Enterprise Process Integration

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Janne J. Korhonen
What is a process?

A process is a coherent set of activities carried out by a collaborating set of roles to achieve a goal.

– Ould: Business Process Management: A Rigorous Approach

A business process is the complete and dynamically coordinated set of collaborative and transactional activities that deliver value to customers.

– Smith and Fingar: Business Process Management: The Third Wave
Anatomy of Enterprise

Strategy: Alignment with environment

Business Processes: Interaction between BSDs

Business System Domains: Consistent sets of business entities

Enterprise Systems: “Sources of Truth”

Real-Time

Operational

Tactical

Strategic
Integration at Real-Time Level: Coherence

Enterprise Application Integration (EAI)
- Brokering
- Federation

Enterprise Information Integration (EII)
- Virtualization of heterogeneous data
- Uniform data access
- Uniform information representation

Extract, Transformation, Load (ETL)
- Extracting data from outside sources,
- Transforming it to fit business needs
- Loading it into the end target
Integration at Operational Level: Control

Workflow

- “The automation of a business process, in whole or part, during which documents, information or tasks are passed from one participant to another for action, according to a set of procedural rules.” (Workflow Management Coalition)

Orchestration

- An imperative formal description of the sequence and conditions in which an executable process invokes services and interacts with other processes in order to achieve its design objectives.
Integration at Tactical Level: Coordination

Business Process Management (BPM)
- Loose-coupling
- Document-style interaction
- Reliable asynchronous messaging
- Compensation
- Executable processes
- Complex outcomes
- Negotiated commitments
- Distributed state
Integration at Strategic Level: Consolidation

Data mining, analysis and reporting:

Enterprise Metadata Repository (EMR)
- Enterprise Architecture view

Business Intelligence (BI)
- Information about company operations

Business Activity Monitoring (BAM)
- Real-time summary of business activities
Levels of Process Digitization

Application-centric

Ability to address business process challenges

Business Process Modeling

"Islands of Automation"

Process-centric

Business Process Management

Evolution of technical architecture

Business Process Automation

Enterprise Application Integration (EAI)

Service-Oriented Architecture (SOA)
First Level: “Workflow in the Brain”

Green Screens

Monolithic Applications

Transaction Processing

Analysis

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Second Level: Business Process Automation
Third Level: Business Process Management

Enterprise Process Integration
Top-Down Meets Bottom-Up in BPMS

Collaborative Business Process Model

Executable Process

Executable Process

Business Process Management System

Service Fabric

Information Systems

Process Development

Software Development

Enterprise Process Integration
Business Process as a Network: Private and Public Processes

Private Process
• Specifies the process control logic within the context of a business process participant

Public Process
• Governs externally observable behavior of business process participants by specifying the message exchange between them
Orchestration and Choreography specify private and public process, respectively

**Orchestration** is an imperative formal description of the sequence and conditions in which an executable process invokes services and interacts with other processes in order to achieve its design objectives.

**Choreography** is a declarative formal description of the coordination between multiple participants, specifying their roles and observable message exchange.
Collaborative Process Example
Agility Through Business Process Management

Visibility
• Business processes are explicitly designed in a standards-based process description language
• Process information can be readily retrieved and tracked in real time.

Speed
• Process models are executable
• Business processes can be changed quickly by modifying the process model

Flexibility
• Business processes consist of more elementary processes and services
• New processes can be developed by combining these context-independent services in novel ways

High Quality
• Business processes can be tracked in real time
• The quality of service can be verified at any instant of time

Efficiency
• Utilization of resources can be tracked at different phases of the process
Case Studies (Removed from this presentation)
Questions Discussion