

# Introduction to MDM

## Part 5 - How to face the data governance issue?

### *Master Data Management*

#### Education

Pierre Bonnet, IS Consultant, March 2012

Last update: March 22, 2012

[pierre.bonnet@orchestranetworks.com](mailto:pierre.bonnet@orchestranetworks.com)

skype: pierre.orchestra

[www.orchestranetworks.com](http://www.orchestranetworks.com)

# Objective

How to face the data governance issue?

- Data governance goals
- Definition of user roles for the data governance
- Meta data repository
- Governance repository and data approval workflow
- Procedures to oversee data values

# Data governance goals

## **Mastering data semantics**

- Sharing data meanings and use across an Information System

## **Mastering responsibilities applied to data**

- Owner, Author, Auditor, etc.

## **Mastering procedures to oversee data**

- What happens when a data value changes

# Roles

## **Data Owner**

Responsible for the data semantic  
Enforce the validation of semantic data models

## **Data Analyst**

In Business department - achieve or contribute to enforce the semantic data modeling  
In IT department - achieve or support business Data Analyst

## **Data Architect**

Responsible for the data quality across an Information System  
Enforce the Enterprise Data Architecture

## **Data Accountant**

Responsible for data management budget  
Encourage and establish an innovative data P&L and data auditing approach

## **Data Steward**

Operational users in charge of authoring data values

# Mastering data semantics

*Meta data repository*

# Knowledge management

**Put into a business and shared repository all semantics of administered items**

- Business object
- Business rule
- Field
- Process

**The better place to govern this knowledge is a MDM system itself because**

- **Meta data = master data**

Eg. in next slides

# Description of an administered item

Eg. business object 'Customer' (1/2)

**Customer**

Creation: January 23, 2012 2:17 PM Last update: March 22, 2012 10:06 AM by Pierre Bonnet

Type: Business Object

Name: Customer

Synonym:

- 1. Client
- 2. Prospective customer
- 3. Company

+ Add an occurrence

1. Organization: sales unit  
Contract: Alfred Lucet

+ Add an occurrence

1. Organization: sales data management  
Contact: [not defined]

+ Add an occurrence

1. Organization: IT department  
Contract: Alexandre Durmain

+ Add an occurrence

1. Organization: IT department  
Contact: Florence Klein

+ Add an occurrence

1. Organization: Accounting department  
Contact: Phillipe Lafleur

+ Add an occurrence

Synonyms

- Data Owner
- Data Steward
- Data Analyst
- Data Architect
- Data Accountant

Governance roles

# Description of an administered item

Eg. business object 'Customer' (2/2)

**Semantics** →

**Customer**

Administration record per version 1.

Registration status: Qualified

Administrative status: Qualified

Creation date: 1 / 23 / 2012

Change description

**+ Text Editing Tools**

A customer is a company having an ongoing contract either with the headquarter or a subsidiary.

A company is no longer a Customer if there is any ongoing contract.

Submitted by organization: [not defined]

Submitted by contact: [not defined]

+ Add an occurrence

Classification

1. classification: Customer

2. classification: Reality

+ Add an occurrence

Business Object

+ Add an occurrence

Field

1. Belongs to: [not defined]

+ Add an occurrence

Business rule

1. Belongs to: [not defined]

+ Add an occurrence

Process

1. + [trash icon]

+ Add an occurrence

Close Revert Submit Submit & Close

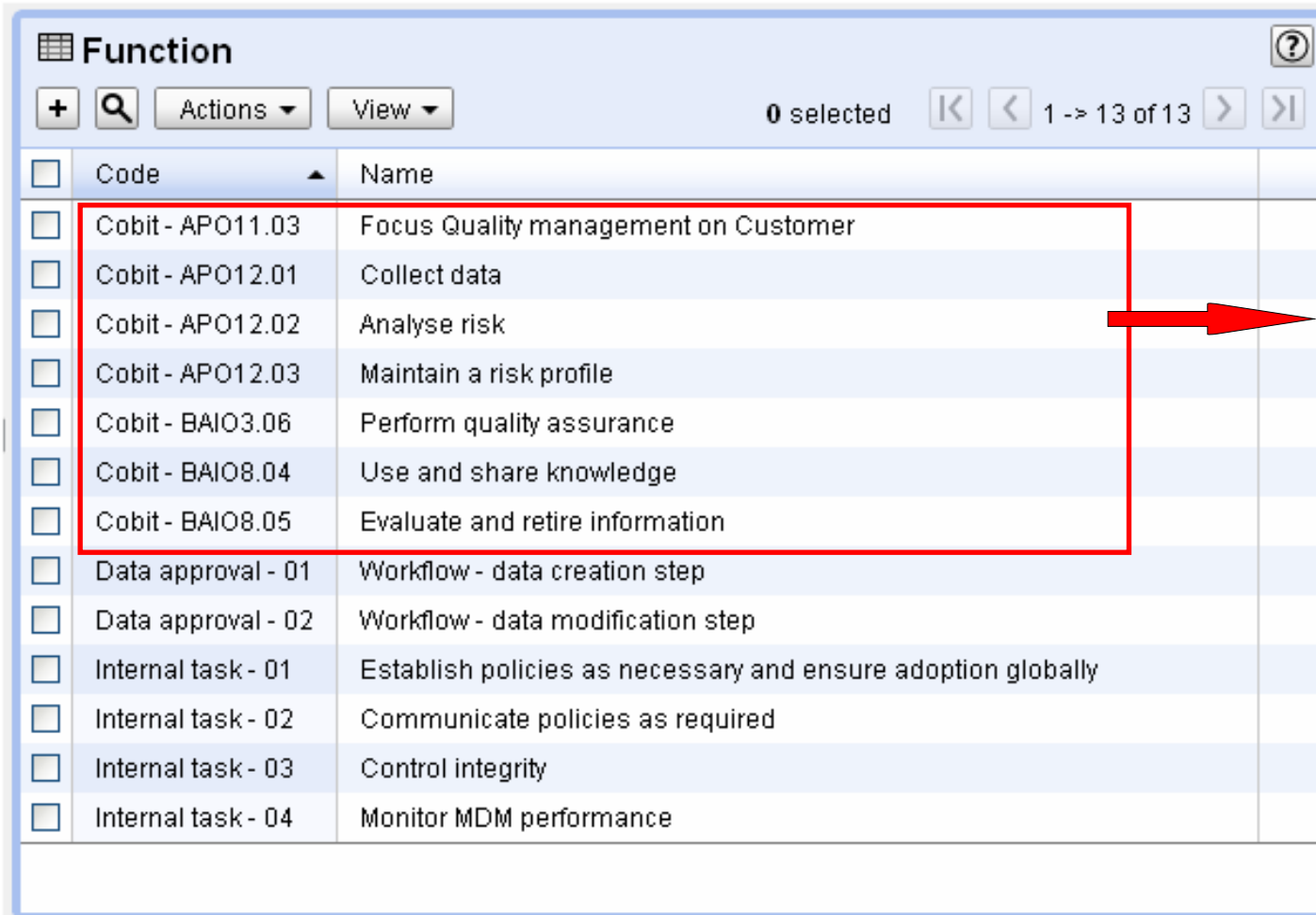


# Governance rules

*Who is in charge of what in data governance across a company?*

# Portfolio of functions involved in data governance processes

*To be defined depending on a company's needs*



<input type="checkbox"/>	Code	Name
<input type="checkbox"/>	Cobit - APO11.03	Focus Quality management on Customer
<input type="checkbox"/>	Cobit - APO12.01	Collect data
<input type="checkbox"/>	Cobit - APO12.02	Analyse risk
<input type="checkbox"/>	Cobit - APO12.03	Maintain a risk profile
<input type="checkbox"/>	Cobit - BAI03.06	Perform quality assurance
<input type="checkbox"/>	Cobit - BAI08.04	Use and share knowledge
<input type="checkbox"/>	Cobit - BAI08.05	Evaluate and retire information
<input type="checkbox"/>	Data approval - 01	Workflow - data creation step
<input type="checkbox"/>	Data approval - 02	Workflow - data modification step
<input type="checkbox"/>	Internal task - 01	Establish policies as necessary and ensure adoption globally
<input type="checkbox"/>	Internal task - 02	Communicate policies as required
<input type="checkbox"/>	Internal task - 03	Control integrity
<input type="checkbox"/>	Internal task - 04	Monitor MDM performance

**Some COBIT functions**

# RACI procedure reminder

Raci			
Code	Name	Definition	
<input type="checkbox"/>	R	Responsible	Those who do the work to achieve the function, there can be multiple resources responsible
<input type="checkbox"/>	A	Accountable	The resource ultimately accountable for the completion of the task - there must be exactly one A specified for each function
<input type="checkbox"/>	C	Consulted	Those whose opinions are sought - Two way communication
<input type="checkbox"/>	I	Informed	Those that are kept up-to-date on progress - One way communication

# Definition of RACI crossed by administered item, function and users roles

**RACI for: Business Object - Customer - Cobit - APO11.03 - Focus Quality management on Customer**

Creation: March 22, 2012 1:03 PM Last update: March 22, 2012 1:03 PM by Pierre Bonnet

*Administered item (type and name)	Business Object - Customer
*Function	Cobit - APO11.03 - Focus Quality management on Cus
Data Owner	A
Data Steward	C
Data Analyst	I
Data Architect	R
Data Cost Accountant	I
Rule Owner	[not defined]
Rule Steward	[not defined]
Rule Analyst	[not defined]
Rule Architect	[not defined]
Rule Cost Accountant	[not defined]
Process Owner	[not defined]
Process Steward	[not defined]
Process Analyst	[not defined]
Process Architect	[not defined]
Process Cost Accountant	[not defined]

Close Revert **Submit** Submit & Close

## List of RACI by administered item

*Eg. Customer business object is governed through four RACI*

**Governance definition by Administered item (type and name)** ?

🔍 Actions ▾ View ▾ 0 selected

- [ All elements ] ▾
- **Customer**
  - ◊ Data approval - 01 - Workflow - data creation step  ▾
  - ◊ Data approval - 02 - Workflow - data modification step  ▾
  - ◊ Cobit - APO11.03 - Focus Quality management on Customer  ▾
  - ◊ Cobit - BAI03.06 - Perform quality assurance  ▾
- Evaluate Factory Capacity ▾
- Evaluate Workshop Capacity ▾
- + **Factory** ▾
  - Factory Capacity ▾
  - Manufacturing domain ▾
  - Revenue ▾
  - Workshop ▾
- [ Administered item (type and name) unset ] ▾

# Synthesis of concepts used to establish data governance

The screenshot displays three panels from the Oracle Data Governance console, illustrating the synthesis of concepts used to establish data governance. Red boxes and arrows highlight key elements:

- Function Panel:** A table listing various functions. A red box highlights the 'Function' title. A red arrow points to the 'Cobit - APO11.03 - Focus Quality management on Customer' entry.
- Contact Panel:** A table listing contacts. A red box highlights the 'Contact' title. A red arrow points to the 'Albert Frère - Data stewardship' entry.
- Administered item Panel:** A table listing administered items. A red box highlights the 'Administered item' title. A red arrow points to the 'Factory' entry.
- Governance definition by Administered item (type and name):** A central panel showing a tree view of governance definitions. A red box highlights the title. A red arrow points to the 'Customer' node, which is expanded to show sub-items like 'Data approval - 01 - Workflow - data creation step' and 'Cobit - APO11.03 - Focus Quality management on Customer'.

Code	Name
Data approval - 01	Workflow - data creation step
Internal task - 01	Establish policies as necessary and ensure adoption globally
Data approval - 02	Workflow - data modification step
Internal task - 02	Communicate policies as required
Internal task - 03	Control integrity
Internal task - 04	Monitor MDM performance
Cobit - APO11.03	Focus Quality management on Customer
Cobit - APO12.01	Collect data
Cobit - APO12.02	Analyse
Cobit - APO12.03	Maintain
Cobit - BAI03.06	Perform quality assurance
Cobit - BAI08.04	Use and
Cobit - BAI08.05	Evaluate

Name	Title	Contact information
Pierre Bonnet	COO	
Alfred Lucet	CFO	
Duc Fortrun	Supply Chain Manager	
Florence Klein	Manufacturing Manager	
Fred Mauban	Accountant	
Albert Frère	Data stewardship	
Phillipe Lafleur	HRM	

Type	Name	Details
Business Object	Factory	[see details]
Business Object	Manufacturing domain	
Business Object	Workshop	
Process	Evaluate Factory Capacity	
Rule	Factory Capacity	
Rule	Evaluate Workshop Capacity	
Field	Revenue	

**Governance definition by Administered item (type and name)**

- [All elements]
- Customer
  - Data approval - 01 - Workflow - data creation step
  - Data approval - 02 - Workflow - data modification step
  - Cobit - APO11.03 - Focus Quality management on Customer
  - Cobit - BAI03.06 - Perform quality assurance
- Evaluate Factory Capacity
- Evaluate Workshop Capacity
- Factory
  - Factory Capacity
  - Manufacturing domain
  - Revenue
  - Workshop
- [Administered item (type and name) unset]

# Global RACI matrix

Governance definition		0 selected   1 -> 5 of 5				
Administered item (type and name)	Function	Data Owner	Data Steward	Data Analyst	Data Architect	Data Cost Accountant
Business Object - Factory	Cobit - BAI08.05 - Evaluate and retire information	C	A	R	A	C
Business Object - Customer	Cobit - BAI03.06 - Perform quality assurance	R	A	I	A	I
Business Object - Customer	Cobit - APO11.03 - Focus Quality management on Customer	A	A	I	R	I
Business Object - Customer	Data approval - 01 - Workflow - data creation step	A	C	I	A	I
Business Object - Customer	Data approval - 02 - Workflow - data modification step	C	R	I	A	I

## Alignment of data workflow with the RACI

<b>Accountable</b>	<ul style="list-style-type: none"> <li>• Create working data version in order to ensure that further data modification will not impact production environment directly</li> <li>• Decide when the working data version can be merged to the production data version</li> </ul>
<b>Responsible</b>	<ul style="list-style-type: none"> <li>• Regular data authoring</li> <li>• Ability to merge a version of data to the production data version on requests by user acting as accountable</li> </ul>
<b>Consulted</b>	<ul style="list-style-type: none"> <li>• Receive an approval task without any other data authoring permission</li> <li>• Depending on the response the process can be stopped or carried out</li> <li>• Under the scene a full audit trail of responses is enforced</li> </ul>
<b>Informed</b>	<ul style="list-style-type: none"> <li>• Receive email of other events without impacting the process</li> </ul>

## Alignment of data workflow with the RACI matrix

*Eg. registered item = Product's price*

	Data Owner	Data Steward	Data Analyst	Data Architect
Accountable	Create working branch - Approve the data merging from working branch to production branch			
Responsible		Data authoring in the working branch created by the Data Owner - Doing the merge when the Data Owner has approved modification		
Consulted				
Informed			email after merging in production branch	email in case of error during the process of modification



# Data overseeing

*Procedures to oversee data values*

# Goals

**Overseeing master data is targeted in priority** as other transactional data should benefit from the supervision enforced by business transactions within applications

- When master data repository is managed with help of a MDM system it is easier to set up business rules over the data repository to oversee data values in real time

## Examples (1/2)

Overseeing a customer's address can be very complicated when it is duplicated within several databases without a real master repository

Conversely, when using a MDM system to manage customers' addresses in complement with existing databases, it is easier to set up business rules over the MDM repository such as

- ***when the customer's address is updated more than three times within a month then send a real-time alert to the sales department***

## Examples (2/2)

In a financial system when this rule is not fully enforced then a real-time alert is thrown to managers

- ***financial classification codes mustn't be modified more the X times within a Y period of time***

# How to manage such rules on data values?

Implementing these real-time rules requires a **Complex Event Processing** approach

Then users can both define real-time rules without any impact on regular execution of the MDM system and can subscribe to events depending on their needs and permissions about data overseeing

- ***feeds of events***
- ***social MDM***
- ***wall MDM***

# What CEP is?

**CEP (Complex Event Processing) is complementary to BRMS (Business Rules Management System)**

- it allows to enforce an active overseeing of data in real time
- the BRMS waits for an invocation coming from the MDM whereas the CEP listens to the MDM repository and executes rules depending on data behaviors
- from an IT point of view, the integration of CEP with a MDM system depends on the ability of this MDM to publish in real-time a full data log containing a detailed description of modifications applied to data values

# This presentation didn't tackle

## Your own company's needs

- Based on data governance concepts defined here a progressive design of your own functions, processes and users roles cannot be avoided

# This presentation integrates these standards

**ISO 11170** (Data repository)

**RACI and COBIT** (Governance)

# To get further information

Please attend the sixth part of this MDM introduction training course

This part is dedicated to the business object's life-cycle modeling



# Stay tuned

[pierre.bonnet@orchestranetworks.com](mailto:pierre.bonnet@orchestranetworks.com)

skype: pierre.orchestra

[www.orchestranetworks.com](http://www.orchestranetworks.com)