

Tools for Designing and Implementing BPI

- Business Process based application Integration -

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eAI needs Workflow facility, but... 2

Our slogan is

Traditional eAI + Workflow != BPI

In this slogan, 'Traditional eAI' means Message Broker and Adapter.

To realize BPI, we believe we must

- ✓ Model BPI system from a point of view of business process and
- ✓ Integrate workflow model and eAI system model into BPI system model in a consistent way.

- ✓ Architectural overview
- ✓ Scenario and tool configuration for developing BPI
- ✓ OMG standards which we use
- ✓ BPI system model
 - Business process model
 - Extended business process model for integration
 - Interaction model between the workflow and applications
- ✓ Summary and future plans

Architectural Overview

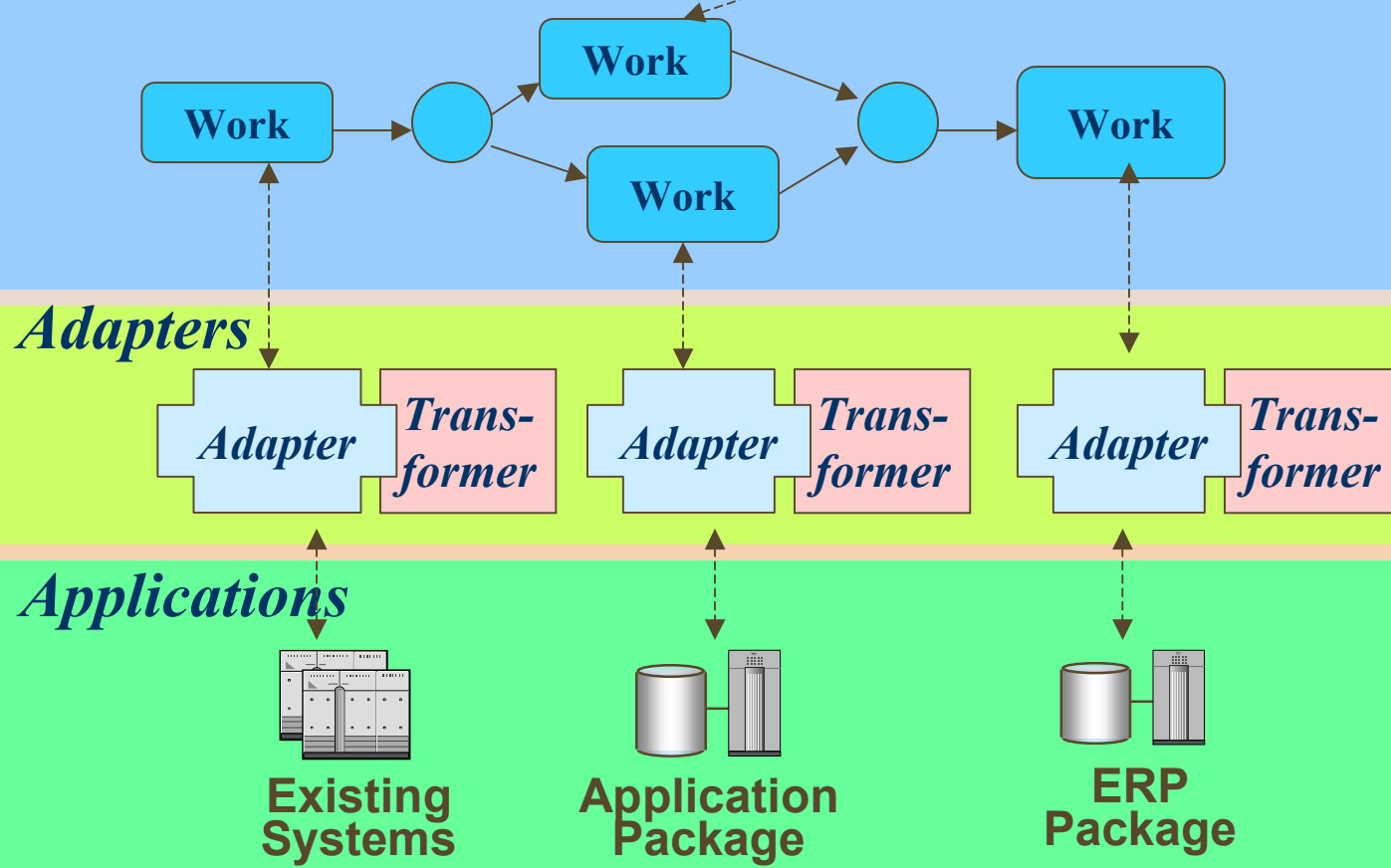
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*Business Process
controlled by Workflow*

Workflow native feature



Human



Scenario for Developing BPI

5

Business experts model business processes as a blueprint of BPI system

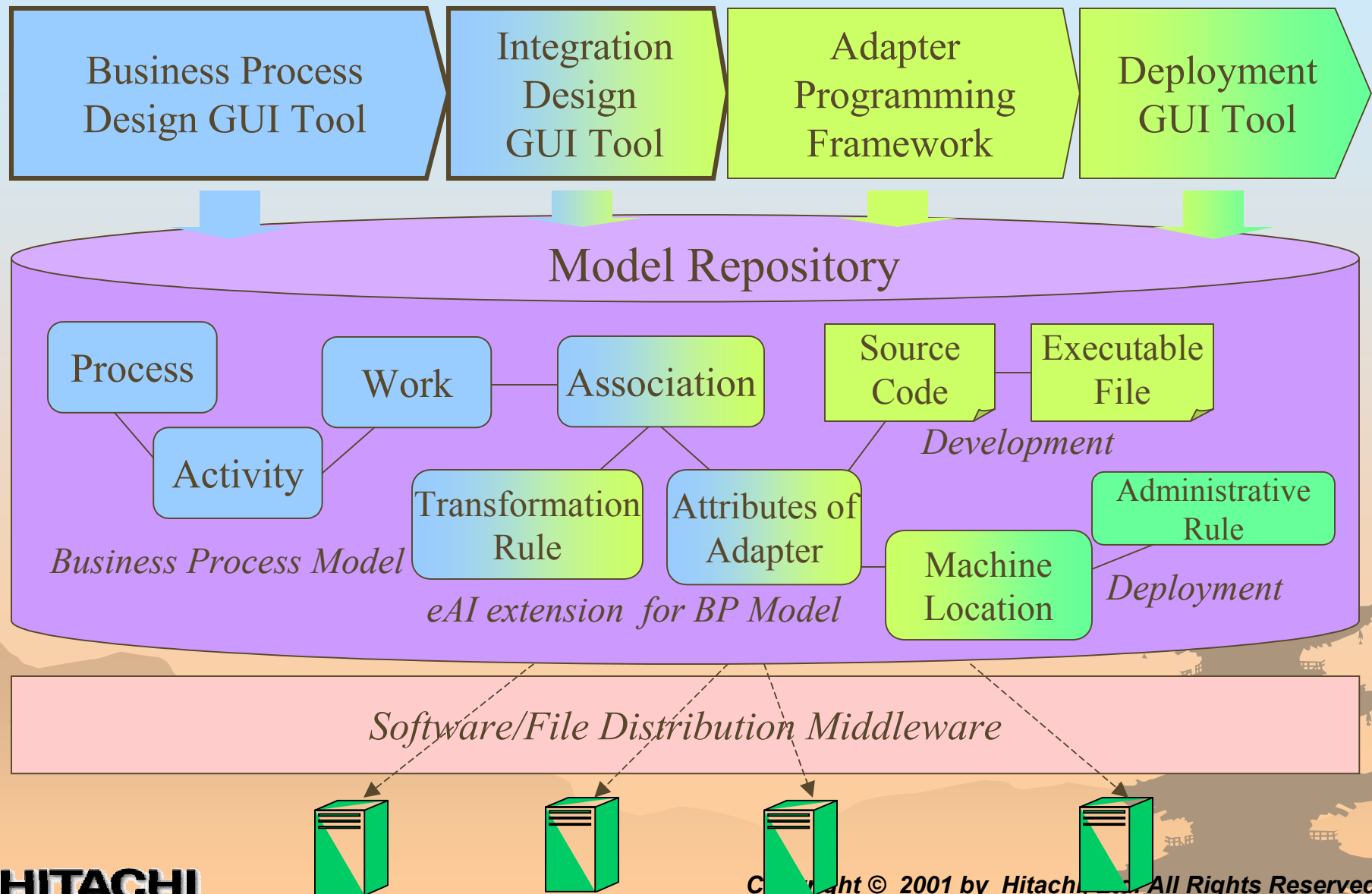
Integrators extend the business process model by adding integration information

Programmers develop adapter programs

Deployers deploy BPI system from the extended business process model and adapter programs into runtime environment

Tool Configuration

6



OMG Standards which we use

7

We start with *WfMC-based business process model* and extend it into *BPI system model* :

- ✓ in a uniform manner by using *MOF/XMI* and
- ✓ in consistence with *WfMC Reference Model*

MOF/XMI provides the following facilities:

- ✓ Modeling methodology
- ✓ Representation and manipulation of model
- ✓ Management of dependency
- ✓ Streaming format(XMI format)

WfMC Reference Model specifies:

- ✓ Application(Business) data model
- ✓ Workflow interoperability



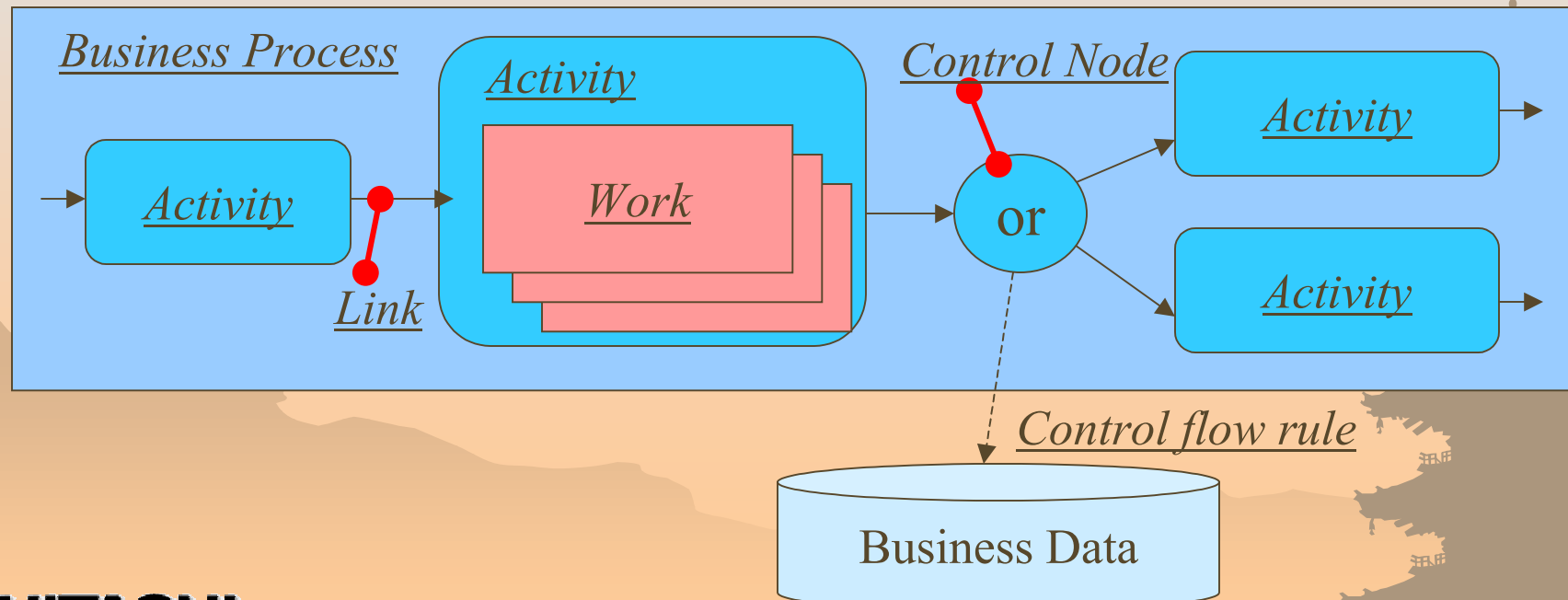
Modeling Business Process

8

Business process consists of two layers: *Activity* and *Work*

✓ Activity layer

- Linking activities represents the overall flow of process
- Control nodes and their rules control the flow of process
- An activity is a collection of works
- Activity layer is suitable for regularized production processes



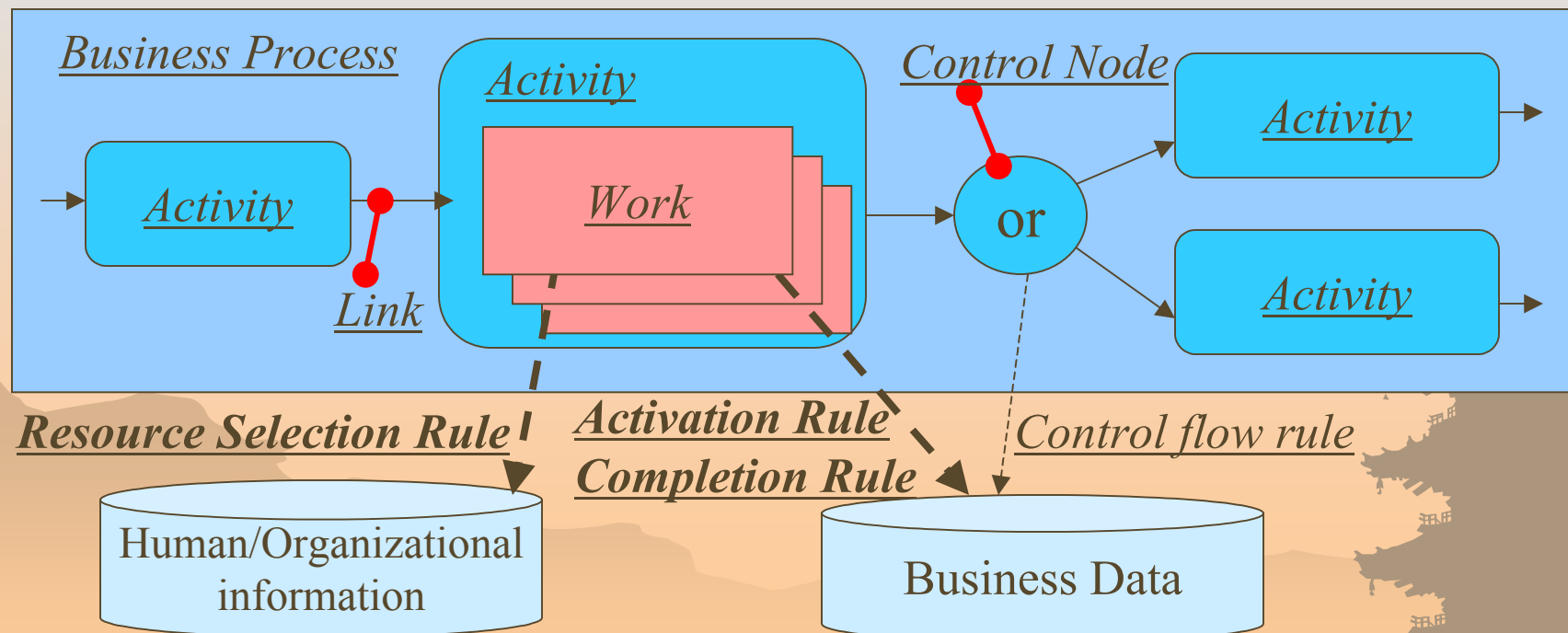
Modeling Business Process

9

Business process consists of two layers: *Activity* and *Work*

✓ Work layer

- A work is an execution unit
- A work has an activation rule and a completion rule
- Resource selection rules assign each work to a human
- Work layer is suitable for data-driven processes



Modeling Business Process

10

Business data consists of:

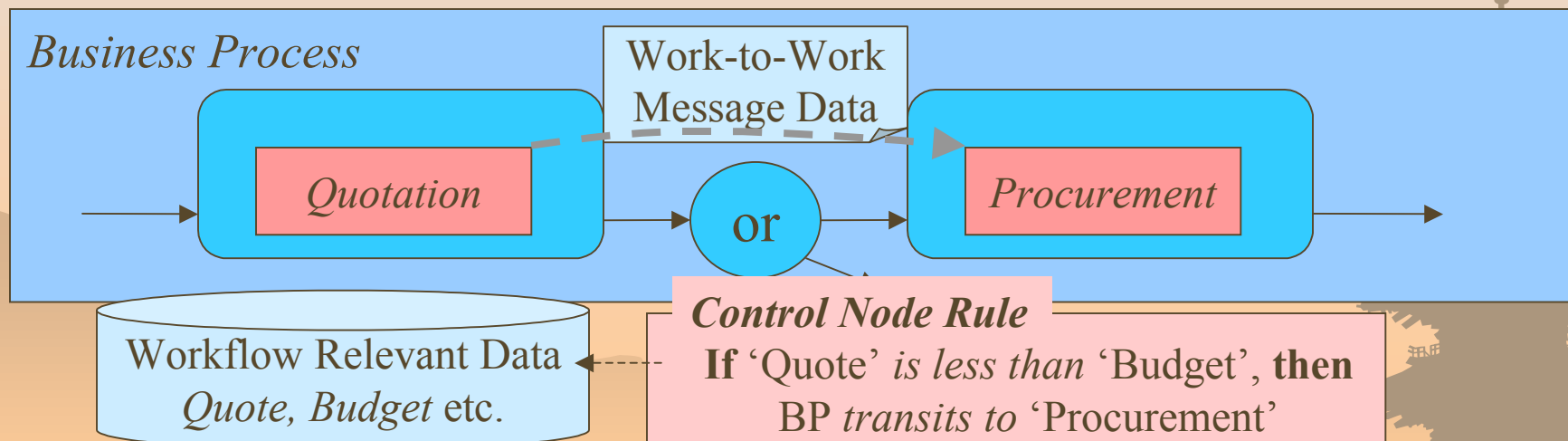
✓ ***Workflow Relevant Data*** (coined by WfMC)

- Defined on a business process
- Referred in various rules, i.e. workflow-accessible format

✓ ***Work-to-Work Message Data***

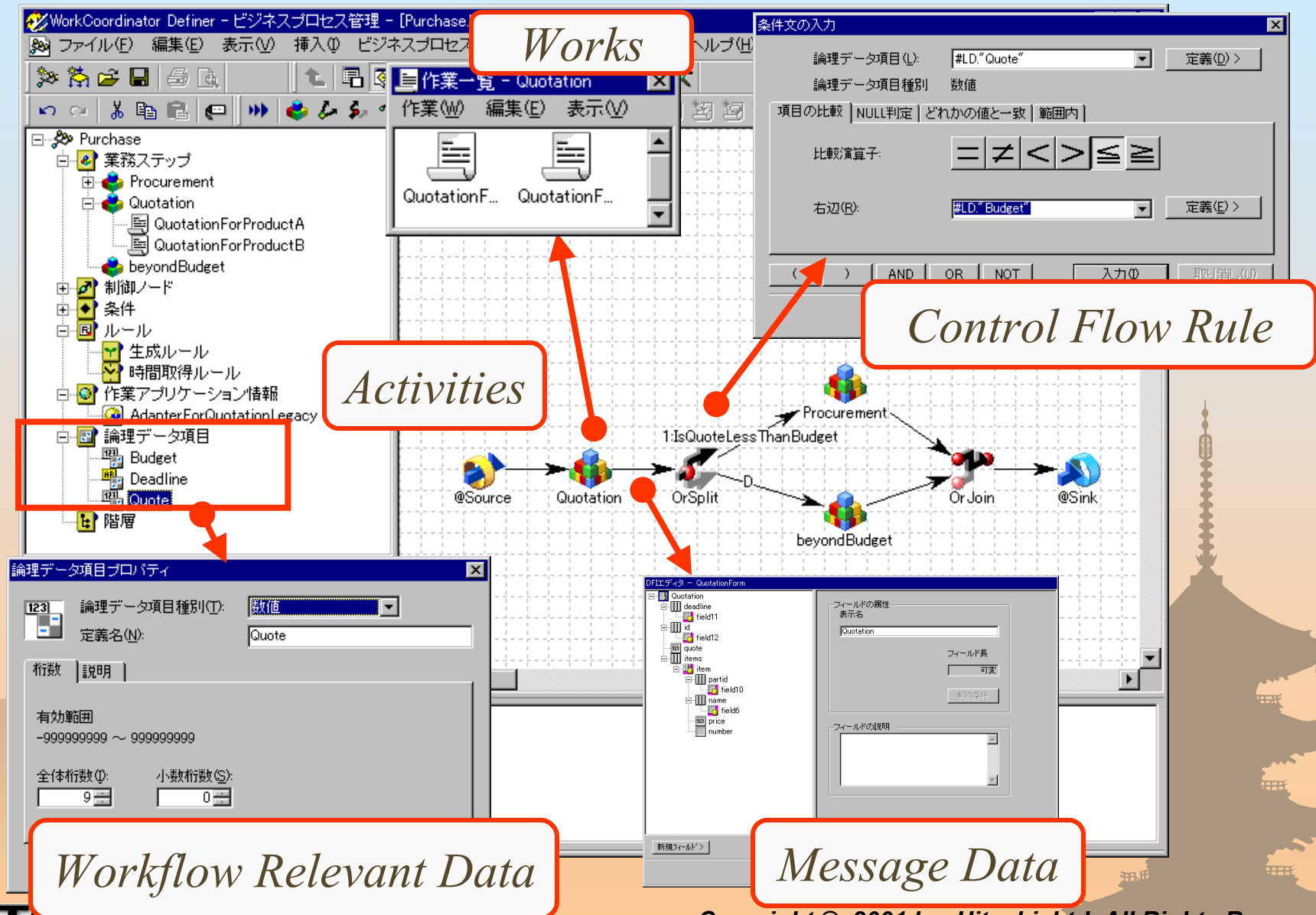
(approximates to 'message' of Message Broker):

- Defined on a transition between 2 consecutive works
- Opaque to the workflow engine, i.e. arbitrary format



Business Process Design Tool

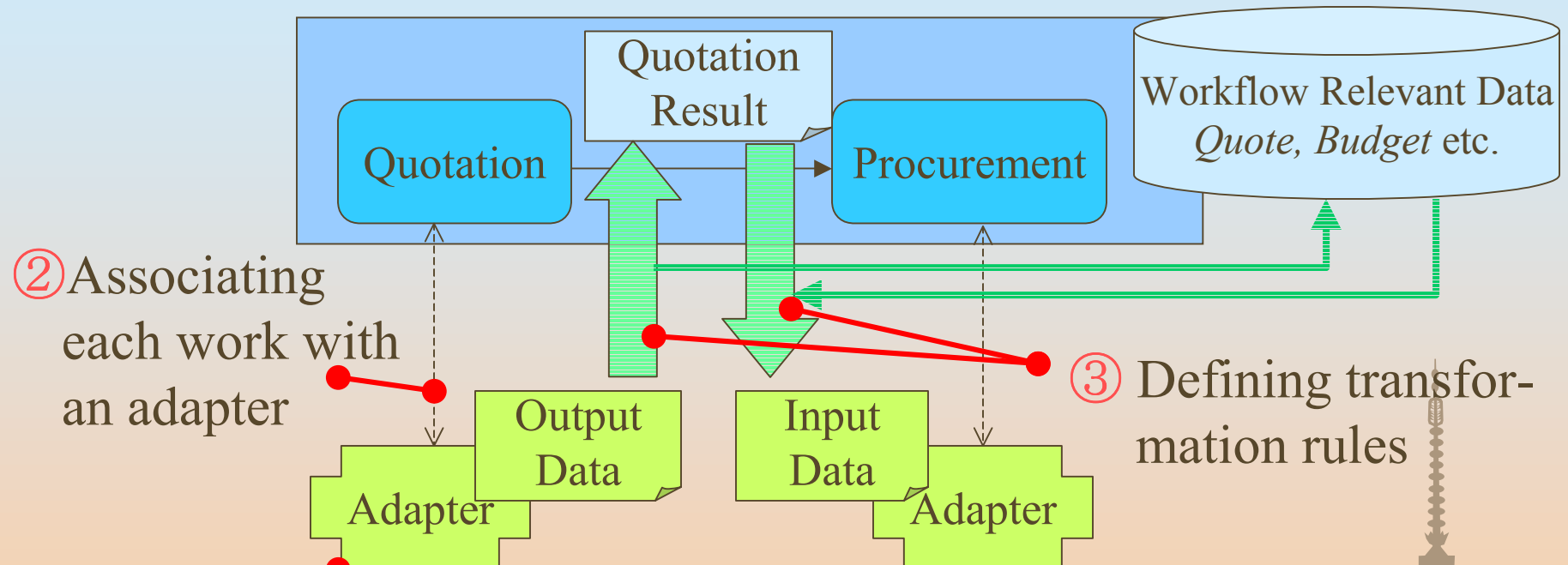
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Extending Business Process Model

12

BP model is extended into BPI system model by adding the following:



- ① Defining attributes of an adapter:
- ✓ Interaction model between the workflow and applications
 - ✓ Input/output data formats

Integration Design Tool

13

Defining an adapter

部品名(N): AdapterForQuotationLegacy

ID: 89994DD3-E1EB-11D4-820E-0000E2132152

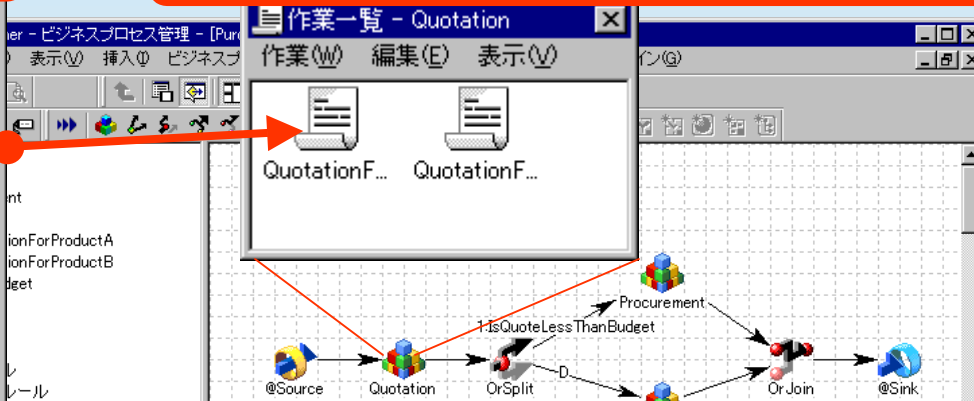
タイプ | 入力データ | 出力データ | ツール | 説明

連携タイプ(T): チェイン連携モデル

プロセス構成(P): WCO-Link/アダプタは同一プロセス

OK キャンセル

Associating each work with an adapter



MDLエディタ - [89994DD7-E1EB-11D4-820E-0000E2132152.mdl]

ファイル(F) 編集(E) 表示(V) 挿入(I) ツール(T) ウィンドウ(W) ヘルプ(H)

入力

QuotationByApp

現在のルート: QuotationByApp

階層構造	コメント
QuotationByApp	QuotationByApp
quotationID	quotationID
estimatedCost	estimatedCost
deadline	deadline
itemList	itemList

出力

Quotation quotationWorkOutput

現在のルート: Quotation

階層構造	必...	テ...	済	コメント
Quotation				Quotation
deadline			✓	deadline
id			✓	id
quote			✓	quote
items			✓	items

Defining transformation rules

Interaction Model — Viewpoints — 14

All applications have internal works and control flow of them in nature. Therefore any application can be considered as a kind of 'Workflow System'!

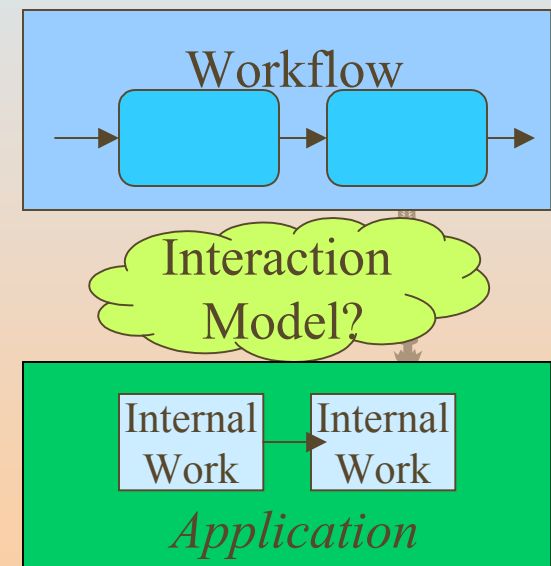
From a viewpoint of workflow interoperability

- ✓ Nested business process
- ✓ Chained business process

From a viewpoint of application invocation

- ✓ Synchronous request/response
- ✓ Asynchronous request and pull
- ✓ Asynchronous request and push
- ✓ One-way

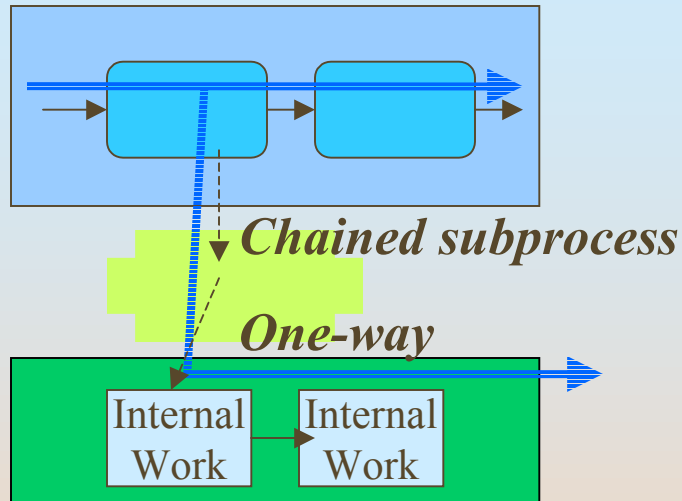
On BPI, we must take account of these two viewpoints in a combined manner.



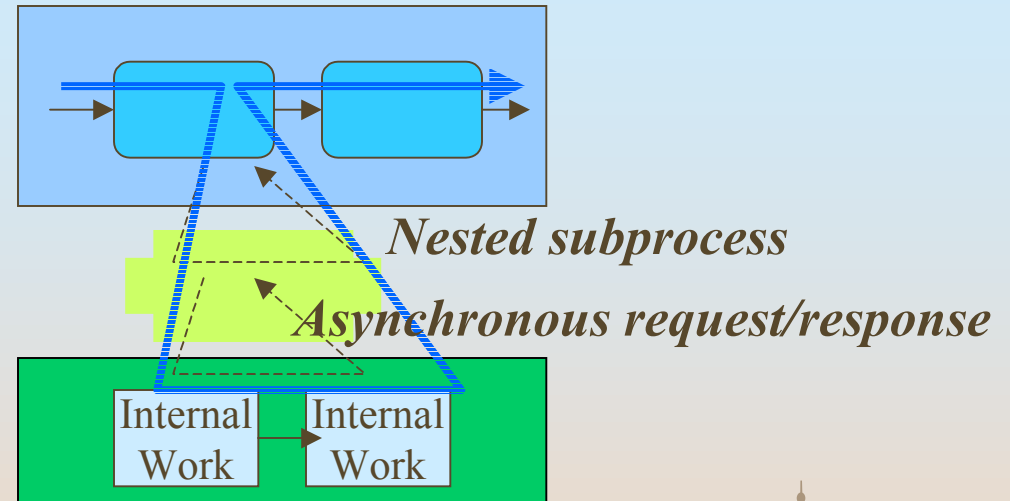
Interaction Model — Examples —

15

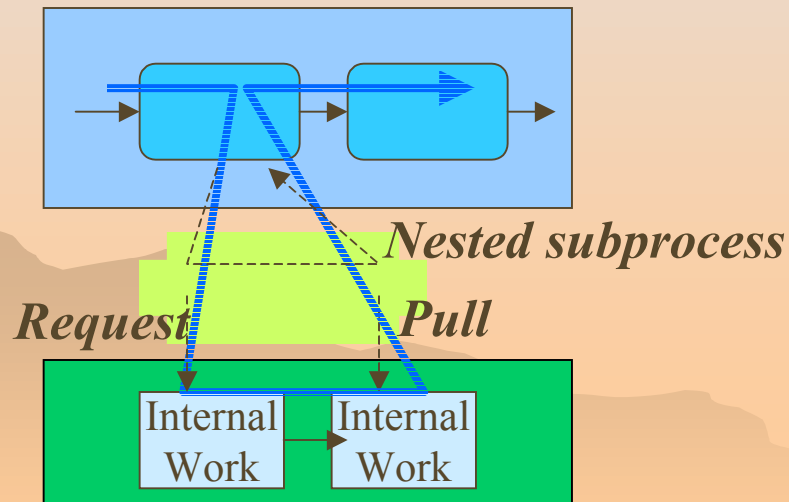
Chained subprocess



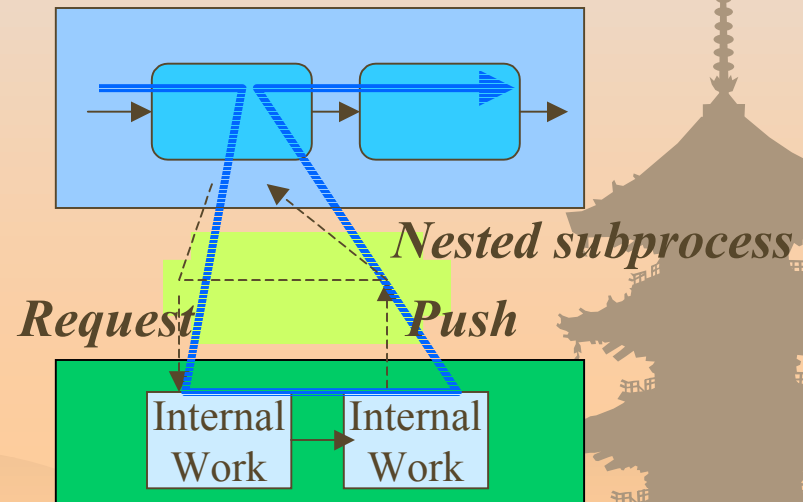
Nested subprocess for synchronous app.



Nested subprocess for asynchronous app.1



Nested subprocess for asynchronous app.2



Summary and Future Plans

16

Our objective is

- ✓ eAI system must be modeled and developed from a business perspective in order to cope with real business problems effectively and speedy.

We have developed tools for modeling eAI System

- ✓ from a viewpoint of business process and by using MOF/XMI
- ✓ in consistence with WfMC Reference Model

We plan to

- ✓ extend BPI approach to B2B eAI(e.g. RosettaNet, ebXML)
- ✓ integrate intra-eAI (i.e. this presentation) and B2B eAI (aka. inter-eAI) into the unified integration framework