
# OASIS BPEL Webinar: Frank Leymann Input

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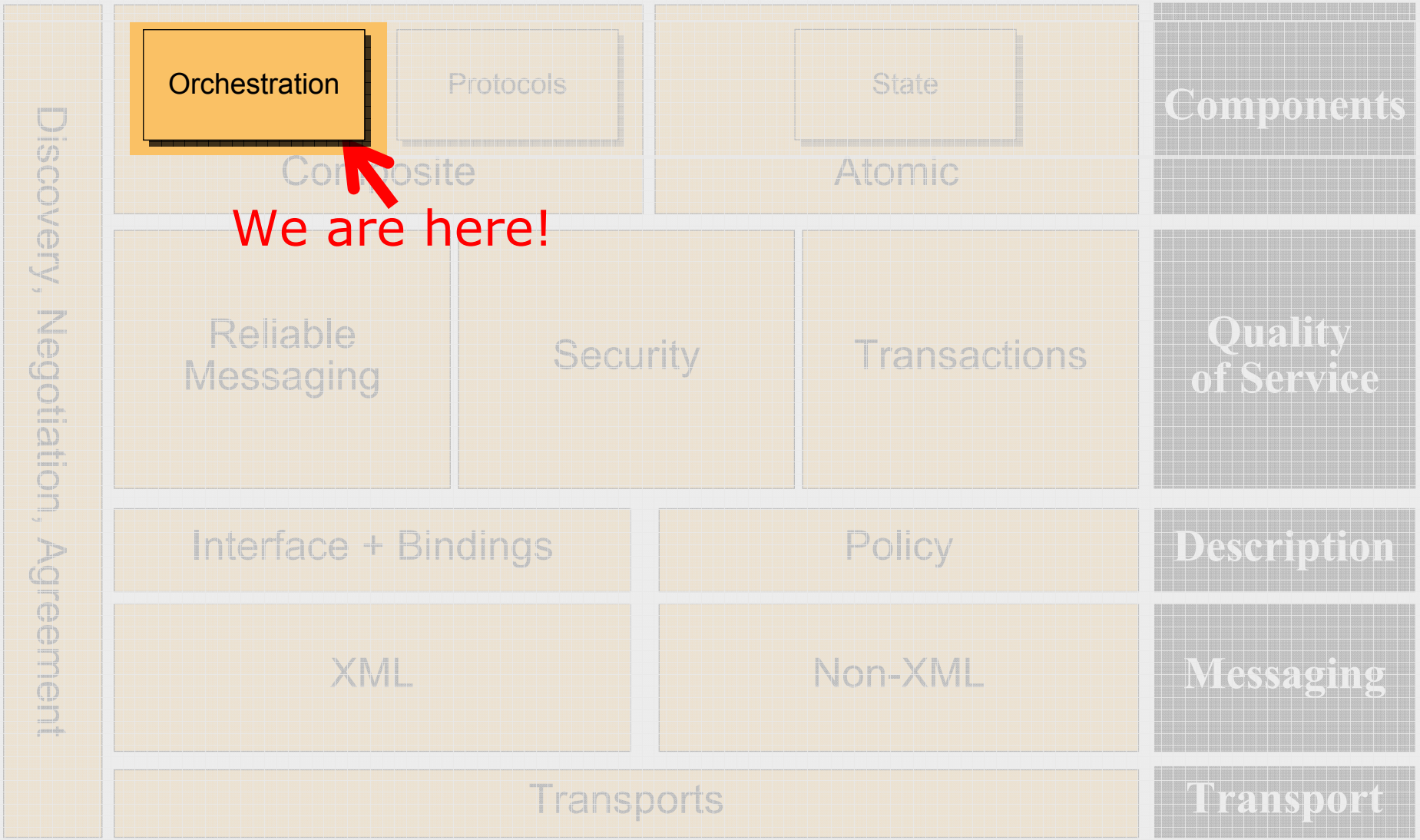
# BPEL's Role in SOA

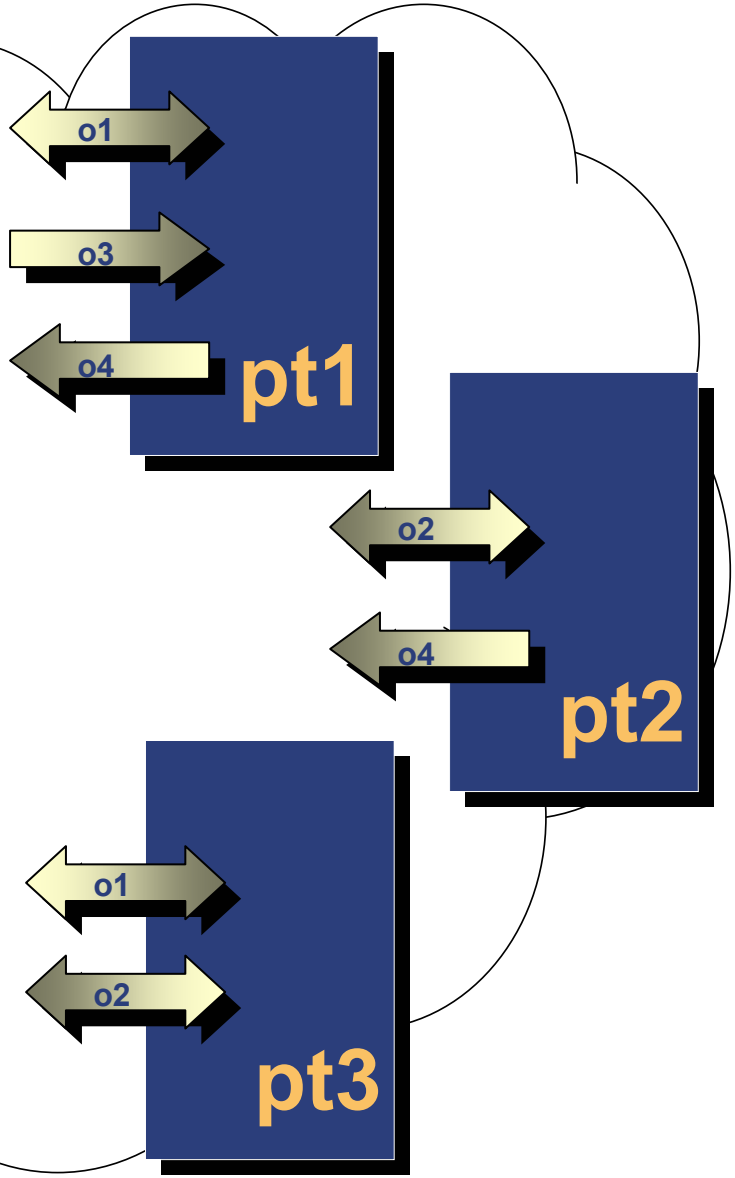
# BPEL in the Web Service Stack



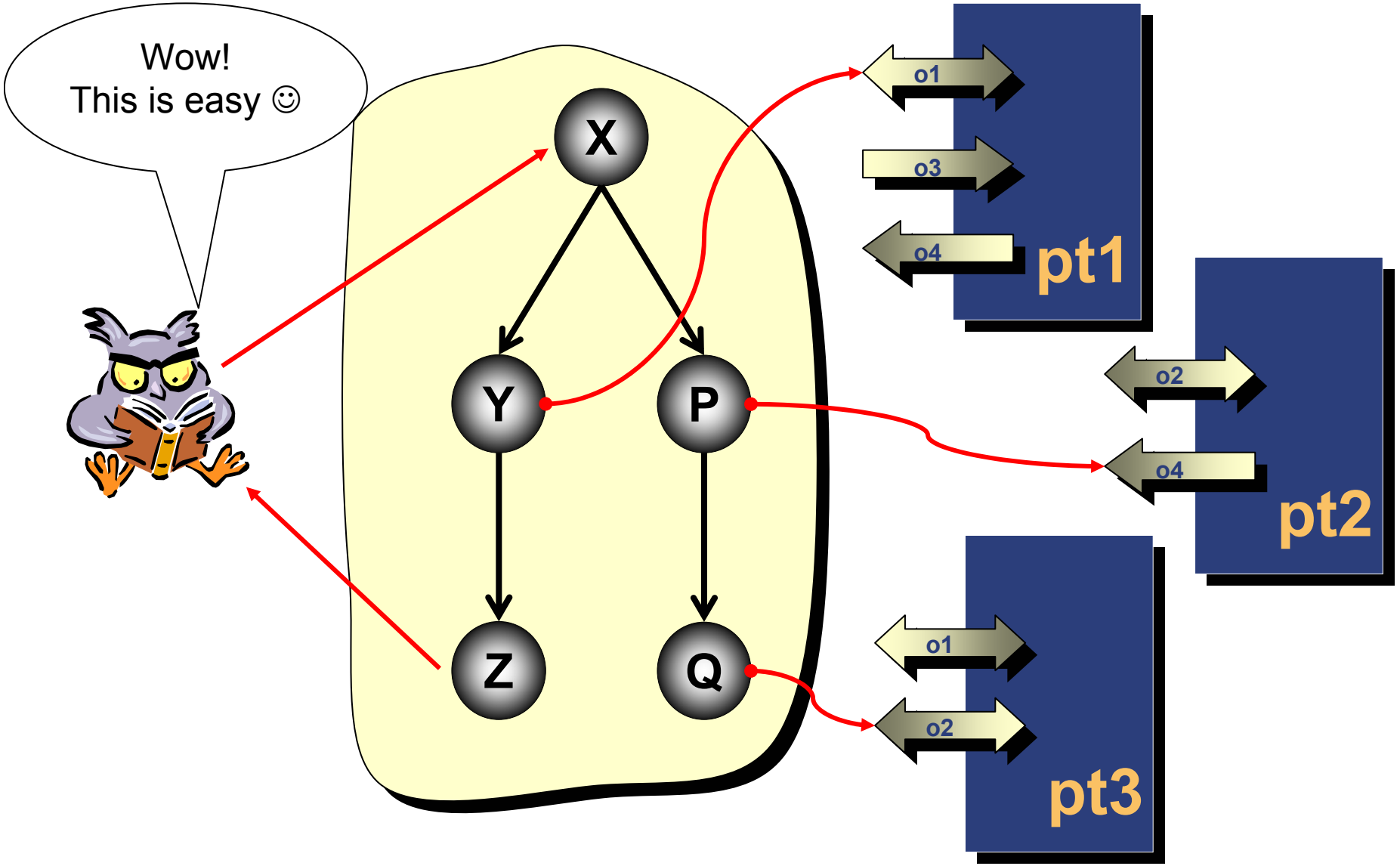
# A Typical Situation


Often, you need more than one service to achieve your goal!

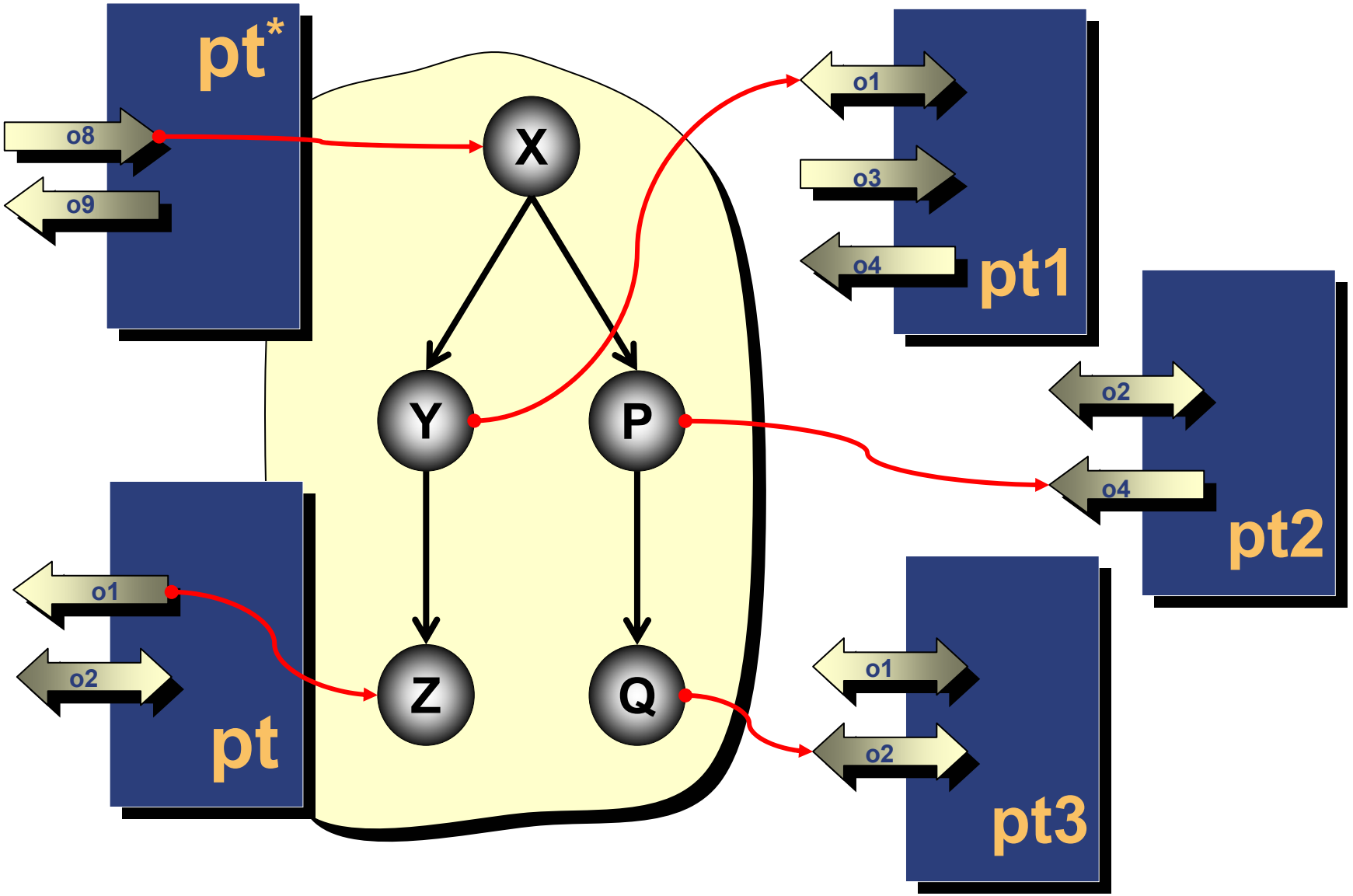
Which ones to use?
How to use them?
In which order?
… ???



# BPEL Prescribes Proper Use of Web Services



# …and Externalizes Processes as Web Services



# BPEL in SOA: Abstract View

"BPEL is a
recursive aggregation model
for Web services"

- Aggregation: A set of Web services can be tied into one or more new Web service by means of a business process model

- Recursive: These new Web services can again be tied into other new Web services

# BPEL in a Nutshell: Elevator Speech

- BPEL describe in a SOA how your company performs its business processes
- With BPEL, it is straightforward to let your business partners and customers directly participate in your business processes
- With BPEL, it is straightforward to tie in Web services as activities of your business processes

# BPEL and Business Process Modeling

# A Well-Known Problem

Executive Focus

How to make money?

Capital & Work Force,
Business Models,
Organizational Structures

Business-IT-Gap

IT Personnel Focus

Application Systems,
Transactions & Data,
Hardware Infrastructure

How to support business with IT?

# Key Aspect of a Solution

How to make money?

Capital & Work Force,

Executive Focus

Business Models,
Organizational Structures

**Business Processes**

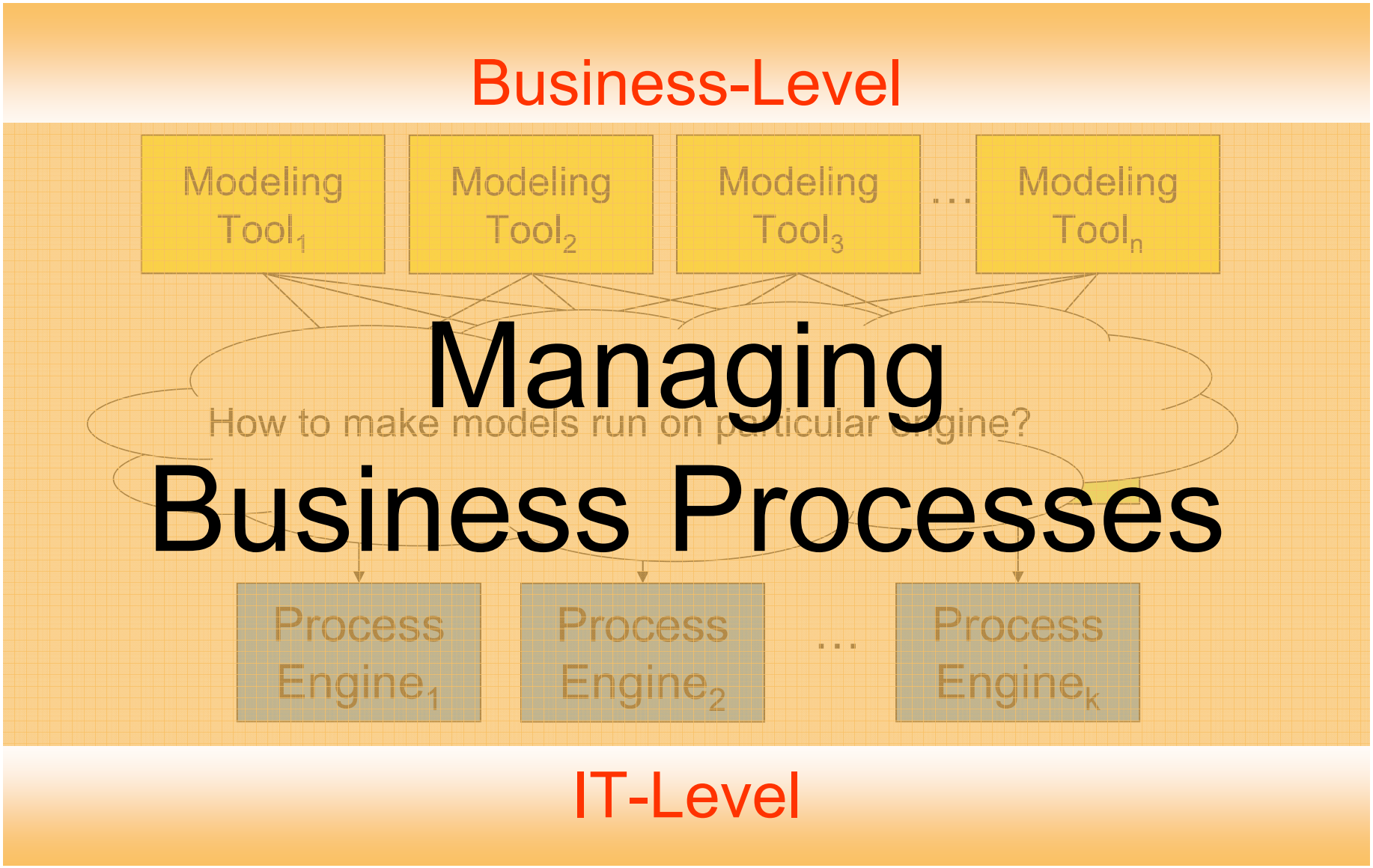
IT Personnel Focus

Application Systems,
Transactions & Data,

Hardware Infrastructure

How to support business with IT?

# Today's Landscape for Process Management



# What's the Problem?

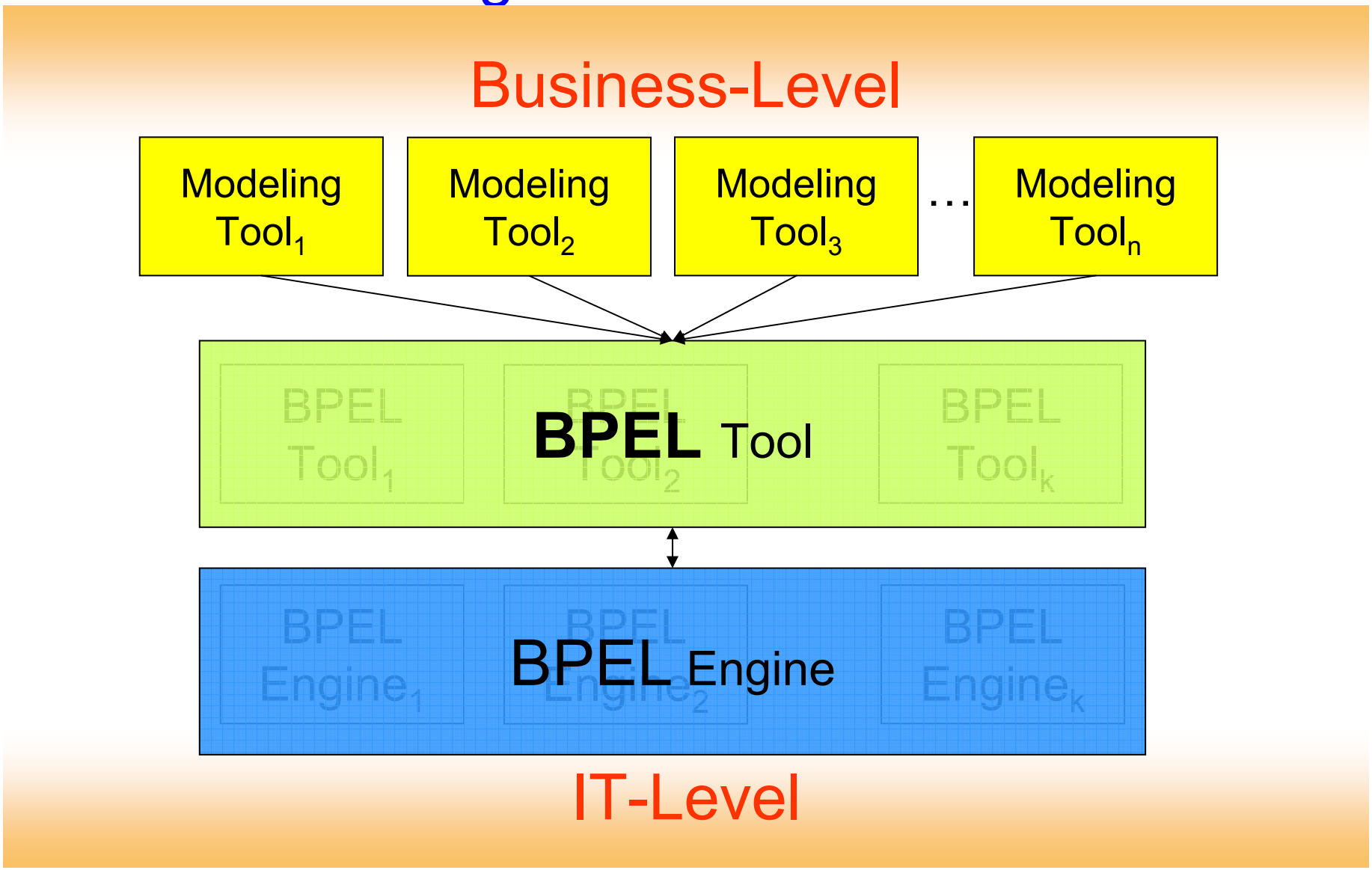
- Vast amount of business level methodologies and corresponding tools
  - …which will never go away… (see next slide)
- Process engines have historically grown up
- Process model must be transformed into a format that can be executed within the process engine of your favorite vendor
- Different vendors process engines support different capabilities
  - …different syntax, terminology, concepts,…
  - …different operational semantics…
    - ➔ The real problem!
- …And all that is different from business level syntax, terminology, concepts, operational semantics,…
- Thus, transformation from business level into IT level always looses information
- Business level tool vendor has to support multiple transformations

# Business-Level Modeling

- Business-level modeling comes with a whole methodology, often developed by business schools
- Different methodologies compete ("method war" ☺)
- Number of business-level methodologies is very large
  ➔ Chances to unify them is very low

- Very likely, there will always be different business-level modeling tools

# What BPEL Brings to the Table



# BPEL Value: First Glance

- Single business process language for IT-users
  - Single runtime model
  - Single IT-level tooling
  - Single target model all business-level tools can map too
- Reuse of IT-level process models across tools and process engines

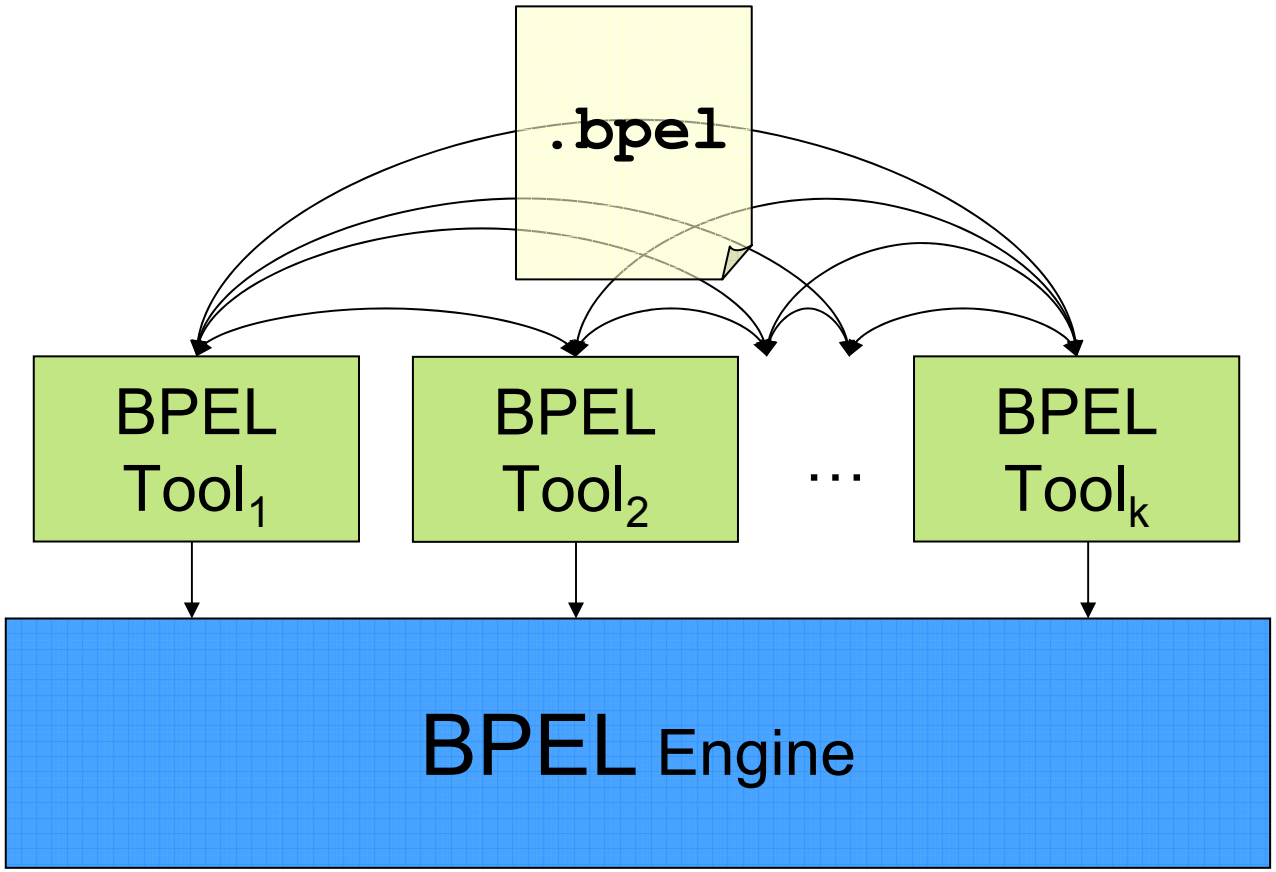
➔ Investment protection

➔ Reduced total cost of ownership: Simplification of overall infrastructure

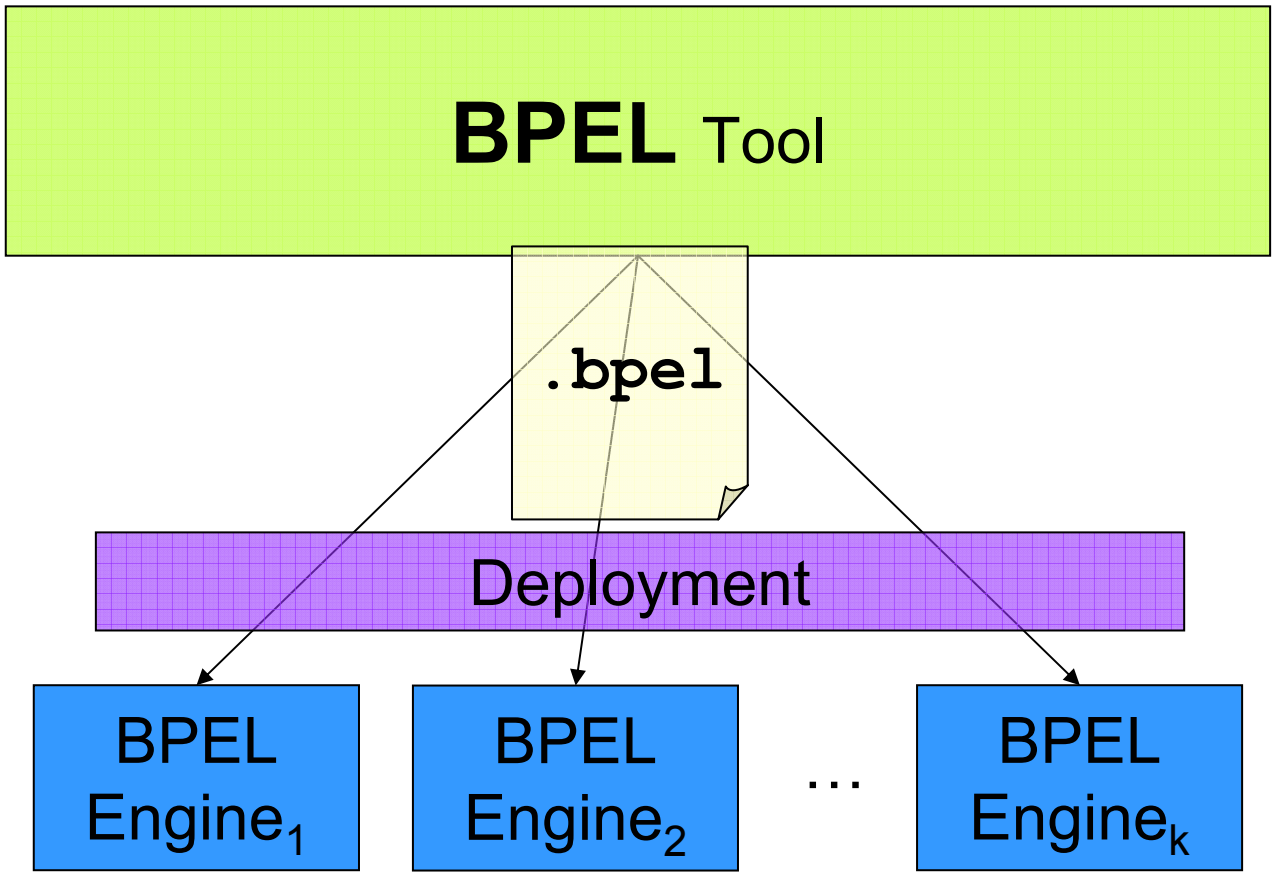
# Did I Say “Table”?

“BPEL is for process/workflow technology what SQL is for relational databases!”

# BPEL and Tool Interoperability

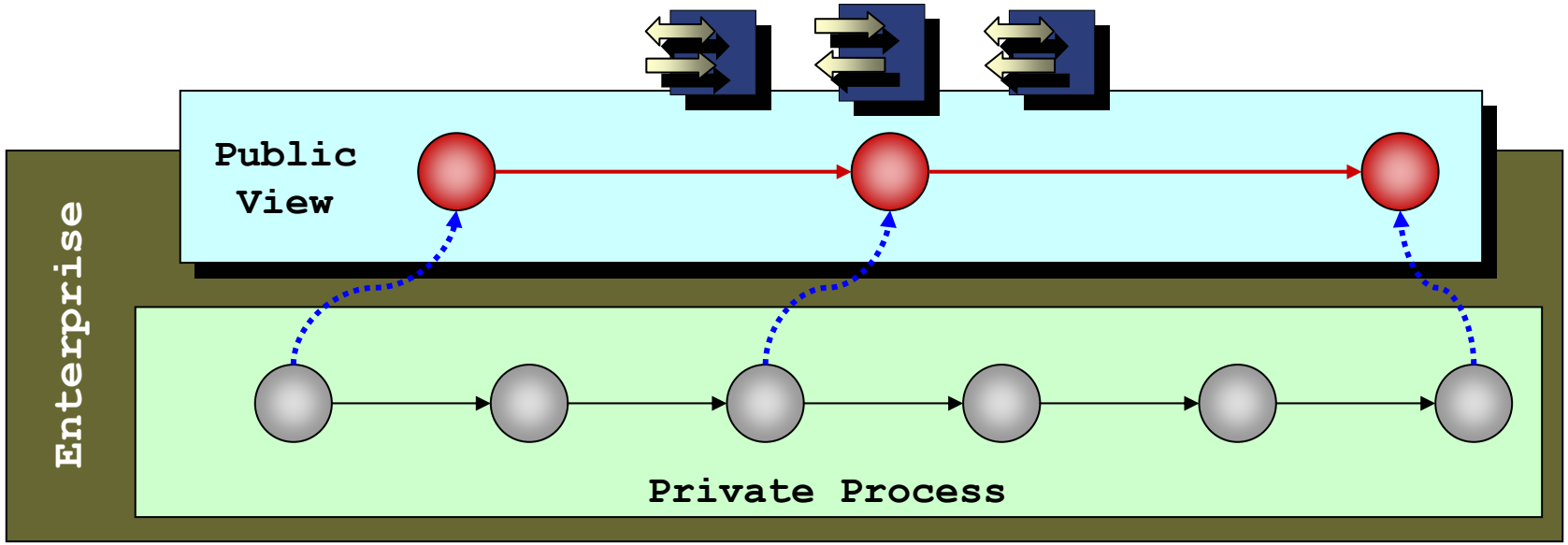


# BPEL & Common Operational Semantics

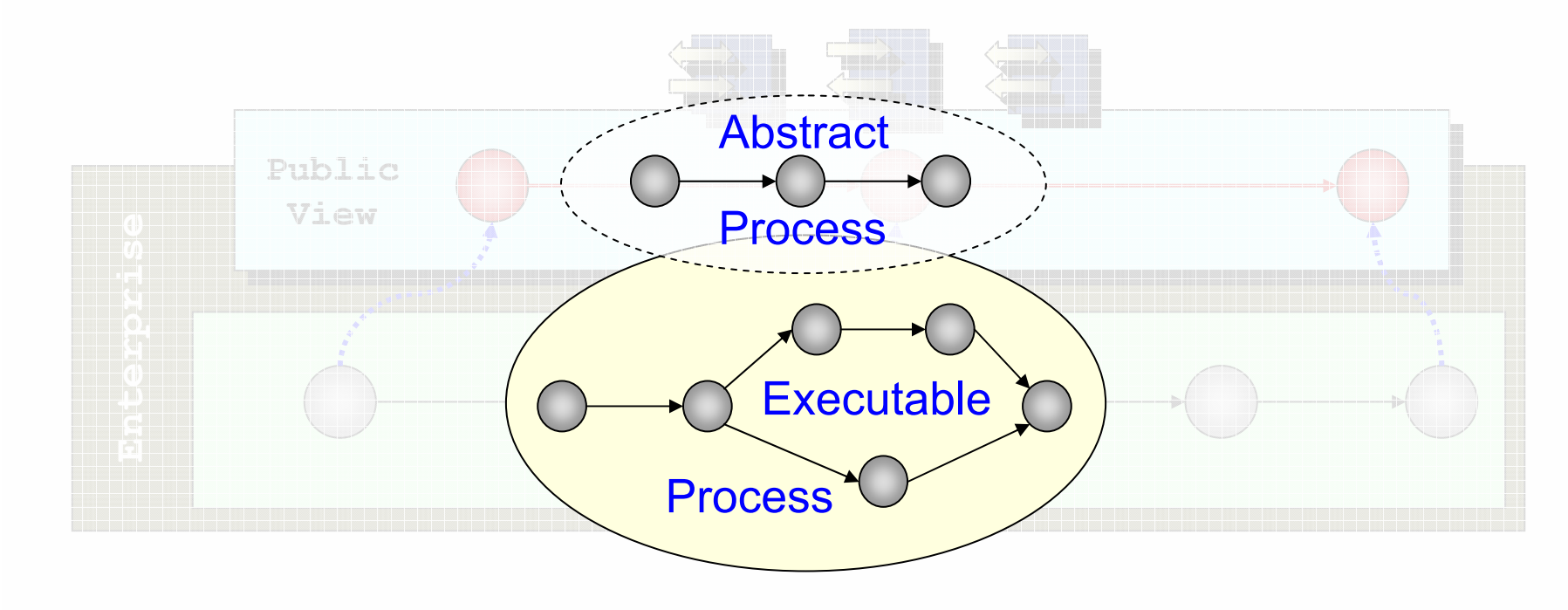


# Usage of Abstract Processes

# Hiding Process Details

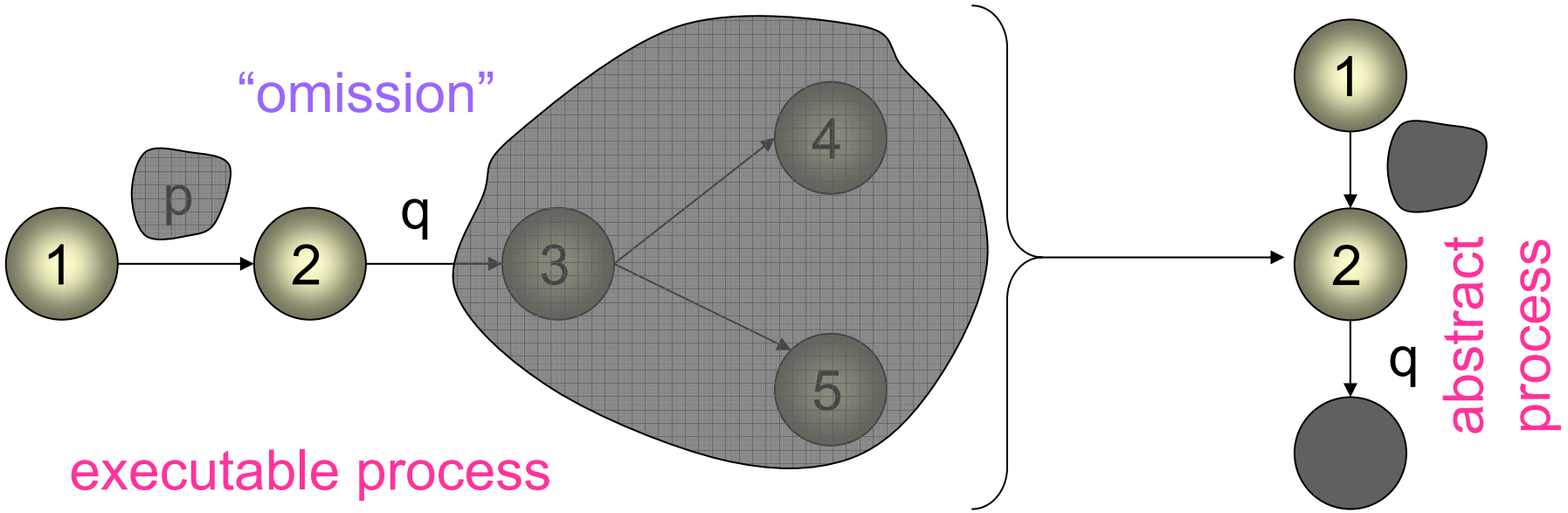


# BPEL Abstract & Executable Processes



# Abstract Processes

- An abstract process describes “behavior” only
- It may not be executable
- It may omit certain information
  - Omitted information represent modeling artifacts that may be provided later (“completion”)



# Use Cases Categories ("Pattern")

- View on internal process
  - Only a projection of an internal (executable) process is made visible to the outside
    - …to protect process model as corporate asset
    - …to hide non-optimal parts of a process model
- Template as "best practice"
  - Specification of common activities, major data structures, and main control flow
  - Must be refined into an executable processes on a case-by-case basis
- Constraints on message exchange
  - Specification about the order in which messages are consumed or produced
    - Business functionality is implemented as a (set of) port types, and operations must be used in a certain order to achieve intended business goal

# View ("Export")

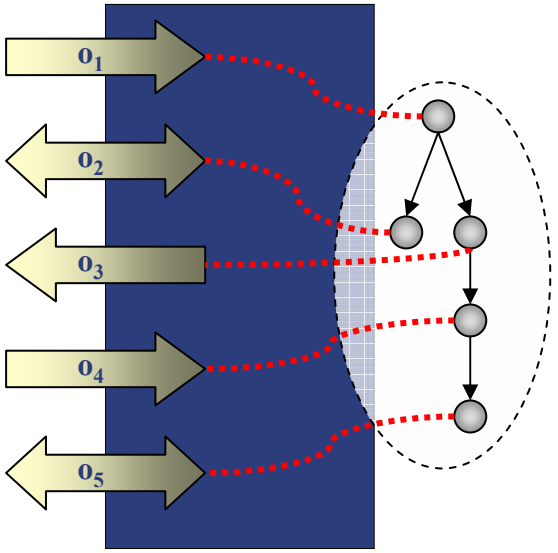
- An abstract process is derived from an executable by abstracting away parts that are not part of the behavior one wishes to expose
- Example:
  - Show a particular business partner the interactions that the partner must follow
    - Interactions with all other partners are dropped
  - Use an abstract process to represent common behavior in a set of executables, and drop any non-repeated behavior
    - An executable process of a more general business model may need parts tagged as points of variability, and those are made explicitly opaque

# Template ("Import")

- An abstract process is basis to create one or more executables, or more detailed abstract processes
- Example:
  - One needs to create an implementation of an abstract process provided as a behavioral prescription for complying with a known, domain-specific business function
  - Multiple abstract processes can be created in a series of iterative refinements to a design
  - One wants to implement "best practices" while maintaining some company specifics
    - The abstract process may have been purchased from a consulting firm, as a model of an optimized approach to a problem

# Service Usage Constraint

- Typically, the operations of a services may not be used in order
  - E.g. it doesn't make sense to use the **`Cancel`** operation of an **`Order`** service before using its **`Buy`** operation ☺
- To describe such ordering constraint an abstract process can be used that only refers to operations of a single port type
- The port type of a service may be associated with a process which describes the order in which the operations of the port type can be used



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