

Modeling Business Architecture

Knut Hinkelmann



Modeling Business Architecture

- The Business Architecture comprises all the structures and relationships which are essential for the business
- It should help answer questions like:
 - ◆ Which business processes or products are critical for the company or for a particular environment in which it operates?
 - ◆ Which business process is responsible for which business objects?
 - ◆ Which organisational structures are relevant for the business? Which business processes are assigned to which business units?
 - ◆ Which business objects are used in which manner (reading, creating, modifying, deleting or using) by which business processes or business functions?
 - ◆ What are the business goals? How are they to be accomplished?
 - ◆ How is the business changing in which business segment? Which products, business processes or functionality will be needed in future?

(Hanschke 2010, p. 70f)



Building Blocks of the Business Architecture

- The Business Architecture contains building blocks like
 - ◆ **Business processes (HOW):** sequence of logically connected activities or sub-processes.
 - ◆ **Business functions (HOW):** distinct, cohesive set of business functionality expressing the enterprise's capabilities (e.g. “customer relationship management”).
 - ◆ **Products (WHAT):** outcome or deliverable of an enterprise’s service or process; can be either material or immaterial (services) and can consist of subproducts.
 - ◆ **Business units (WHO):** logical or structural unit of the enterprise
 - ◆ **Business objects (WHAT):** real-world entity which encapsulates some part of the business activity of an enterprise (e.g. customers, for example, products or orders).



Levels of Granularity

- Dependencies can exist between elements of the business architecture
 - ◆ Example: a business unit is responsible for the business object "customer" and maintain customer data in the business process "customer management"
- Building blocks are generally described with differing granularity.
 - ◆ Example: Business processes are described in process maps in in terms of links in the value chain (procurement, production, sales) and also can be broken down to the level of individual activities in a BPMN diagram.
 - ◆ Similarly business objects can be modeled as clusters (e.g. customer data) or broken down into classes with attributes and associations.

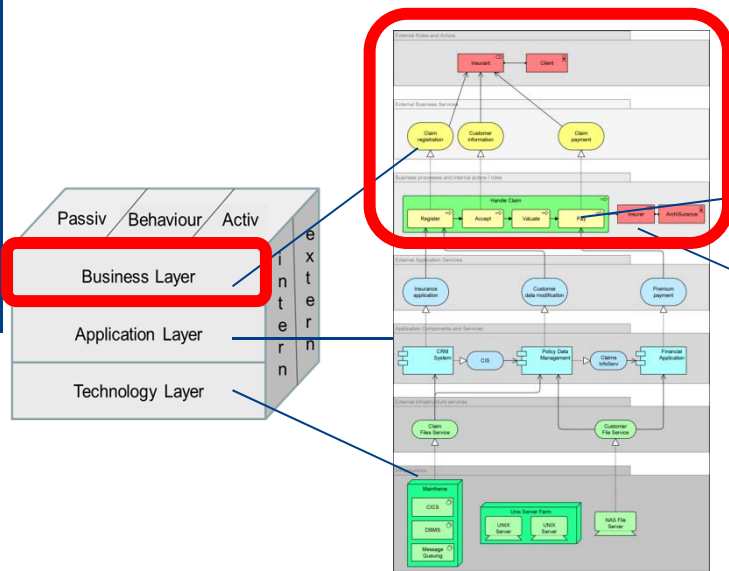
(Hanschke 2010, p. 71f)



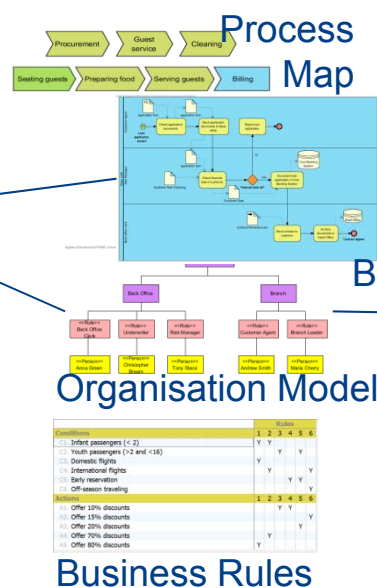
Modeling Business Architecture

- Detailed models can
 - ◆ be related to the cells of the Zachman Framework
 - ◆ represent details of elements in an ArchiMate model

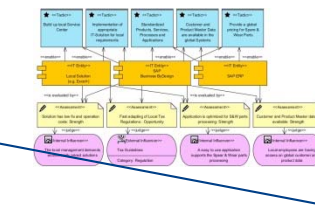
Overview: ArchiMate



Detailed Models



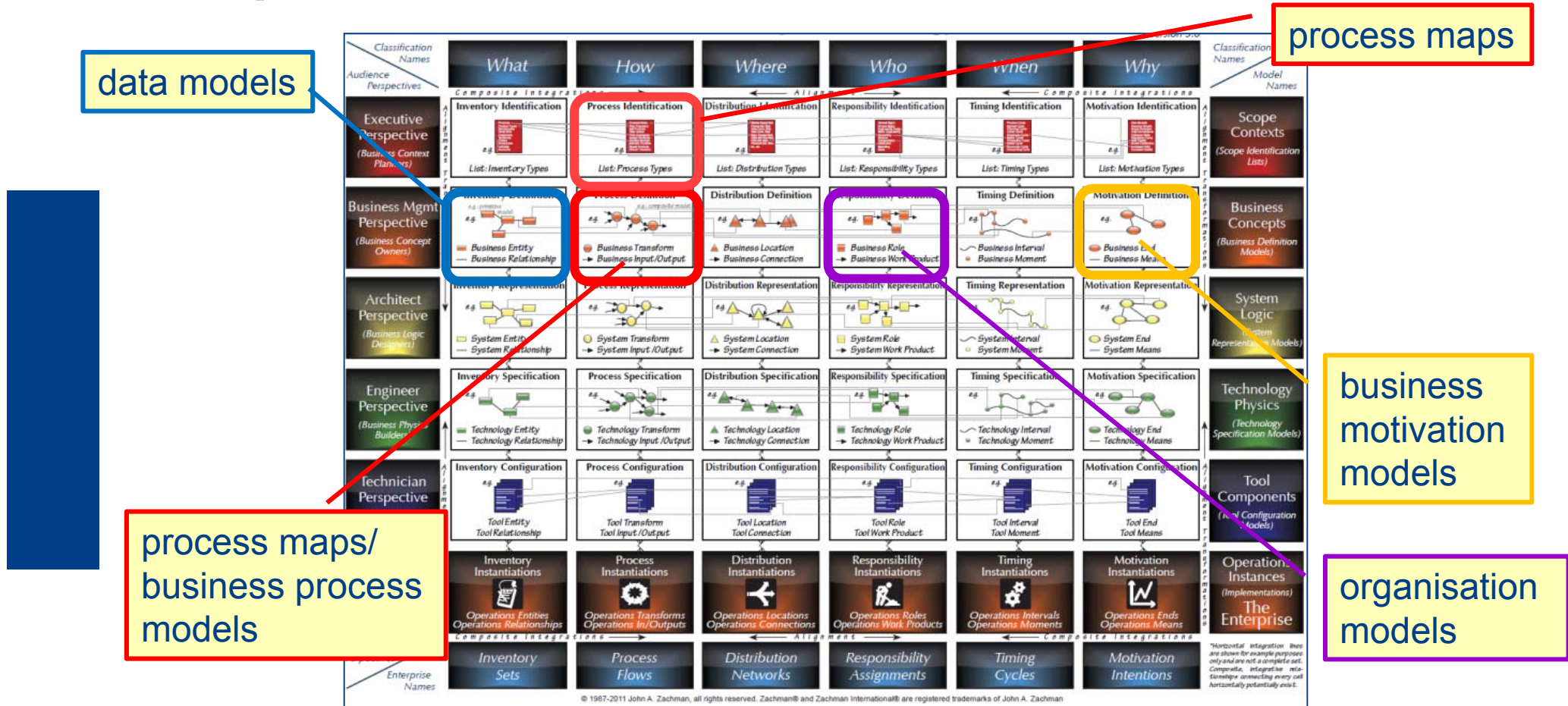
Business Motivation



Overview: Zachman

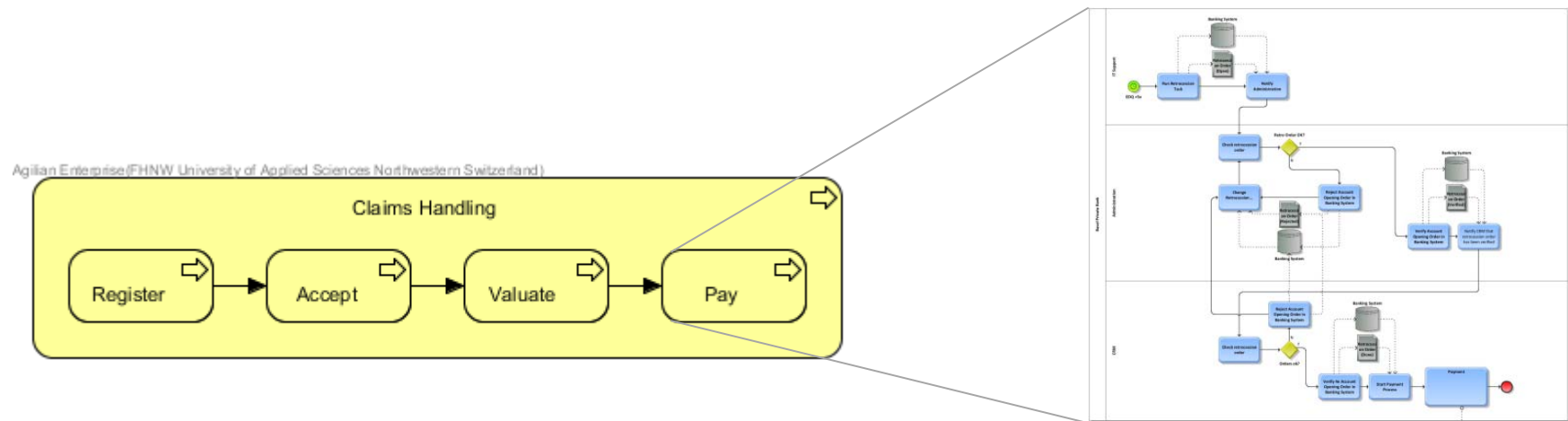


Referencing Detail Models from the Business Perspective of the Zachman Framework



Business Process Models and ArchiMate

- An ArchiMate Model is an overall representation of an Enterprise Architecture
- To model details of elements (e.g. conditional flows and events of a process) one can use specific models
- Example: Modeling the flow of a process in BPMN



Relationships

- Dependencies can exist between elements of the business architecture
 - ◆ Example: a business unit is responsible for the business object "customer" and maintain customer data in the business process "customer management"
- Dependencies can be represented in different ways and on different levels of granularity
 - ◆ **Landscape diagrams** representing dependencies between three building blocks
 - ◆ **Mapping tables** present functional dependencies between two building blocks
 - ◆ **Business Conceptual Model:** References between models and model elements

(Hanschke 2010, p. 71f)



Example: Business Landscape Diagramm



In this business landscape diagramm

- business functions (cells of the matrix) are assigned to
- Business Processes (x-axis))
- Organisational Units (y-axis)

Representing Relationships: Mapping Diagramm

This mapping table assigns business objects to business processes. The mnemonic “CRUD” summarises the ways in which business objects are used in business processes

		Business processes				
		Disposition	Production management	Factory planning	Resource planning	...
		BP1	BP2	BP3	BP4	...
Business objects						
Sales order	BO1	R				
Production order	BO2	CUD	CUD	R		
Factory order	BO3			CUD	R	
Stock location	BO4	R	R	R		
Goods receipt doc.	BO5			R		
Storekeeper	BO6				R	
...	...					

CUD Create, Update, Delete

R Read



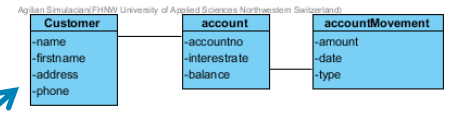
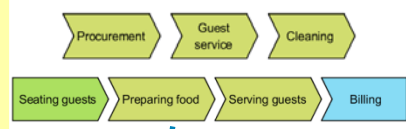
Horizontal Relations between Processes and other Aspects on the Business Perspective



References in BPMN

- Process models represent the flow of work.
- Processes are related to other aspects of business
- These are represented by references to other models.

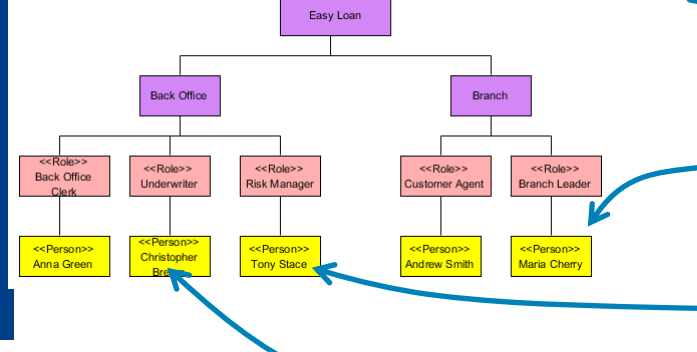
An element in a process map corresponds to a process diagramm



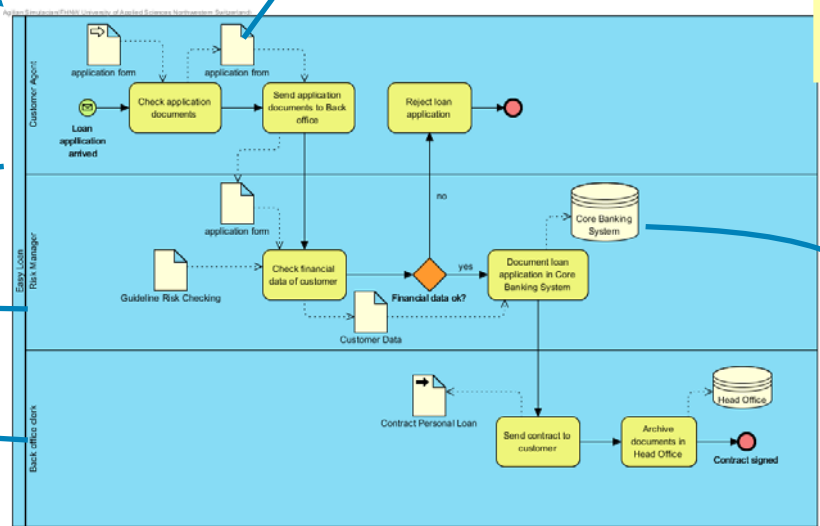
Data Objects can refer to

- data models
- document models

©Gillian Simonsian/FHMM University of Applied Sciences Northwestern Switzerland



Lanes refer to elements in an organisation model



Data stores may refer to IT model



Relationships from and to Business Process Diagrams

There are two kinds of relations from/to BPMN

- Relations **to** process **models as a whole**
 - ◆ Process maps
 - ◆ Business motivations
- Relations **from** process model elements to **elements** in other models
 - ◆ data objects in document models and data models
 - ◆ organisation units in organisation models
 - ◆ applications and application services in IT models
 - ◆ business rules



References in BPMN

- Artifacts in BPMN stand for data objects
 - ◆ Data object in BPMN can represent different kinds of data
 - structured data
 - documents
 - ◆ Data store (applications)
- Lanes and pools represent organisational elements
 - ◆ organisation units
 - ◆ roles
 - ◆ people

Data and organisation are modeled in their own models; their elements can be referenced from BPMN