### Methods for the specification and verification of business processes MPB (6 cfu, 295AA)

Roberto Bruni http://www.di.unipi.it/~bruni



06 - Abstraction

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## Object

Overview of the conceptual models and abstraction mechanisms in business process modeling

Ch.3.1--3.3 of Business Process Management: Concepts, Languages, Architectures

## Conceptual model of business processes



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# Horizontal abstraction (modeling levels)



### MOF metamodel



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## Process models and process instances



## Activity models and activity instances



## Aggregation abstraction

Multiple elements of a lower level of granularity can be grouped and represented by a single artefact at the higher level of granularity

Aggregation abstraction is different from horizontal abstraction, because all activities are at the same horizontal level of abstraction

## Vertical abstraction (domain separation)

#### BPM includes multiple modelling domains, integrated by Process Modelling



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### Function models

Units of work enacted by processes (at different aggregation levels)

Informal description, textual documents (coarse business level)

Formal description, function specifications (software layer)

Business Process Modelling								
Process Modelling								
Function Modelling	Information Modelling	Organization Modelling	IT Landscape Modelling					

### Information models

Data representation is crucial: all decisions made during a business process depends on data values

#### Data dependencies between activities are also important (reduce waiting time, avoid deadlock)

Business Process Modelling							
Process Modelling							
Function Modelling	Information Modelling	Organization Modelling	IT Landscape Modelling				

## Organizational models

Organizational structure must be represented

Activities must be associated to specific roles



## IT landscape

Many activities in a business process are supported by information systems

Information systems and programming interfaces needs to be represented because they provide functionality

Business Process Modelling								
	Process Modelling							
Function Modelling	Information Modelling	Organization Modelling	IT Landscape Modelling					

### Process models

Define the glue between the subdomains

Relate functions and execution constraints

Relate data values with process instances

Business Process Modelling								
Process Modelling								
Function Modelling	Information Modelling	Organization Modelling	IT Landscape Modelling					

## From business functions to business processes (and their implementation)

## Step 1: Functional decomposition



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## Step 2: Structuring business processes



### Start event / End event



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## Step 4: Activity implementation



Activities are functions of the finest granularity

They are the building blocks of operational business processes (but sometimes activity implementation can be provided by knowledge worker)





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