accomplishments

- **Application Architecture Principles**
- **Took inventory of applications** for 8 business functions
- **Identified candidates for reusable enterprise services**
  - **Bottom-Up Approach**:
    - Documented details and decomposed existing applications into major components, modules, and feature sets.
    - Identified candidates for reusable enterprise services and mappings to 8 business functions.
    - Applied requirements for Data Architecture and Security Architecture
  - **Top-Down Approach**:
    - Identified new service candidates, common services, and shared business services for the 8 business functions.
- **Application Architecture Schemas**
  - **Place System Schemas** (for 8 business functions)
  - **Process Systems Schemas** (for 8 business functions)
  - **Time Systems Schemas** for 8 business functions

Current Architecture



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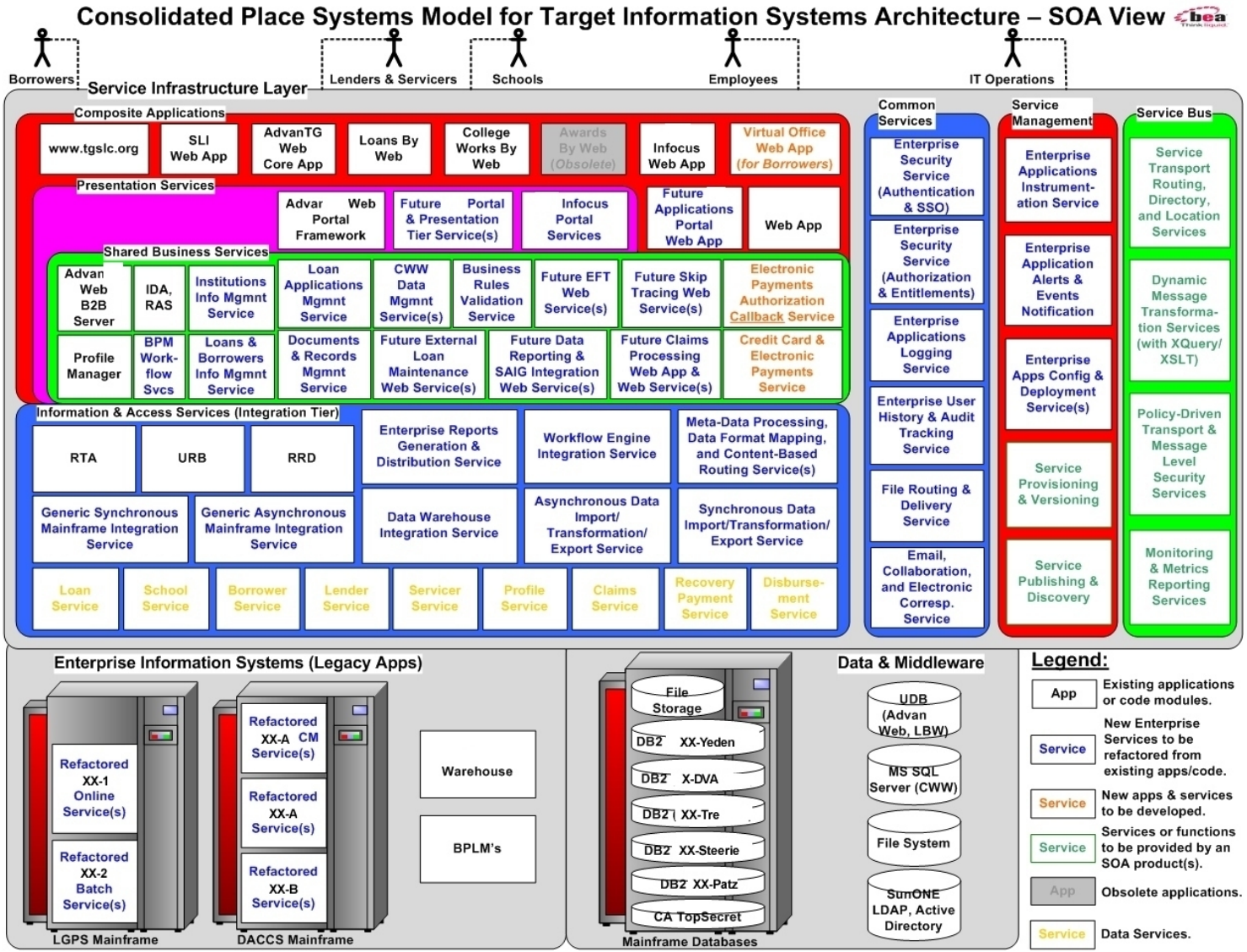
Application Architecture

Place Systems Schemas



Application Architecture

Place Systems Schemas

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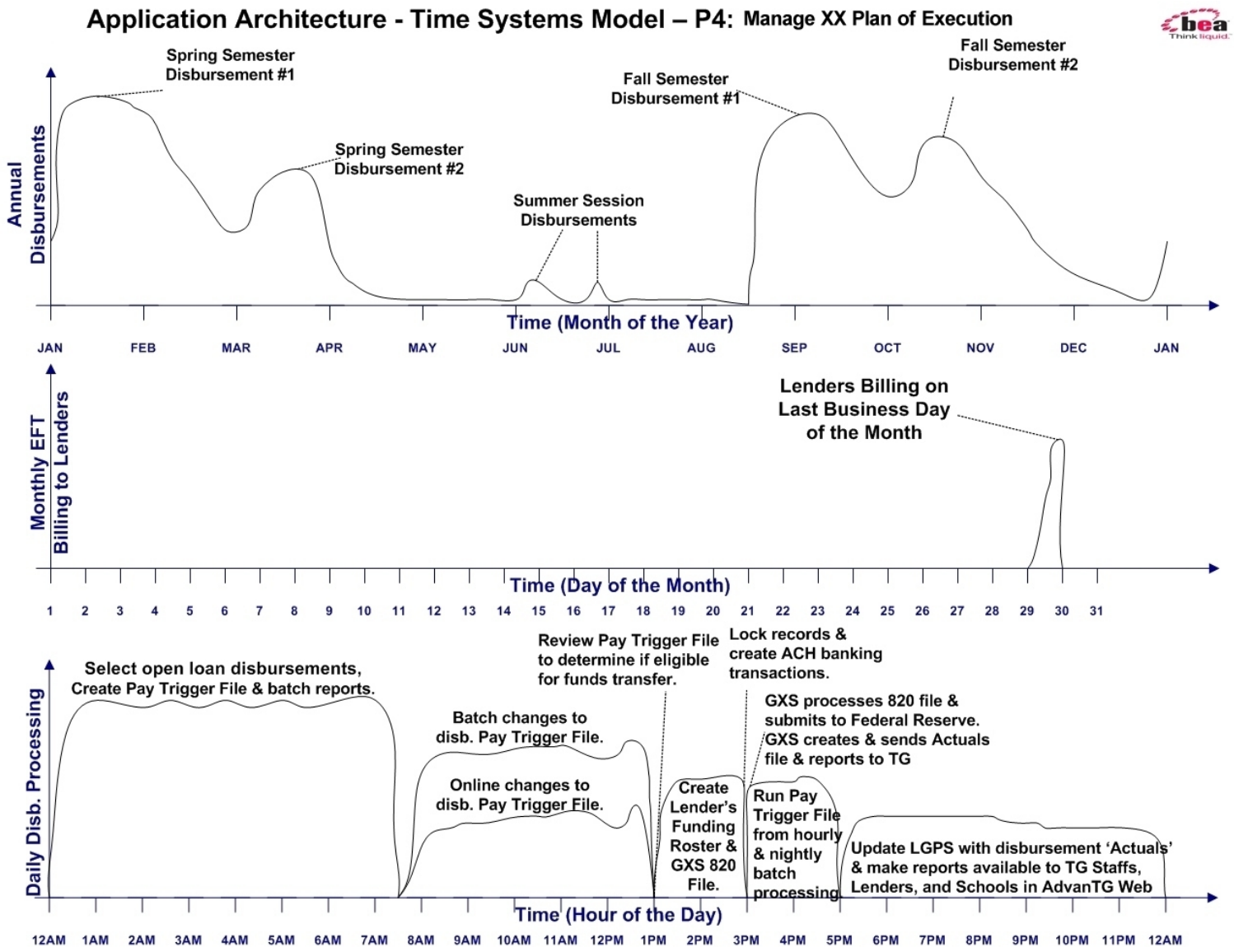
Application Architecture

Time Systems Schemas



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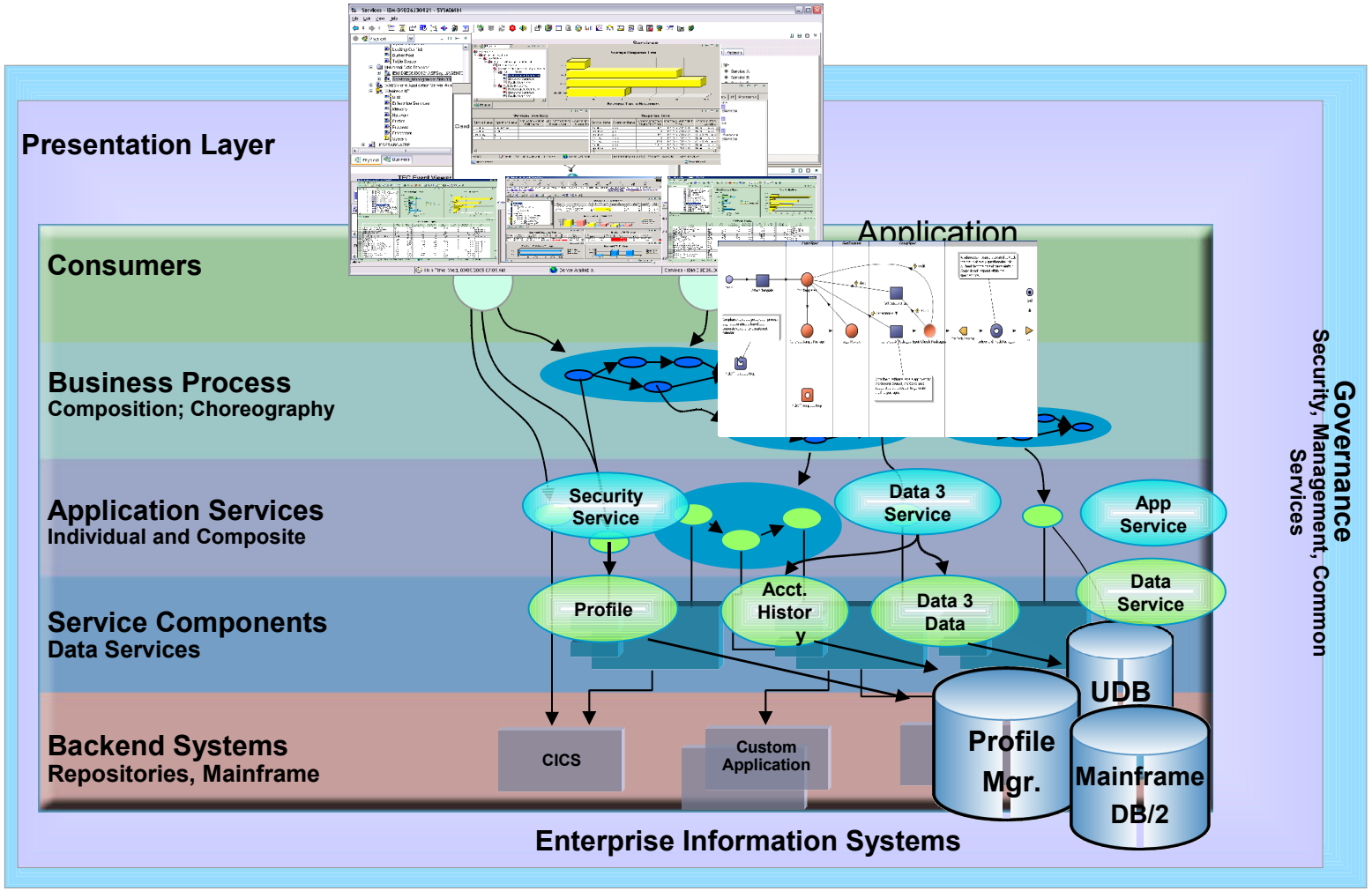
Application Architecture
SOA Reference Architecture

- Target Architecture can leverage SOA Products for design, development, deployment, hosting, and maintenance of SOA-based services in the XX Target Technology Architecture



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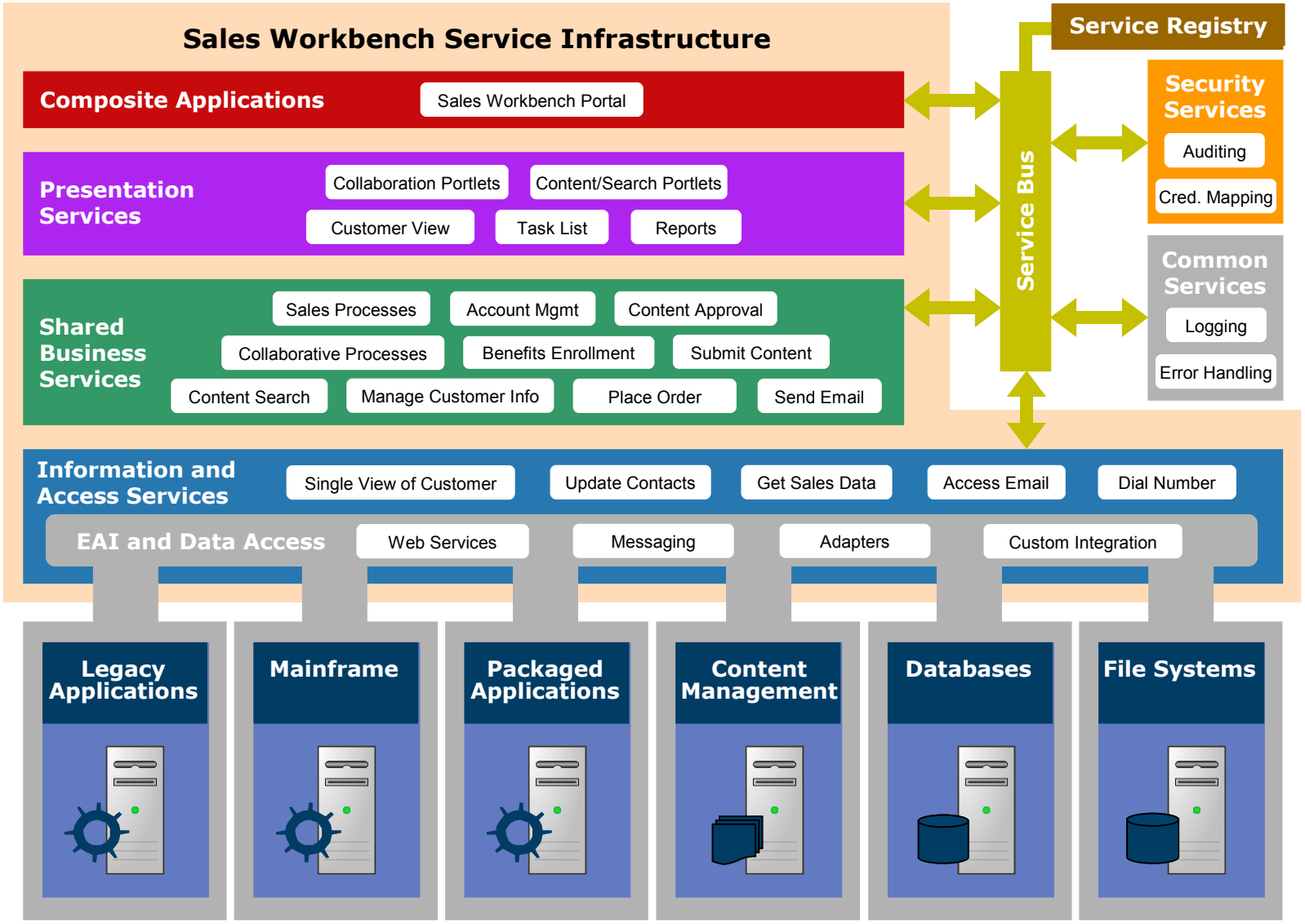
Technology Architecture
Accomplishments

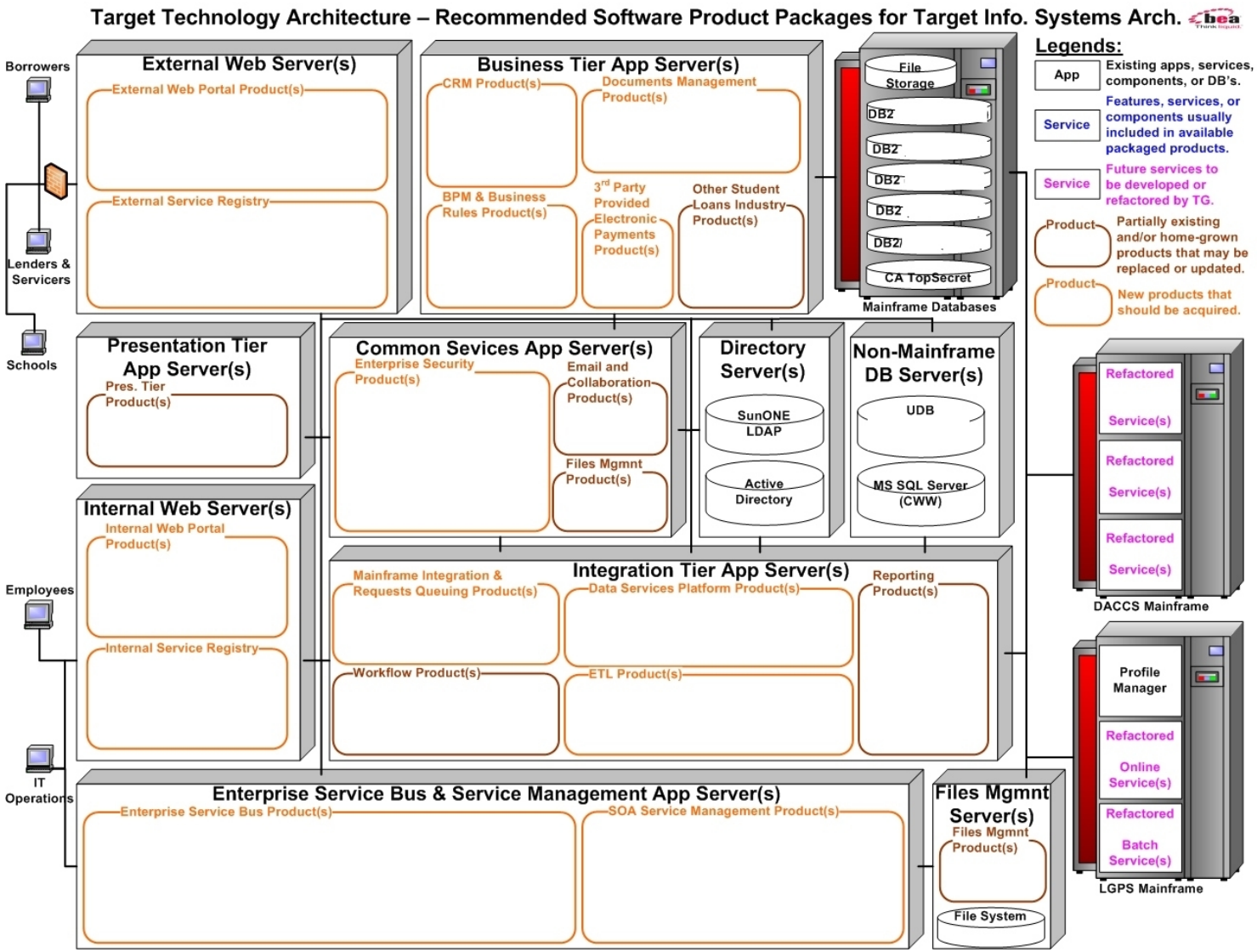
- **Technology Architecture Principles**
- **Documented current Technology Architecture** (software, hardware, network topology) for the 8 business functions.
- **Identified Architecture Building Blocks** for enterprise reuse
- Created an **SOA Reference Architecture** for the 8 business functions
- **Specific requirements for software products, hardware, and network topology** needed to support the SOA Reference Architecture
- **Networking View** and **Communications View** for the XX Target Technology Architecture

Technology Architecture

Sample Reference Architecture



Technology Architecture



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Bringing It All Together

- Identify implementation (budgeted) projects
- Decide on approach (bottom up vs. top down)
- Decide on a strategy (Build vs. Buy vs. Re-Use)
- Assess priorities (resources, budget, products, etc.)
- Identify dependencies
- Cost/benefit analysis
- Risk assessment
- Monitoring and Metrics – Manage what you measure
  - Defines architecture constraints on implementation projects
- **Produce an implementation road-map**

Extras

- **Simulation Exercise**
- Keeping benefits constant, look at return for second and subsequent implementations relative to the first implementation
- Current and Target Architectures Covered
  - Business, Application, Data, Security, Technology
- Communicate and educate continuously regarding the benefits of EA
- Senior Business and IT Management Involvement essential
- Cyclical Process.
- Make sure to capture metrics to monitor alignment and efficiency
- 3 Levels of Ownership.
  - Production, Development, Strategic Direction
- Adopt simple Governance Model people can actually use

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Thank You