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Enterprise Architecture at the USPTO

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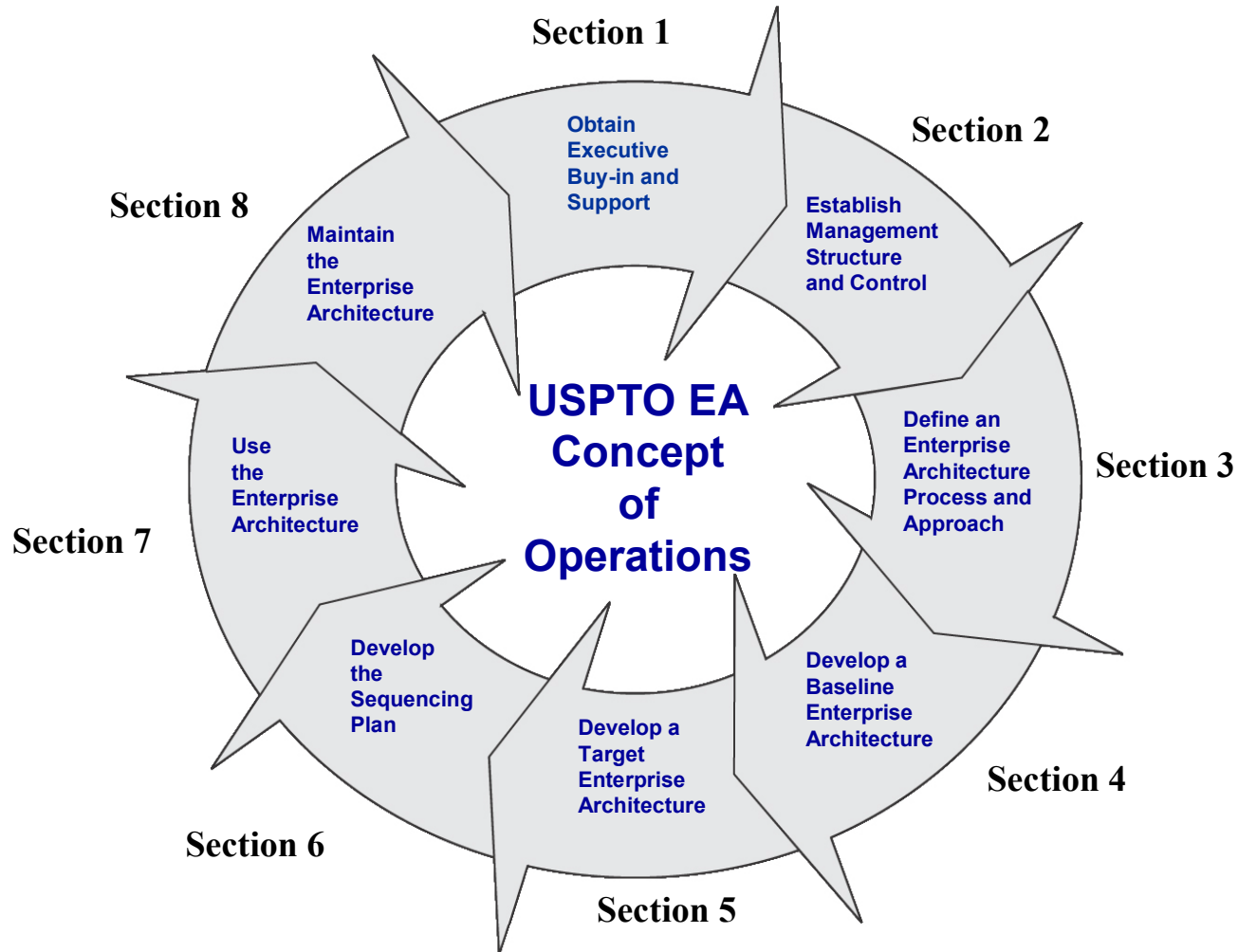
Reusable Architecture Patterns

A framework for Solutions Architecture within the FEA

Doug Bourgeois
Chief Information Officer
United States Patent and Trademark Office

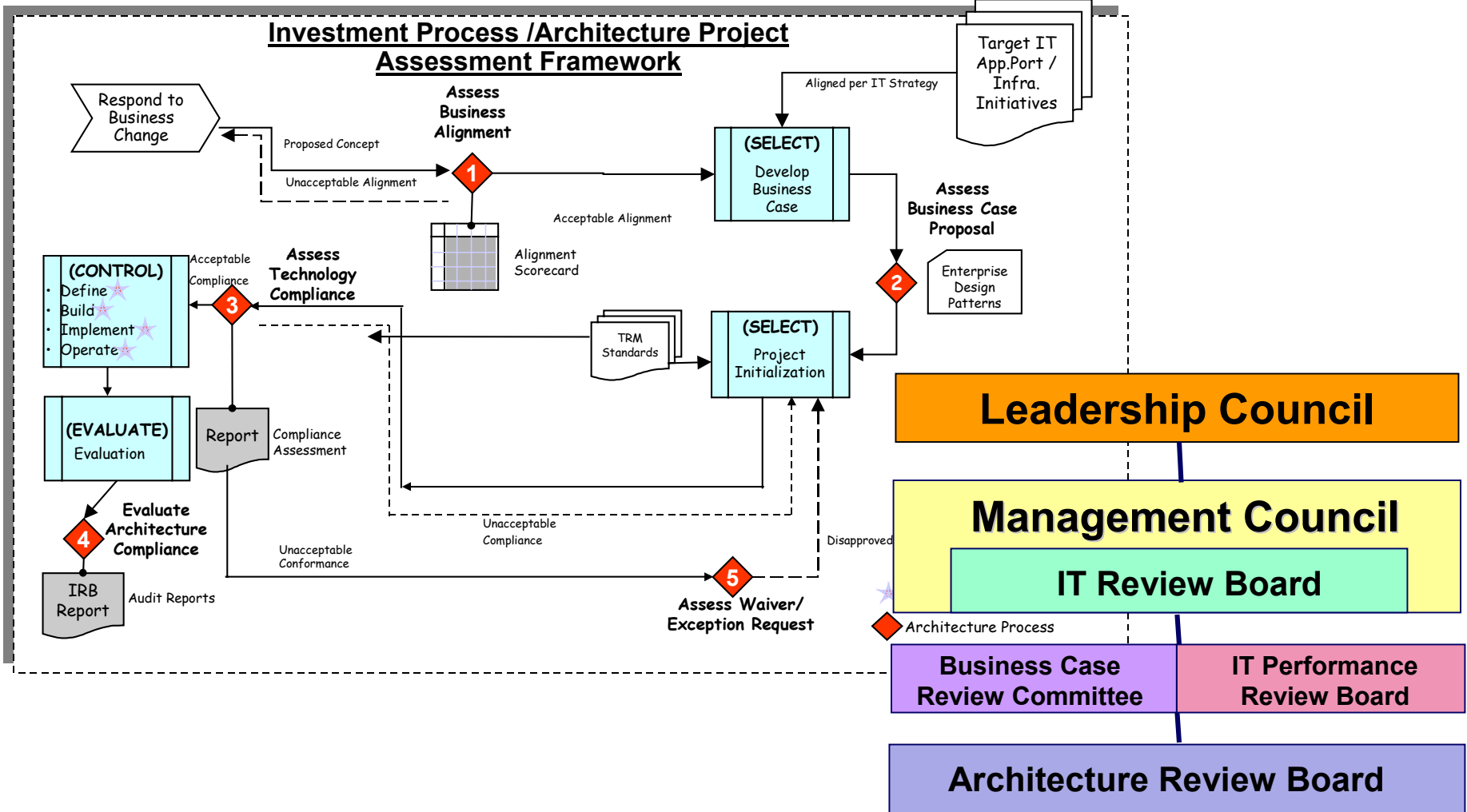
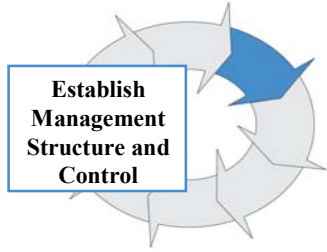


USPTO Approach to Enterprise Architecture





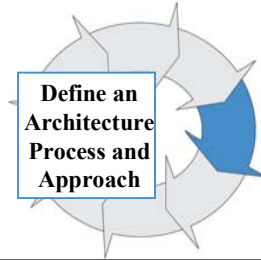
Establish Management Structure and Control





Define an Architecture Process and Approach

Define an Architecture Process and Approach



Business and Architecture Driver

USPTO Business Strategy

Strategic Information Technology Plan

USPTO CPIC and Organization Change Constraints

Cost Reduction/Service Improvement Opportunities

UEA Conops

UEA Communication Plan

UEA Maturity Assessment

UEA ARB Charter

UEA-Target Enterprise Security Architecture

Certification & Accreditation

USPTO Enterprise Architecture Framework - Business Reference Model

Patent

Trademark

Corporate

Policy

Dissemination

Infrastructure

Business Activity Model

Business Rules

Cross Functional Consolidation Model

USPTO Enterprise Architecture Framework - Service Reference Model

Conceptual Application Architecture

Conceptual Application Implementation Guideline

Solution Architecture Models (Portal, Wireless, Web Services, etc)

Reusable Assets Library Artifacts, Component, Web Services

Integrated Development Environment

Configuration Management

High Level Architecture

Quality Assurance

LCM

USPTO Enterprise Architecture Framework - Technical Reference Model

Service Access and Delivery

Service Framework

Infrastructure Platform

Policy & Standard

High Availability Architecture

Infrastructure Capability

Storage Infrastructure Architecture

USPTO Enterprise Architecture Framework - Data Reference Model

Data Management Plan

Enterprise Data Repository

Enterprise Data Architecture

Electronic Records Management

Data Warehouse Architecture

Data Standardization

Pattern for E-Business

Balanced Scorecard

USPTO Performance Reference Model

USPTO Security Reference Model

USPTO Enterprise Architecture Portfolio

USPTO Enterprise Architecture Portfolio

USPTO Security Reference Model

Unified Modeling Language (UML)

Pattern for E-Business

USPTO Performance Reference Model

Policy, Procedure and Guideline



Develop a Baseline and Target Enterprise Architecture

Develop Baseline Enterprise Architecture

Develop Target Enterprise Architecture

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Library

Title	Author	Modified
AETS's Priority Project List	dsantosa	07/11/2003
The Chief Architect's Recommended Reading Material This page contains recommended reading materials (e.g., articles, white papers, research) about Enterprise Architecture topics. Reading Material Description Cutter Consortium's Executive Summary - Applying Enterprise...	dsantosa	06/08/2003
USPTO Enterprise Architecture Reference Model Zoom1 slides. Slide number 1.	dsantosa	03/24/2003
Volume 1: UEA - Business Architecture This page contains work products (a.k.a. Performance Reference Model (June 2003	dsantosa	05/04/2003

Volume 2: UEA - Data Architecture
This page contains work products (a.k.a. released the following key USPTO Enter

Volume 3: UEA Applications Architecture
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Volume 4: UEA - Technology Architecture
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Volume 5: UEA - IT Security Architecture
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Volume 6: UEA - Center of Excellence
This page contains work products related product: Chapter 2 is described below. T

Volume 7: UEA - Oversight and Outrea
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Volume 3: UEA Applications Architecture

dshearer, 05/04/2003 - 03:47 PM

This page contains work products (a.k.a. artifacts) related to the UEA Applications Architecture.

AETS - Office of Applications Architecture and Services has officially released the following key USPTO Enterprise Architecture (UEA) work products: Chapters 2, 3, 4, and 5 are described below. PDF versions also available below:

USPTO Enterprise Architecture (UEA) - Volume 3 - Applications Architecture

Volume 3 - Work Products	Description
Chapter 1: UEA Service Component Reference Model (SRM) (currently being developed)	The USPTO-level SRM based on OMB FEA-PMO Guidance. (currently being developed)
Chapter 2: UEA - Enterprise Applications Integration (EAI) Strategy	Chapter 2 lays out the USPTO's high-level EAI strategy.
Chapter 3: UEA - EAI Architecture Implementation Guide	Chapter 3 provides implementation concepts and guidance for the USPTO EAI Architecture.
Chapter 4: UEA - Concept Applications Architecture	Chapter 4 presents the UEA Concept Applications Architecture that provides a basic schematic for development solutions.
Chapter 5: UEA - Concept Applications Architecture Implementation Guide	Chapter 5 provides implementation concepts and guidance for making the UEA Concept Applications Architecture a reality.

You can download any of the files below by dragging them to your Windows desktop. To open a file for reading, double-click it.

File Name	Size	Modified
Vol 3 - Chapter 2 - UEA Enterprise Application Integrati...	105KB	3/16/2003 10:20:09 AM
Vol 3 - Chapter 3 - UEA - EAI Implementation Guide (Ma...	664KB	3/16/2003 10:30:35 AM
Vol 3 - Chapter 4 - UEA - Concept Applications Architec...	369KB	3/16/2003 10:42:20 AM
Vol 3 - Chapter 5 - UEA - Concept Applications Architec...	405KB	3/16/2003 11:05:33 AM

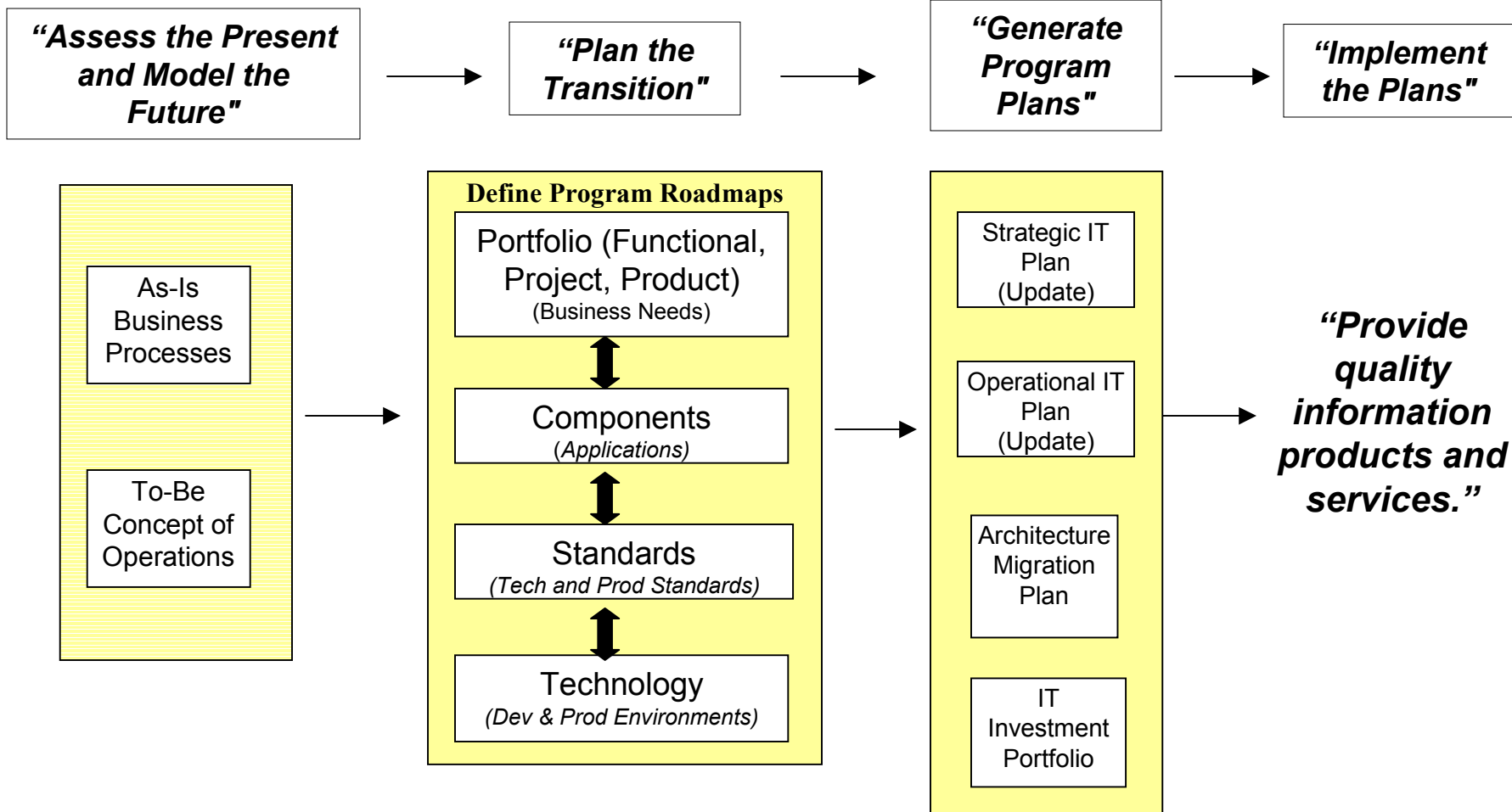
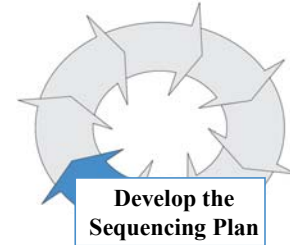
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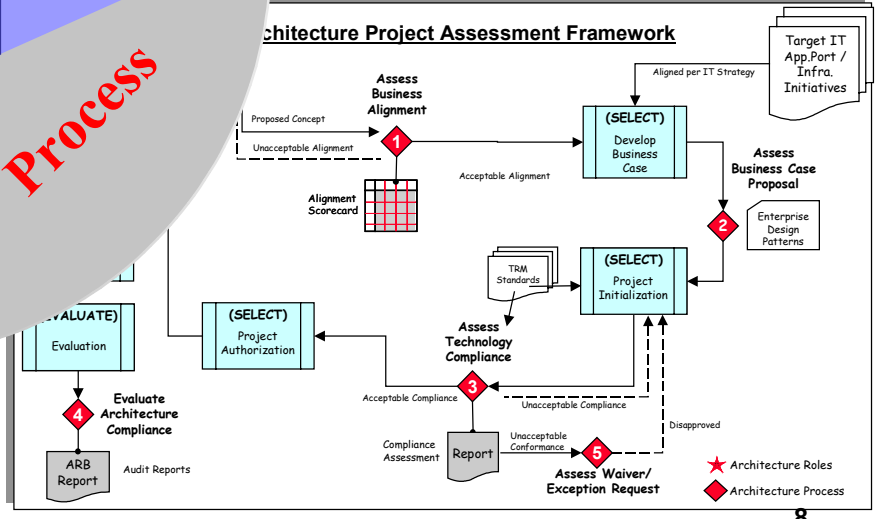
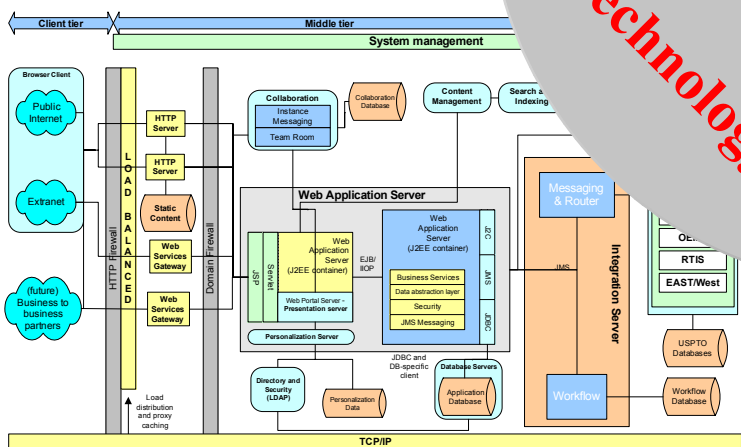
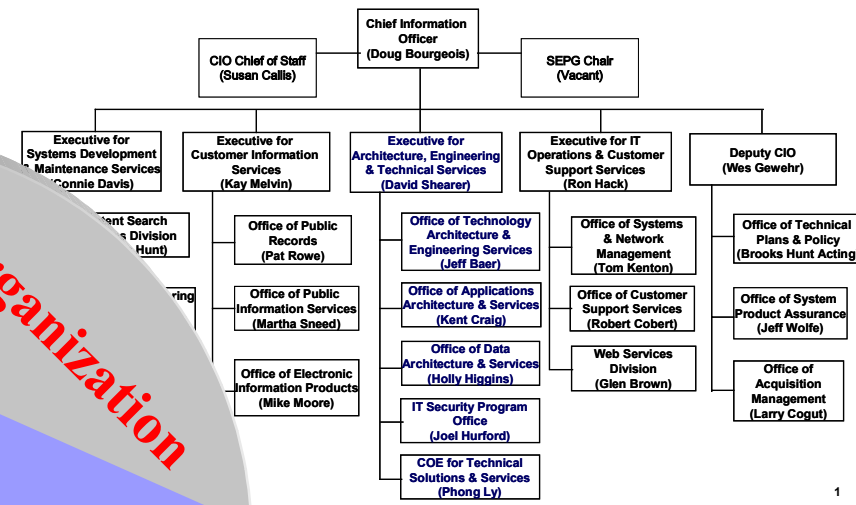
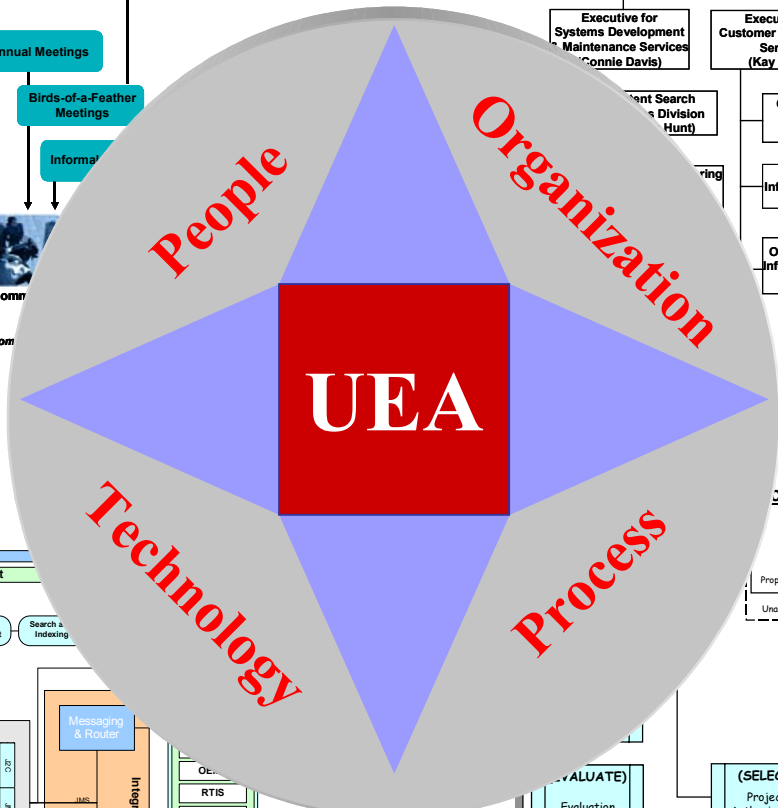
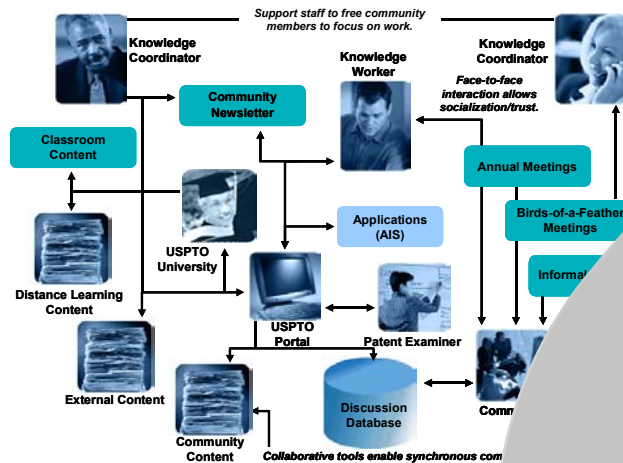
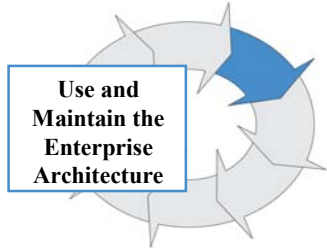
Develop the Sequencing Plans

USPTO Sequencing Plan Strategy



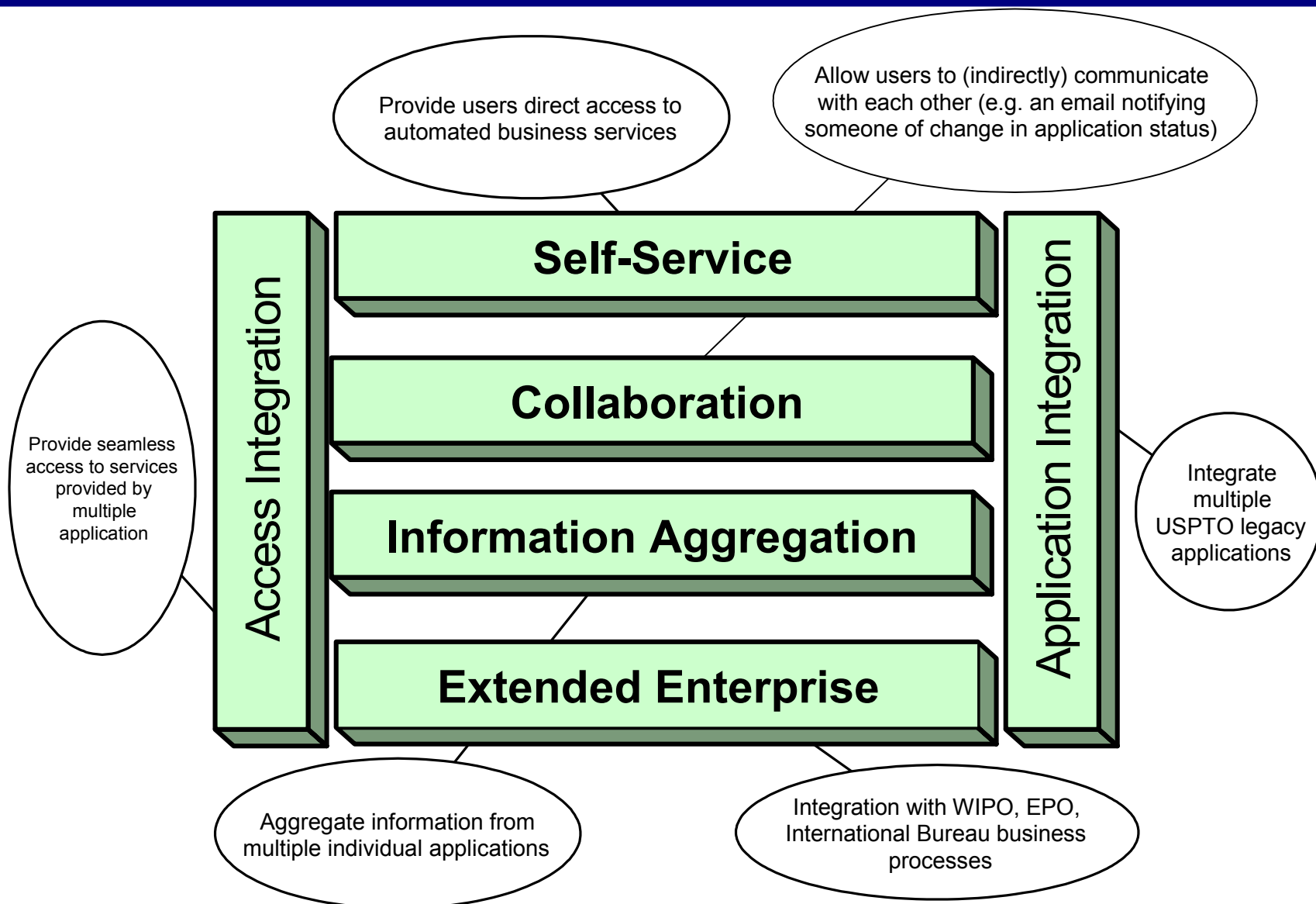


Use and Maintain the Enterprise Architecture





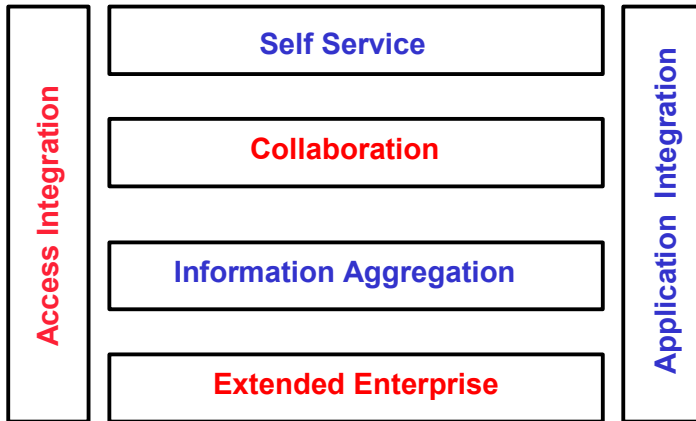
Solutions Architecture Example: Using the Patterns for e-business, we identify the appropriate architecture patterns required for the solution.



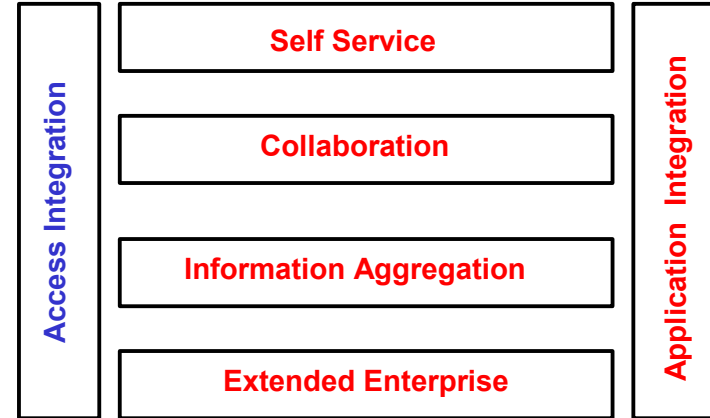


Composite patterns represent a combination of business patterns which together form a specific solution.

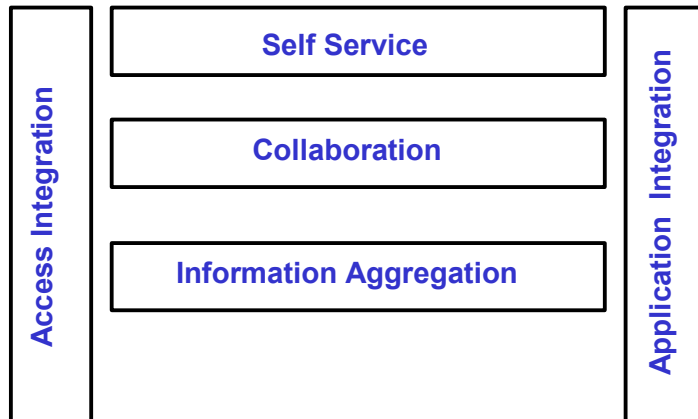
Composite Pattern for Electronic Commerce Solutions



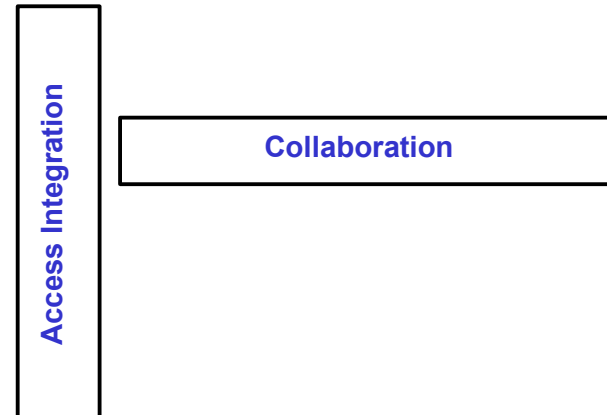
Composite Pattern for Portals



Composite Pattern for Enterprise Intranet Portal



Composite Pattern for a Collaboration ASP

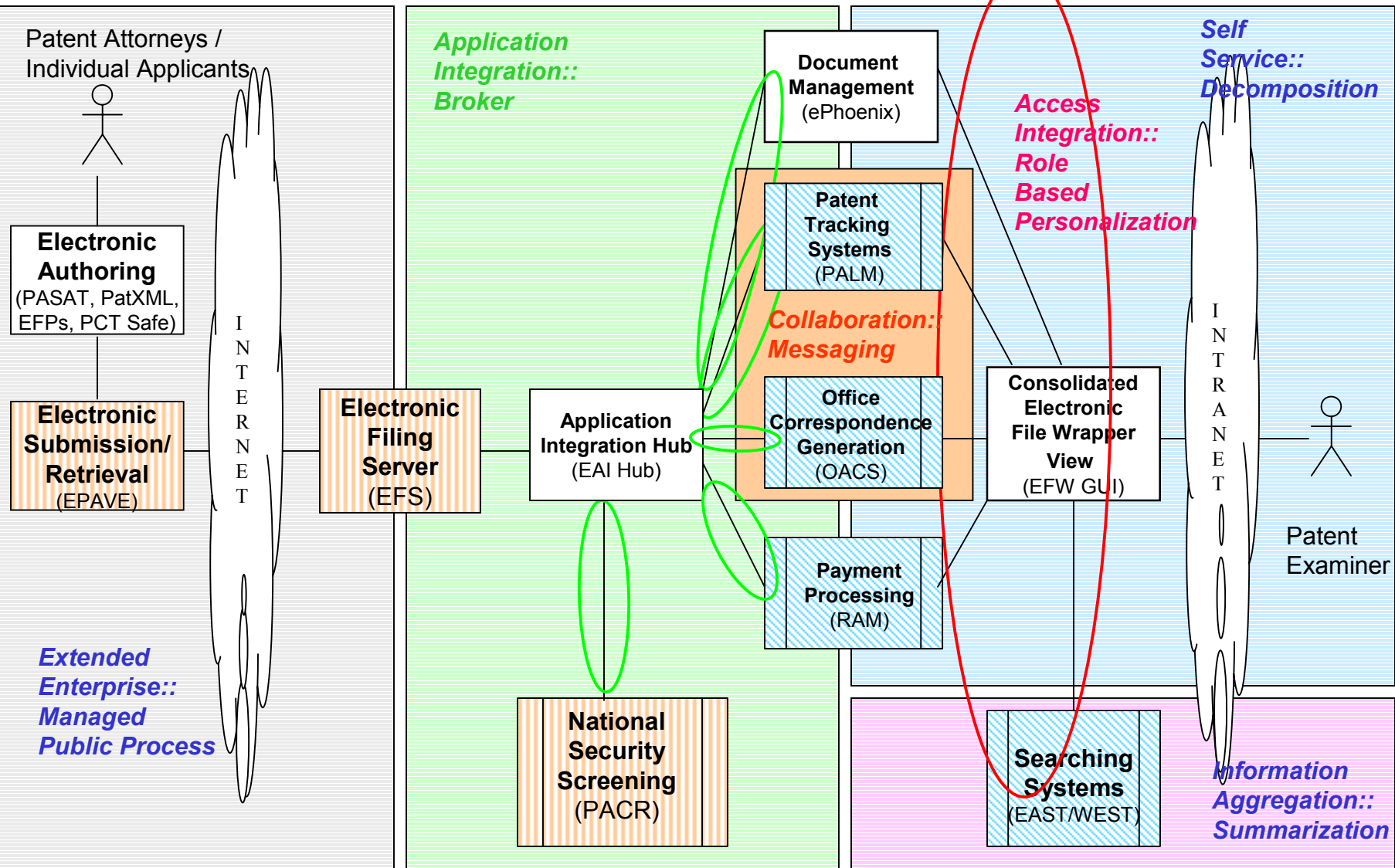


Blue – Mandatory Business Patterns

Red – Optional Business Patterns - Variations

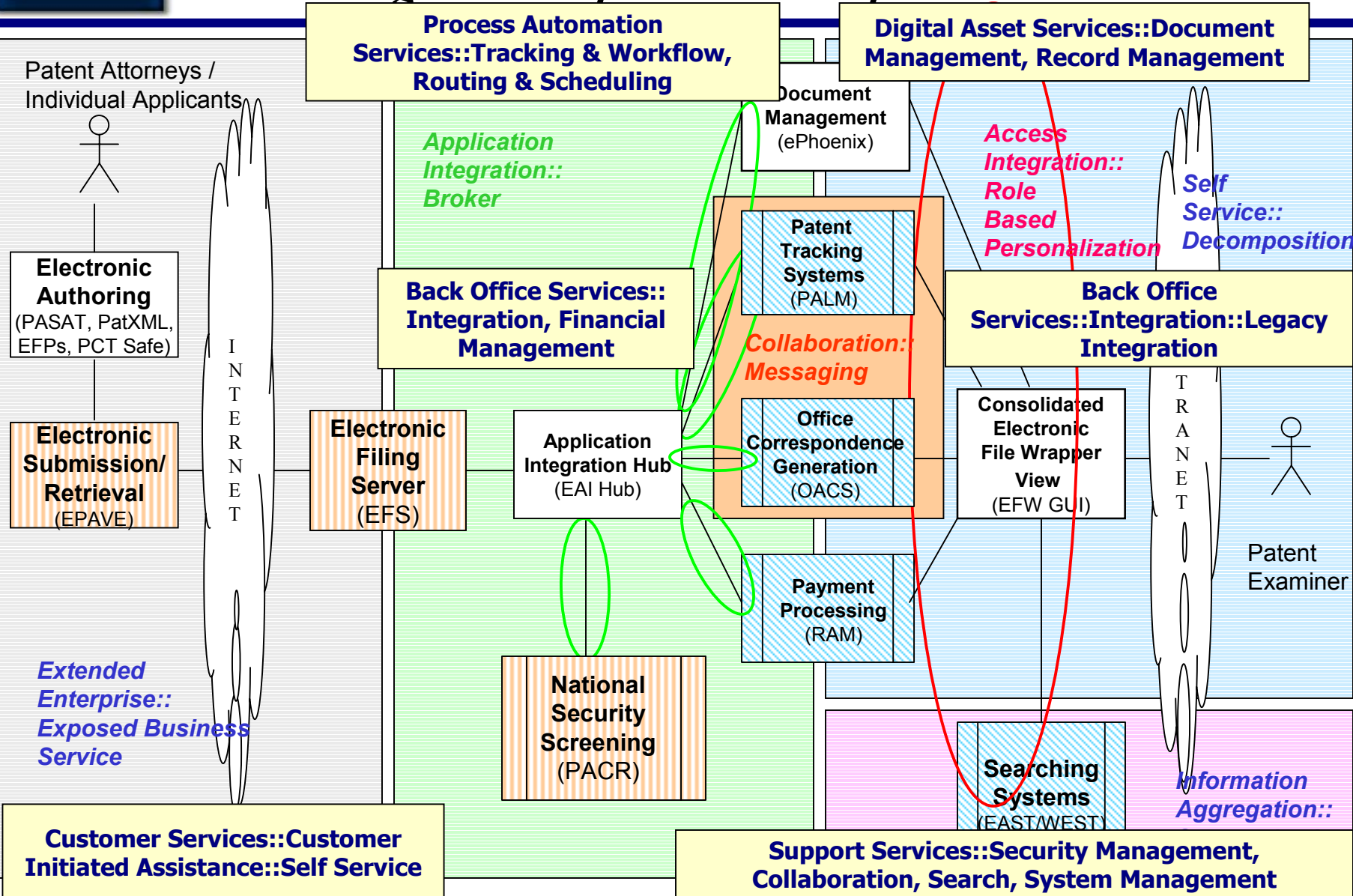


This Solution Overview Diagram for the Patents Electronic Government strategic initiative consists of a composite set of reusable architecture patterns.





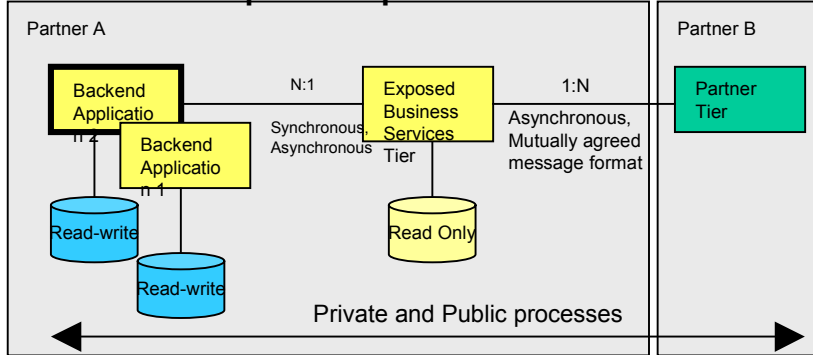
The reusable architecture patterns can be mapped back to the FEA SRM to indicate clear alignment and integration as well as to guide component development and reuse decisions.



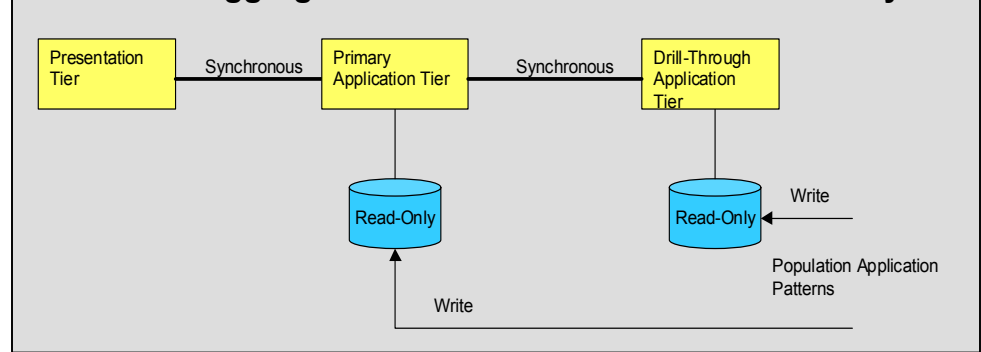


Each application pattern can be depicted in an n-tier solution diagram which serves as a transition step towards the development of the logical run-time topology.

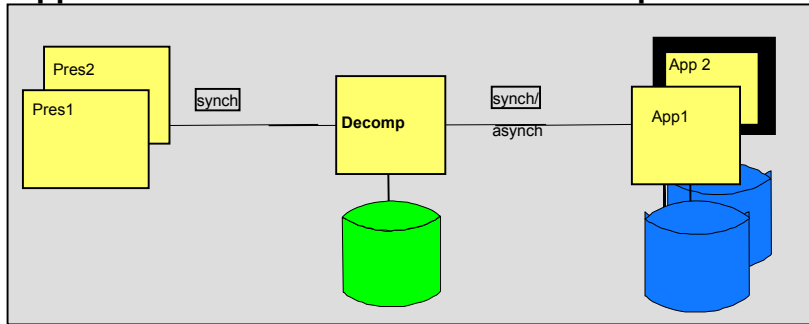
Extended Enterprise::Exposed Business Services



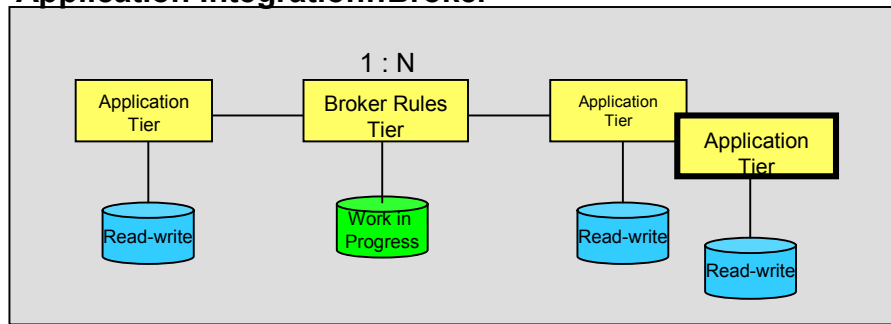
Information Aggregation::Information Access – Read Only



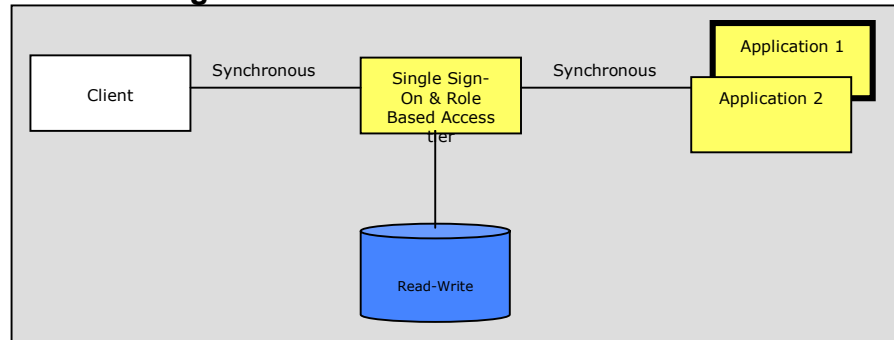
Application Pattern::Self Service::Decomposition Tier



Application Integration::Broker

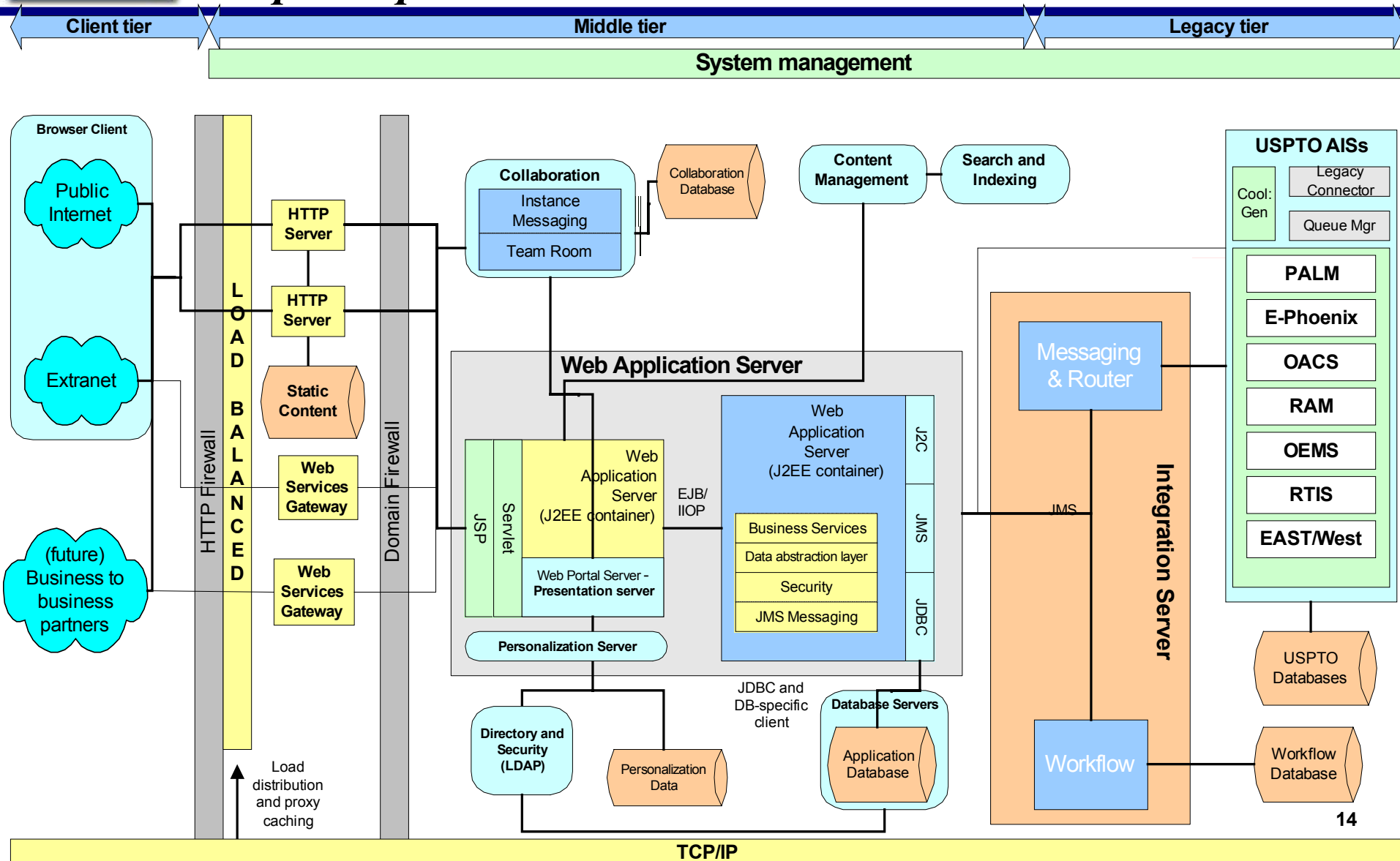


Access Integration::Role-Based Personalization



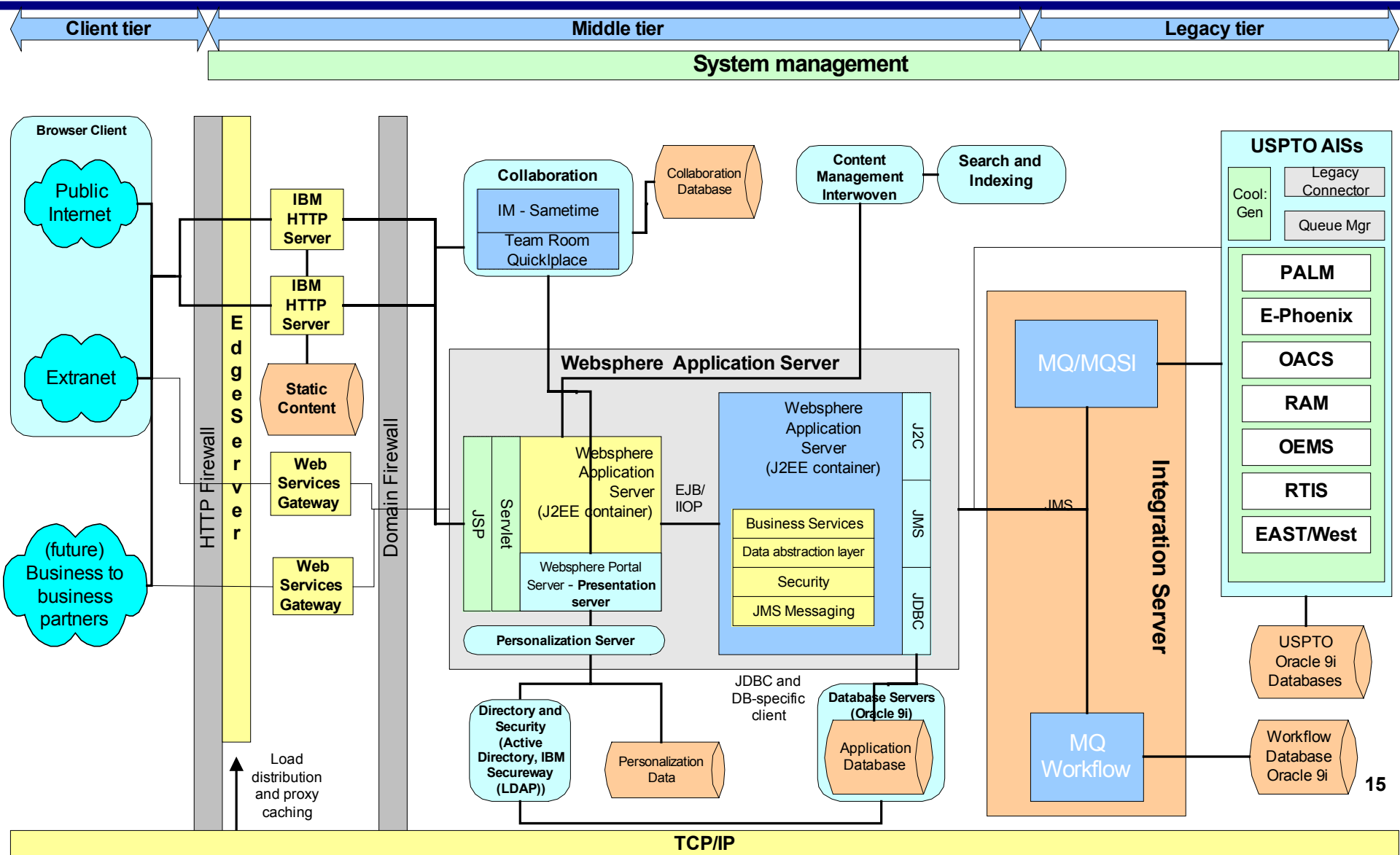


This view depicts the logical run-time topology, which provides a complete solution architecture that adheres to the composite patterns.





This view depicts the solution architecture mapped to the specific products and standards from the USPTO TRM.





Summary and Conclusions

- **USPTO utilizes a reusable solution architecture framework to avoid EA “shelf-ware”.**
- **The solution architecture approach jump started the USPTO EA implementation.**
- **EA facilitates business transformation and requires transformation of the IT organization.**
- **Without a governance process, EA will fail to deliver.**
- **If EA establishes the standards and targets, then solution architecture delivers them.**
- **A solution architecture framework can integrate with the FEA SRM.**