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Case Study: A Volley Club

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A Semestral Project for
MI-MEP - Modeling of Enterprise Processes

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Abstract

Here is a perfect place for an executive summary. Insert what did you accomplished in this project and how did it made the state of the art better.

Keywords:
    Volley Club, DEMO methodology, BPMN model, process execution

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Contents

Organization Essence Revealing

The goals of this chapter are to perform an OER analysis as described in [1, 2]. For simplicity, we will only do the following steps:

1. Insert the project domain description into this document.

2. Perform the OER analysis and find ontological acts. Be vigilant about the blue traps!

3. Identify ontological transaction kinds and put them in the text. E.g. [TK1/rq] If there are not enough red transactions, you can include the green ones.

4. Create an extended transaction result table (e-TRT). Map the transaction acts to the project domain description. See the table 1.1.

5. Create a Subject-Actor table to realize the distinction between roles and DEMO actor roles. See the table 1.2.

6. Think in trees, not in flows and create the interaction structure of your transaction kinds. See the fig. 1.1.

7. Produce the Coordination Structure Diagram (CSD) and the Object Fact Diagram (OFD). See the fig. 1.2 and fig. 1.3.

8. Finally, summarize your modeling thoughts and revelations. Don't forget about missing transaction steps table table 1.3.

The process description of the Volley Case and it's OER analysis was taken from the Enterprise Ontology book [2].

1.1 OER Step 1: Distinguishing Performa-Informa-Forma

Legend:

- Ontological Act [Transaction Kind/Act type]

- Blue trap ontological act!

§1 Preliminary Rules

(1) One can become member of the tennis club Volley[TK1] by sending a letter[TK1/rq] to the club by postal mail. In the letter one has to mention one's surname and first name, birth date, gender, telephone number, and postal mail address (street, house number, zip code, and town). Adam, the administrator of Volley, empties the mailbox daily and checks whether the information provided is complete. If not, he makes a telephone call to the sender in order to complete the data. Once a letter is complete, Adam writes an incoming mail number and the date on the letter, records the letter in the letter book, and puts it in a folder.

(2) Every Wednesday evening, Adam takes the folder to Eve, the secretary of Volley. He also takes the member register with him. If Eve decides that an applicant can become member of Volley[TK1/pm], she stamps 'new member' on the letter and writes the date below it. She then hands the letter to Adam in order to add the new member to the member register. This is a book with numbered lines. Each new member is entered on a new line. The line number is the number by which the new member is referenced in the administration. Next, Eve calculates the fee that the new member has to pay [TK2] for the remaining part of the calendar year. She asks Adam for the annual fee, as decided at the general assembly [TK out of scope], which Adam has recorded on a sheet of paper. Then, she asks Adam to write down the amount in the member register.

(3) If Eve does not allow an applicant to become member[TK1/dc] (e.g. because he or she is too young or because the maximum number of members has been reached), Adam will send a letter[TK2/rq] in which he explains why the applicant cannot (yet) become member of Volley.

§2 Some Other Rules

(1) When all applications are processed, Adam takes the letters and the member register home and prepares an invoice to all new members for the payment of the first fee[TK2]. He sends these invoices[TK2/rq] by postal mail. Payments have to be performed by bank transfers.

(2) As soon as a bank statement is received[TK2/da], Adam prints a card on which the member number, the starting date, the name, the date of birth, the gender, and the residence are mentioned. The card is sent[TK1/da] to the new member by postal mail.

1.2 OER Step 2: Identifying Transaction Kinds and Actor Roles

Table 1.1: Extended Transaction Result Table

Transaction	Membership Starting (TK1)	Membership Paying (TK2)
Product	membership is started	the first fee of membership is paid
Initiator	Aspirant Member (AR1)	Membership Starter (AR2)
Executor	Membership Starter (AR2)	Membership Payer (AR3)
Request	Sending a letter (§1/1)	Sends the invoices (§2/1)
Promise	Application decision (§1/2)	Not Specified (Probably Tacit)
Decline	Does not allow an applicant to become member (§1/3)	Not Specified
Declare	The card is sent to the member (§2/2)	A bank statement is received (§2/2)
Reject	Not Specified	Not Specified
Accept	Not Specified (Probably Tacit)	Not Specified (Probably Tacit)
Revoke Request	Not Specified	Not Specified
Revoke Promise	Not Specified	Not Specified
Revoke Declare	Not Specified	Not Specified
Revoke Accept	Not Specified	Not Specified

Table 1.2: Subject Actor Table

	Aspirant Member (AR1)	Membership Starter (AR2)	Membership Payer (AR3)
Administrator		X	
Customer	X		X

1.3   OER Step 3: Composing the Essential Model

Before starting with a CSD model, it is important to think about the transaction interaction structure. The transaction have to form one or more trees to compose into a process. You can see an example in fig. 1.1.
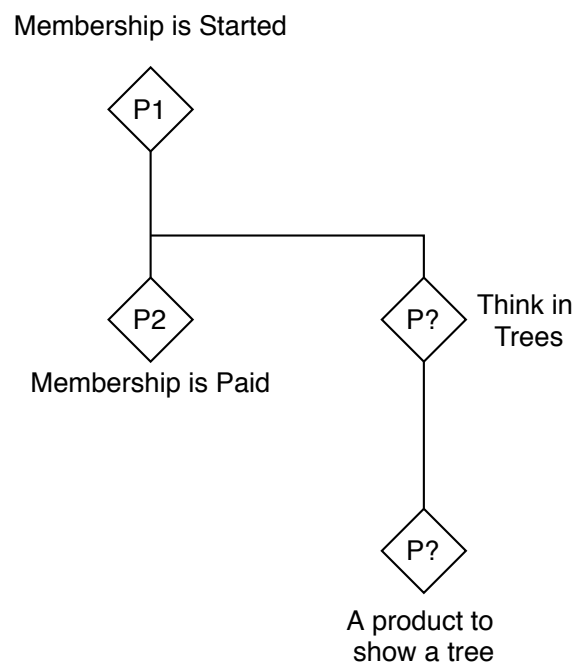
Membership is Started

P1

P2

Membership is Paid

P?

Think in
Trees

P?

A product to
show a tree

Figure 1.1: An Interaction Structure Model of Volley

1.4   Summary

Some comments about the OER analysis belong here. Why were you not able find some responsibilities? What was vaguely defined? Just roast the authors of the assignment (not the teachers :).

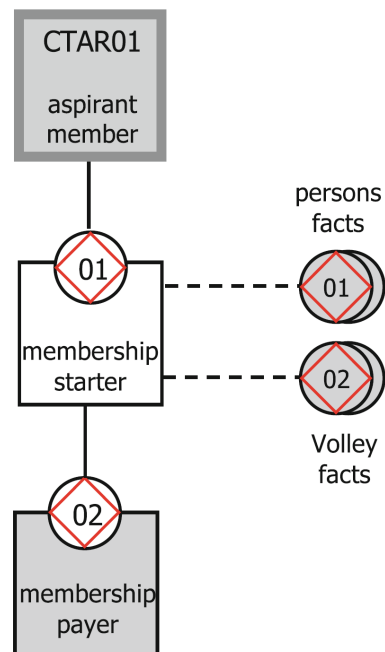And finally, show how much information is missing in a table table 1.3.
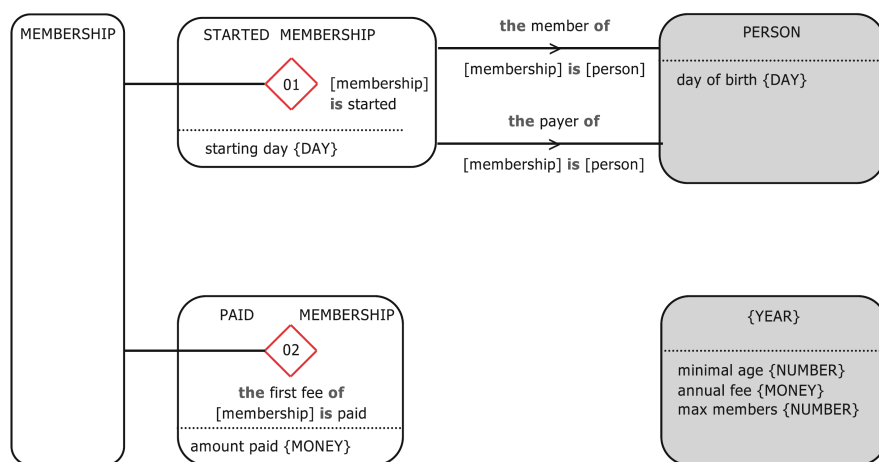
Figure 1.2: A CSD Model of Volley [2]

Figure 1.3: An Object Fact Diagram of Volley [2]

Table 1.3: Missing Transaction Steps

	Specified	Not Specified	Missing Information
Standard Transaction Pattern			
Request	2	0	0%
Promise	1	1	50%
Decline	1	1	50%
Declare	2	0	0%
Reject	0	2	100%
Accept	0	2	100%
Total	**6**	**6**	**50%**
Revokes			
Revoke Request	0	2	100%
Revoke Promise	0	2	100%
Revoke Declare	0	2	100%
Revoke Accept	0	2	100%
Total	**0**	**8**	**100%**
Complete Transaction Pattern			
Total	**6**	**14**	**70%**

Process Automation

After doing a domain analysis, we will execute the process.

1. Create an executable BPMN model in Camunda Modeler.

2. Create a functional application that supports the BPMN model using the Camunda BPM.

3. Create forms for BPMN activities.

4. Execute the BPMN model. One happy flow, one unhappy flow.

5. Create one meaningful report in the Analytics section

6. Demonstrate your results in a presentation. See section 2.3.

2.1   Process Design

Insert the process models in BPMN and DMN.

2.2   Process Execution

Include screenshots of all the important execution steps here.

2.3   Results Presentation

An url to your 2 min presentation where you present an executive level summary of your efforts. Imagine you are presenting it to a customer who paid 100k EUR for the work. https://www.youtube.com/watch?v=qfprck_Djro

Bibliography

[1] Jan Dietz. *The essence of organisation : an introduction to enterprise engineering.* Sapio Enterprise Engineering, Netherlands, 2015.

[2] Jan Dietz. *Enterprise ontology a human-centric approach to understanding the essence of organisation.* Springer, Cham, 2020.