DEMO - workshop

Hans Mulder – Wim Ploegaerts – Jan De Winter November 2009



Agenda – day 1

• Introduction

- Who is who?
- Managing expectations

• Theory from Practice - Concise DEMO-training

- FORD-case as practical basis
- Explanation of 3 main theoretical axiom's
 - **o** Distinction Transaction pattern Organisation
- First practice on a simple case (Volley)
 - How do we use DEMO?
- DEMO in an actual case at 'Antwerp province'
- Preparation of day 2

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Introduction

• Who is who?

- Why are you here?
- What do you expect te get out of these 2 day's

• Who are ?

- Wim Ploegaerts PWCS bvba
- Jan De Winter – DWT Consulting bvba
- Hans Mulder – Viagroep NV

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Theory from Practice



Ford casus



More then 500 accounts payable clerks matched purchase orders, receiving documents, and invoices and then issued payment. Mismatches were common.

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Ford casus (2)



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Axiom 1 Distinction

• Separates 3 distinctive views in an organisation

Based on 3 distinctive human capabilities

- We utter & recieve information (FORM) (language is only a carrier, cfr infrastructure)
- We use content in our communication (IN-FORM) (the content in the communication or on the form)
- We have a purpose while communicating (PER-FORM) (the will to achieve new facts)

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Axiom 1 Distinction in the FORD-case

• FORM

- Receiving documents
- Invoices
- Purchase orders

• IN-FORM

- The number of goods in the purchase order
- The amount of the payment

• PER-FORM

- Purchasing the goods
- Paying the invoice

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Axiom 2 Transaction pattern



Figuur 1.9 Het bedrijfstransactieconcept van DEMO

• 2 types of actions

- Communicative actions (4 actions)
- Execution and the result (1 action + 1 fact)

• = the succes-layer of the transaction-pattern

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Discussion-discourslayer of a transaction



- Discussion vs discours
- 23 possible exceptions on the succes layer

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Axiom 2 Transactions in the FORD-case

• Transaction 1 purchase goods

- Who initiates transaction FORD
- Vendor • Who executes
- Who accepts the transaction FORD

• Transaction 2 payment of invoice

- Who initiates transaction?
- How does he initiate the transaction?
- Who executes the transaction?
- When is the transaction a fact?
- Some examples of how it can go wrong?

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Fig. 16.1 Legend of the Actor Transaction Diagram (interaction)



Process step Diagram (FORD-case)

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Organisational axioms

- Actor = chunk of responsibility & competence
 - is not a person or a department
 - Is a small element of the organisation
- The Actor Transaction Diagram (ATD) is a model of the construction of the organisation
 - Compact view of all relevant chunks of responsibility & competence and their interaction in transactions
 - It is independant from the realisation of the model
- ATD = thé source when discussing issues as
 - Authorization
 - Delegation
 - Specialisation

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Organisational aspects of the Ford case

- What are the different actors in this case?
- Do the different employees of Ford belong to different actors?
- Is there a difference in the ATD of FORD before and after the re-engineering?
- What is the authorization level of the employee at the warehouse before and afterwards?

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Function & Construction of enterprises

• By the *Business* of an enterprise is understood the *function* perspective on the enterprise.

It is characterized by the products and services that are delivered to the environment.

• By the *Organization* of an enterprise is understood the *construction* perspective on the enterprise.

It is characterized by the processes in which the products and services are brought about.

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The black-box model (1)

A black-box model is a *conceptual system*. The relationship with a concrete system is not straightforward, because it is expressed in terms of the using system.

A black-box model shows the function and the (functional) behavior of a system.

Example: An economic model of an enterprise.

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The black-box model (2)



functional (de)composition

the driver's perspective

function :

relationship between input and output

behaviour :

the manifestation of the function in the course of time



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The white-box model



constructional (de)composition

the mechanic's perspective

construction :

the components and their interaction relationships

operation :

the manifestation of the construction in the course of time



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Recognise

the transaction pattern

Money withdrawing



Withdrawing money anno 1950

E = employee C = client

E C E	:	How can I help you, Mister Bean? I want to withdraw money from my account Your account current, I assume?	request
C	:	Yes	
E	:	How much do you want?	
С	:	£ 100, please	
		< E fills out a form >	
Е	:	lf you sign here, please	
		< C signs the form >	
Е		One moment please	promise
_	-	< E puts banknotes in front of C >	
F		Here you are Mister Rean	state
	:	Thonk you	accont
C	•	THATIK YOU	accept

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Withdrawing money anno 2010

A = ATM C = client

A	:	'Welcome to the ABC bank' 'Please insert your card'	
С	:	< inserts card into a slot >	
Ā		'Enter your PIN please'	
С	:	< keys in PIN >	
А	:	'Choose the amount you want to withdraw'	
С	:	< presses the button for £ 100 >	request
Α	:	'Take your card please'	promise
С	:	< takes card out of the slot >	,
Α	:	'Your money is being counted'	
		< A pushes banknotes through a slot >	
Α	:	'Take your money please'	state
С	:	< takes the banknotes from the slot >	accept

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Let's try it out !!

Tennisclub Volley



Volley: description (1)

One can become member of the Volley tennis club by sending a letter to the club by postal mail. In that letter one has to mention surname and first name, birth date, sex, telephone number, and postal address (street, house number, zip code, and residence). Charles, the administrator of Volley, empties daily the mailbox and checks whether the information provided is complete. If not, he makes a telephone call to the sender in order to complete the data. If a letter is completed, Charles adds an incoming mail number and the date, records the letter in the letter book, and archives it.

Every Wednesday evening, Charles takes the collected letters to Miranda, the Secretary of Volley. He also takes the member register with him. If Miranda decides that an applicant will become member of Volley, she stamps 'new member' on the letter and writes the date below it. This date is the commencement date of the membership. She then hands the letter to Charles 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 member number, by which the new member is referenced in the administration.

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Volley: description (2)

Next, Miranda calculates the membership fee that the new member has to pay for the remaining part of the calendar year. She finds the amount due for annual fees, as decided at the general meeting, on a piece of paper in the drawer of her desk. Then, she asks Charles to write down the amount in the *member register.*

If Miranda does not allow an applicant to become a member (e.g., because he or she is too young or because the maximum number of members has been reached), Charles will send a letter in which he explains why the applicant cannot (yet) become a member of Volley.

If all applications are processed, Charles takes the letters and the member register home and prepares an invoice to all new members for the payment of the first fee. He sends these invoices by postal mail.

As soon as a payment is received, Charles prints a membership card on which are mentioned the membership number, the commencement date, the name, the birth date, and the postal address. The card is sent to the new member by postal mail.

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The Modeling Method (way of working)

- 1. The Performa-Informa-Forma analysis
- 2. The Coordination-Actors-Production analysis
- 3. The Transaction Pattern synthesis
- 4. The Result Structure analysis
- **5.** The *Construction* synthesis
- 6. The Organization synthesis

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The Performa-Informa-Forma Analysis

1. Mark all **Performa** things red; these include the *ontological* production acts and facts in the enterprise, as well all *performative* coordination acts.

2. Mark all **Informa** things green; these include the *infological* acts and facts in the enterprise, as well as all *informative* coordination acts.

3. Mark all **Forma** things blue; these include the *datalogical* acts and facts in the enterprise, as well as all formative coordination acts.

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PIF Analysis of case Volley

One can become member of the tennis club Volley by sending a letter to the club by postal mail. In that letter one has to mention: the surname and first name, the birth date, the sex, the telephone number, and the postal address (street, house number, zip code, and residence). Charles, the administrator of Volley, empties daily the mailbox and checks whether the provided information is complete. If not, he makes a telephone call to the sender in order to complete the data. If a letter is completed, Charles adds an incoming mail number and the date, enters the letter in the letter book and archives it.

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Next, Miranda calculates the membership fee that the new member has to pay for the remaining part of the calendar year. She finds the annual fees, as settled by the general meeting, on a piece of paper in the drawer of her desk. Then, she asks Charles to write down the amount in the member register.

If Miranda does not allow an applicant to become member (e.g. because he or she is too young or because the maximum number of members has been reached), Charles will send a letter in which he explains why the applicant cannot (yet) become a member of Volley.

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 Consider only the Performa things. Divide them into production things (thus P-acts and P-facts) and coordination things (thus C-acts and C-facts).

Mark the production things with a \bigcirc

Mark the coordination things with a \bigcirc

2. Mark all **actors** yellow: persons, organizational functions, and organizational units.

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CAP Analysis of case Volley

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Volley: analysis

From the Flow Charts and the case description, two ontological transaction types are identified:

T01 membership_start

T02 membership_payment

The corresponding production result types are:

R01 *membership M has been started*

R02 *the first fee for membership M is paid*

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Volley: analysis of Flow Chart 3



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The Result Structure Analysis

The bringing about of a result (P-fact) R02 may be a condition for bringing about a result (P-fact) R01. In such a case R02 is called a *component* of R01. Likewise, T02 is called to be *enclosed* in T01.

On the basis of this part-of relationship, arbitrarily large tree structures may arise that are comparable to the bills-of-material (BOM) of material products.

The root of such a tree is the product or service that the organization delivers to its environment (Note that in fact these structures go across organizational boundaries).

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Result Structure Analysis of case Volley

From the description of the case Volley it appears that the existence of the result R02 (*the first fee for membership M is paid*) is a condition for bringing about the corresponding result R01 (*membership M has been started*).

Consequently, R02 is considered to be a *component* of R01, and T02 is considered to be *enclosed* in T01.

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The Construction Synthesis

Determine for every transaction type the **actor role** that is the initiator and the **actor role** that is the executor.

Use the tree structures that are the outcome of the Result Structure Analysis. Recall that a transaction type has exactly one executor, and one or more initiators.

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Construction Synthesis of case Volley

transaction	initiator	executor
T01 membership_start	A?? aspirant_member	A01 admitter
T02 membership_payment	A01 admitter	A02 payer
T03 fee_settlement	A?? board	A03 general_meeting

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The Organization Synthesis

In this last step the boundary of the (organization of the) enterprise under consideration is settled.

This system boundary divides the actor roles into *internal*, *environmental*, and external actor roles, and the transaction types into internal, border (interface) and *external* transaction types.

An *internal actor role* is an actor role that is executor of an internal transaction type or a border transaction type.

An environmental actor roles are actor roles that are initiator or executor of a border transaction type.

An *external actor role* is an actor role that is executor of an external transaction type.

The external transaction types as well as the external actor roles are disregarded. They do not belong to the enterprise.

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Organization Synthesis of case Volley

Internal actor roles:	A01 admitter
Environmental actor roles:	A?? aspirant_member A02 payer
External actor roles:	A?? board A03 general_meeting
Internal transaction types:	< none >
Border transaction types:	T01 membership_start T02 membership_payment
External transaction types:	T03 fee_settlement
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Volley: Transaction Result Table

transaction

transaction result

T01 membership_start

T02 membership_payment

R01 membership M has been started

R02 the first fee for membership M is paid

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Volley: Ontological Construction Model

Volley : Statemodel



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Case Antwerp Province

Michel Van den Bossche



Preparation of Day 2

Jan De Winter



Preparation for day 2

• Assignment

- Minimal
 - Read the whole document
 - Make some notes on what seams te be important
- If you have more time
 - Make an analysis using your current way of working

• How will we start next week

- Groups of 3 persons
- Assignment
 - **o** Work out the PIF analysis
 - Work out the transaction-result diagram
 - **o** Work out the Actor-transaction & process diagram

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2 cases

• IMPORT EXPORT SERVICES

• Chain integration of different companies in the harbour

• **DWT Selection Services**

• Recruitment and selection agency

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