Enterprise Process Integration

22.10.2007

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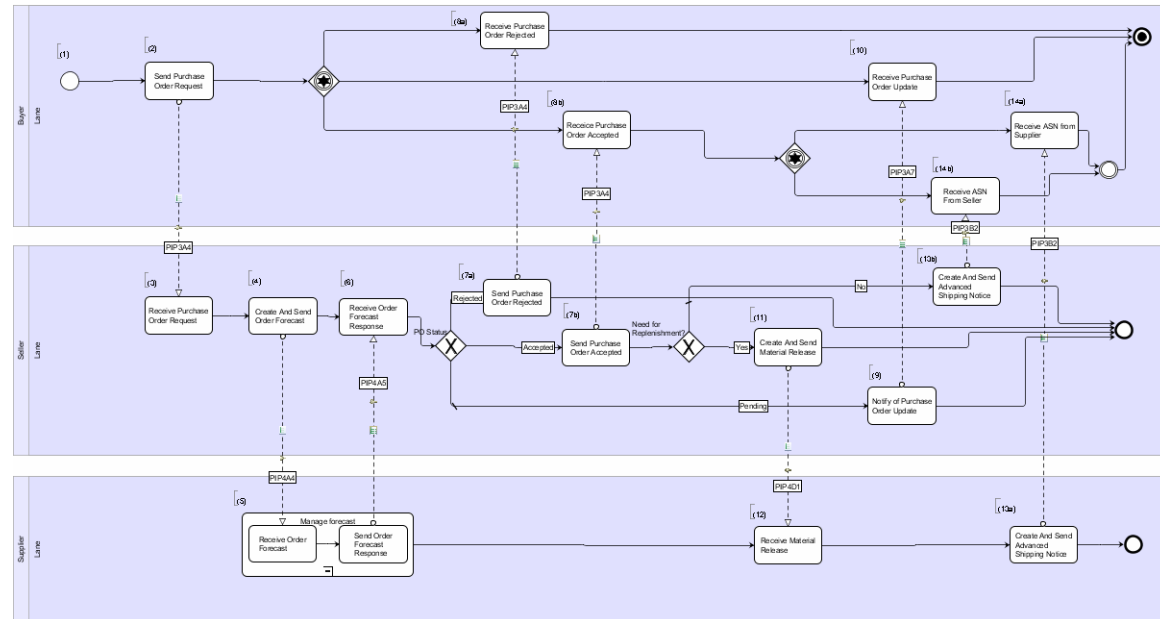
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What is a process?

A process is a coherent set of activities carried out by a collaborating set of roles to achieve a goal.
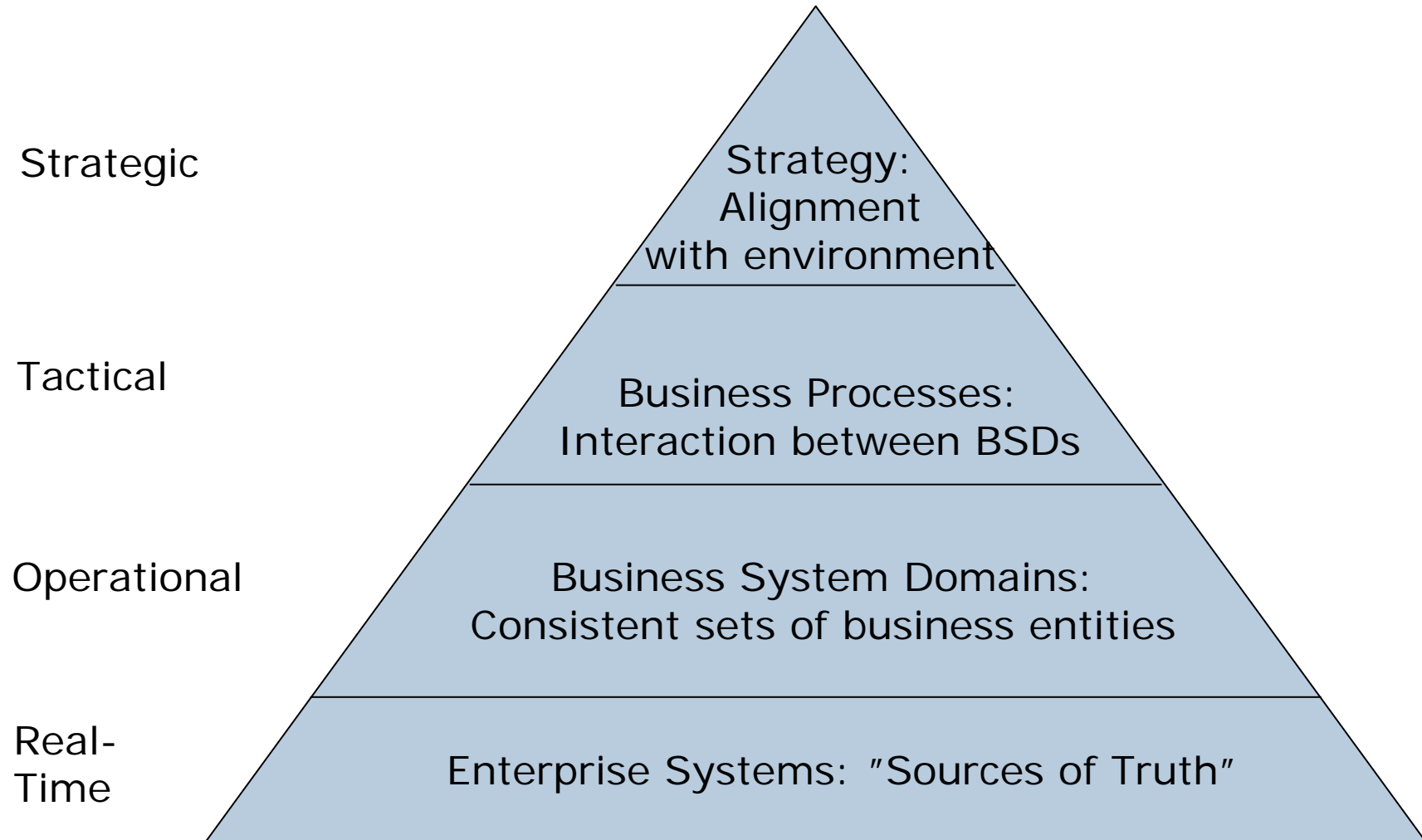
– Ould: Business Process Management: A Rigorous Approach

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

Strategic

Tactical

Operational

Real-
Time

Strategy:
Alignment
with environment

Business Processes:
Interaction between BSDs

Business System Domains:
Consistent sets of business entities

Enterprise Systems: "Sources of Truth"

Integration at Real-Time Level: Coherence

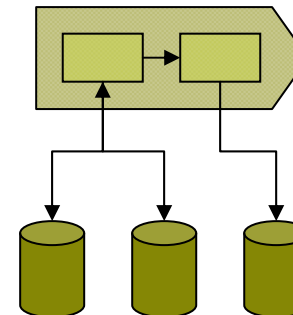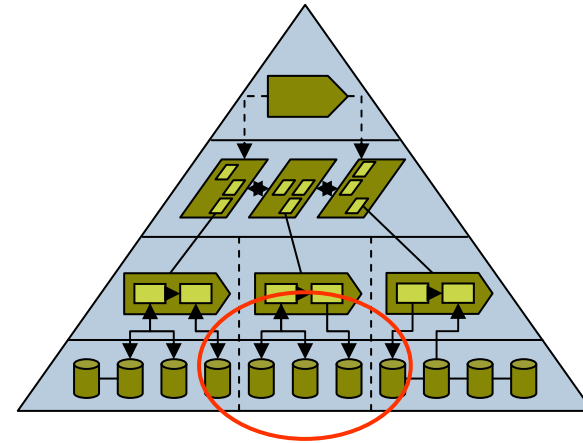Enterprise Application Integration (EAI)

- 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
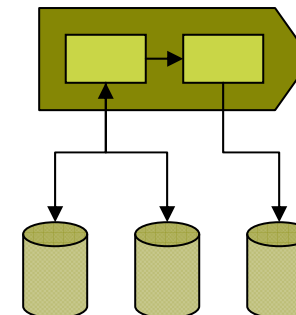
Integration at Operational Level: Control

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)
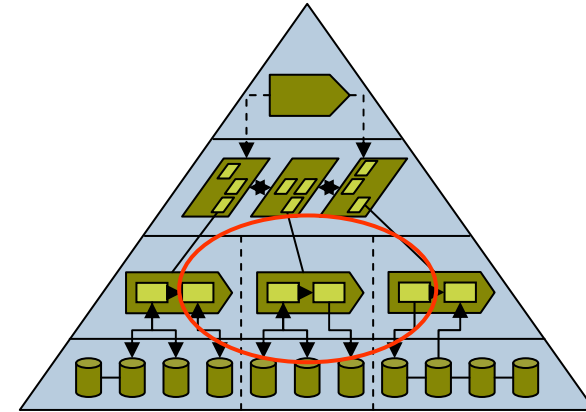

Orchestration

• 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.

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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
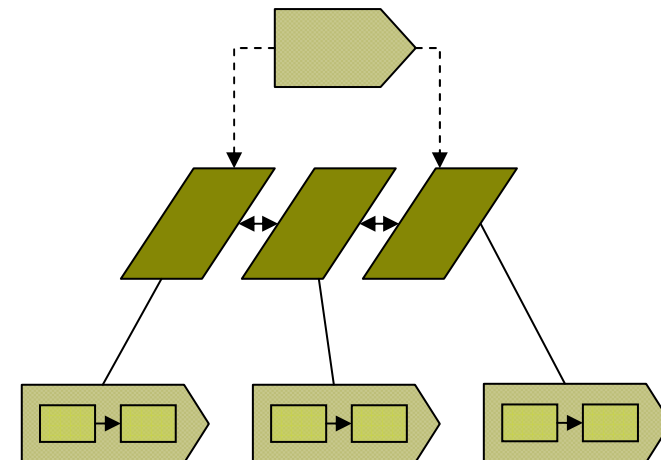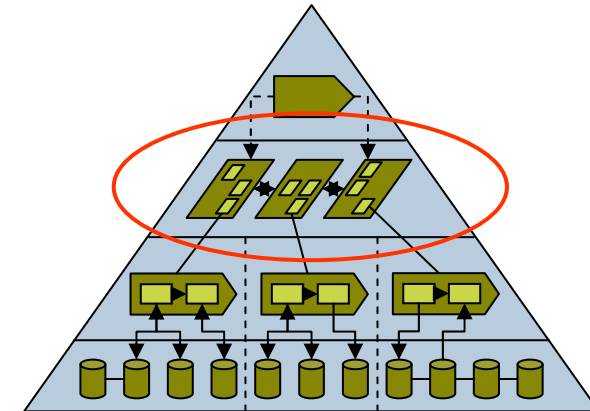
Integration at Strategic Level: Consolidation

Data mining, analysis and reporting:
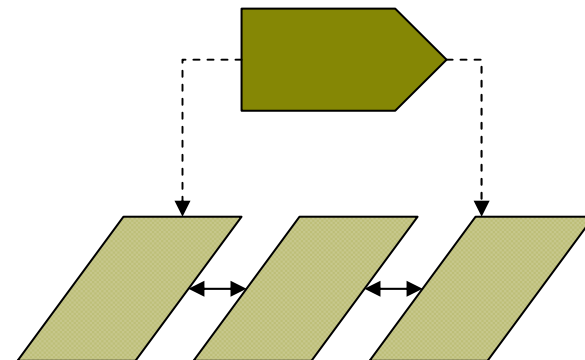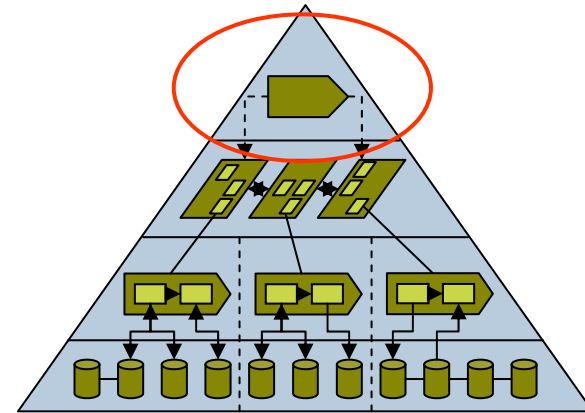
Enterprise Metadata Repository (EMR)

- Enterprise Architecture view
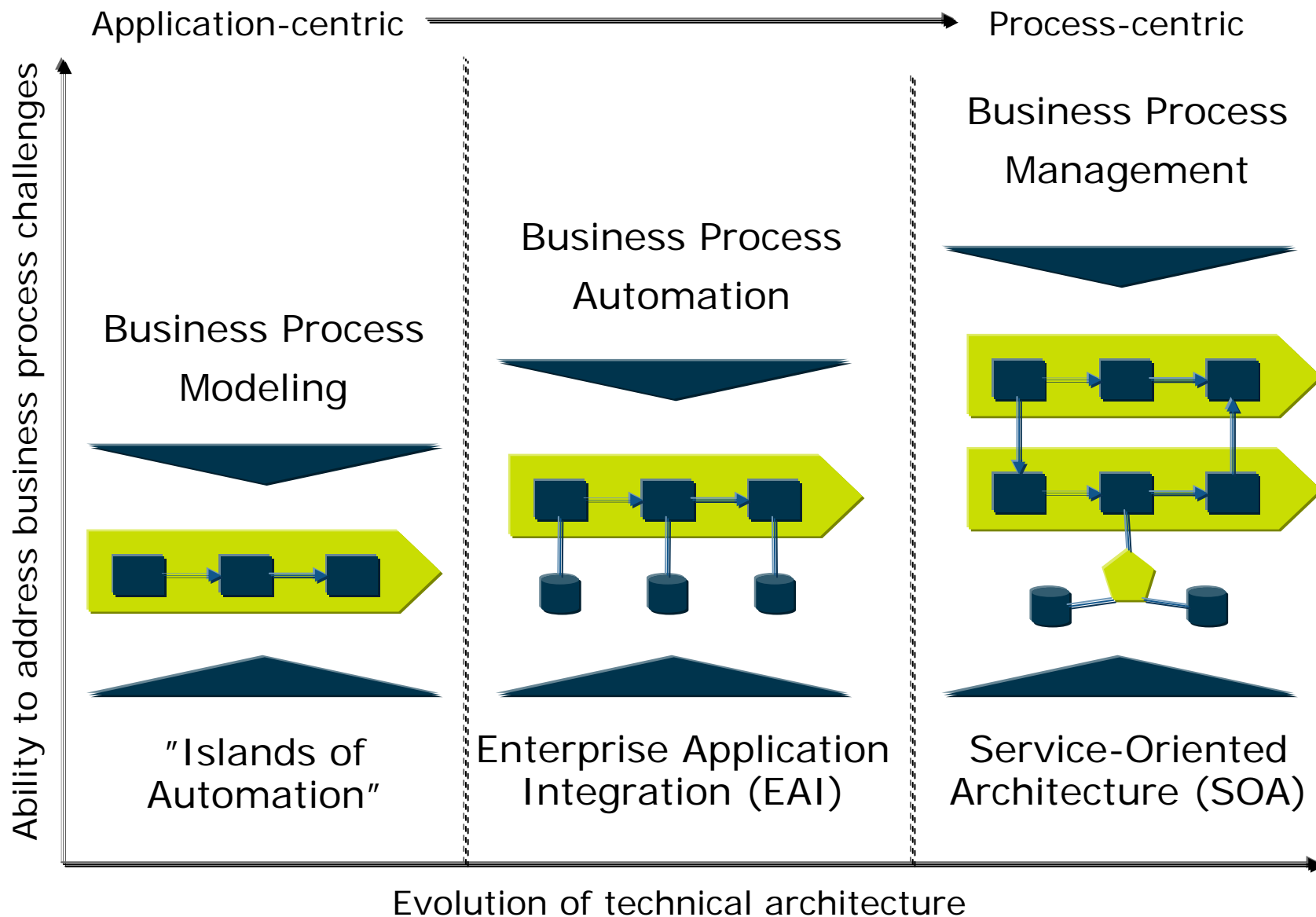
Business Intelligence (BI)

- Information about company operations

Business Activity Monitoring (BAM)

- Real-time summary of business activities

Levels of Process Digitization

Application-centric →→→→→ Process-centric

Ability to address business process challenges ↑

Business Process Management

Business Process Automation

Business Process Modeling

"Islands of Automation"

Enterprise Application Integration (EAI)

Service-Oriented Architecture (SOA)

Evolution of technical architecture →

First Level: "Workflow in the Brain"
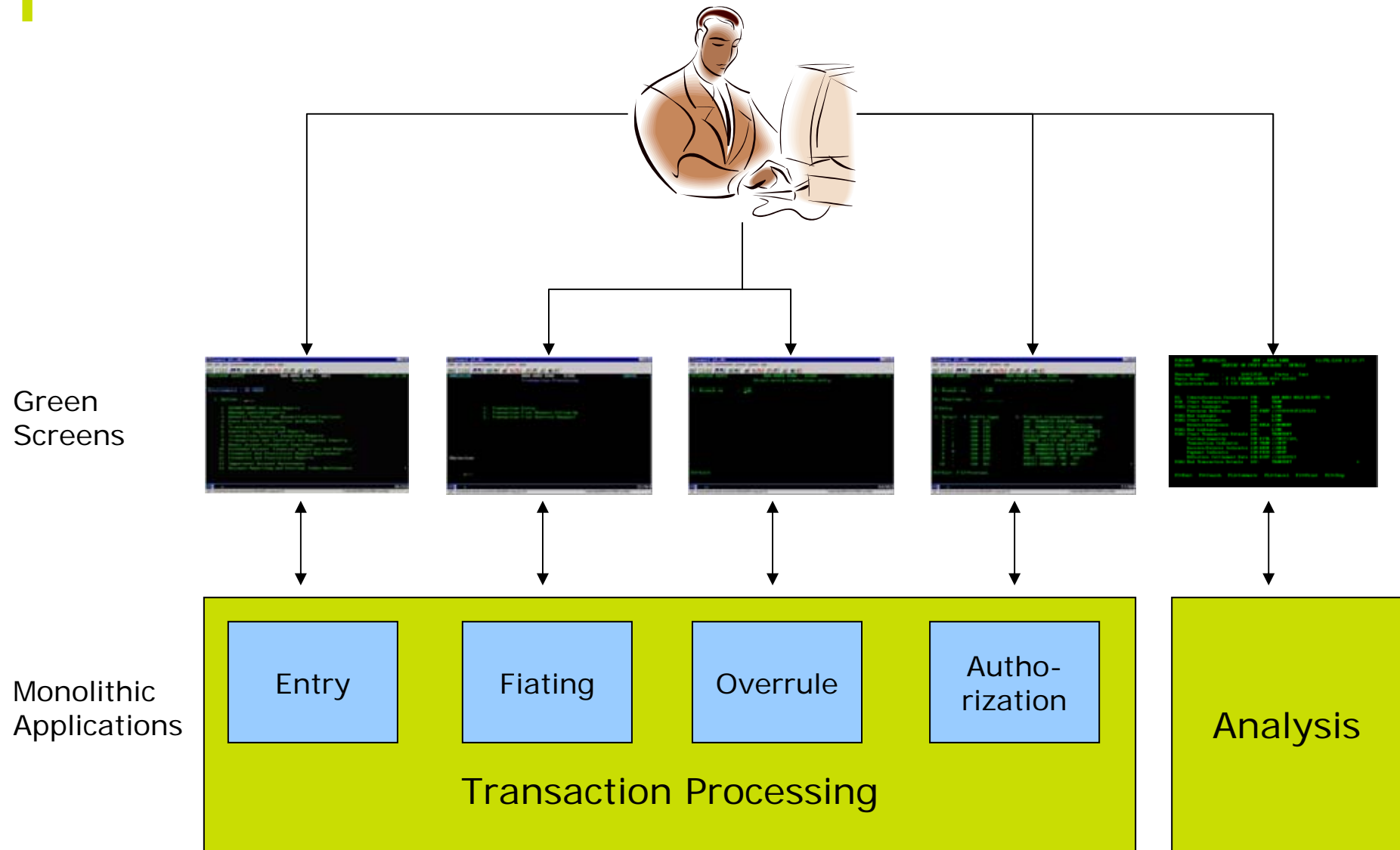
Green Screens

Monolithic Applications

| Entry | Fiating | Overrule | Autho-rization |

Transaction Processing

Analysis

Second Level: Business Process Automation

Portal

EAI
Platform

Adapters

Application
Logic

Entry   Fiating   Overrule   Autho-
                                rization

Transaction Processing

Analysis

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Third Level: Business Process Management

Business Process Management

Enterprise Service Bus

Service Containers

EAI

AS

Application Logic

Entry

Fiating

Overrule

Transaction Processing

Portal

BRMS

Autho-rization

Analysis

WS

EDS
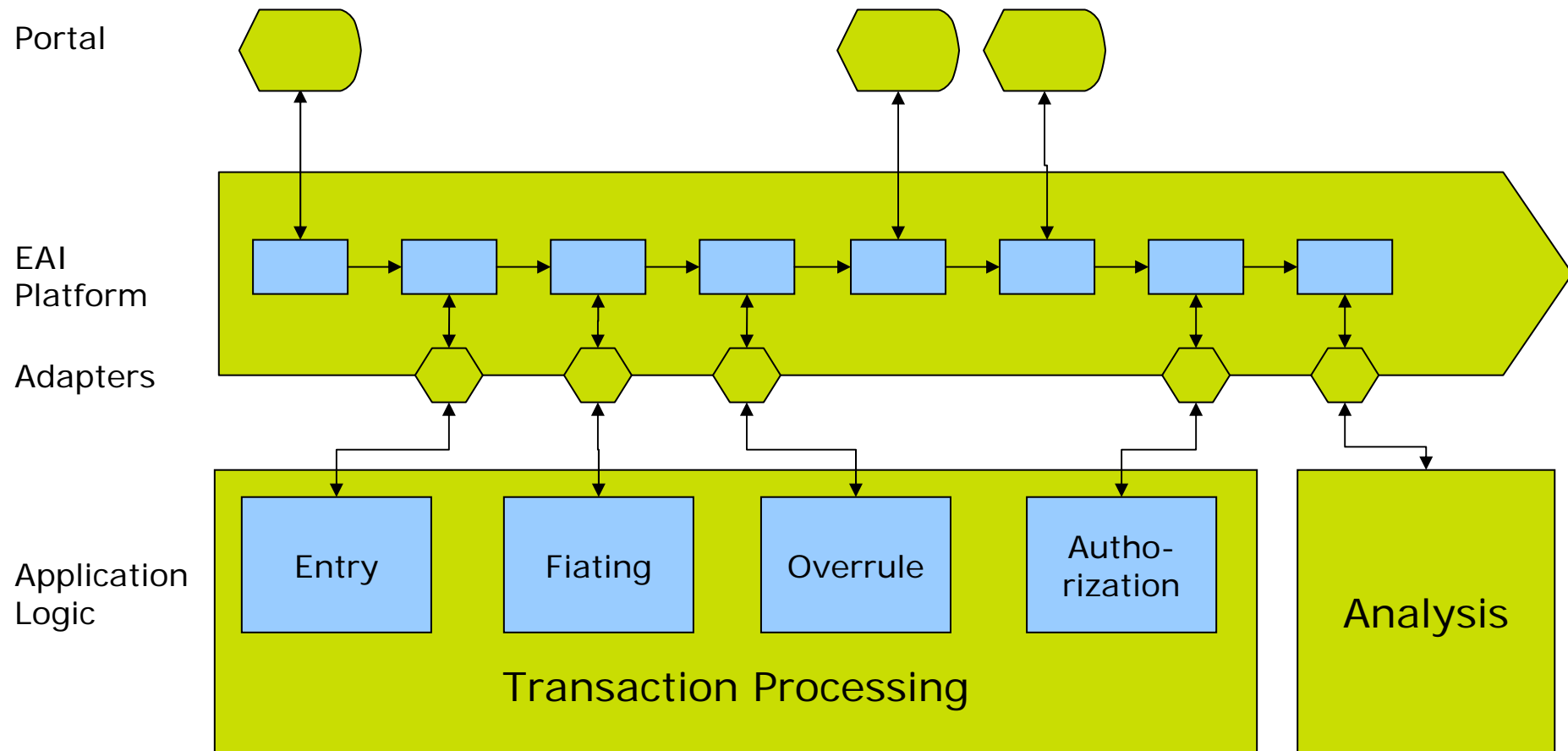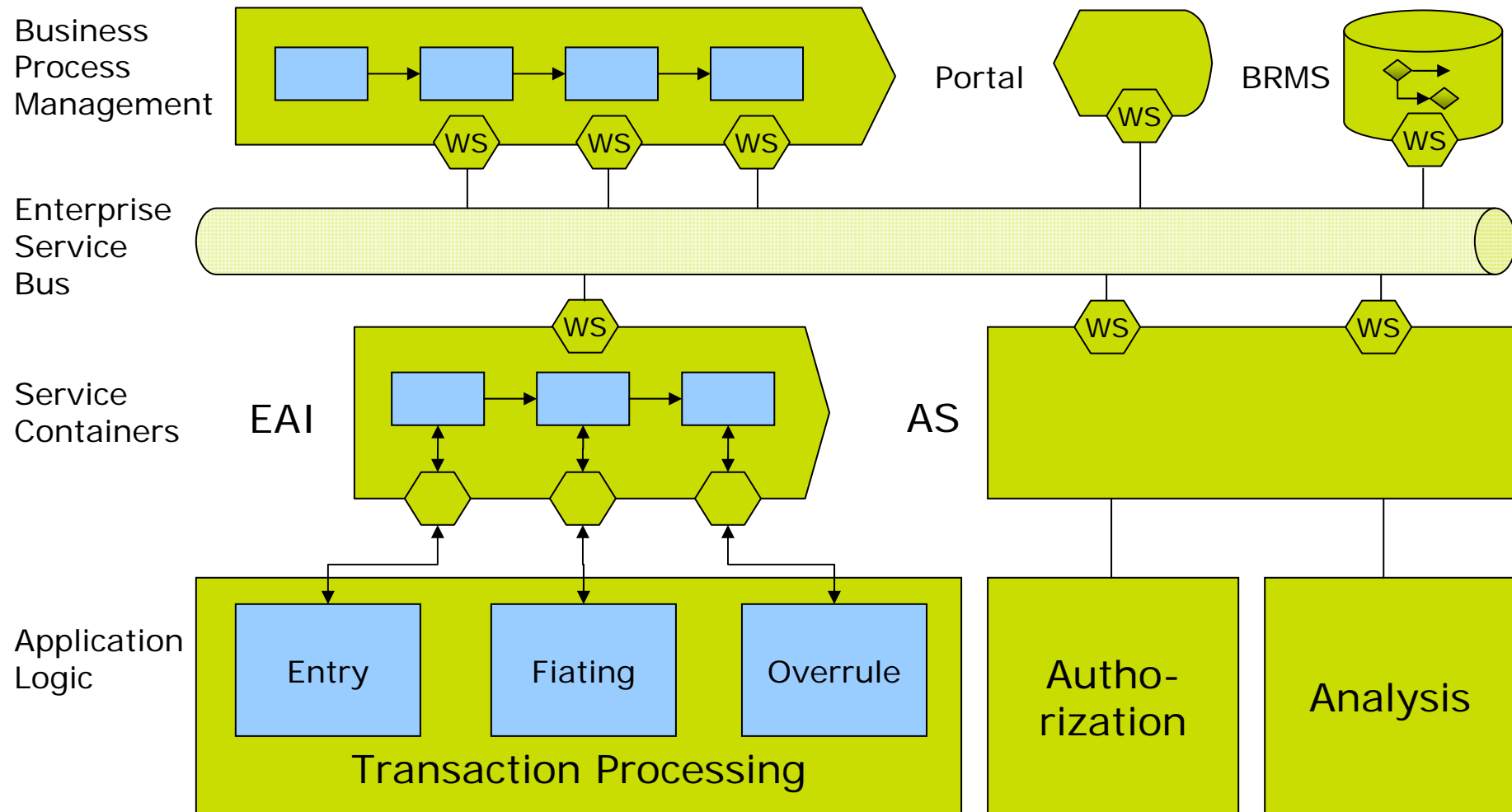
Top-Down Meets Bottom-Up in BPMS

Collaborative Business Process Model

Process Development

Executable Process

Executable Process

Business Process Management System

Service Fabric

Information Systems

Software Development

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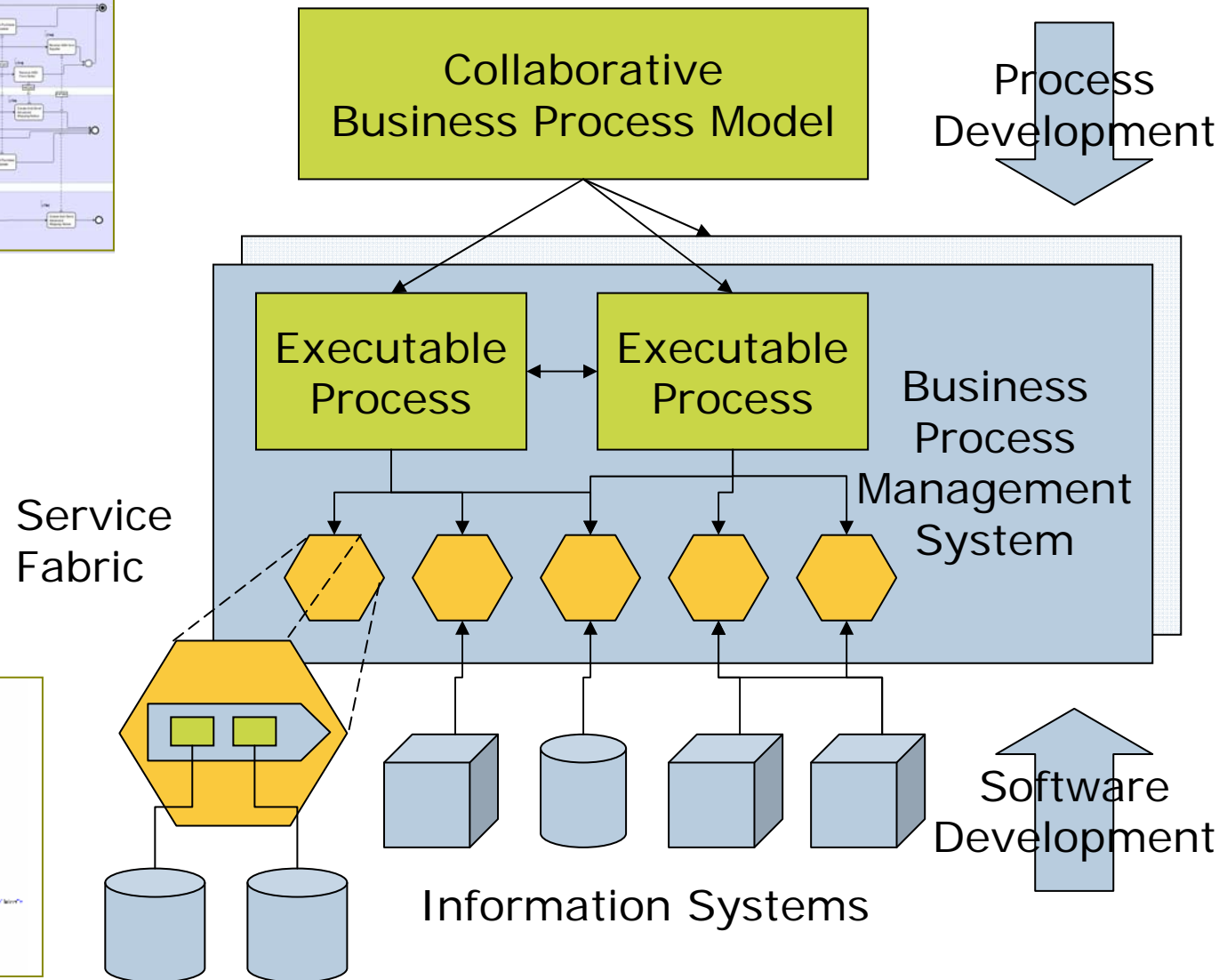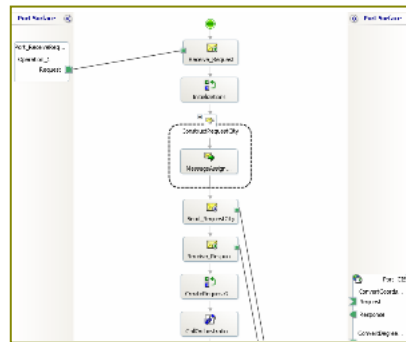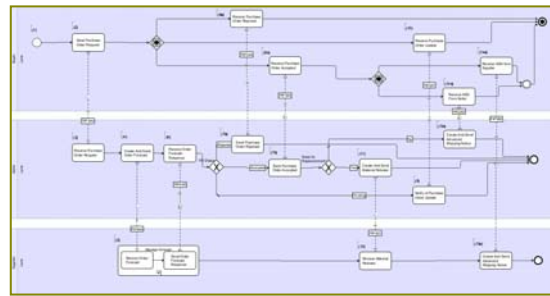
Business Process as a Network:
Private and Public Processes

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

Private process
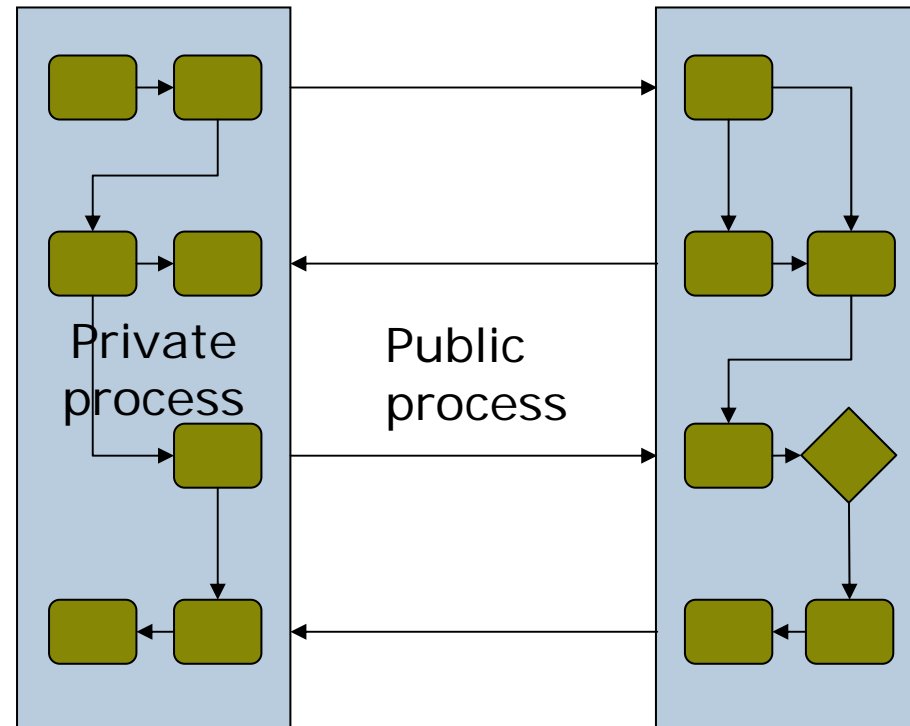
Public process

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.

Choreography
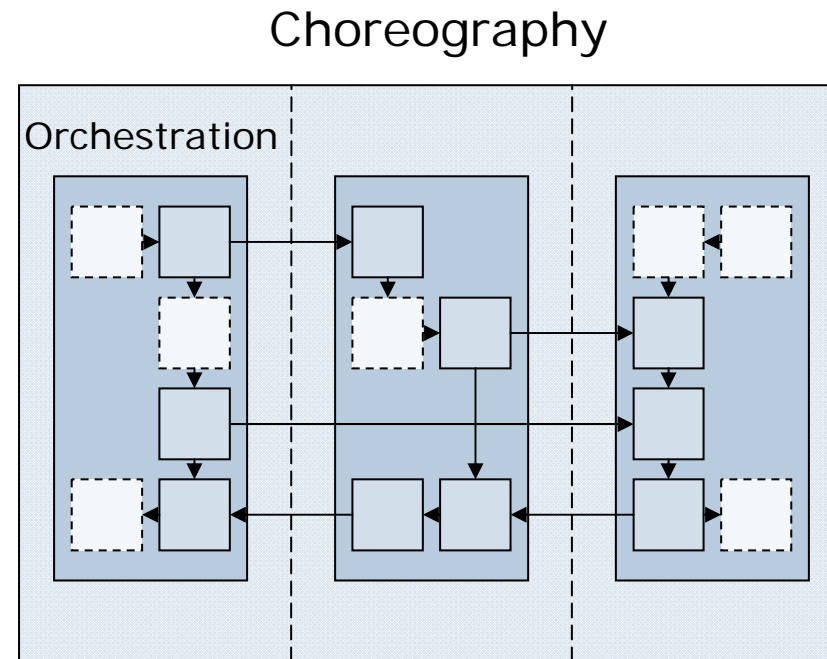
Collaborative Process Example

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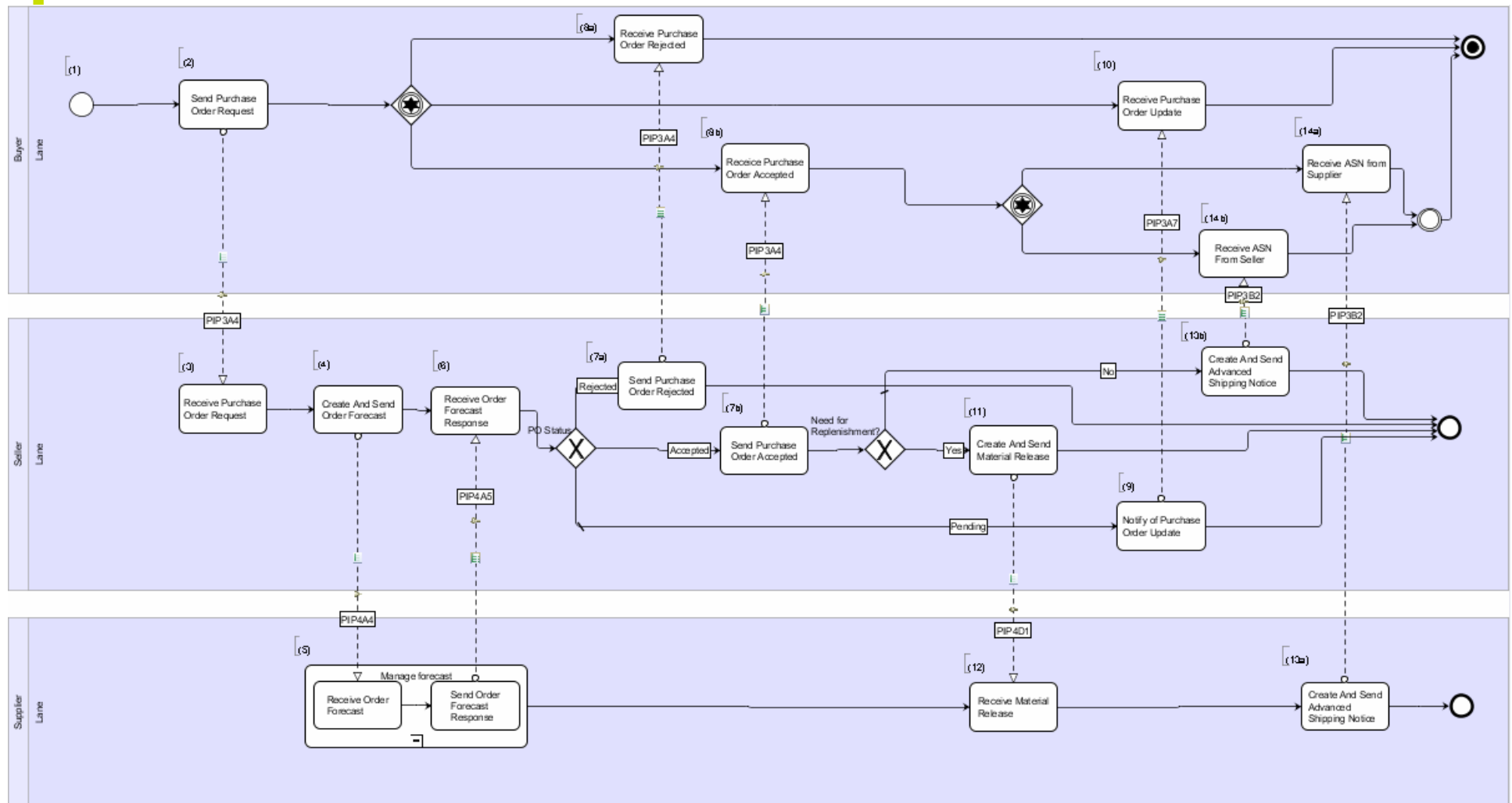
Agility Through Business Process Management

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)

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Questions

Discussion