Software Engineering

Session 3 – Sub-Topic
Strategy Alignment Elicitation Methodology
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Presentation material partially based on textbook slides
Software Engineering: A Practitioner’s Approach (7/e)
by Roger S. Pressman
1. Strategy Alignment Elicitation Methodology
2. Practical Requirements Engineering
3. EAMF Strategy Enablement Aspects
Objectives

- Explain the Strategy Alignment Elicitation Approach
- Describe Requirements Engineering Activities
- Relate to Other Strategy Alignment Enablers
Transformation methodology needs to be applied incrementally to reach the desired level of Enterprise maturity established by sponsors upon the recommendation of experts (multiple iterations/projects may need to be conducted).

Sustaining operation at a given maturity level may not be possible due to: changes in the project roadmap, ongoing change requests, evolution of Best Practices, or perception of customer discontent.

**For BPM Improvements**, the maturity level may be assessed via BPMM and Six Sigma maturity levels.

For BPM Improvements, preparation involves champion training and Hoshin planning.

Conducting projects may involve ongoing organizational training and reviews.

Hardening involves a consolidation of the team in charge of Enterprise governance.
Awareness-Desire-Knowledge-Ability-Reinforcement (ADKAR)

- See [http://www.change-management.com](http://www.change-management.com)
- A goal-oriented change management model that allows change management teams to focus their activities on specific business results
- Model initially used to align traditional change management activities (e.g., communications and training) to a given result or goal during organizational change
Framework is used to handle change initiatives.

Change happens on two dimensions: the business dimension (vertical axis) and the people dimension (horizontal axis)

Successful change happens when both dimensions of change occur simultaneously.
Strategy Alignment Elicitation Methodology

- Inherits the characteristics of the generic transformation methodology
- Includes initiation, preparation, execution, hardening, and deployment phases
- Communications and training are the main change management activities encompassed by the family of Strategy Alignment methodologies
Strategic Alignment Elicitation Methodology vs. ADKAR

- Business need activity on the business dimension of the ADKAR framework
  - Involves identifying a business need or opportunity and defining the scope and objectives of a project
  - Handled as part of a Strategy Alignment Elicitation methodology
- Concept and design, implementation, and post implementation activities on the business dimension of the ADKAR framework
  - Handled as part of a Strategy Alignment Execution methodology
- ADKAR covers all Strategy Alignment Elicitation and Execution on its business dimension
- ADKAR can be used to handle the change management activities required as a result of Strategy Alignment projects
  - ADKAR provides an excellent complement of managerial activities in addition
- ADKAR may be viewed as the meta-change management methodology from which the Generic Transformation Methodology is derived
Both inherit the characteristics of the generic transformation methodology

**Strategy Alignment Elicitation Goal**
- Help gather a prioritized project map based on current strategic vision (i.e., implements “EBAM” Project Roadmap Definition process pattern)
- More conceptual

**Strategy Alignment Execution Goal**
- Implement the vision
- More practical and detailed
Updating activities are built into the methodology as part of the Initiation and Preparation phases

- Methodology designed to accommodate evolution so it can seed and revise Strategic Project Roadmaps on an ongoing basis
  - E.g., changes in strategic directions or adverse project findings while deploying the Strategic plan may motivate methodology updates

Incremental nature of the Elicitation methodology

- Meant to be aligned with ongoing re-evaluations of the project roadmap
- Assumed, at least initially, that a single increment conducted in an iterative fashion will lead to a project roadmap that may be revised on a regular basis by re-applying (a possibly modified version of) the methodology
- Initiation and preparation phases should enable the level of maturity required to create a project roadmap.
Updating activities are built into the methodology as part of the Initiation and Preparation phases.

Incremental nature of the Execution methodology:
- Meant to be aligned with a change management process within the organization.
- Example:
  - It may be that a set of BPM improvement projects created as part of a roadmap resulting from the application of the elicitation methodology need to be executed via several increments of an execution methodology to bring up the necessary organizational maturity to a level that makes it possible to carry on and use the end results of each individual project increment.
Initiation Phase:
Strategy Elicitation Methodology (EM)

- The goal of the initiation phase is to assess the current level of maturity and the next achievable level
  - Department in charge of applying elicitation methodology may not have the level of planning maturity required to work with the updated version of the methodology
- No standard maturity levels specific to planning today
  - Rely on evolutionary improvement path suggested by the Business Process Maturity Model (BPMM) to identify levels of planning maturity
  - Example:
    - Level 4 - Optimized - Capable planning (EM)
    - Level 3 - Standardized - Effective planning (Hoshin)
    - Level 2 - Managed - Controlled planning (MBO + PDCA)
    - Level 1 - Initial - Hero worship (MBO)
Elicitation methodology leverages the MBO and PDCA strategic planning process patterns set forth in Hoshin.

It also complements Hoshin by leveraging modeling process patterns at planning time.

Resulting planning approach minimizes the need for additional up-front analysis work at project execution time.

Typically, a single increment covering the entire scope of the project is used to create a project roadmap.

Actual planning work largely conducted by applying the following approaches concurrently:

- Pattern-driven modeling
  - E.g., modeling activities specific to SBAM, GDM, PEM, LSS, CBM

- Pattern-driven planning
  - E.g., planning activities specific to MBO + PDCA as part of concurrent iterations

Concurrent threads generate results that are integrated as part of catch-ball phases inherent to the steps followed in the elicitation methodology execution phase.
Example:

- Original planning approach relies on the MBO planning pattern (Level 1 in the planning maturity hierarchy)
- Planning team needs to transform its planning process to operate at Level 4 in the planning maturity hierarchy
- Depending on the experience of the project staff, the transformation may be achievable in one step
- The transformation may involve a fair amount of change management
  - Example: Planning activities driven by a combination of SBAM, GDM, PEM, and business solution pattern-specific modeling techniques (e.g., LSS for BPM Improvements, and CBM for SOA) identified as a result of the strategic goals elicitation and the subsequent business patterns elicitation
- The planning maturity enablement effort required to transform the planning team’s maturity level is part of the EM preparation phase
The Initiation and Preparation phases of the M1 methodology support the introduction of updates meant to accommodate changes in strategic directions or adverse project findings while deploying a Strategic plan.

While the goal of the initiation phase is to assess the planning maturity level transformation scope, the preparation phase is responsible for implementing the associated change management effort and planning the execution phase.
Sample Training Change Management Effort

- Various roles in the team need to be trained to understand and apply SBAM, GDM, PEM, LSS, and CBM techniques.
- Sample sources of training information for strategic planning (MBO, PDCA) and standard business architecture modeling techniques (i.e., SBAM, GDM, and PEM) identified as follows:
  - **MBO & PDCA:**
    - Hoshin Handbook
  - **SBAM:**
    - Business Process Modeling Notation - BPMN (http://www.bpmn.org/)
    - Semantics of Business Vocabulary and Business Rules SVBR (http://www.bpmi.org/)
    - Unified Modeling Language - UML 2.0 (http://www.uml.org/)
  - **GDM:**
    - Business Motivation Model - BMM (http://www.bpmi.org/)
    - User Requirements Notations (www.usecasemaps.org)
  - **PEM:**
    - Custom training (e.g., EAMF)
    - The Open Group Architecture Framework (www.togaf.org)
Sample Training Change Management Effort (continued)

- Training information for the business solution pattern-specific modeling techniques
  - CBM for SOA
    - IBM’s Component Business Modeling approach
  - LSS for BPM Improvements
    - Training for LSS requires an assessment of maturity level in relation to the Six Sigma Maturity Level or the BPMM industry standard
- Example:
  - Step 1: A Six Sigma black belt estimates that the current BPMM level is launch level and the next BPMM maturity level achievable by transformation is BPMM Level 2
  - Step 2: A transformation training program is put together to reach BPMM Level 2 and corresponding transformation training modules are developed and/or obtained
Project Roadmap Definition Planning

- Another aspect of the preparation phase is the planning of the execution phase
- Since the goal of the execution phase is to conduct a strategic planning project and generate a strategic plan, the goal of the preparation phase is to plan how the strategic planning project will be performed in the execution phase
- It is assumed here that the planning activities are driven by a combination of SBAM, GDM, PEM, and business solution pattern-specific modeling techniques
- While the planning activities complement those of Hoshin, the general planning structure suggested by Hoshin still applies in this context and will be used as the end of the execution phase to create the strategic plan either manually using the forms provided in the Hoshin Handbook or using the TQE software provided on the CD included in the Hoshin Handbook
Sample Project Roadmap Definition Planning (continued)

Actual sequence of activities to follow in the execution phase in order to obtain the data that are typically used as a basis for the strategic plan can be summarized as follows:

I. Requirements Engineering Activities:
   I.1. CS Requirements Definition
   I.2. FS Requirements Definition
   I.3. Tests Requirements Definition
   I.4. Requirements and Tests Management Plans

II. EAMF Requirements Model (RM) Engineering Activities:
   II.1. CS EAMF Requirements Model Definition
   II.2. FS EAMF Requirements Model Definition
   II.3. Traceability (Between Requirements and RM) Documentation
   II.4. High-Level Scope Definition via GDM and SBAM
   II.5. CS BA Modeling using PEM
   II.6. BA Foundation Model Definition Using SBAM
   II.7. CS BA Modeling Using SBAM
   II.8. CS BA to High-Level Goals Relating Using GDM
   II.9. Defects and Waste Elicitation via LSS
   II.10. FS BA Modeling Using GDM
   II.11. RM & RTM Update
Project Roadmap Definition Planning (continued):

III. Business Architecture Analysis Activities:
   III.1. Business Needs Analysis
   III.2. Entities/Relationships Refinements
   III.3. Goal Model Gap Assessment Between CS and FS BA
   III.4. Business Model Improvement Gaps Documentation
   III.5. Pattern Model Gap Assessment Between CS and FS
   III.6. Project Prioritization Model Deployment

IV. Strategic Plan Compilation Activities:
   IV.1. Business Fundamentals Planning
   IV.2. Breakthrough Planning
Agenda

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Use of IBM Rational RequisitePro for the Requirements Engineering Phase

Glossary

Stakeholder Requests

Business Objectives

Features and Events

Use Cases

Business Model

Business or Functional Requirements

Non Functional Requirements

Project Requirements Types

Requirements Engineering

Location

Organization

Process

Business

Rules

Pattern

/ Product

Enterprise Solution Reqs

Business Rules Reqs Repository

Enterprise Solution Patterns Requirements

Enterprise Business Vocabulary Reqs

Business Strategy and Innovation Reqs

Enterprise Requirements Categories

Enterprise Project Requirements

Enterprise Project Documents types are the same as Project Documents Types

.RequisitePro Requirement Types Usage

.RequisitePro Document Types Usage

Project Prefix

 Req.

Type

known Document Types

Enterprise Project Requirements types are the same as Project Requirements Types
Sample Requirements Definition

Rational RequisitePro - ABS-Build 2 - [FNC-BUS: Business or Functional Requirements to 1-Business Objectives]

6 Business or Functional Requirements
- All Business/Functional Requirements
- Snapshot - Business/Functional for RMP_5
- Business/Functional Requirements to 1 Business Objectives
- Business/Functional to 2 Features
- FNC1: Generate reports to measure project critical success criteria
- FNC2: Generate reports to identify unbalanced payments received for reconciled...
- FNC3: Implement Online Services Enhancements deferred from ABS Build 1/1/1
- FNC4: Implement Reconciliation Workflow Enhancements deferred from ABS Build...
- FNC5: Allow User to Request an Invoice Service Transaction
- FNC6: Allow User to Request a Non-Invoice Service Transaction
- FNC7: Automate Pay Code Processing that is beneficial [i.e., cost benefit achieved via,...
- FNC8: Automate Non-Invoice Service Work that is beneficial [i.e., cost benefit achieved via,...
- FNC9: Separate policy service processing received via the invoice from...
Agenda

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Enterprise Architecture Management

EAMF Activities Integrate Seamlessly with Company X’s Project Lifecycle

Disciplines & Process

Workflows

Enterprise Planning
High-Level Analysis
High-Level Design
Detailed Analysis
Detailed Design
Product Mapping
Deployment

Supporting Workflows

Administration
Management
Environment

SDLC Stages

Initiation
Planning
Tech Design
Build/Test
Install/Close
ROI Benefits

Iterations

Preliminary Iteration(s)
Iter. #1
Iter. #2
Iter. #n
Iter. #n+1
Iter. #n+2
Iter. #m
Iter. #m+1
Iter. #m+2
Building Pattern Cluster Networks via EAMF Activities

Solution Architecture Areas

- **Enterprise**
- **Business**
- **Information**
- **Application**
- **Technology**

Solution Development Disciplines

- **Analysis & Design**
- **Implementation**

Pattern Cluster Network

Level of Abstraction
EAMF-Augmented Iterative/Incremental SDLC

Disciplines & Process Workflows

Planning

Req. Engineering

E A M F

Disciplines & Process Workflows

HL Analysis

HL Design

Det. Analysis

Det. Design

Architecture Implementation

Product Mapping

Architecture Deployment

Application/Tests

Design

Implementation/Test

Deployment/Test

Supporting Workflows

Administration

Management

Environment

Initiation Stage

Planning Stage

Iter. #1

Iter. #2

... Iter. #n

Iter. #n+1

Iter. #m

Build/Test Stage

Design Stage

ROI/Benefits Stage

Install/Closen

Stage

Production

Elev. Phase

Warranty Phase

Thread 1

Thread 2

Thread 3

Project Activity Threads: