CO457 Business Modelling

Module Week 11

Finalising the Business Model

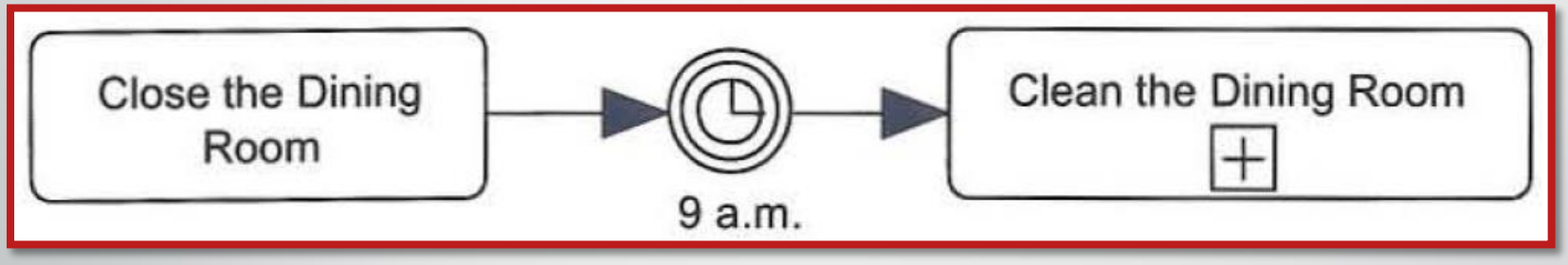
Finalising the Business Model

- The business model is **not complete until all the dimensions and relationships have been considered**
  - Structural and process models primarily captured the what, how, and who dimensions
- The dimensions remaining are **when, where, and why**
- Techniques include:
  - **Modelling time with state and timing diagrams**
  - **Using matrices, maps, and floor plans for locations**
  - **Analysing means and ends**

Timing

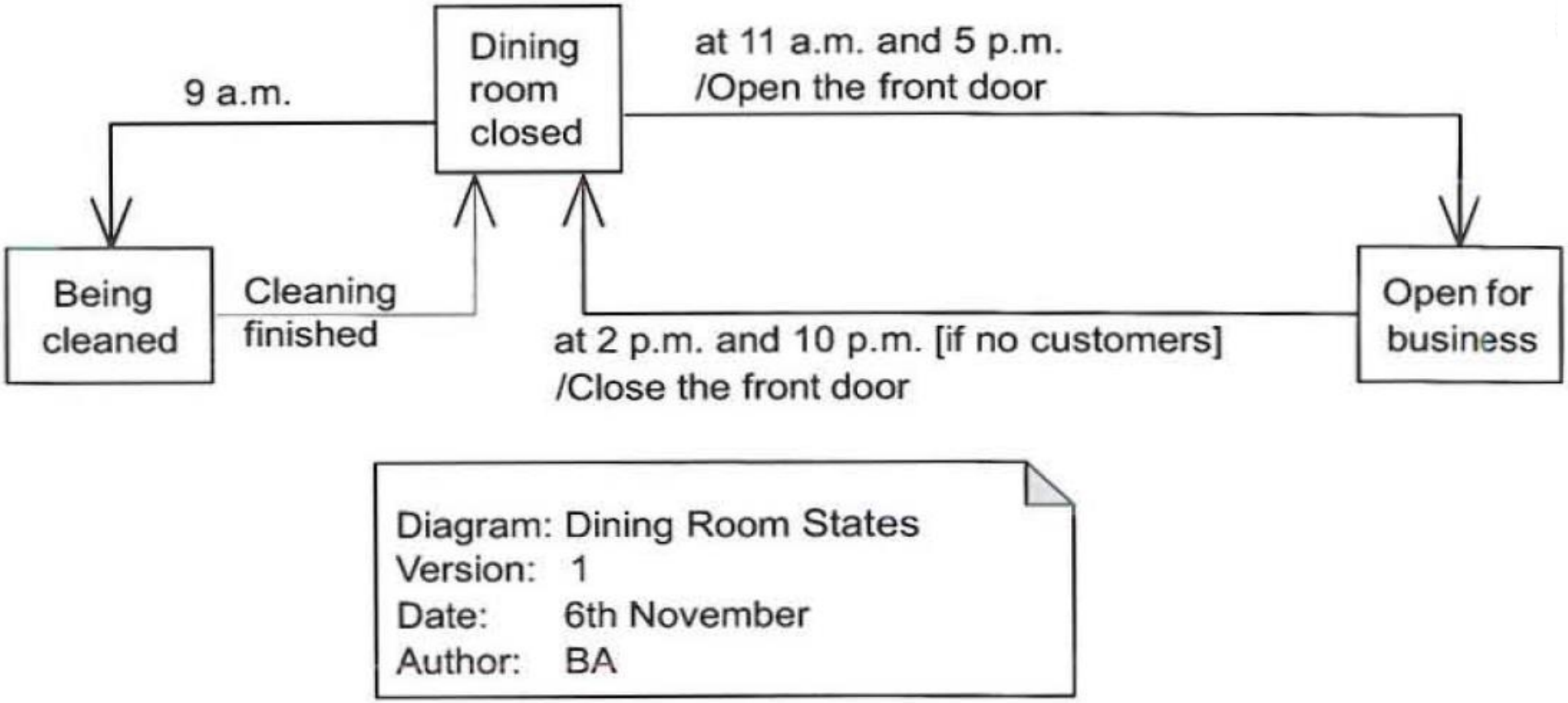
Modelling Time

- Timer events appear on a **business process diagram**
  - To interrupt a task or trigger an activity



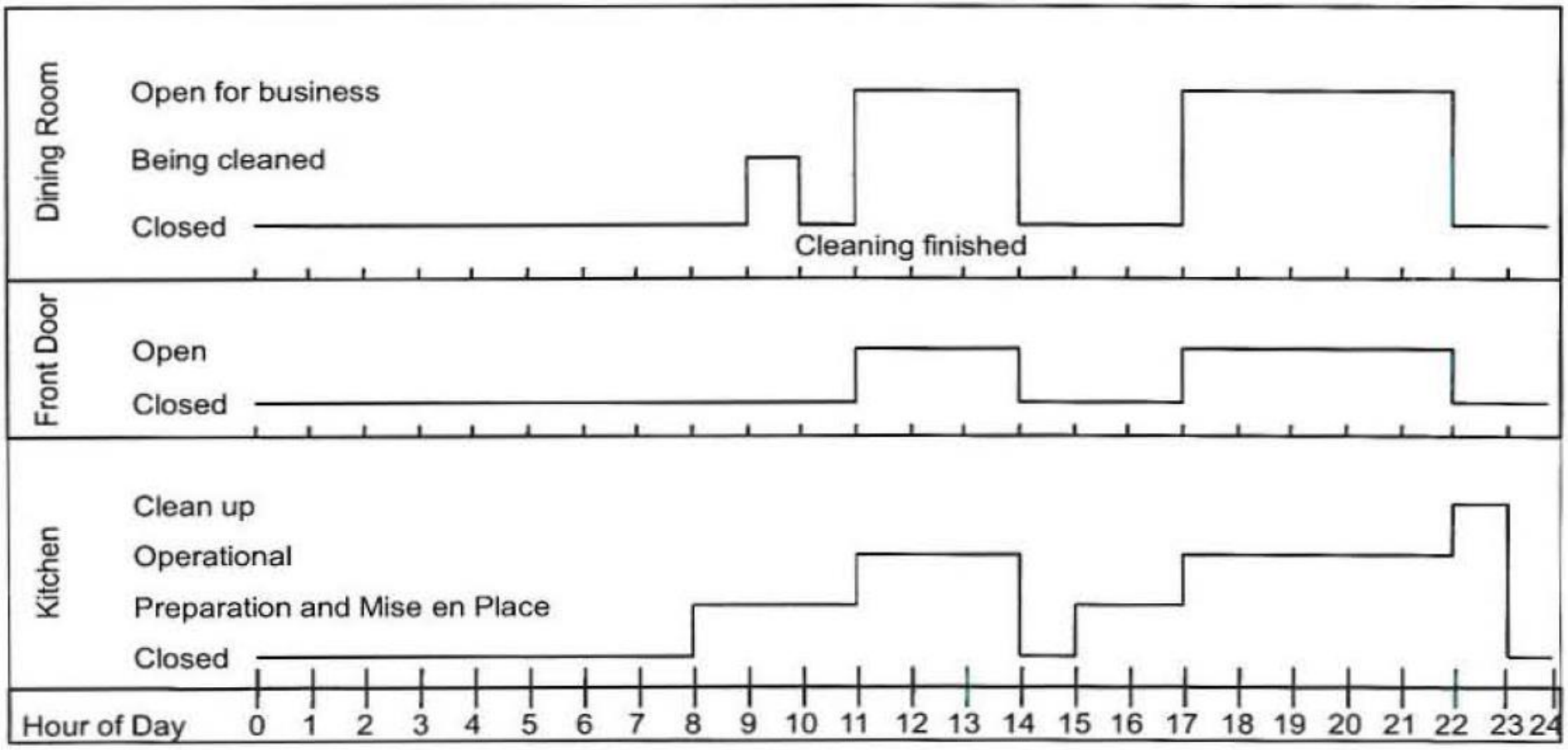
Modelling Time

- Time can be shown as an event on a UML state diagram
  - **Causing a change in state of a business object**



Modelling Time

- The UML timing diagram shows **the synchronization of object states**



Simulating the Processes

- Business process modelling tools **allow the processes to be simulated**
  - Cost-effective vs. changing the business
- Advantages:
  - Find potential bottlenecks and their causes
  - **Execute what-if scenarios with existing processes**
    - Add or remove workers
    - Perform processes in parallel instead of sequentially
  - **Predict**
    - Throughput and response times
    - People and equipment utilization
  - **Map traffic patterns**

Simulating the Processes

- Business process modelling tools allow the processes to be simulated
- Challenges:
  - **Need measurements from existing business**
  - **Results are only as accurate as the data input**
    - Garbage in, garbage out

Matrices

Using Matrices

- Matrices identify the relationships **between two dimensions**
  - Useful for checking completeness; easily understood by stakeholders
  - Known as a **Responsible, Accountable, Consulted, and Informed (RACI) matrix**
  - **Relates activities or tasks to workers**

Using Matrices

- **Responsible**
  - Does the work
- **Accountable**
  - Approves the work and its results
- **Consulted**
  - Provides opinions and participates in discussions
- **Informed**
  - Kept up-to-date on progress and sees the results

Using Matrices

Matrix: RACI matrix for kitchen department activities and roles
Version: 1
Date: 6th November
Author: BA

Activities	Exec. Chef	Sous Chef	Line Chef	Cleaning Staff	Office Manager
Order Food	R	C	C		A
Receive Food	R	R	I		A
Prepare Main Course	R A	R	I		
Bake Rolls	A	R	C		
Maintain Salad Bar	A	C	R		
Expedite Meals	A	R	C		R
Perform Mise en Place	R A	R	R	R	
Modify Menu	R A	C	I		C
Wash Plates	A			R	C

CRUD Matrix

- A **Create, Read, Update, and Delete (CRUD)** matrix
  - Relates activities or tasks to business entities
  - **Equivalent to associations between activities and data objects** on a business process diagram
  - Use question marks for unknowns on the first iteration

Matrix: CRUD matrix for kitchen department activities and entities
Version: 1
Date: 6th November
Author: BA

Activities	Packing Slip	Food Order	Menu	Recipe	Meal Order
Check food supplies		C	R?	R?	
Order food items		R U			
Receive food	R U				
Prepare a plate of food				R	R
Plan daily special			U	C R	
Place dishes on pick-up counter					D?

Security Rules

- Security rules can be captured in a matrix
  - **Who can access what data**
  - Access functions include **create, read, update, delete**

Matrix: Kitchen department - Data access rules
Version: 1
Date: 6th November
Author: BA

Roles	Packing Slip	Food Order	Menu	Recipe	Meal Order
Executive Chef	R U	C R U D	C R U	C R U	R D
Sous Chef	R U	R	R	C R U	R D
Line Chef			R	R	R
Expediter			R		R
Cleaning Staff			?		

Geographical Matrix

- Matrices can also be used to describe
  - **Geographical requirements**
    - Locations vs.
      - Organisation units
      - Roles
      - Functions performed
      - Business entities
- Also, consider the use of **maps and floor plans for location modelling**

Business Interfaces

Describing Business Interfaces

- Business interfaces **occur at the boundary of the business you are analysing**
  - Used by actors and case workers **to exchange information**
  - Are usually formal documents if **interfacing to external actors**
  - Appear as message flows **between pools on Business Process Diagrams**

Describing Business Interfaces

- Examples of business interfaces for the kitchen:
  - Conversation between a server and the expediter
  - Food order the executive chef gives to a supplier
  - Packing slip
  - Meal order printed in the kitchen
  - Job application filled out by a potential chef

Describing Business Interfaces

- Each business interface **needs to be documented**
  - Name
  - Users (actors and workers)
  - Language(s) used
  - Description from the business glossary
  - Document layout, if applicable
  - Data attributes exchanged
    - Mandatory or optional

Describing Business Interfaces

- Each business interface needs to be documented
  - Service(s) requested
  - Interface business rules
    - Include rules for calculating/deriving attributes
- A major source of **attributes for the business domain model**
- **Documented with the associated process or use case**

Business Interfaces: Example

Business Interface	Meal Order
Users	The Server enters it. A Chef reads and uses it. The Expediter reads and destroys it.
Language	English
Description and/or Layout	A meal order is a document that lists the dishes ordered by customers in a party. It is printed on the MOBS printer in the kitchen. At the top, it contains the Date and Time. This is followed by the table number and server's name. Then appears a list of the dishes requested with any comments about each dish such as "meat - medium rare" or "no mushrooms." The order is split into sections by course if it contains dishes from more than one course.

Meal Order – Bev & Bob's Bistro

Time: HH:MM Date: DD/MM/YY

Server: Xxxxxxx Table Number: NN

Course: Xxxxx

(Course section repeats for each course)

Dish Name: Xxxxxxxxxxxx

Comments: Xxxxxxxxxxxxxxxxxxxxxxxx

(Dish name and Comments repeat for each dish)

Business Interfaces: Example

Business Interface (continued)	Meal Order (continued)	
Data items	**Name**	**Mandatory or Optional**
	Date Time Table number Server name Course category List of dishes (per course) Dish comments (per dish)	Mandatory Mandatory Mandatory Mandatory Optional Mandatory Optional
Service(s) requested	Prepare these dishes	
Business Rules	1. The Expediter keeps the Meal Orders during the shift but destroys them at the end of the shift. 2. The Chef shall prepare these dishes within 20 minutes of the order time.	