Objectives

- Describe the limitations of legacy and best practice SDLC methodologies for Application Server-Centric Development
- Suggest an improved approach
Limitations of Legacy SE Methodologies

- Focused on software solutions development
- Driven by processes
  - Not driven by architecture and/or best practices altogether (other than initially)
- Focus is on scope, time, cost, and quality
  - Customer input sparsely considered
- Metaphor:
  - “an algorithm without a centralized data structure to operate on”

Limitations of RUP Approach

- Focused on software solutions development
- Driven by best practices
  - Driven by workflows (and tools)
- Focus is on scope, time, and cost
  - Customer assesses quality and drives change
  - Deliver quality software on-time & on-budget
    - By enforcing a best practice process that manages change
    - By following a PDCA (Plan-Do-Check-Act) approach were individuals play various roles in the overall process
- Gap between Architecture-Driven approach and Use-Case Driven Modeling
  - A “top-down” architectural approach
Going from business requirements to use cases requires non-trivial input that is hard/impossible to predict.

**Limitations of ASDE Approaches**

- **Focused on software solutions development**
- **Driven by best practices**
  - Driven by collaboration between individuals
    - Interactions: customer/project team & intra-project team
  - Driven by change
- **Focus is on quality (test-driven), time, and cost**
  - Customer drives the scope
  - Deliver optimal quality software on-time & on-budget
    - By limiting the scope to facilitate change
    - By following an MOB approach were individuals assume full leadership
- **Architectural re-factoring becomes a nightmare**
  - A “bottom-up architectural approach”
Agile Pattern-Driven Architecture (PDA) Approach

- Focused on business solutions development
  - SDLC stands for “(Business) Solution Development LifeCycle”
- Seed the Architecture-Driven approach so it does not operate top-down or bottom-up
  - Integrate the Architecture-Driven approach into standard and business specific architecture-driven workflows
    - e.g., AKDAR, GDM, SBAM, PEM, LSS (BPM pattern), CBM (SOA pattern)
  - Use an agile workflow-driven approach rather than rigid processes
  - Use architecture-driven approach from business strategy all the way down to product maintenance
  - Subject individuals to ongoing transformation processes
- Flexible RUP-like or ASDE-like focus and introduces problem pattern set as an additional variable
- Need to deal with individuals reaction to the constant need to adapt to change
  - Build conducive environments (e.g., game-metaphor, etc.)

Enterprise Strategy and Business Solutions Alignment Problem
PDA Solution: Enterprise Architecture Management

"Focusing on Business Model Improvements while Maintaining Enterprise Alignment"

Enablers 2-5 provide the underlying infrastructure that supports Enabler #1 and EAM

Strategy Enablement Process Patterns and Artifact Types

"Enabler #1: Enterprise Specific Organizational/Location Model Implementation"
Strategy Enablement Process Patterns Categories
Enabler #1: Support for Both Enterprise and Project Strategy Enablement

- Enterprise Strategy Enablement Process Patterns Categories (i.e., orange puzzle blocks in the previous slide)
  - Enterprise Strategy
    - Handled by the Strategic Project Office (SPO)
  - Enterprise Governance
    - Handled by the Strategic Project Office (SPO)
  - Architecture Integration
    - Handled by the Enterprise Architecture Review Board (ARB) in collaboration with the SPO

- Project Strategy Enablement Process Patterns Categories (i.e., light blue puzzle blocks in the previous slide)
  - Project Execution Process Patterns Category
    - Includes Project Strategy, Requirements Engineering, and Business/Application/Information/Technology Architecture process patterns sub-categories

Strategy Enablement Process Patterns Categories (cont.)
Enabler #1: Support for Both Enterprise and Project Strategy Enablement

- EAM integrates Enterprise and Project Strategy Enablement process patterns into a “whole that is greater than the sum of its parts”
- This is accomplished by leveraging process pattern integration and artifact traceability and reusability across process patterns from the strategic level all the way to the tactical project implementation
- This explains why Enablers #3 and #4 (i.e., Framework and Tools) are critical to support EAM process patterns and artifacts practically within the Enterprise
Strategy Enablement Process Patterns Detailed

Enabler #1: Provides a Generic Set of Activities that Leverage Well Defined Artifact Types

Strategy Enablement Artifact Types Detailed

Enabler #1: Artifact Type Implementations Are Either Enterprise or Project Specific

- Artifact types are typically specific to individual process patterns and/or may be shared by multiple process patterns
  - The Project Artifacts shown (in Pink) here on the left are specific to the Project Execution Process Patterns Category
  - Enterprise Artifacts are Consumed by Enterprise Strategy Enablement Process Patterns
  - Project Artifacts are Consumed by Project Strategy Enablement Process Patterns
  - Portfolio Management Recommendations May Become "Business Strategy and Innovation Requirements"
  - Process Pattern Implementations Rely On Enterprise Specific Methodologies
Strategy Enablement Process Patterns Partially Illustrated

Enablers #1: Process Pattern Implementations Rely On Enterprise Specific Methodologies

- Enterprise Strategy Process Patterns
  - Strategic Goals Elicitation
    - e.g., NetPromoter Modeling
  - Business Patterns Elicitation
    - i.e., Selection of Business Reference Architectures (e.g., SOA + Business Process Management), and associated Business Architecture Patterns (e.g., Business Activity Monitoring, Business Rules Management, etc.) that best match the forces identified within a given business problem domain.
  - Project Roadmap Definition
    - i.e., Strategic Project Roadmap Definition process used to generate the Enterprise Strategic Project Roadmap

- Enterprise Governance Process Patterns
  - Enterprise Business Architecture
  - Best Practice Maturity Assessment
  - Enterprise Governance Definition
  - Project Governance Definition

- Architecture Integration Process Patterns
  - Best Practice Knowledge Base Management
  - Portfolio Management
    - i.e., Portfolio Management Process pattern should be considered as new process pattern features (new types of activities meant to create application and project portfolio documentation) that augment the Architecture Change Management process patterns of the TOGAF ADM
  - Technical Risks Assessment
  - Architecture Review, and IT Strategy Definition

- Project Roadmap Execution Process Patterns
  - e.g., Business/Application/Data/Technology process patterns sub-categories are currently being deployed in Enterprise via the “Hardening/Industrialization/PQS” offerings.

Extensible Framework and Best Practices Knowledge Base

“Enablers #2 and #3 (Sample)” – EAMF Framework Summary of Capabilities

- Extension of the TOGAF Industry Standard
  - http://www.opengroup.org/togaf/

- Implementation of Enabler #2
  - EAM-Extended TOGAF’s Enterprise Continuum
    - Business Pattern Oriented Architecture (POA) orientation
      - Extensible methodology based on business solution patterns
      - Extensible knowledge foundation based on best practices and ongoing strategies and business solution development
    - Artifact Traceability Focus
    - Agile Activity-Driven Approach
      - Solution Development Lifecycle agnostic
      - Solution-Driven Approach
      - Tool Agnostic Approach
Extensible Framework and Best Practices Knowledge Base

“Enablers #2 and #3 (Sample)” – EAMF Framework Summary of Capabilities

- Implementation of Enabler #3
  - EAM-Extended TOGAF’s ADM Process Patterns/Approaches
- Enterprise Implementations of EAM Includes:
  - Select subset of EAM process patterns and artifact types
  - Customized implementation of EAM Process Patterns that fit the Enterprise environment and leverage existing Enterprise approaches and assets
- Example:
  - Enterprise Portfolio Management Approach is based on the EAM Portfolio Management process pattern that is part of the Architecture Integration process pattern category
  - The implementation of Enterprise Portfolio Management Approach typically leverages Enterprise Blueprinting standards

Strategy Enablement From a Tools Perspective

Enabler #4 (Sample): TOGAF Framework Implementation is Enterprise Specific (Example Shown)
Incremental Iterative Enterprise Transformation Methodology

Enabler #5: CMMI-Compliant Implementation Recommended (Example Shown)

Transformation methodology needs to be applied iteratively to reach the desired level of Enterprise readiness established by sponsors upon the recommendation of experts. Flexible deliverables in projects may need to be conducted.

Sustaining operations at a given maturity level may not be possible due to changes in the process. Change management is an enabler of Best Practices or perception of customer optimism.

Example shown illustrates how the generic EAM Awareness-Desire-Knowledge-Ability-Reinforcement (ADKAR) change management methodology applies in the context of a Business Pattern-Driven Modeling process pattern (e.g., BPM improvement via Six-Sigma DMAIC).

Strategy Enablement At Work
Sample Business Non-Functional Drivers
(Web 2.0 Problem Space)

- Recognized benefits of building/enriching information through community participation
- Continuous improvement – N/W & H/W infrastructure
- Community focused innovation
- Maturing ways to connect to others through technology
- Priority shift – #1 priority is people
- Experience ‘True’ open web – Accept, express, react, inform, acknowledge
- Growing necessity of information access from anywhere and anyhow
- Rich User Experience – Need for engaging user
- Change is inevitable
- Awareness - information enrichment is collective responsibility
- Why restrict ourselves to Readable Web 1.0?
- Shift in thinking from individual contribution to collaborative participation
- Lessons from Dot Com burst

Sample Business Functional Drivers
(Web 2.0 Problem Domain)
Enterprise Architecture Management

EAMF Activities Integrate Seamlessly with the Company X Project Lifecycle
Improved Solution Planning/Implementation Approach

- Document Transformation methodology driven approach
  - Strategy Alignment Elicitation
    - Equivalent to strategic planning
      - i.e., planning at the level of a project set
  - Strategy Alignment Execution
    - Equivalent to project planning + SDLC
      - i.e., planning at the level of individual projects + project implementation
- Build a methodology Wiki & partially implement the enablers
- Apply transformation methodology approach to a sample problem domain for which a business solution must be found
- Final product is a wiki/report that focuses on
  - Methodology / methodology implementation / sample business-driven problem solution

Any Questions?