Chair of Mobile Business & Multilateral Security

Mentorium 1
Business Informatics 2 (PWIN)

Course Organisation
myPlace Scenario
Information Systems

WS 2023

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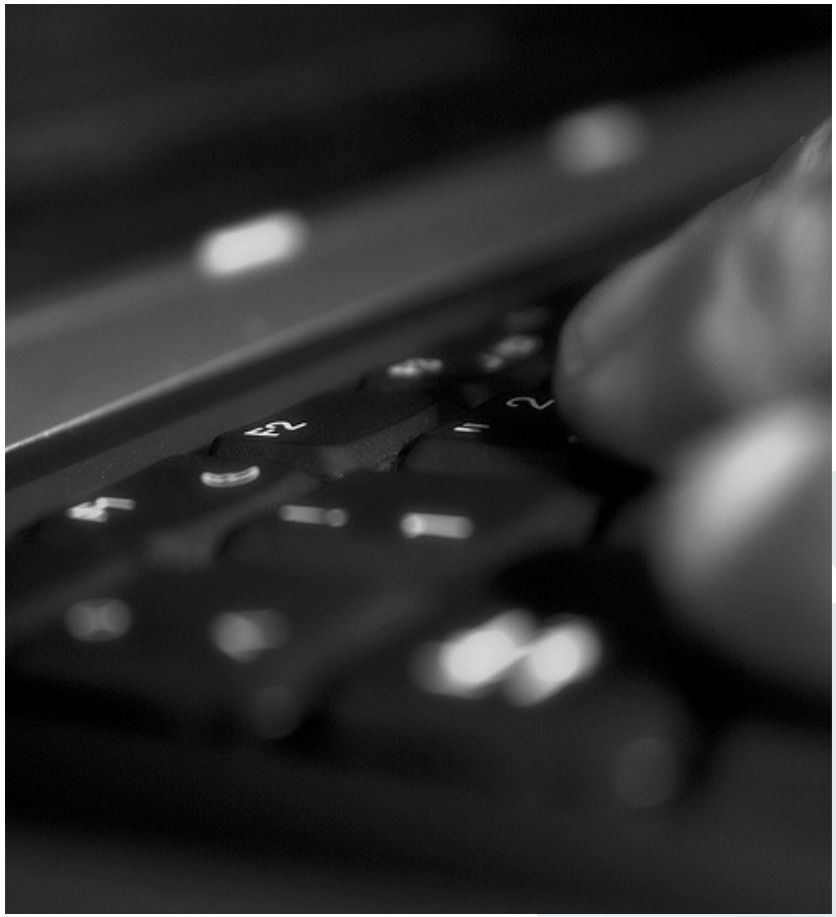

Jenser (Flickr.com)

Agenda

- Course Organisation
- myPlace – A mobile location-based service
- Information Systems
  - Information and Application Systems
  - Models and Meta-Models
  - Enterprise Modelling

Aim and content of the Mentorium

- The aim of this Mentorium is to **practice and deepen** the contents of the *Business Informatics 2 (PWIN)* lecture based on a fictitious service for the mobile Internet.

- For this, fundamental concepts of the mobile service *myPlace* are going to be developed, presented and discussed within the five Mentorium sessions.

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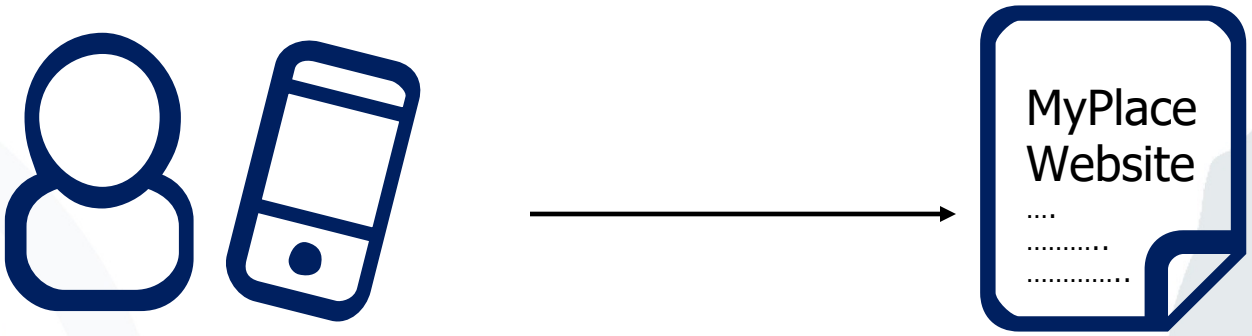
One application scenario for all Mentorium sessions

- *myPlace* service aims to enable users to search for and navigate to any **Point-of-Interest** (POI)

Image Source: https://www.adatitleiii.com/wp-content/uploads/sites/121/2017/01/iStock-531265203.jpg

Features of myPlace service

- Users sign up for *myPlace* service using stationary online website
- *myPlace* service generates **user preference profile (UPP)**
- This profile contains e.g. user's gender, age, and personal interests (hobbies, favourite type of readings or movies, etc.)



Features of myPlace service

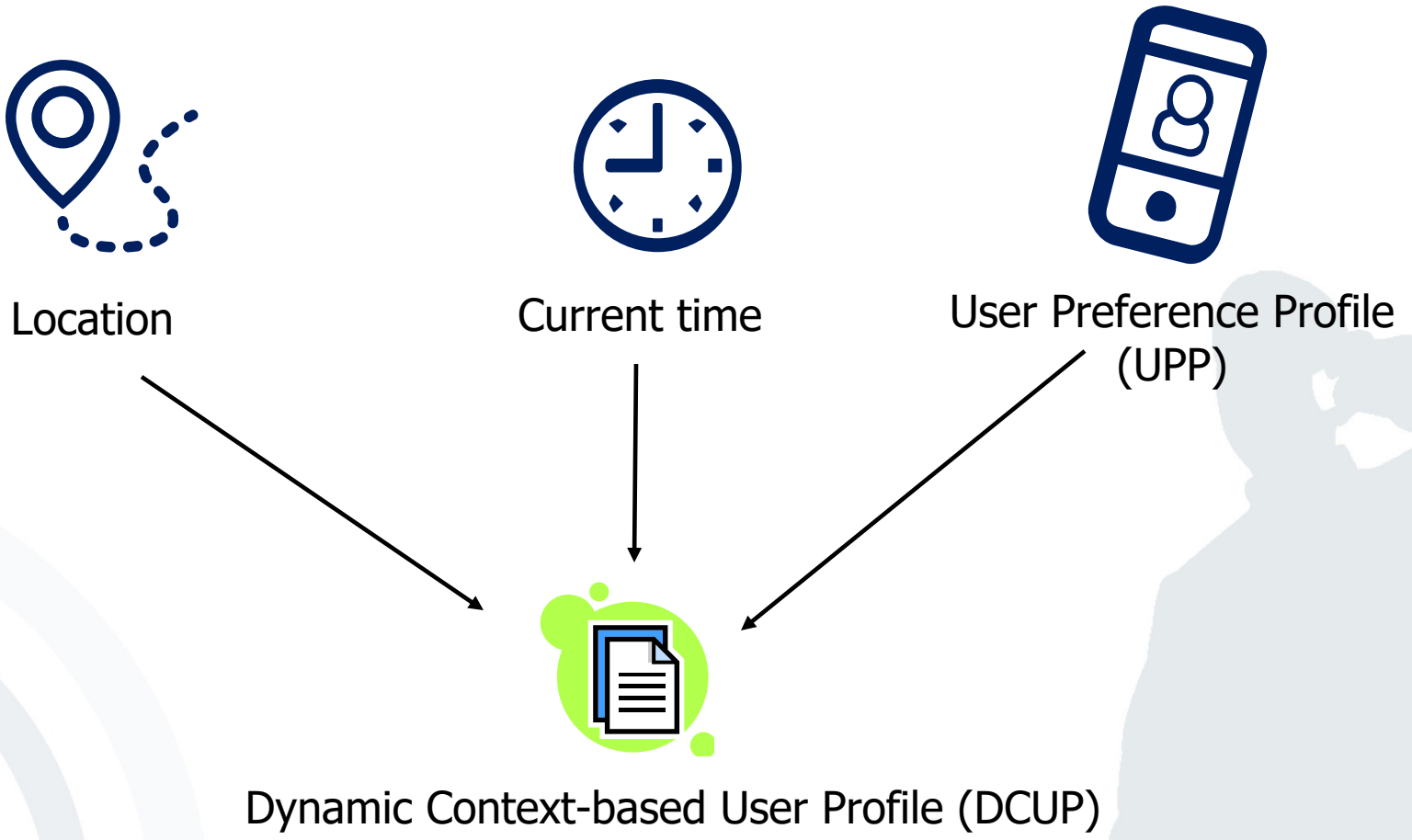
- When a user accesses the *myPlace* service, their mobile device is **identified** and automatically associated with the **corresponding user preference profile (UPP).**

- **Current time** of use determined and...

- ...(assuming the user's consent) the current **geographic location** is determined.

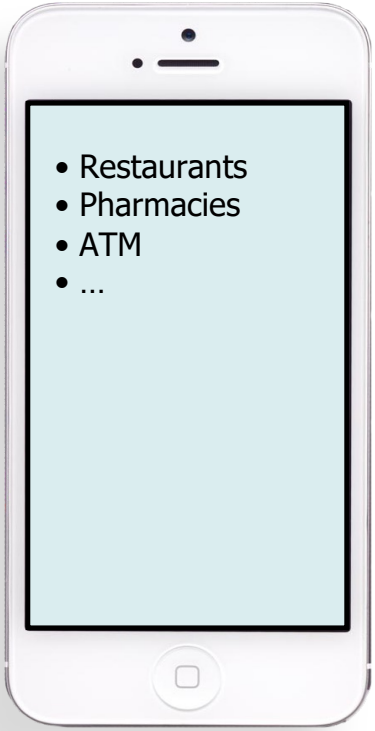
Features of myPlace service

- All obtained information is aggregated to a **dynamic context-based user profile (DCUP)**



Features of myPlace service

- When using *myPlace* service, user is presented with overview of **various POI categories** (restaurants, cinemas, etc.) or – alternatively - a text field for entering a **search query**



Features of myPlace service

- User sends out a **POI request** for a category of choice
- *myPlace* service generates a **list of potential POIs** based on user's DCUP
- Only POIs in **close proximity**, **open** at the current time of day and **matching to the user's preference profile** are returned as search results

Features of myPlace service

- When user selects a POI from the results list, the mobile device presents **POI location**, **map** and **navigation directions**.

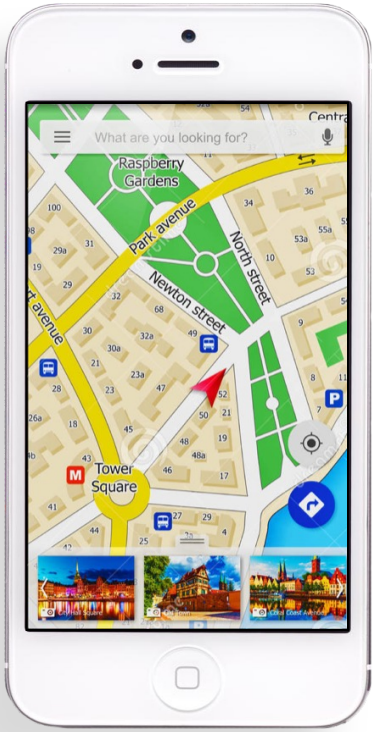
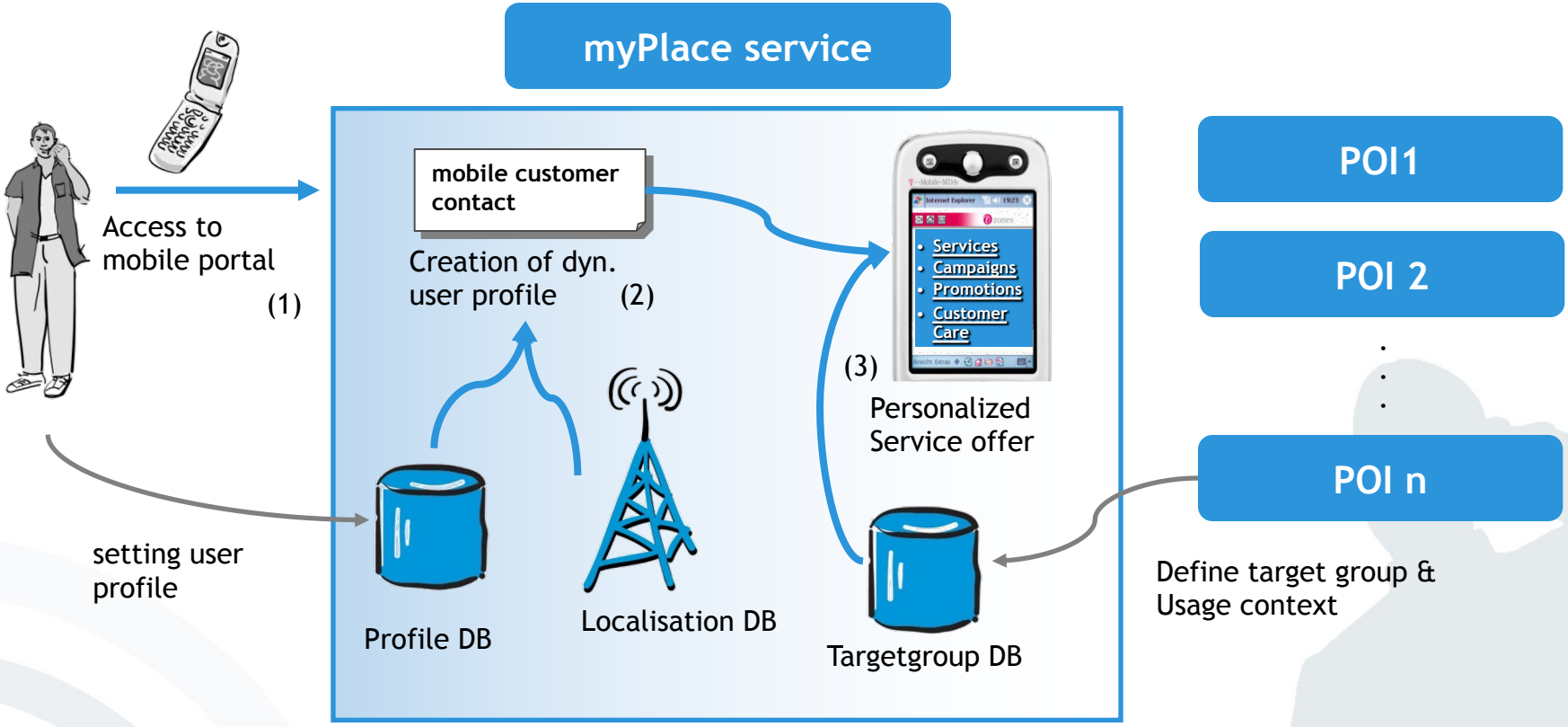


Image Source: https://www.dreamstime.com/stock-illustration-gps-navigation-smartphone-creative-abstract-satellite-travel-tourism-location-route-planning-business-concept-modern-black-image49616886

Process overview of the myPlace service



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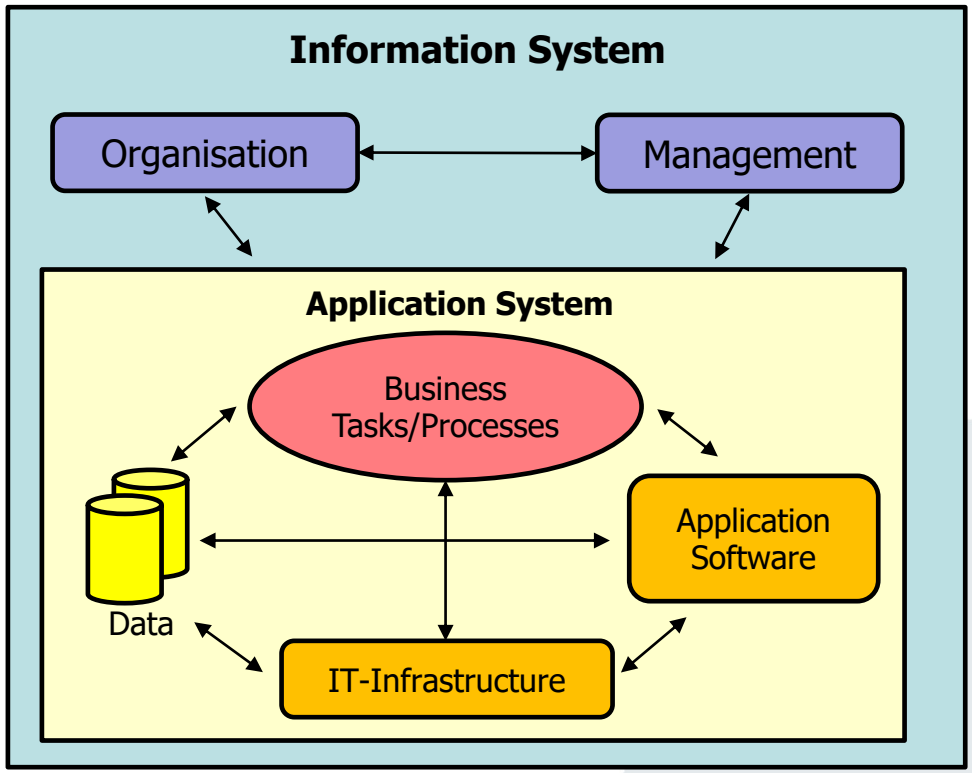
Exercise 1: IS vs. AS

Referring to the MyPlace, give an example for an Information System as well as an Application System and describe their relation to each other.

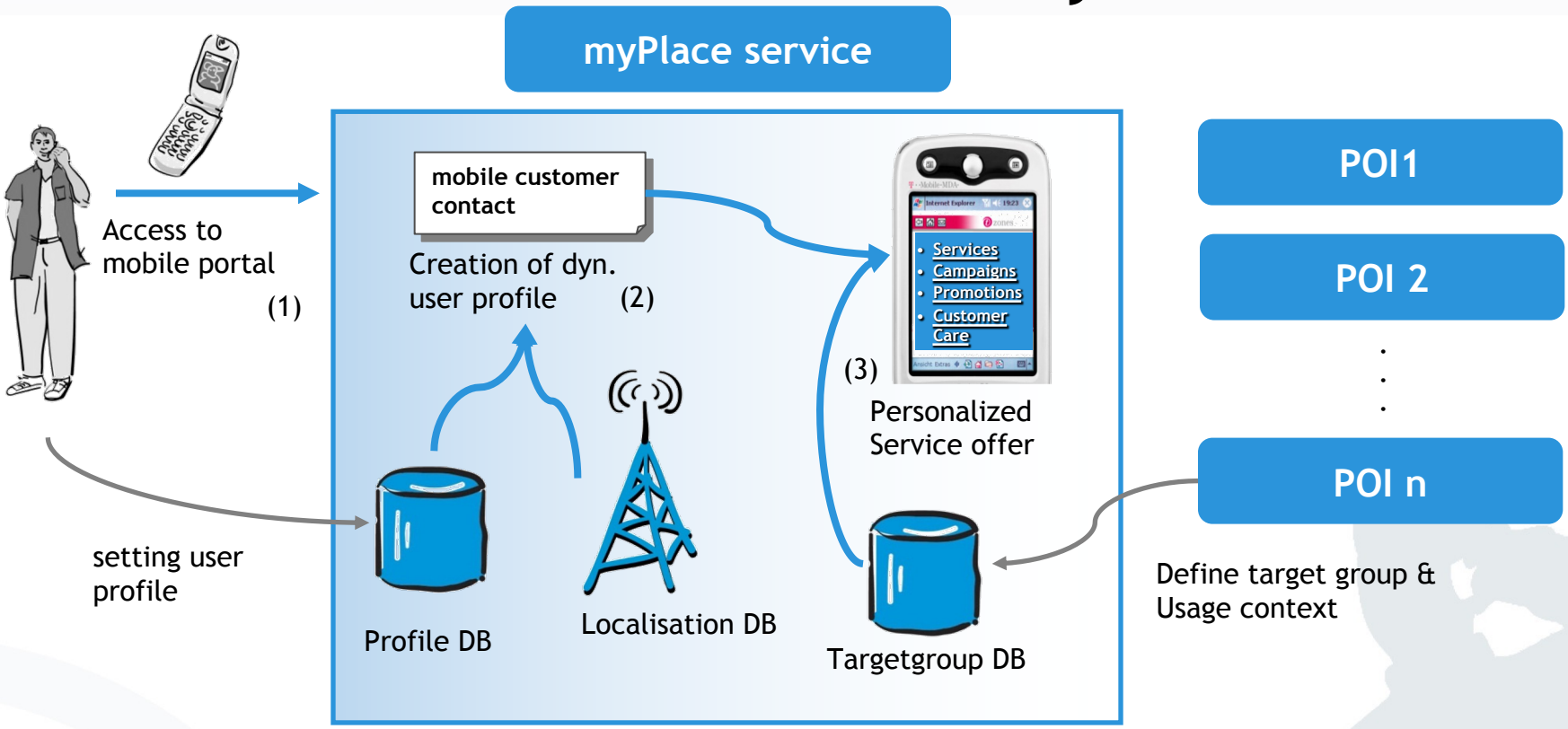
Background

- **Information System (IS):**
  A system which was built to be used in a part of an enterprise. It contains all relevant application systems and is embedded into the organisation and management of an enterprise.
- **Application System (AS):**
  A system, which consists of business tasks and processes it supports, the underlying IT-infrastructure, the application software and the data it required in order to accomplish its objectives.

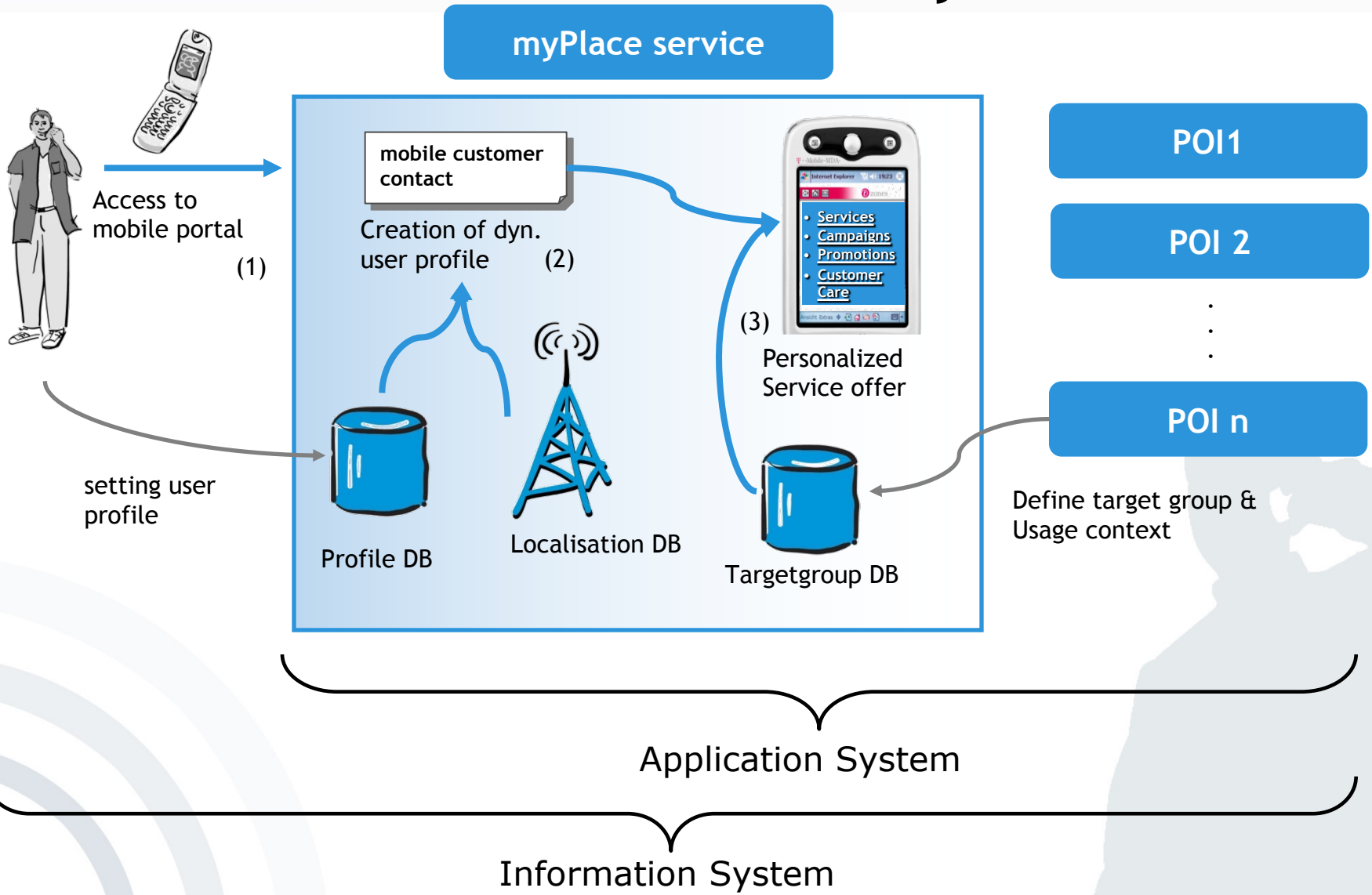


Source: Laudon, K.C., Laudon, J.P., Schoder, D. (2010)

Process overview of the myPlace service



Process overview of the myPlace service



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Exercise 2: Models

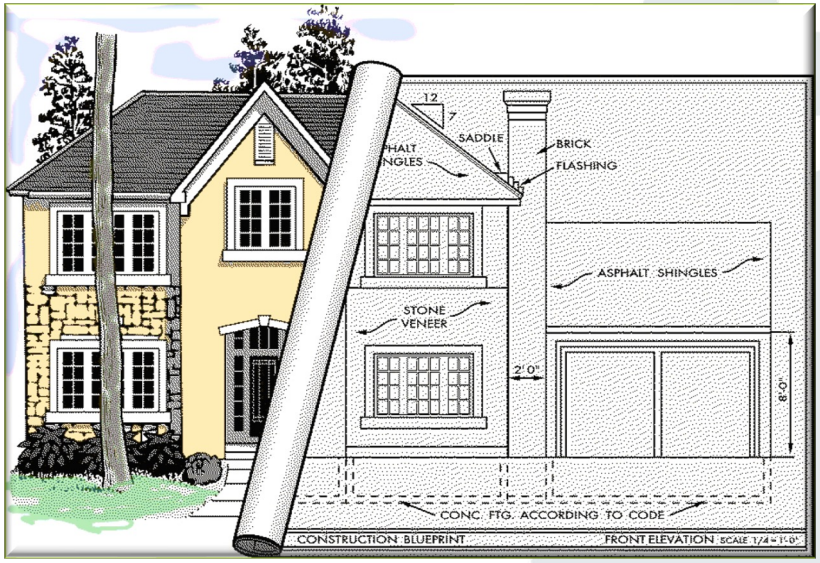
a) What is a **model?** Give an example in relation to the myPlace service.

b) Explain briefly the abstraction mechanisms “aggregation” and “generalisation” in the modelling context. In addition, give an example for each of the two mechanisms with regard to MyPlace.

Exercise 2: Models

- A model is a representation of a the real world with the following properties
  - **Representation:** A model is always representation of natural or artificial objects, which themselves can be models.
  - **Abstraction:** Models are typically an excerpt of reality.
  - **Pragmatism:** The contents of a model are relativized through the following questions: For whom? Why? For what?

- *Example for MyPlace:*
  - Real life directions vs. app navigation
  - Picture on slide 16



Exercise 2: Models

b) Explain briefly the abstraction mechanisms “aggregation” and “generalisation” in the modelling context. In addition, give an example for each of the two mechanisms with regard to MyPlace.

Exercise 2b: Solution

- Models are used for the purpose of **simplification and complexity reduction**
- Abstracting mechanisms in this regard are:
  - ***Generalisation*** (vs. Specialisation): Similar objects are abstracted to become a new high-level object.
  - ***Aggregation*** (vs. Disaggregation): Different objects are combined to a new object.
- MyPlace Examples
  - ***Generalisation***: Food preferences, Beverage preferences, Sport preferences → User Preference Profile (UPP)
  - ***Aggregation***: Time data, Location data, User Preference Data → Context-based User Profile (DCUP)

Exercise 2: Models

c) Business process modelling knows the concept of AS IS, TO BE, and TO DO processes.
Explain the difference between them and what they are being used for.

Exercise 2c: Modelling

- **AS IS:** describes the current state of processes or activities. Details strengths and weaknesses.

- **TO BE:** redesigning the processes or activities according to new circumstances or managements' wishes. Is compared to AS IS processes.

- **TO DO**: technical modelling to implement and automate TO BE processes. Apply technology towards the process.

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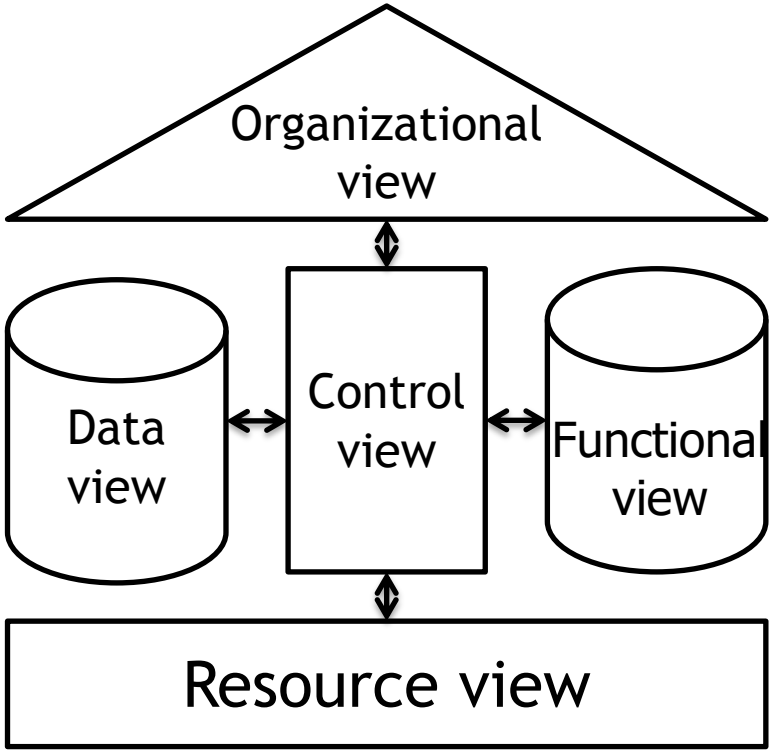
Exercise 3: Enterprise Modelling

- Develop a high-level Enterprise Model of the myPlace Service using the ARIS approach.



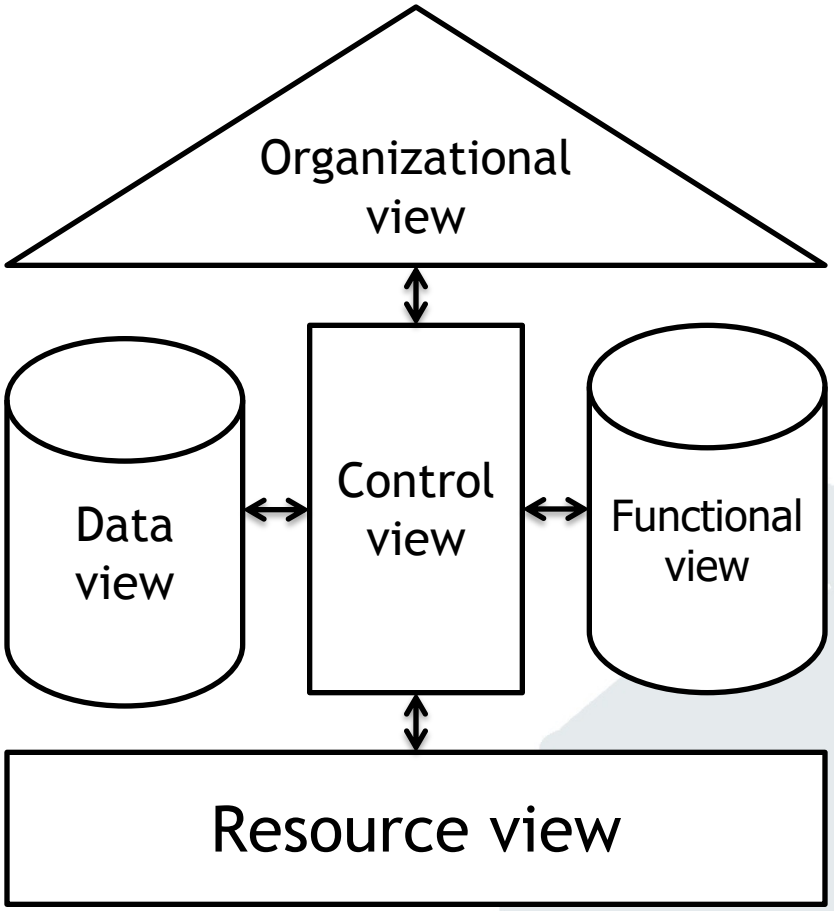
Exercise 3: Enterprise Modelling

- Enterprise Model
  - An enterprise model is a representation of the structure, activities, processes, information, resources, people, behaviour, goals, and constraints of a business, government, or other enterprises.

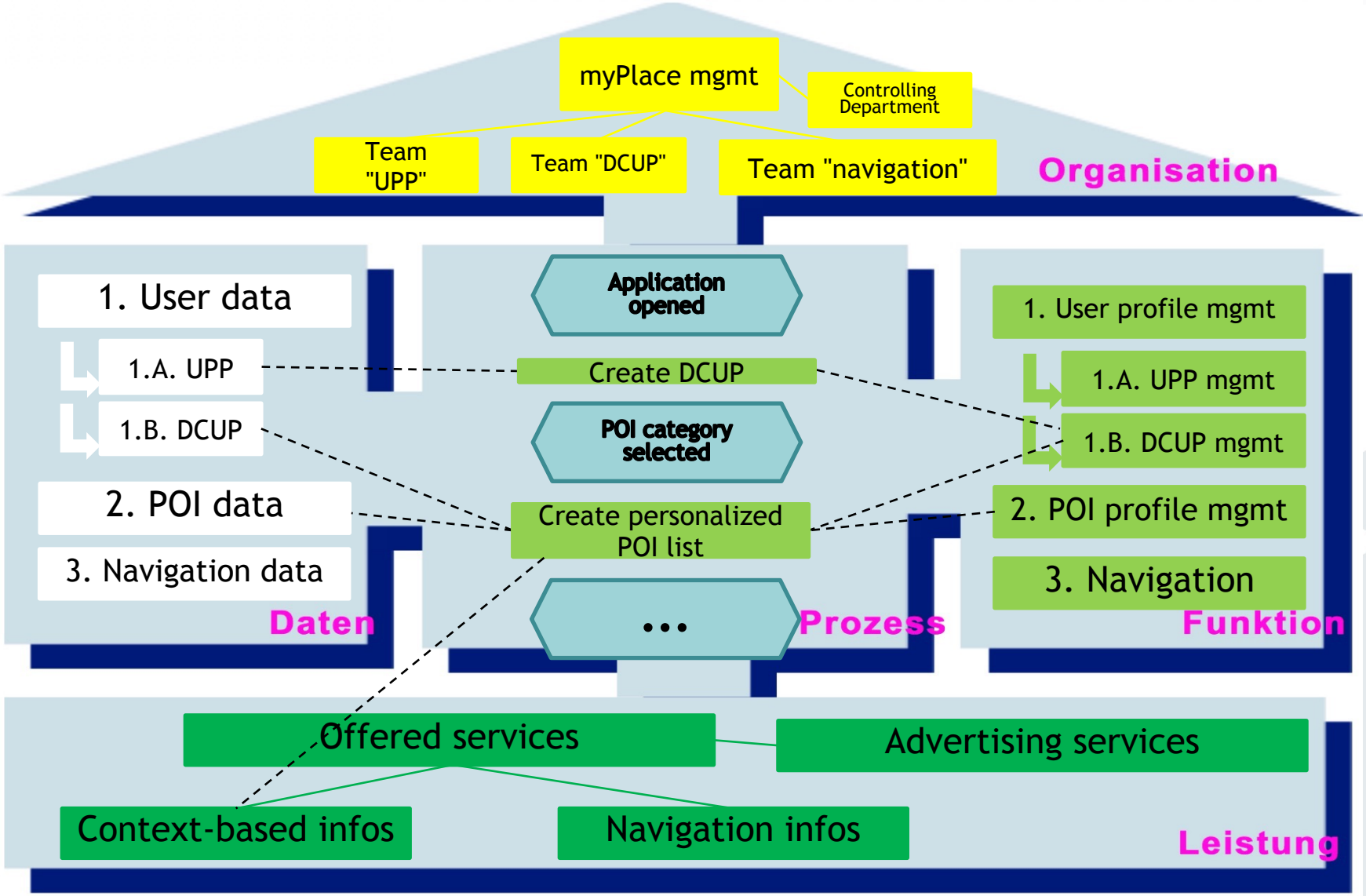
(Source: F.B. Vernadat 1997)

Exercise 3: Enterprise Modelling

- Organisational View
  - Resources of company's organisational structure (humans, machines, hardware, etc.)
  - Organisational Chart
- Functional View
  - All processes generating output as well as their relation to each other
  - Function Tree
- Data View
  - All events generating data (e.g. documents, e-mails, etc.)
  - Entity-Relationship Model
- Control View
  - Integration of all other views into a logic process
  - Event-driven Process Chains
- Resource View
  - Services, Products and Financial Assets
  - Product Tree

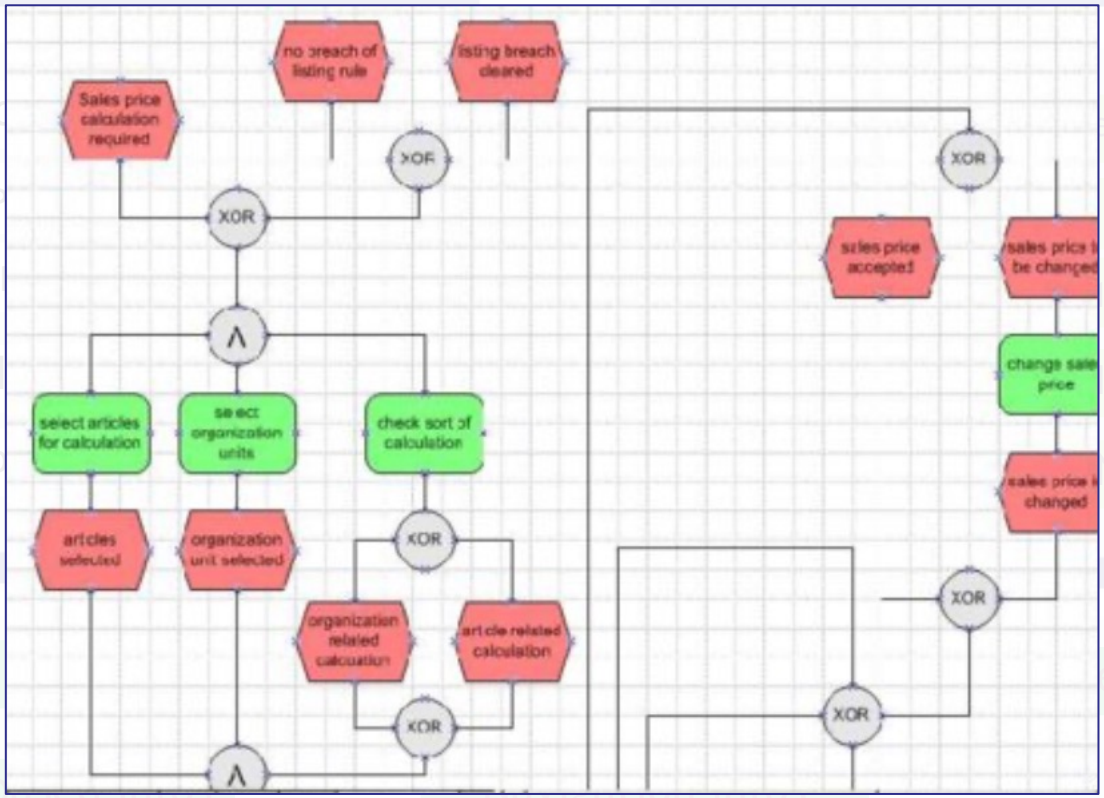


Exercise 3: Enterprise Modelling Example



Exercise 3: Enterprise Modelling

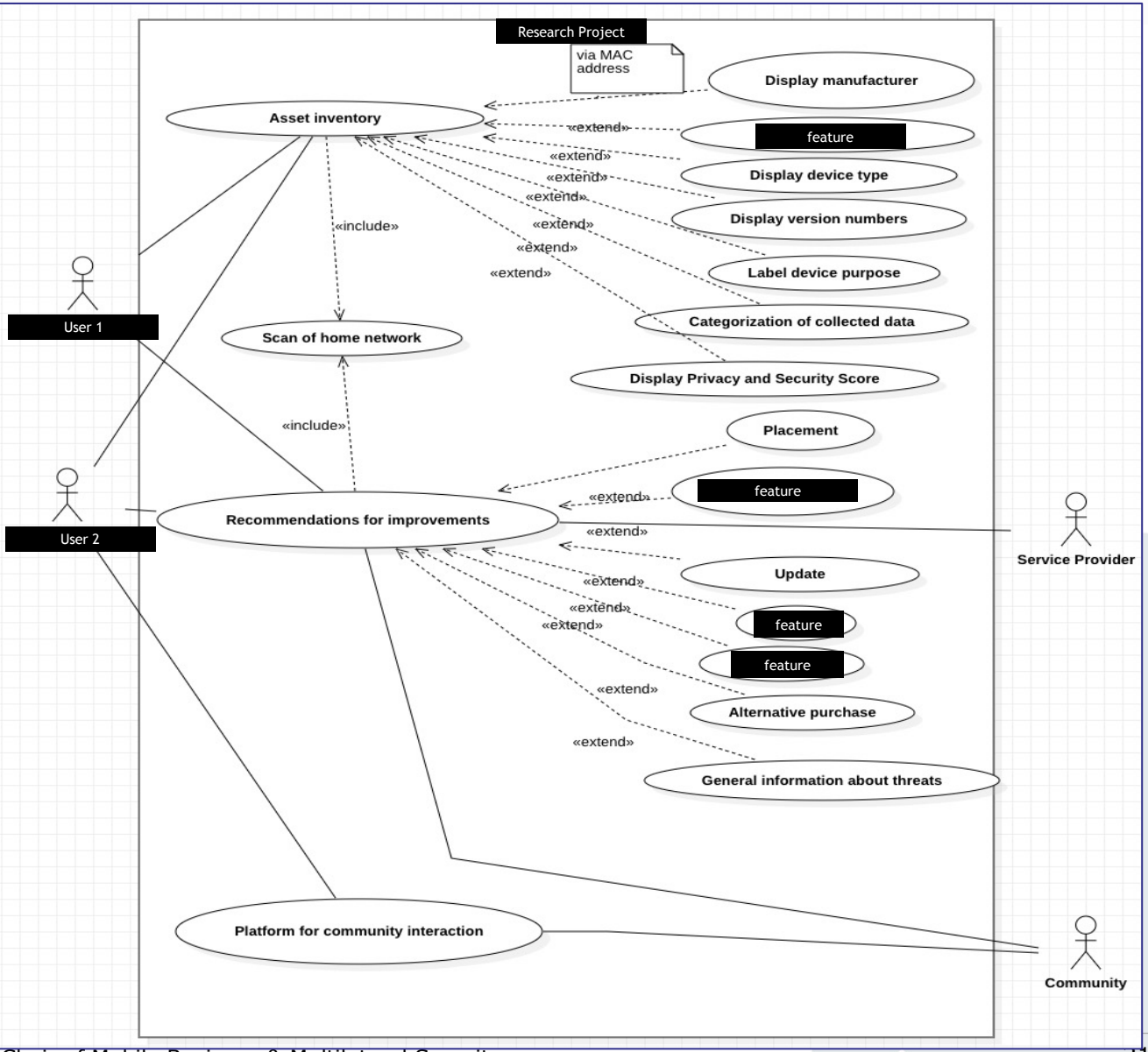
Example: *Event-driven process chain (EPC)* in **control view** *(ARIS concept/requirements layer)* that would combine processes and data as events, functions and logical operations



Reference: Gustav Neumann

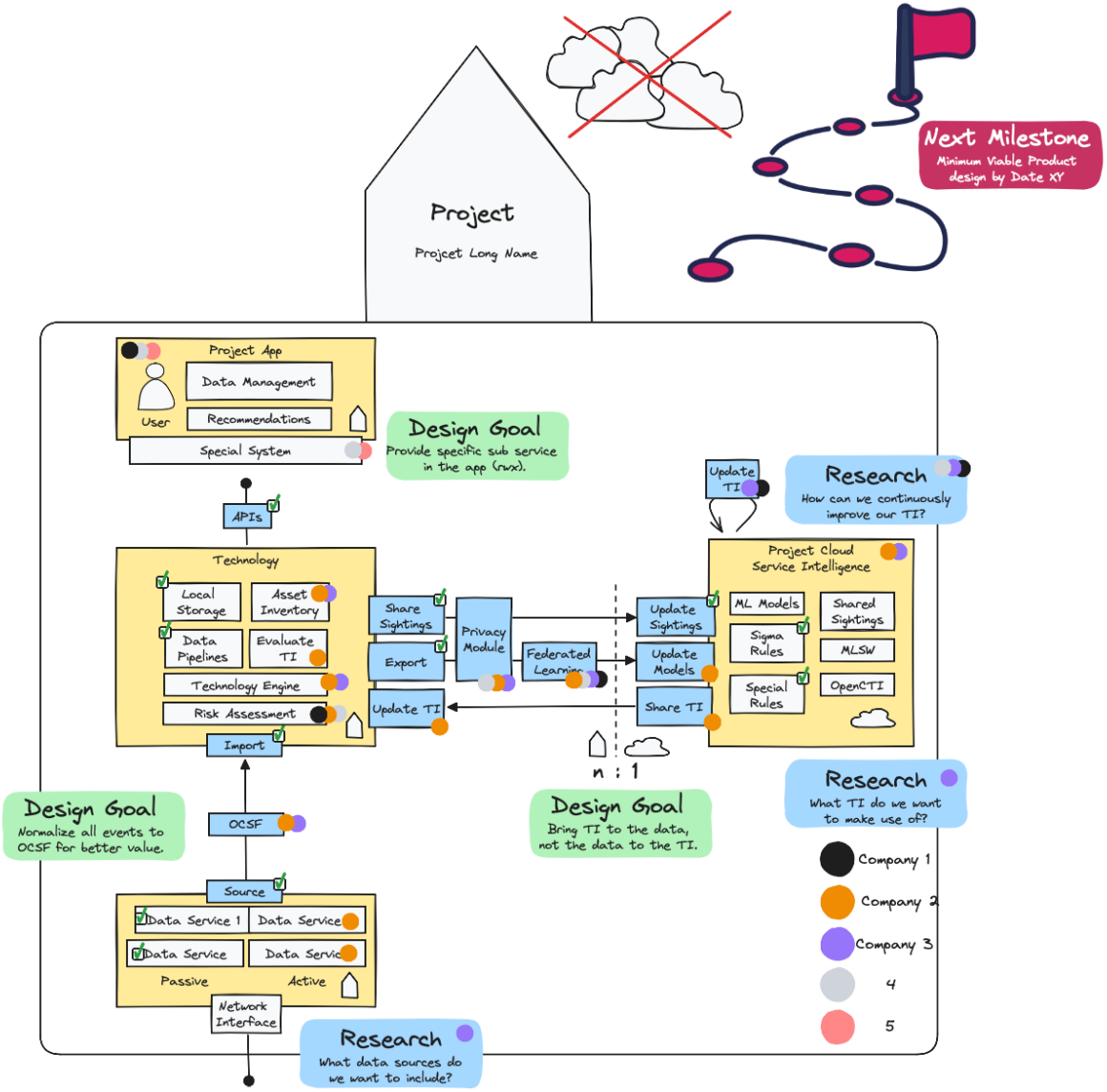
Example 3: Enterprise Modelling

Example:
UML activity diagram (ARIS: functional view + conceptual model) for functions in a research project. Activities generated through expert interviews-



Example 3: Enterprise Modelling

Example:
High-level technical modelling of functions, goals and resources for an m-chair research project (ARIS: Technical model in control view)



Thank you!