Foundation for execution: Beyond The IT Engagement Model

Moving from the Ross, Weill, Robinson, Enterprise-level architectural conception towards building bridges to mid-range architectural representations and Lightweight architectures
Cognitive Map of 8090

IS Architectures as Strategy
Weill, Ross & Robertson, “Enterprise Architecture as Strategy”

Work Systems Models
S. Alter, “Work System Method”

IS architectural components and development
Mid-Range Modeling

ERP as instantiation of Architectures

The Operating Model (textual)
The Core Diagram (graphical)

Business/manager/user level
• textual descriptions of work systems, business components, Process models….

ADLs, UMLs, MDA, MetaObjects, XML, SOAs, … (graphical)
Architectural layers (Component Architectures)
IBM has begun to systematically classify diverse service systems industry by industry, component by component, measure by measure...

CBM: Component Business Model

WBM and RUP: Work Practices & Processes

SOA: Technical Service-Oriented Architecture

Key Performance Indicators (KPIs)
IBM IBV: Component Business Models
BPM, EA and OOAD positioning

(Zimmerman et al., Service-Oriented Analysis and Design)
Getting from ‘as-is’ to ideal state

Operating Model
- Defines integration and standardization requirements

Foundation for Execution
- Core Business processes
- IT infrastructure

Enterprise Architecture
- Establishes priorities
- Updates and evolves architecture

Engagement Model
- Defines core capabilities

Strategic Initiative
- Defines strategic limits

Learning and exploitation
Document the Architecture

ENTERPRISE FINANCE INITIATIVE
Interface Architecture
SAP®THD (EFI & Mexico)

Document the Architecture

ENTERPRISE APPLICATION INTEGRATION
Interface Architecture
SOSI Release 1

Future EAI Projects
Build a Conceptual View
Rally Projects Around Your Vision

- Rollout Enterprise Service Repository
- Capability for Service Oriented Processes
  - All interfaces for enterprise registered (IA)
  - MSR Go-live (new services)
  - May 2009
  - Prepare Governance Standards
  - Select ESR
  - Establish SOA Governance Panel
- Service enabled Processes reused
  - New apps built from service composition & Mashups
  - Nov 2009
  - New Integration Capability live in all stores
  - Jan 2010
- Dynamic Services
  - Mavericks
  - Planogram Services Live
  - Mar 2010
  - Business becomes SOA Driver?
- Dynamic Service Discovery
  - Store Integration Standards
  - Managed Services
  - Apr 2010
- Today
  - Loosely Coupled (LC) Applications
  - Some LC Services
  - Initial services/reuse
  - Messaging Stds
  - Some XML Stds
  - Interface Visibility
  - May 2009
  - BPM Go-live (4 new services)
  - Begin dev on ES API – define THD standard
  - Begin dev on highly reused service list

THD Standards Adoption
- Industry Standards Adoption
- Technology Standards Adoption
IT Engagement Model

From Figure 6-1 Ross, Weill & Robertson, “Enterprise Architecture as Strategy”, 2006
IT Engagement Model-Types of linking mechanisms

From Figure 6-1 Ross, Weill & Robertson, “Enterprise Architecture as Strategy”, 2006
Software development platform (Alan Brown, op cit.)
Across the life cycle

Pattern and asset use across the life cycle
14 different UML Diagrams – static and behavioral
--UML--
insert or escape and load the UML Lectures here....
Now...
on to Alter’s Work System Framework
Definitions

• **Work** - the application of human and technical resources to produce products and services for internal and/or external customers.

• **Work System** - a system in which human participants and/or machines perform work using information, technology, and other resources to produce products and/or services for internal or external customers.

  • Typical business organizations contain work systems that procure materials from suppliers, produce products, deliver products to customers, find customers, create financial reports, hire employees, coordinate work across departments, and perform many other functions.

  • Every work system can be viewed as a subsystem of a larger work system, the boundaries of a work system are treated as a carefully considered decision by the work system modeler.

  • In general, the relevant work system for a particular analysis is the smallest work system that exhibits or possesses the problem, issue, or opportunity that prompted the analysis.
Examples of work Systems

Work system #1: How a bank approves commercial loans.
Work system #2: How a software vendor tries to find and qualify sales prospects.
Work system #3: How Zoo Atlanta defines its membership recruitment process.
Work system #4: How a major bank authenticates callers to be *bona fide* customers before connecting to a call center.
Work system #5: How a famous piano manufacturer manages its warehousing of newly completed grand pianos.
Work system #6: How a regional venture capital firm’s property project auditors plan, conduct and report managerial audits of properties in which their firm has an investment interest.
Work system #7: How Turner Broadcasting prioritizes and schedules news reporting assignments.
Work system #8: How a bottle manufacture’s test labs schedules and establishes samples and tests for bottle production runs.
• A specific work system can be supported by a specific information system in many ways. When looking at a specific work system, it is usually true that a subsystem of the work system can be viewed as an information system. That subset may be part or all of another entity that can be viewed as a separate, larger information system.

Figure 4.1: Different types of overlap between work systems and related information systems

• An IS is a specific kind of work system totally devoted to processing information (capturing, storing, retrieving, manipulating, displaying).
• Info systems as a group inherit the general characteristics of work systems as a group (e.g. the nine elements of work system framework)
Confounding a technology system with a Work System

Example #: Work System for Clinical Data Warehouse, XYZ Healthcare

“The general premise behind the process model is that during the extraction, transformation and loading of the source data in the operational data store to the data warehouse, any transaction that fails anywhere, the entire load cycle is aborted and appropriate personnel is notified about the outage. Until the offending process is rectified and dealt with, the entire cycle is kept on hold.”

Comment: A highly Technical works system in a healthcare IT services unit and an example of a name/scope of the WS that is tied to the technology BUT where the WS description is a bona fide WS problem.
Figure 2.1. The Work System Framework™
Customers

- The people who receive, use, or benefit directly from products and services that a work system produces.
  - In most cases they can experience or perceive the quality of those products and services.
  - Customers include external customers and internal customers.
    - External customers receive and use the economic products and/or services that a firm produces. Firms exist to produce those products and services.
    - Internal customers are employees or contractors who receive and use a work system’s products and/or services while performing work in other parts of the same firm’s value chain.
Products and Services

- the combination of physical things, information, and services that the work system produces for its various customers.

- products and services may take various forms, including physical products, information products, services, intangibles such as enjoyment and peace of mind, and social products such as arrangements and agreements.
Intermediate Products and Services

- intermediate products and services --used by other activities within the work system.
  - not considered to the products and services of the work system unless they are received and used by the customers of the work system for some purpose outside of the work system.
- E.g., assume that a loan approval process produces a formal evaluation of a loan.
  - The approval is considered to be among the products and services of the work system if it goes to a work system customer for some purpose outside of the work system.
  - If the approval process is only used to make a decision in a subsequent activity and then discarded; it is an intermediate process.
Work Practices
(processes and activities)

• All of the activities within the work system including: information processing, communication, decision making, coordination, thinking, and physical actions.

• activities can be:
  • highly structured business processes.
    • e.g., the manufacturing of automobiles and the reimbursement of travel expenses are generally viewed as highly structured processes consisting of steps or activities that are known in advance, occur in a pre-defined order, and are relatively easy to evaluate in terms of efficiency, consistency, rate of rework and other measures.
  • less structured and dynamically unfolding with the next step determined by the outcomes of previous steps.
    • coordination occurs through improvisation rather than pre-specified rules.
    • e.g., product design, management of client relationships, execution of consulting projects, development of corporate plans, medical diagnosis, and general management.
Participants

- **People who perform the work**
  - The role of work system participant is more important than the more limited role of technology user, whether or not particular participants happen to be technology users.
  - Customers are participants in many work systems.
    - Minimal involvement-- such as when their request launches a production process that they are not involved in.
    - Vs quite involved (e.g., selecting furnishings for a room with the help of a designer or sales person, learning in a classroom with the help of a teach, and helping a doctor perform a medical examination).
  - A strong trend -- toward self-service work systems whose customers perform much of the important work (e.g., paying bills online, using an ATM, or doing research on the internet about a possible car purchase).
Information

- **Includes codified and non-codified information used and created as participants perform their work.**
  - **Codified** information is the pre-defined information used in tracking packages, entering orders, and performing repetitive financial transactions.
    - In each case, each data item must be defined precisely, and the information is usually processed using explicit rules.
  - **Uncodified** information includes computerized or handwritten documents, verbal agreements, and formal or informal conversations. Information may or may not be computerized.
  - Knowledge can be viewed as a special case of information.
    - Explicit knowledge is recorded in documents, images, rules, and other forms.
    - Tacit knowledge exists in people’s heads and is not explicit.
Technologies

- *Tools that help people work more efficiently or that perform automated work steps autonomously.*

  - Some technologies, such as search engines, cell phones, spreadsheet software, and automobiles, are general-purpose because they can be applied in a wide range of business situations.

  - Other technologies are tailored to specific situations.

    - Examples include a spreadsheet model for calculating mortgage interest and a software package for designing kitchens.
Infrastructure

- **Human, informational, and technical resources that the work system relies on but are outside the work system and are shared resources with other work systems.**
  - **Human infrastructure** - people and organizations that supply services shared by different work systems.
    - For example, training organizations, internal consultants, and human resources departments are typically considered part of the human infrastructure that may be relevant to a work system.
  - **Information infrastructure** -- information shared across various work systems, such as mutually accessible databases and other enterprise-wide information.
  - **Technical infrastructure** includes the Internet, corporate computer networks, database management software, and other technologies shared by multiple work systems and often hidden or invisible to work system participants.
    - e.g., Enterprise software such as ERP suites is technical infrastructure that is shared across multiple work systems. A specific
Environment

- The organizational, cultural, competitive, technical, and regulatory environment within which the work system operates.
- Factors in the environment affect work system performance even though the work system does not rely on them directly in order to operate.
- The organization’s general norms of behavior are part of the culture in the environment that surrounds the work system, whereas...
- Behavioral norms and expectations about specific activities within the work system are considered characteristics of processes and activities within the work system.
Strategies

- The guiding rationale and high-level choices within which a work system, organization, or firm is designed and operates.

- Strategies at the department and enterprise level may help in explaining why the work system operates as it does and whether it is operating properly.

- A work system’s strategy (its guiding rationale and high-level choices) should be aligned with the strategy of the organization and firm that it serves.

  - E.g., a work system designed to produce the highest quality products might not fit in an organization operating under a cost minimization strategy.
Work System Snapshot

- A highly summarized but balanced view of a work system that a business professional can produce quickly or can understand quickly when it is presented.
- It uses six central elements to summarize what a system is and what it produces.
- At this summary level distinctions between technology and technical infrastructure are unimportant.