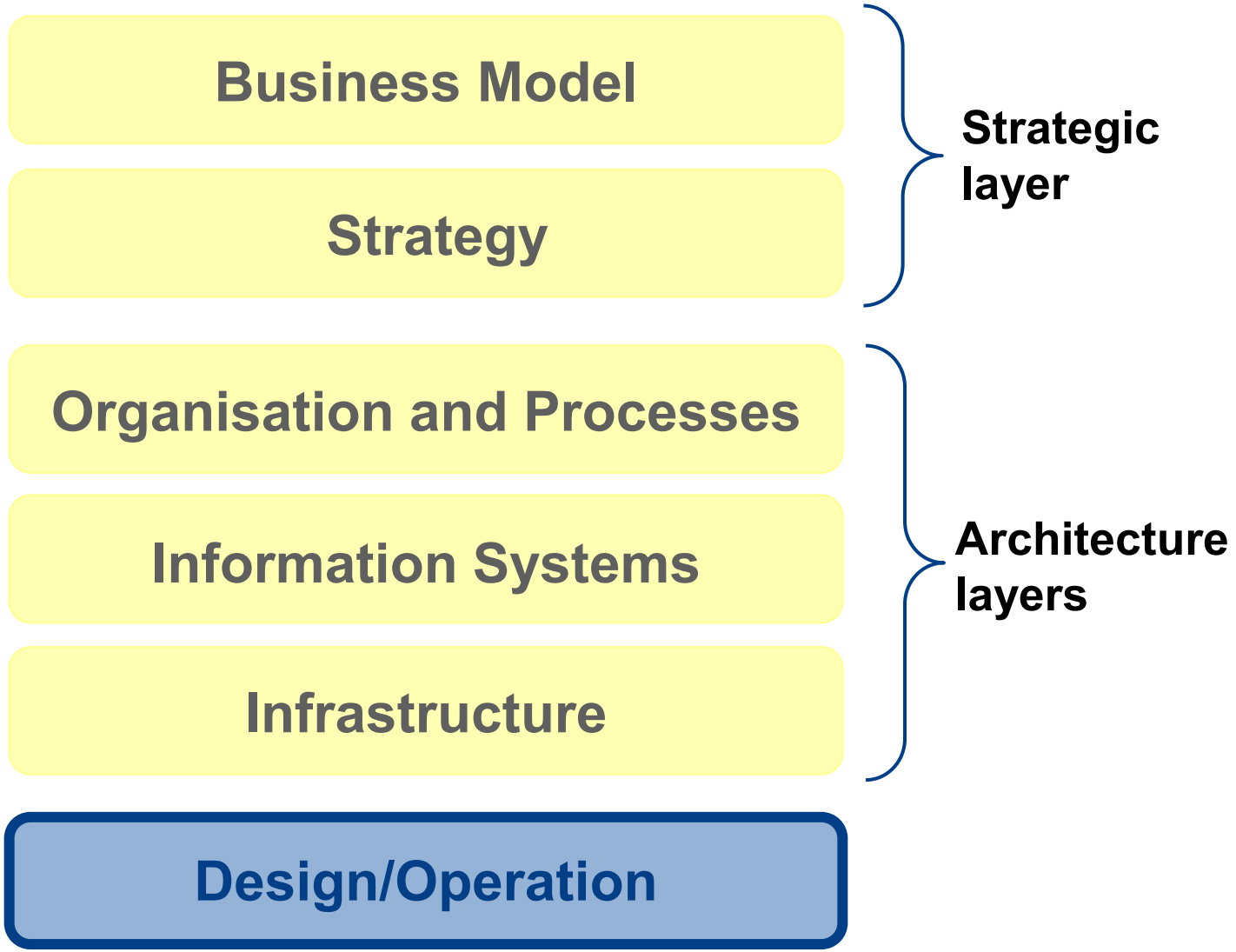
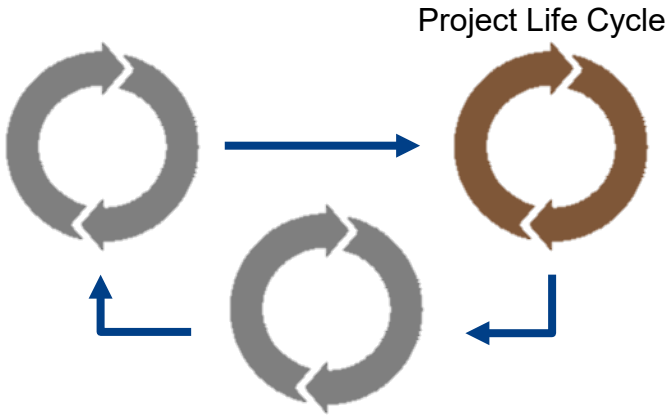
Architecture Level vs Design Level

Knut Hinkelmann

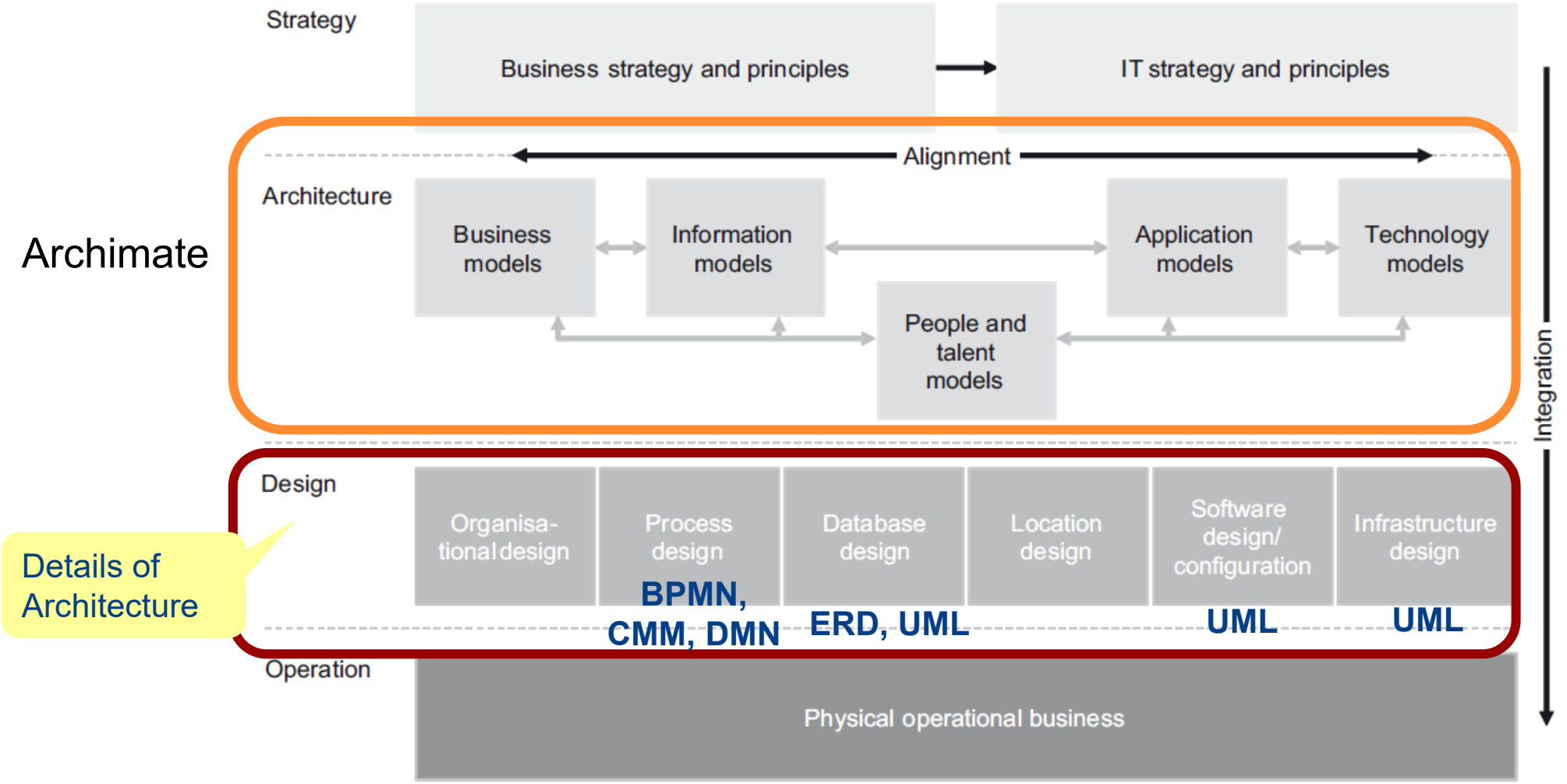

Business Model
Strategy
Strategic layer
Organisation and Processes
Information Systems
Infrastructure
Architecture layers
Design/Operation

EAM and Project Life Cycle



- During Project Life Cycle decisions are made that effect Enterprise Architecture
  - Enterprise Architecture guides Design of Processes, Information, Applications, …
  - Decision on Design Level might change Enterprise Architecture

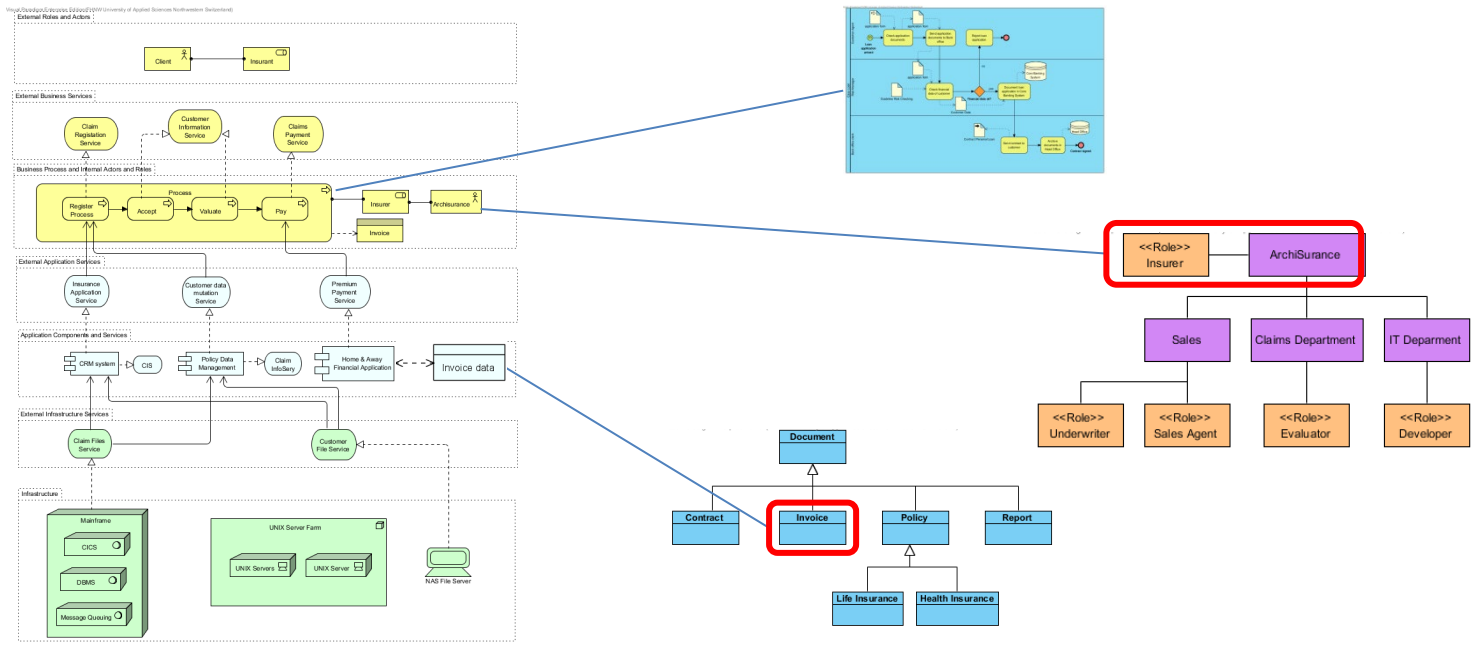
Project Life Cycle: Implementation of Enterprise Architecture



(Ahlemann et al. 2012, p. 61)

Referencing Detail Models from ArchiMate

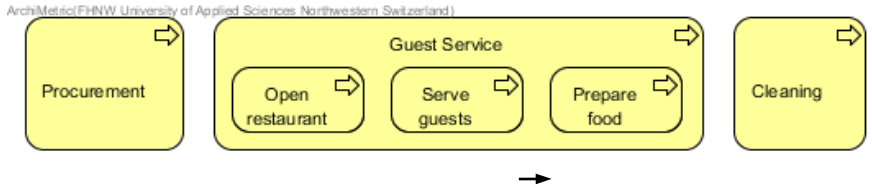
- ArchiMate represents an overall architecture
- Architecture elements can be modeled more detailed in a separate model
  - Business Processes models represent flows with events, tasks, gateways
  - Data Objects and Artefacts are detailed as Class Diagrams, Entity Relationship models and database tables



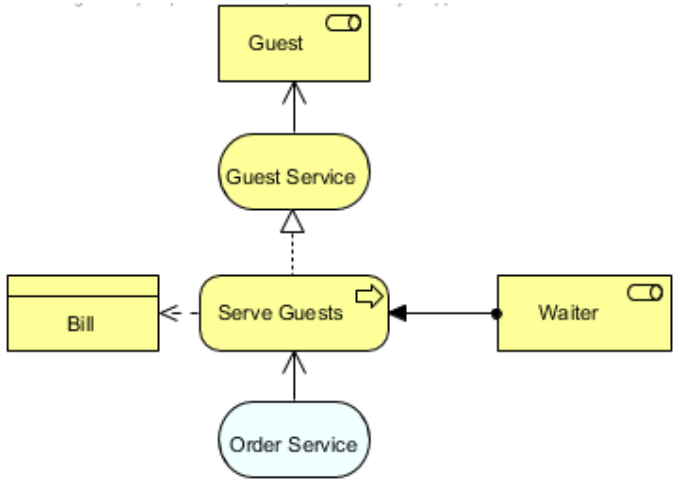
Scenario 1: Business Process Design

Business Processes on Architecture Level

- Architecture models show process and relationships
  - between processes (subprocess, trigger, logical order)

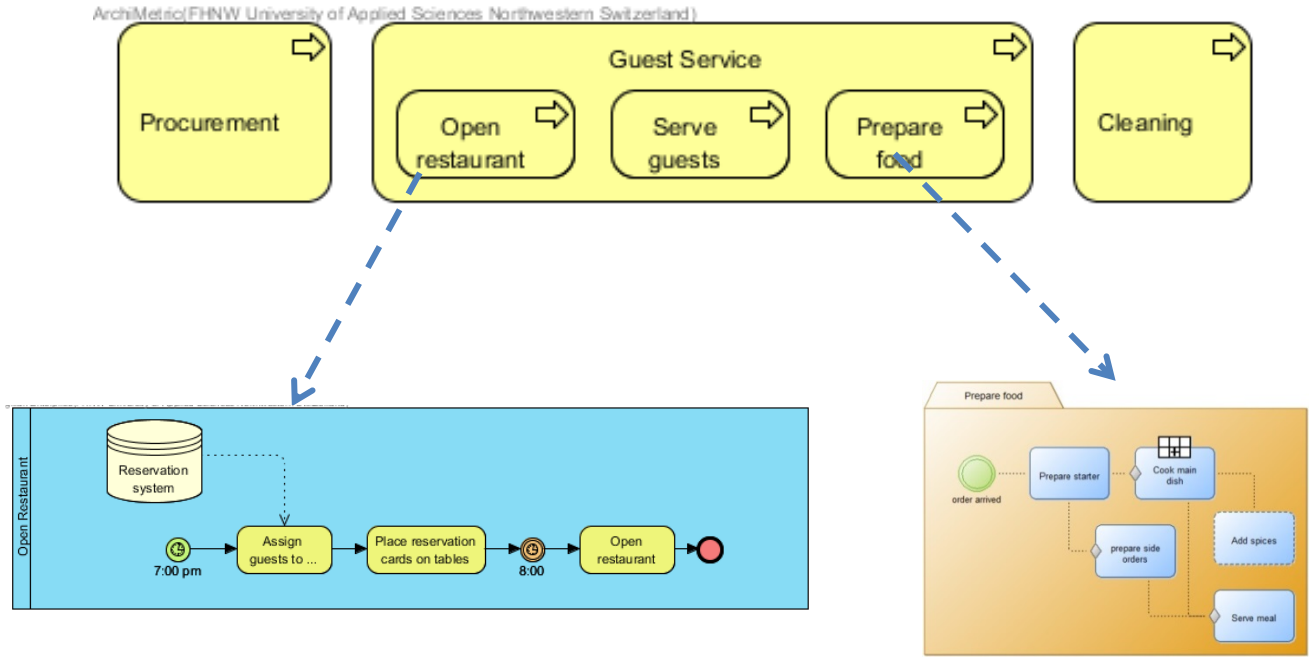


  - between processes and other elements (application services used, business services realized, roles assigned, …)



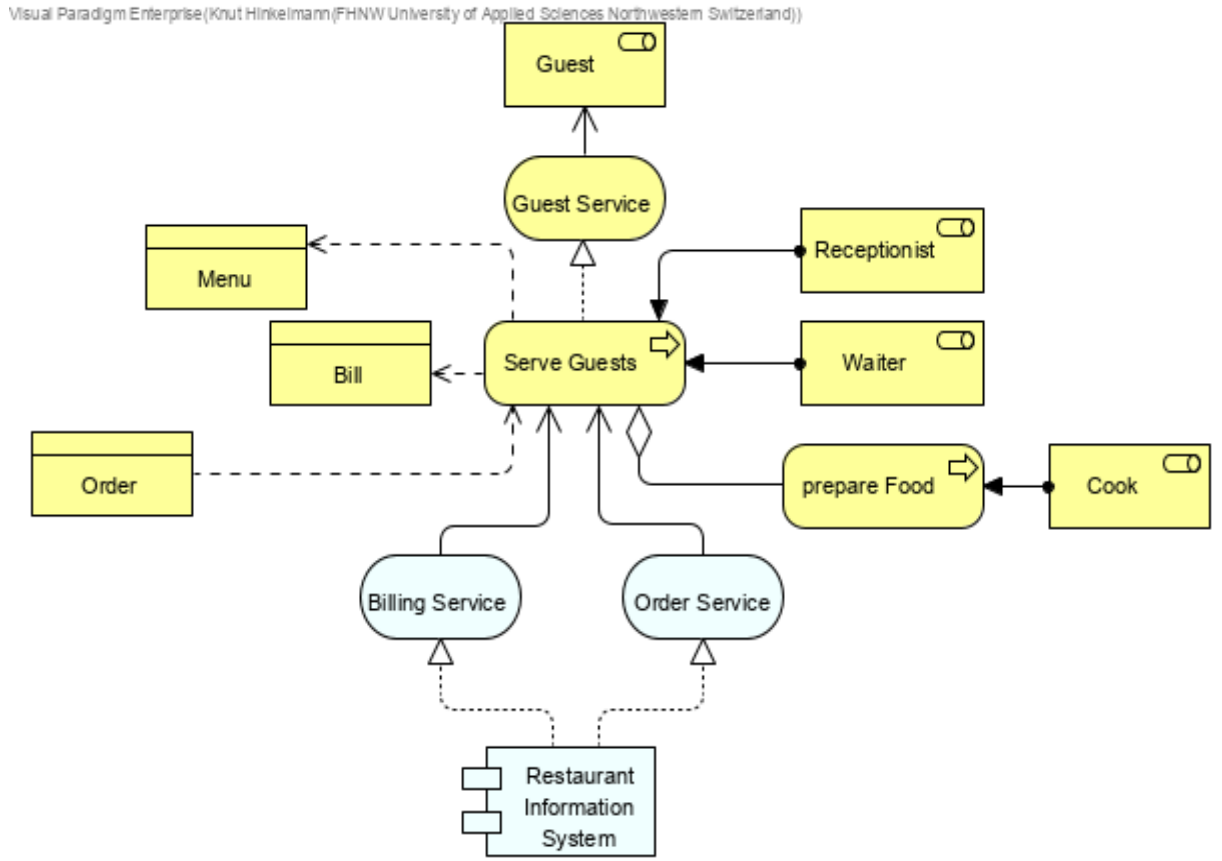
Business Process Architecture and Design

- An ArchiMate Model is an overall representation of an Enterprise Architecture
- Modeling details of elements (e.g. conditional flows and events of a process) are not part or the architecture. They are modeled in specific process models
- Example: Modeling process logic in BPMN and CMMN



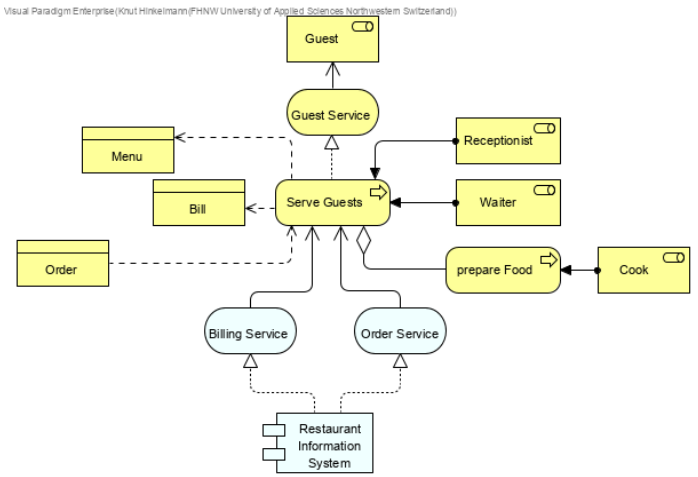
Example

This is a view on the Enterprise Architecture from the viewpoint of the process manager for guest services at Portia



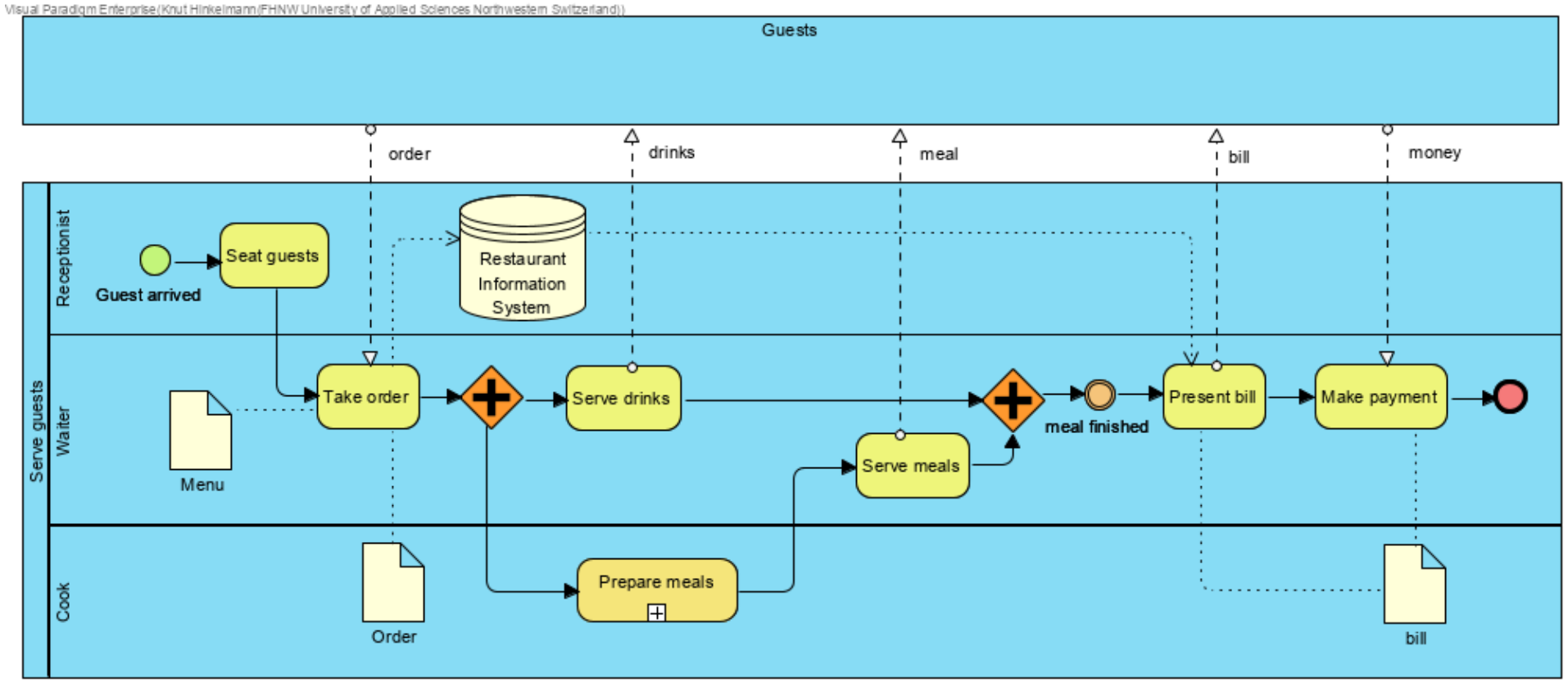
Business Process Structure Derived from Architecture

Sketch of the process derived from the architecture:



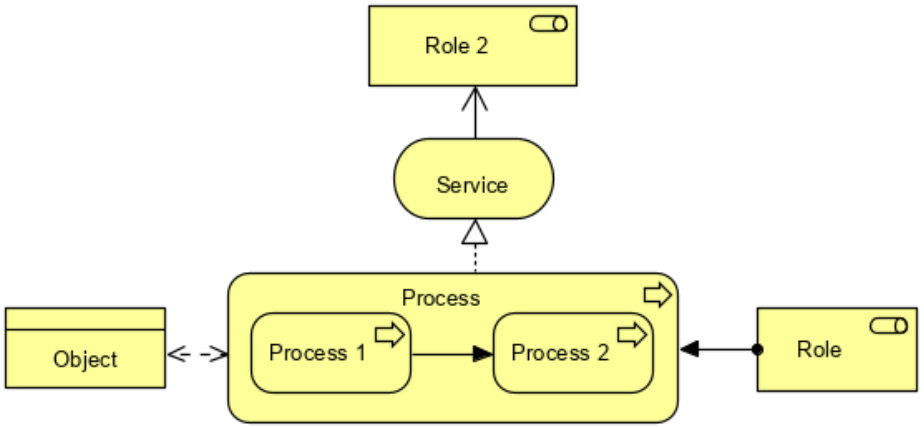
An Example Process

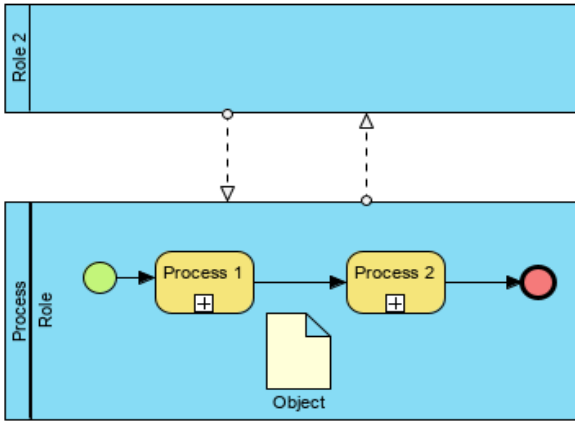
- This is a simplified version of the process for serving guests



Deriving the Process Structure from Architecture

- There are two ways a role can be related to a process
  - Participants executing (part of) the process are connected via the "assign to" relation – they are represented as lanes in BPMN
  - Participants for whom the process "produces" something are assigned via services – they are represented as pools (external participants) in BPMN
- Business Objects and Data Objects appear as Data Objects





Scenario 2: Data and Documents

Documents and Data

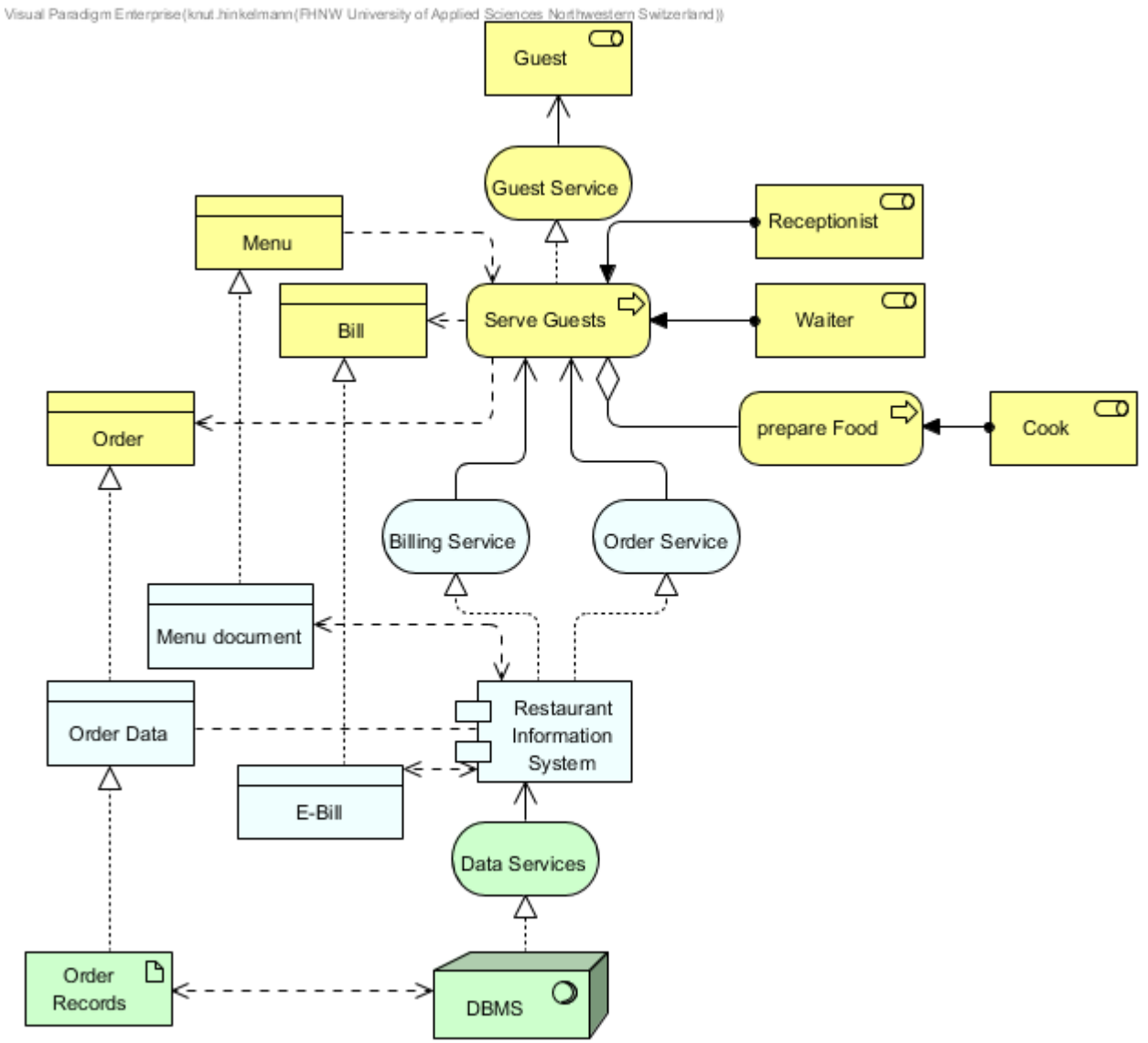
Business Objects and Data objects can represent different kinds of data

- **Structured data:**
  - Entities with attributes and relations between them
    - Examples: the data about customers with address, phone number and products they bought
- **Documents**
  - Entities which contain text, graphic or other content
    - Examples: Application form, report, invoice, book
  - *Metadata* are structured data describing documents
    - Example: a report might have an creator, a creation date and a subject. A book has author, title, publisher

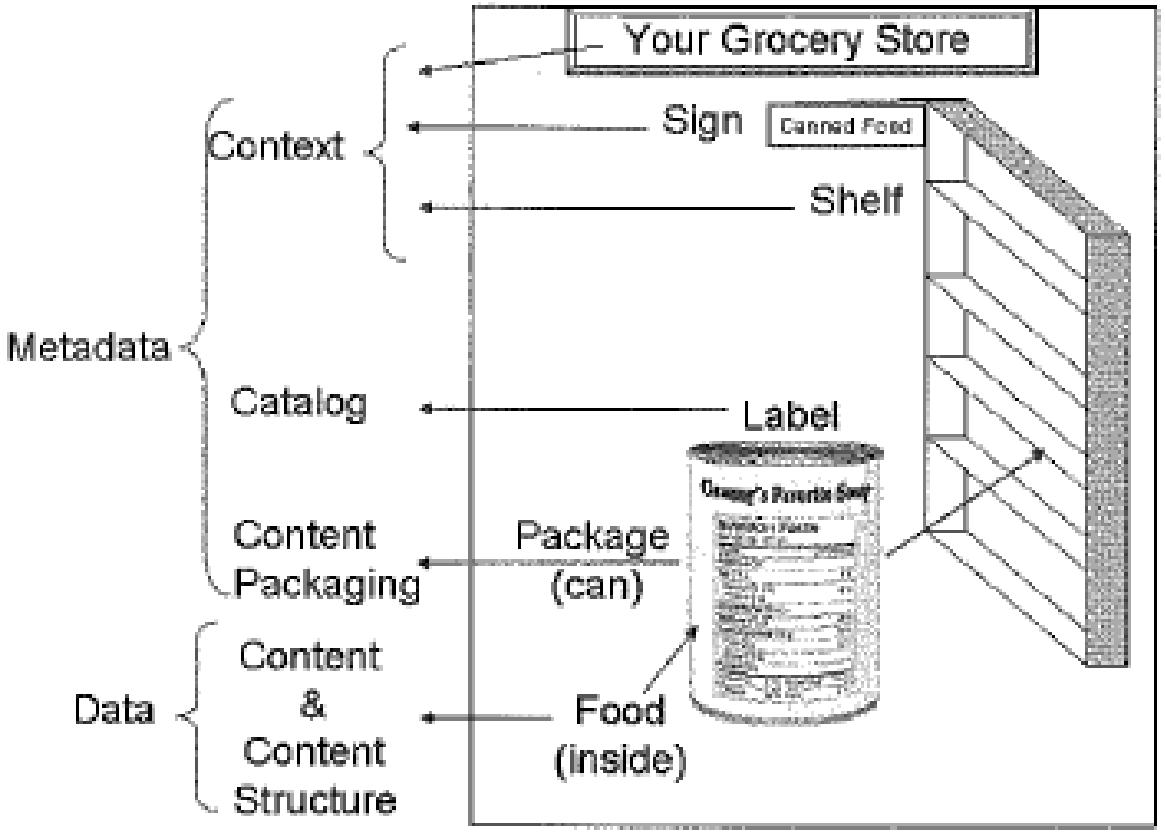
Example

This is an extended process view with data objects and artifact

- Menu and Bill shall be represent documents
- Order shall be structured data



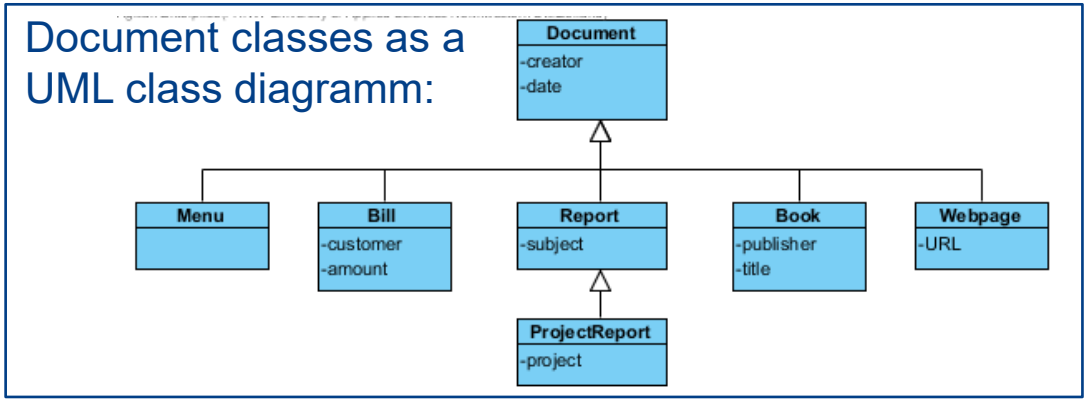
Metadata correspond to Labels



Michael C. Daconta: Information as Product, 2007

Modeling Data Objects as UML Class Diagrams

- A document can be represented as a class object with attributes describing the meta-data



- Data model for structured data represented as a class diagram

Combining Document and Data Modeling

Information about Documents and Data can be combined in one model

- Document classes
- Structured Data
- Associations

- In this example, Stereotypes are used to distinguish document classes from other classes