

# Model Driven MDM

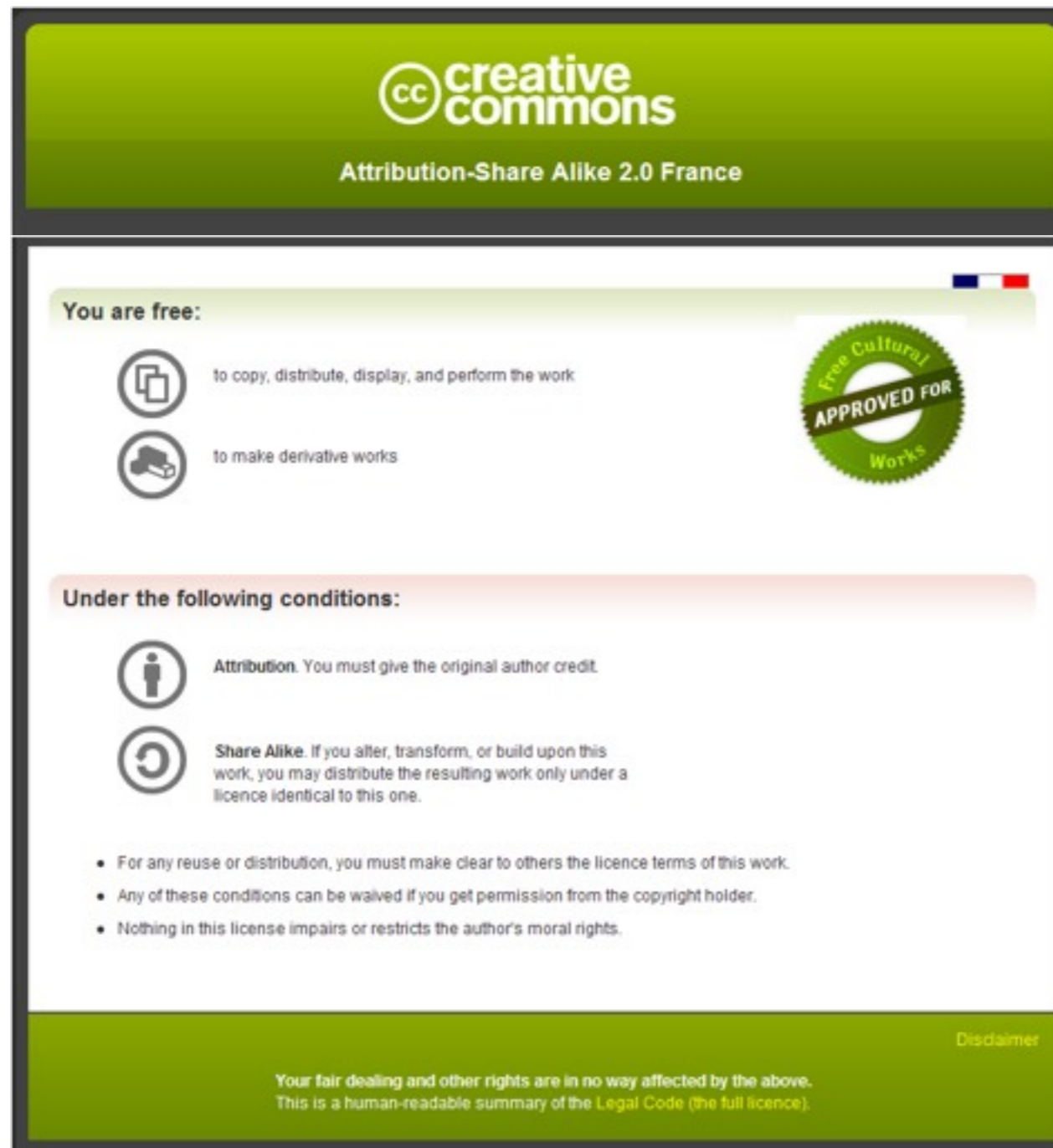
Do you know CDI, PIM & MDM?  
**You need more!**

By Pierre Bonnet





*Version February 4th, 2009*  
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This document is freely downloadable via the MAG’ website:

<http://www.mdmalliancegroup.com/>

MAG stands for MDM Alliance Group

# The speaker



- **Pierre Bonnet is the founder of Sustainable IT Architecture and MDM Alliance Group**
- **He is a well-known expert in IT/IS community and brings real world experience to topics such as MDM, MDA, semantic modeling and BRMS**
- **He is also co-author of the Praxeme methodology, the first real open source enterprise method available to the market.**
- **Pierre Bonnet is responsible for evangelization operations in Orchestra Networks. He is located at Paris, France.**
- **To join Pierre:  
[pierre.bonnet@orchestranetworks.com](mailto:pierre.bonnet@orchestranetworks.com) –  
+33 6 75 01 54 54**

# Agenda

1. How to really improve IS Agility?  
***Agility Chain Management System (ACMS)***
2. Discrepancies between OLTP, CDI, PIM, MDM and  
***Model Driven MDM***
3. How to succeed in semantic modeling?  
***MDM modeling procedures***

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# Sustainable benefits or poor quick wins?

<http://www.sustainableitarchitecture.com>



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Turning point for ISV

ACMS concept

ACMS and governance

Variants of services

Overhaul of IS

SOA letter

Materials

## Sustainable IT Architecture community

The migration of legacy systems to a sustainable Service Oriented Architecture relying on the Agility Chain Management System

'Less IT software layers... more resilient architecture'

The "Sustainable IT Architecture" community (S-IT-A) rallies IT actors (Software Vendors, Consultants, Companies, Industry Analyst) advocating a progressive revision of information systems around the following principles: the **SOA maturity matrix** (Cosmetic SOA, Overhaul SOA, Extended SOA), the Agility Chain Management System (**ACMS**), an **enterprise method**. [Learn more.](#)

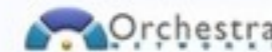
Sustainable  
Architecture **IT**

To restructure IS in a sustainable way relying on the **Agility Chain Management System (ACMS)**

### Members



Creating business value



SOFTEAM  
Your Object



logica management consulting



Meaning in action

Information Builders

PROGRESS SOFTWARE

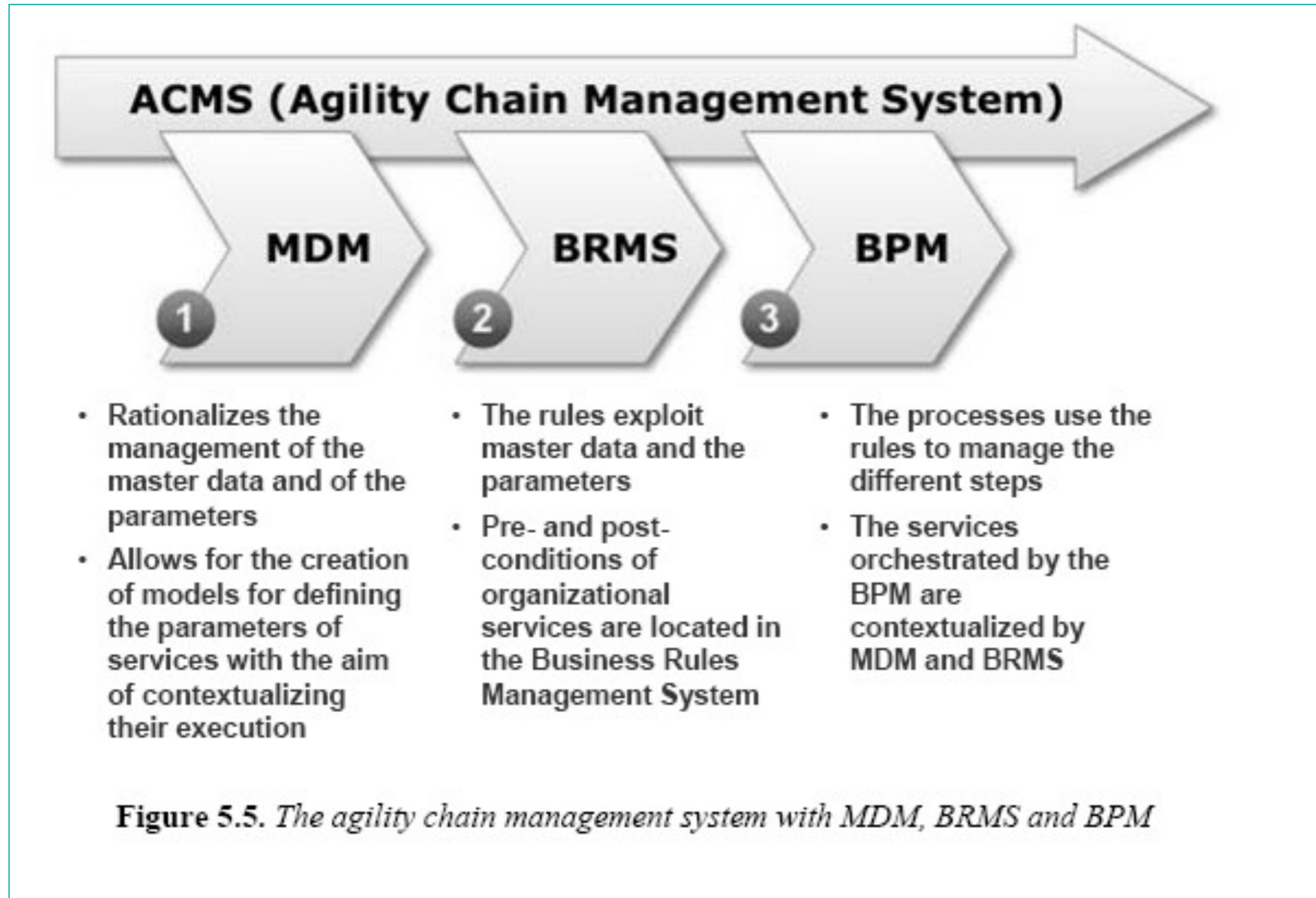


software

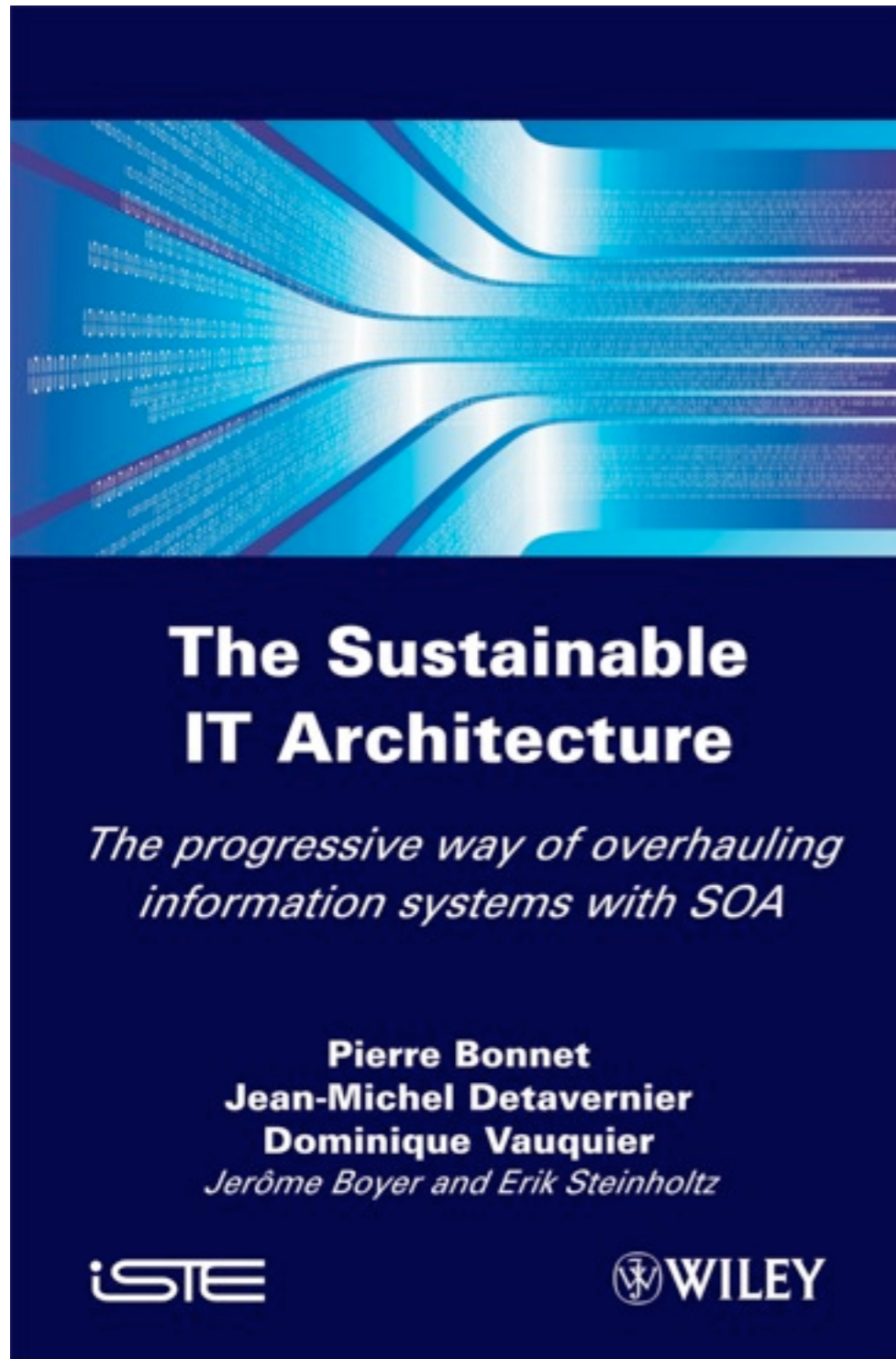
soft.computing  
data into results

MetWare  
The future of legacy

# Agility Chain Management System



# The **story** of the Sustainable IT Architecture



*Real Insurance case study*



*Master Data Management*



*Semantic modeling*

*And special contributions by:*



*Business Rules Management*



*Semantic integration*

# How to restart data modeling?

<http://www.mdmalliancegroup.com>

HOME | MDM MODELING PROCEDURES | DATA MODELS | DOWNLOAD | MEMBERS | TRAINING | CERTIFICATION | FORUM

## MDM Alliance Group

September 10, 2008

### MDM Alliance Group releases its MDM modeling procedures guidebook and prebuilt data models

[Read Press Release](#) - [Download MAG Documents](#)

**Download latest document releases**

- MAG Guidebook**  
MDM modeling procedures - Sep 09, 2008
- MAG Prebuilt Models**  
Prebuilt data models - Sep 09, 2008  
Data Enterprise Architecture blueprint - Jul 31, 2008
- MAG One-day Training Materials**  
August 2008

**The MDM Alliance Group (MAG) rallies Systems Integrators and Consultants sharing a set of procedures for modeling master data and conducting MDM projects**

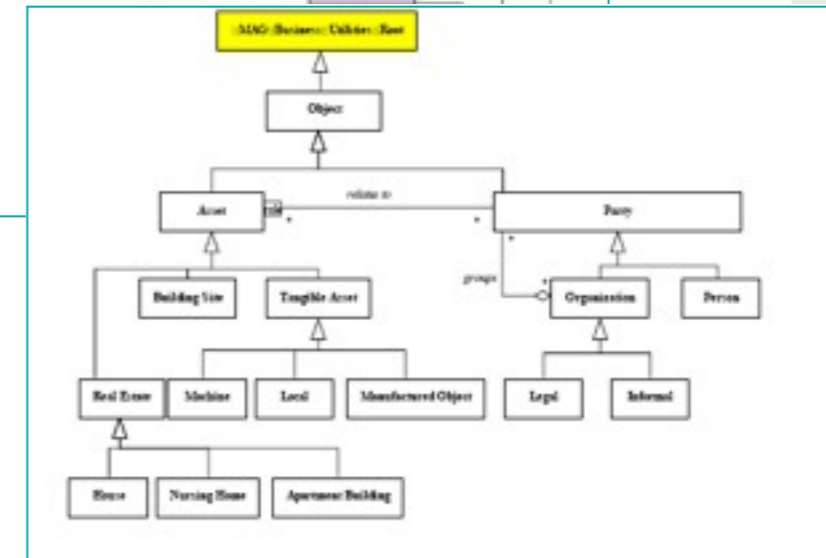
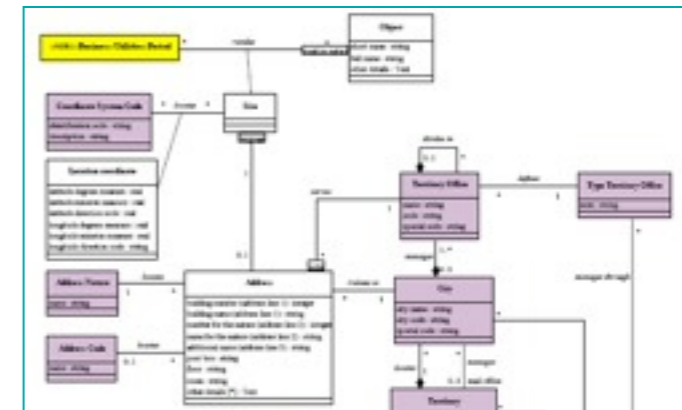
In order to avoid reinventing the wheel, Pierre Bonnet(\*), founder of the MAG Community, has initiated a complete Guide describing UML procedures to successfully model master data. This guide is freely downloadable (see the section [Download](#)).

**Need to accelerate your MDM strategy?**

Then do not reinvent the wheel but build up or buy pre-built MDM Common Information Models based on the MAG's modeling procedures

Starting from the [initial Guide](#), each member of the [MAG Community](#) (systems integrators, consultants) enriches it by extending current procedures with their own business or IT added-value, in domains or specializations such as: data quality, data integration, workflow approval, modeling patterns, security, MDA (Model Driven Architecture), change management, regulation, etc.

MDM modeling procedures relying on **semantic data modeling**



# Give me a real ROI please!

BPM, BRMS, BAM, CEP, SOA...  
need a high level of data quality to reveal  
the agility of the IS

- MEANING
- VALUE
- UPDATING RULES
- PERMISSION
- VERSION
- TRACEABILITY
- ..../..



Rich Data Model = Semantic modeling

~~Silo'd  
Data Quality tools~~

**Data Semantic Model Quality!**



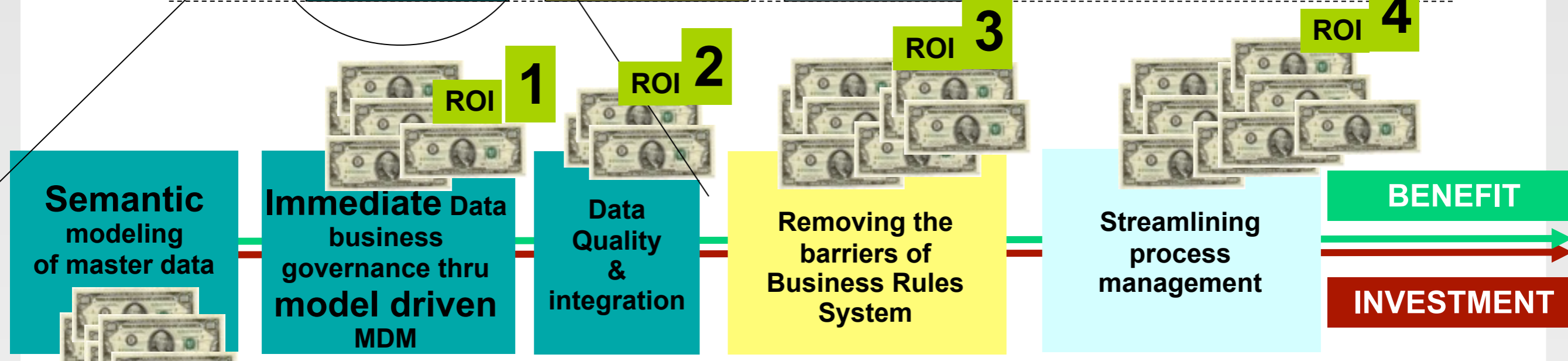
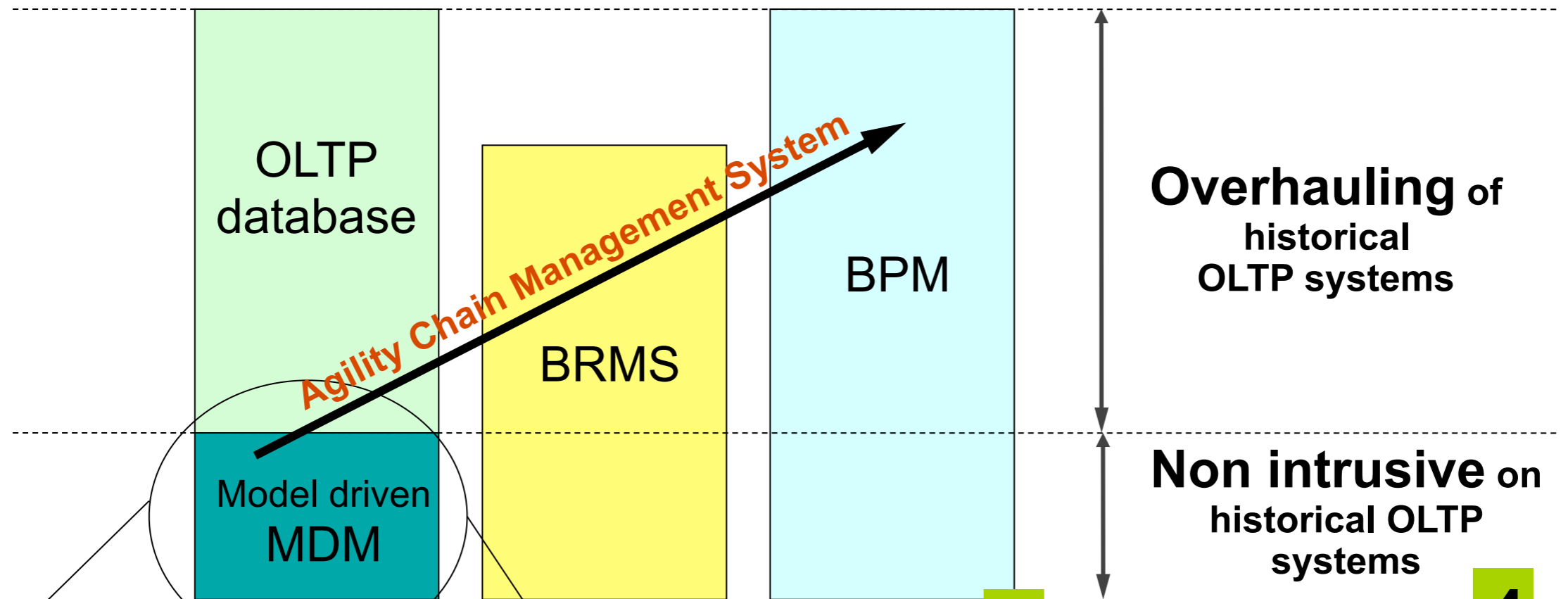
Revitalization of Data Quality tools

# Agenda

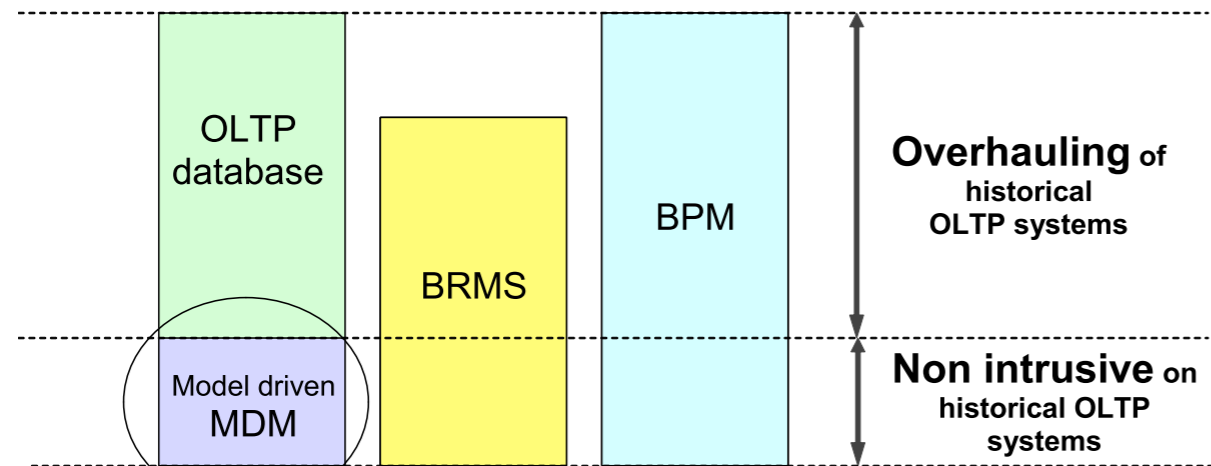
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*Agility Chain Management System (ACMS)*
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*MDM modeling procedures*

# Give me a real ROI please!

Transforming data model into ROI with help from Agility Chain Management System



# What is a model driven MDM?



Modeling styles

1. model driven
2. strong modeling style
3. design by contract

Object  
(Multivalued attribute,  
inheritance)

Relational  
(Normal forms)

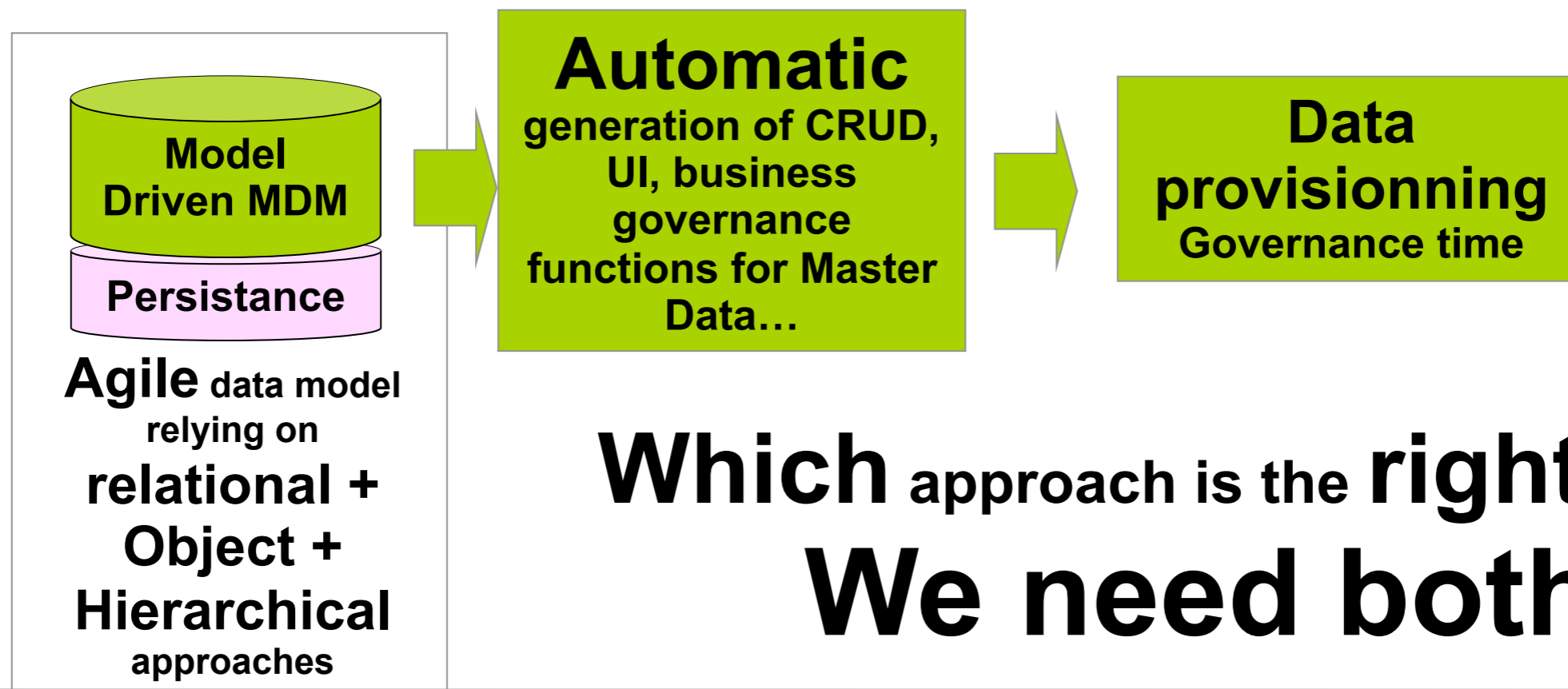
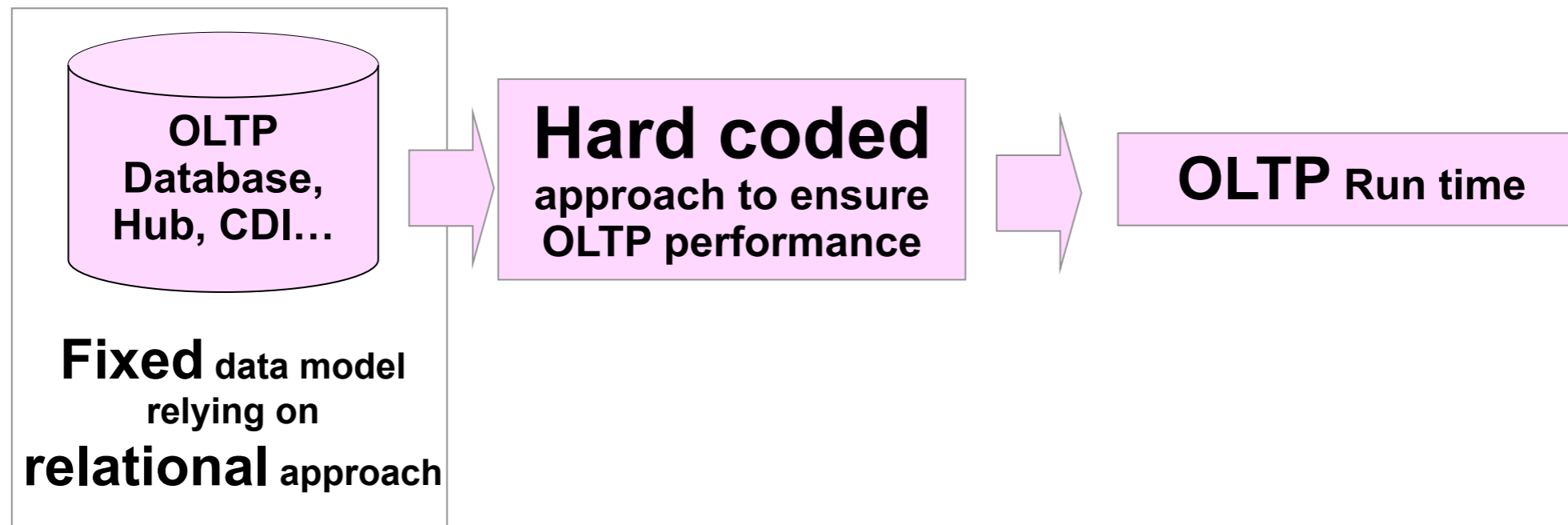
*Master Data  
Management*

Hierarchical  
(XML complex data type)

- A rich semantic data model absorbing **several variants without duplicating data structures!**
  - Dynamic enumerations
  - Dynamic cardinalities
  - Pre & Post conditions
  - Life-cycle of business objects
  - Multivaluated foreign keys to avoid useless join tables
  - Automatic generation of CRUD based on the model
  - Etc.

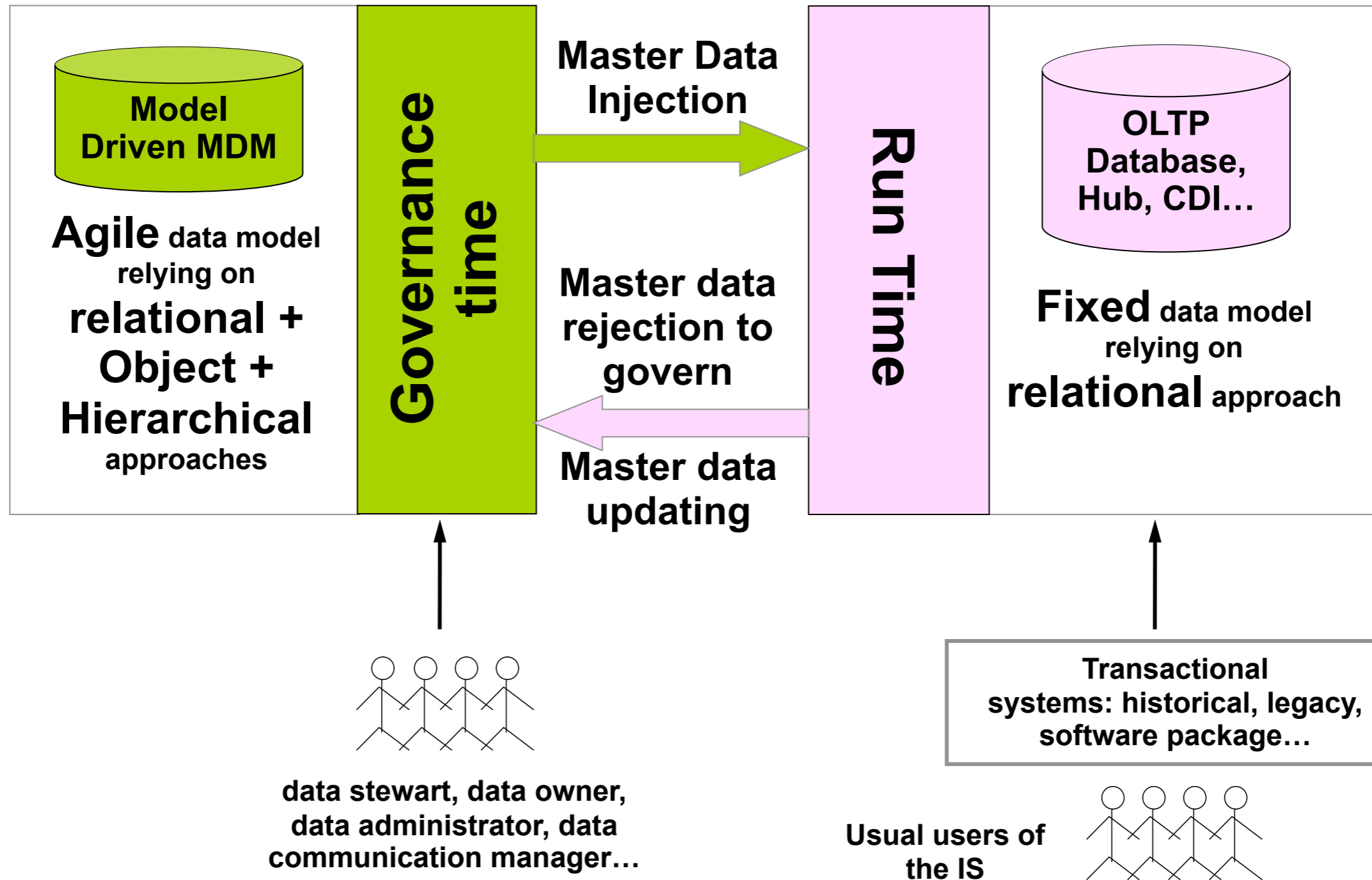
- **Automatic generation of strong business governance functions based on the data model**
  - UI, version and merge management, query, Strong audit trail and traceability, permission management, etc.

# OLTP or Model driven?



**Which approach is the right one?  
We need both!**

# OLTP+HUB+CDI+Model driven MDM



# What are discrepancies between...

## MDM

- **Strict data relational approach**
- **Poor data model relying on join tables without ability to handle variants of data structures**
- **Silo'ed approach due to lack of data variant management and hard-coded approach**
- **Heavy risk of silo'ed MDM: customer, product (PIM), organization, chart of account, functional parameters, right management of transactional systems, etc.**

## Model driven MDM

- **Object and Relational data style that provides a rich model and allows semantic modeling (variant of data structures without any duplication)**
- **A unified MDM to handle all kinds of Master Data. No risk of silo'ed MDM**
- **High level of integrity rules management with help from rich data models : constraints, business rules, multivaluated attributes such as list of foreign keys, etc.**

1. **OLTP and model driven MDM have to live together**
2. **CDI hubs are OLTP system so they have to live with model driven MDM**
3. **MDM relying on a simple relational data modeling is a trap**
4. **Model driven MDM is the only way to quickly deliver a cost-effective MDM**

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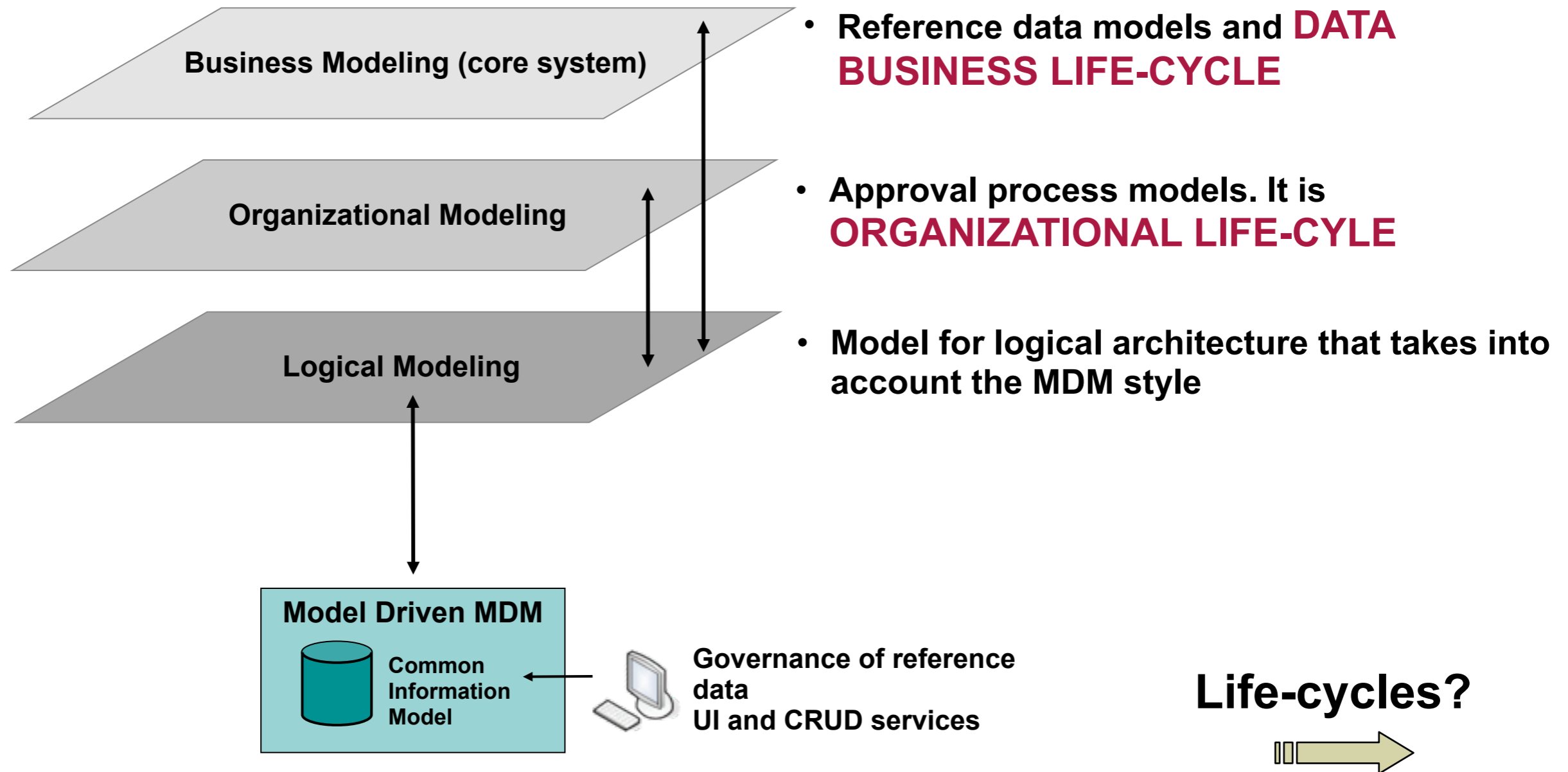
# Help me to succeed in an efficient semantic modeling for my Master Data and more...



Good news! Find out more on MAG's website  
MDM Alliance Group's **modeling procedures**

# An universal framework

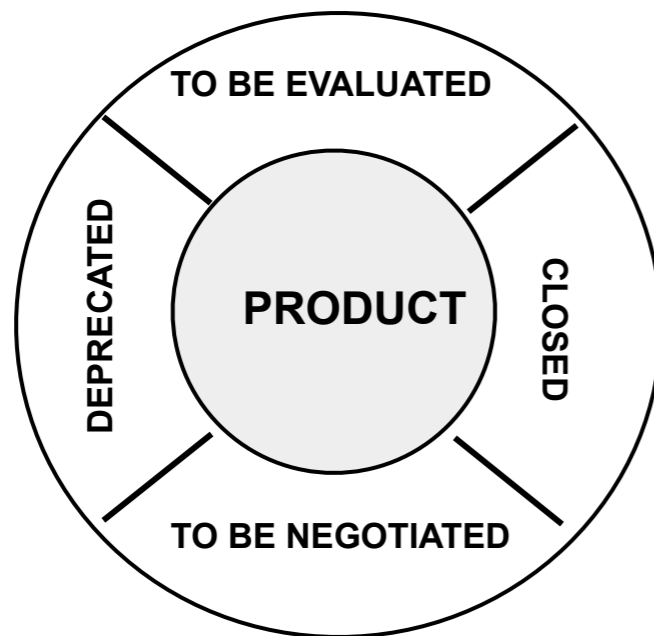
Three Modeling levels of abstraction must be distinguished



# Life-cycle

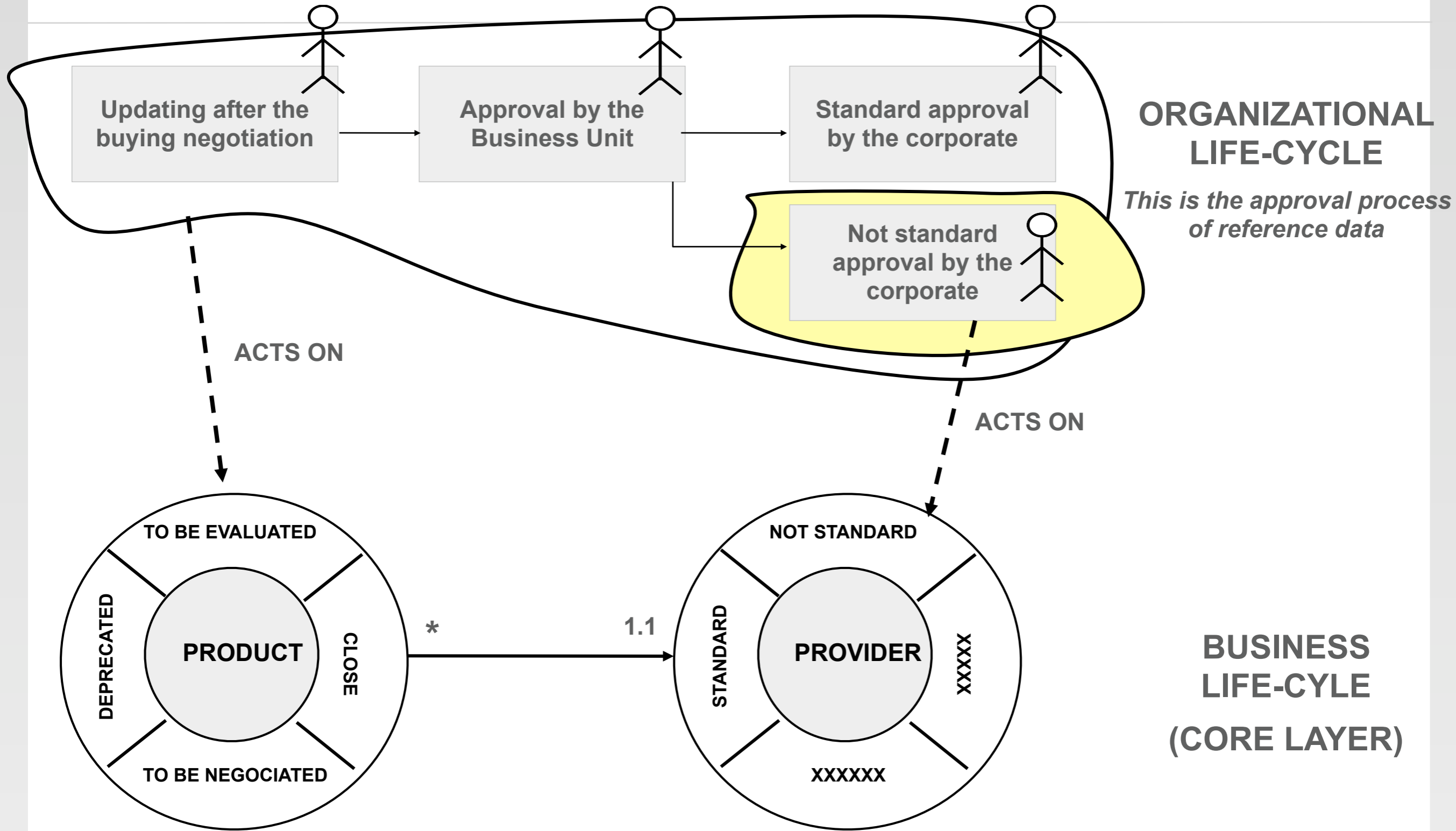
- Those two types of life-cycle describe successive states that reference data (business state) and approval processes (organizational state) can have
- Moreover those states allow to manage in a better way data integration processes between systems

## THE BUSINESS LIFE-CYCLE



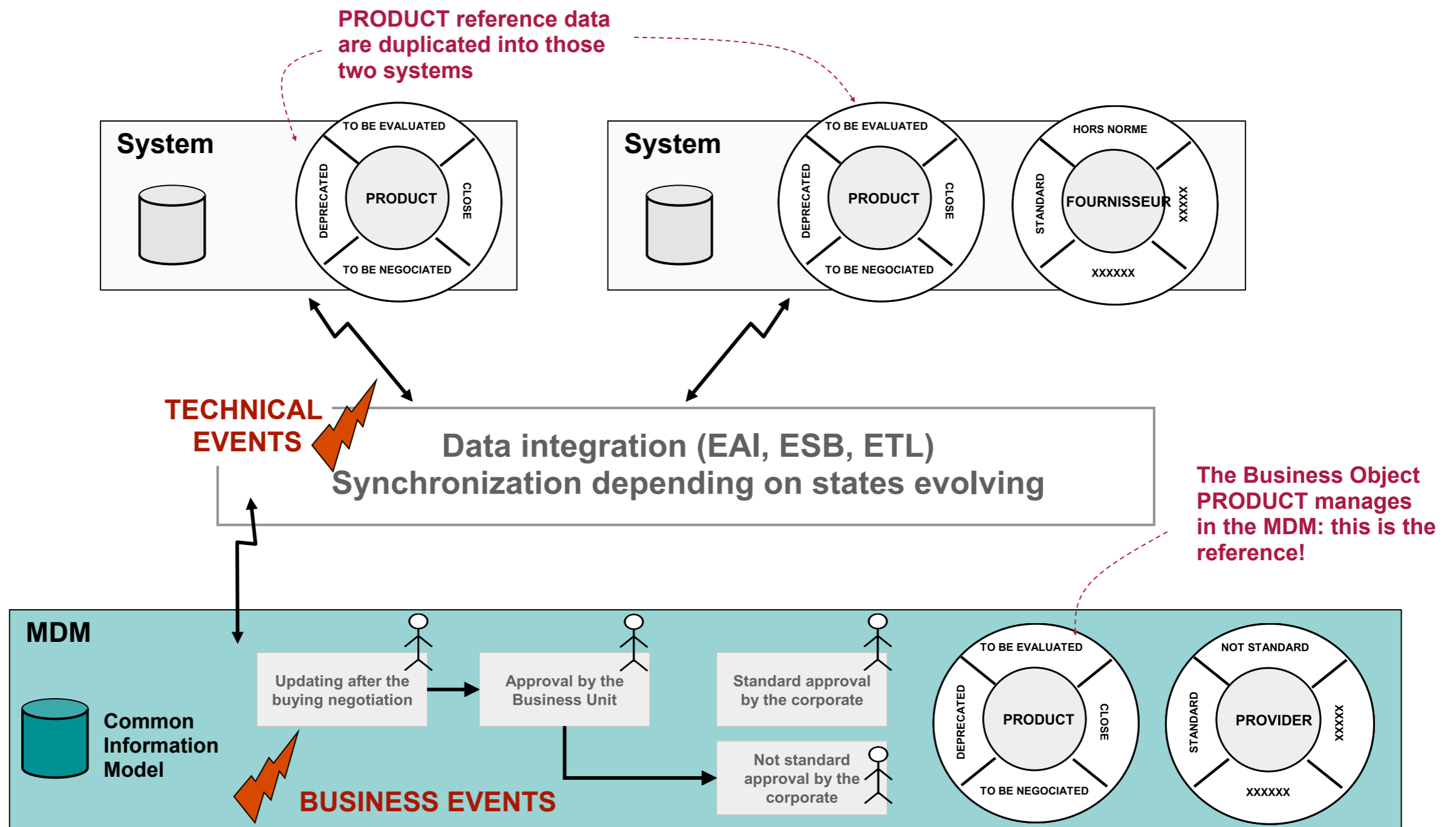
- The business object Product holds 4 business states
  - The modification of attributes is depending on the current state
- In the MDM context, the business object Modeling is reduced to reference data **BUT** that Modeling procedure is **valuable** for designing all types of data and not only reference data

# Life-cycle



# Life-cycle

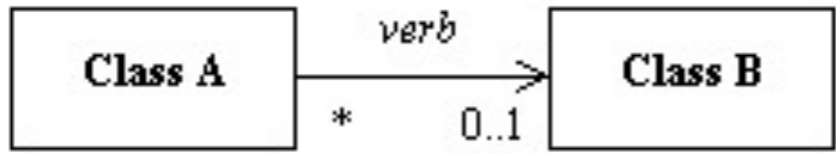
## Synchronization between MDM and systems



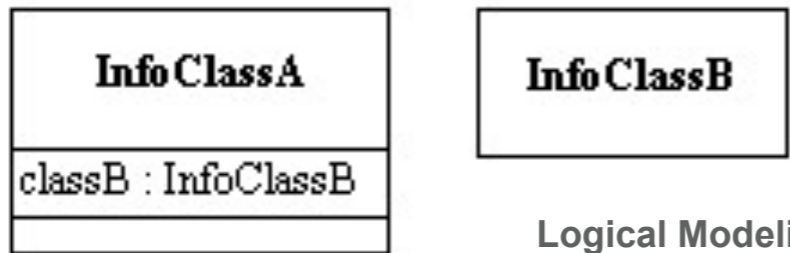
# Example #1

**Nested data types**

**Data models**



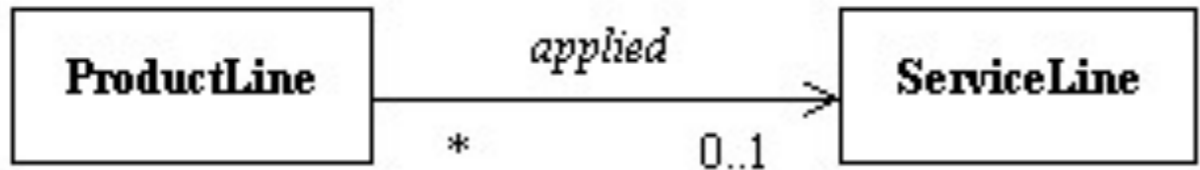
Semantic Modeling



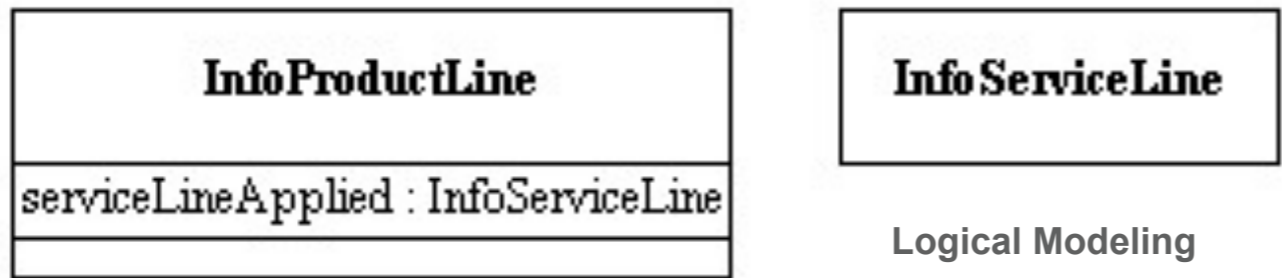
Logical Modeling

Class A and Class B are located in a unique Data Category

**A Data Category or Category Class is a cluster of tightly coupled classes**



Semantic Modeling



Logical Modeling

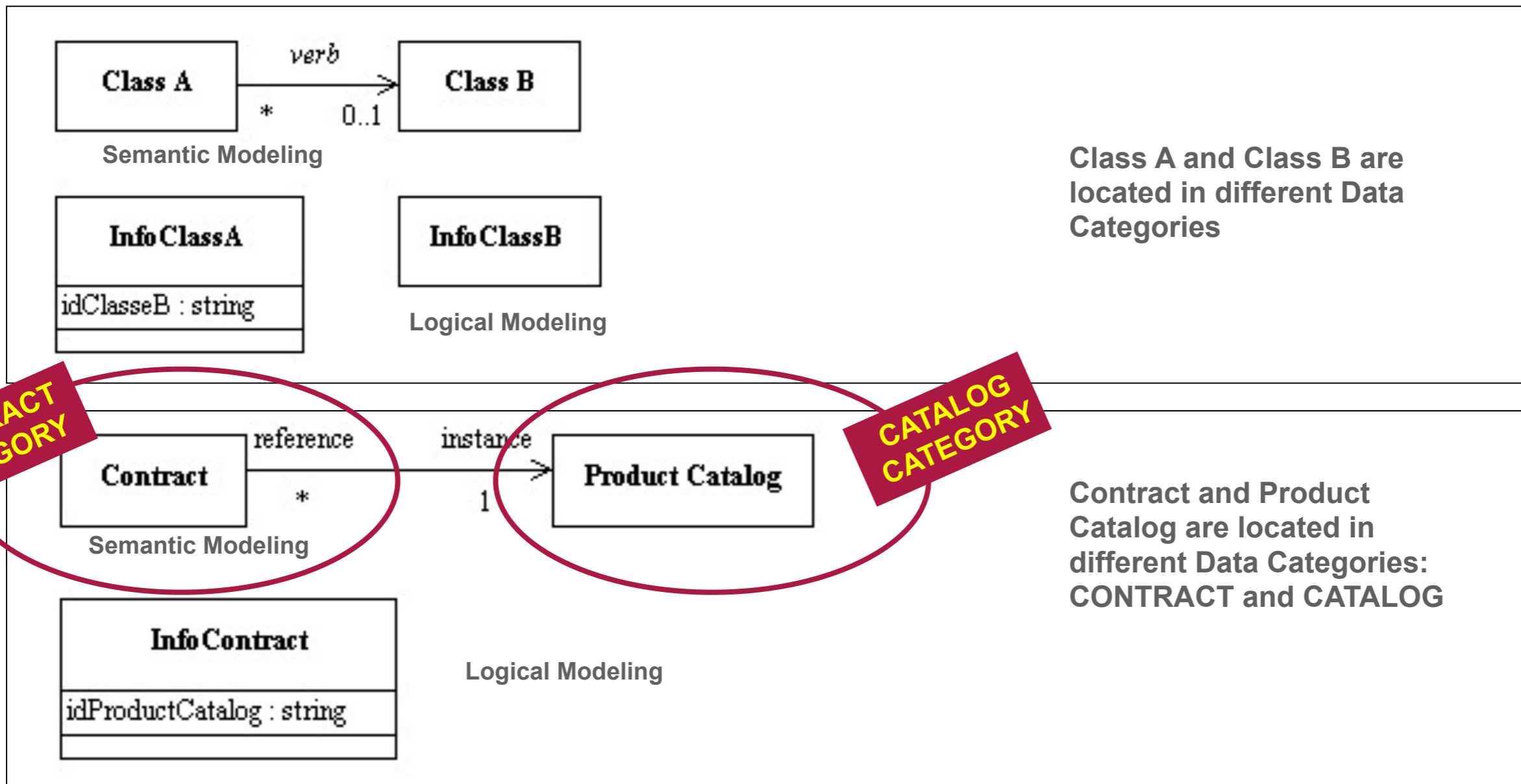
ProductLine and ServiceLine are located in a unique Data Category

**In those examples nested types are used because data are located in a unique Data Category (see also next slide)**

# Example #2

Foreign Key attribute

Data models



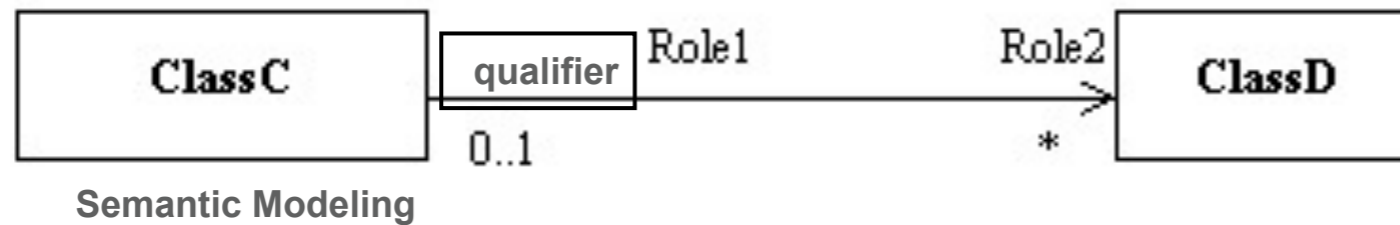
Class A and Class B are located in different Data Categories

Contract and Product Catalog are located in different Data Categories: CONTRACT and CATALOG

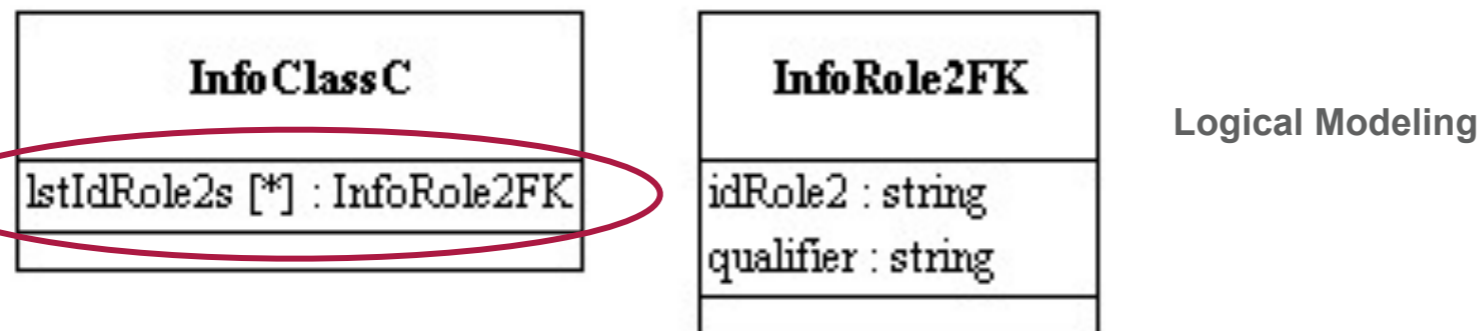
In those examples a foreign key is used to connect data because they are located in different data categories

# Example #3

List of Foreign Key attributes



The qualifier attribute is derived by a complex data type describing the foreign key (InfoRole2FK)



- This is a multivaluated attribute authorized in oriented object Modeling. This is not a E/R Modeling
- The MDM tool must be able to absorb this model and automatically generate basic CRUD functions and the User Interface for querying and keying value data
  - AND OBVIOUSLY ASSOCIATED WITH ALL GOVERNANCE FUNCTIONS LIKE the version management, the permission management, etc.

All derivation rules are detailed in the annex of the MDM guide



Method MDM guide

# MDM modeling procedures Guide

MDM Alliance Group (MAG)

<http://www.mdmalliancegroup.com/>

The screenshot shows the homepage of the MDM Alliance Group website. At the top, there is a navigation menu with links for HOME, MDM MODELING PROCEDURES, DATA MODELS, DOWNLOAD, MEMBERS, TRAINING, CERTIFICATION, and FORUM. Below the navigation is a blue header with the text "MDM Alliance Group". The main content area features a large heading: "A public method for modeling master data in a sustainable way".

**Next MDM Method Trainings**

- In French: September 23, 2008 in Paris (PDF form) Organized by [Orchestra Networks](#)
- In English: Please [contact us](#) directly to organize inhouse session.

**News**

July 22, 2008. Press Release.

**Agile Solutions Ltd to become the first UK member of the MDM Alliance Group (MAG)**

Agile Solutions, one of the fastest growing data integration and business intelligence consultancies in the UK, today announced its membership and support of the Master Data Management Alliance Group (MAG), the community promoting sustainable modeling procedures for delivering master data management projects.

**Members**

The members section displays logos for Agile, Atos Origin, and IWA Consulting.

**The MDM Alliance Group (MAG) rallies Systems Integrators and Consultants sharing a set of procedures for modeling master data and conducting MDM projects**

The MDM Alliance Group is a community of Software Vendors, Consultants and Systems Integrators, who jointly invest their time and intellectual property in the development of a common best practice and procedure approach for the successful and sustainable implementation of Master Data Management projects. Completely agnostic to technologies, the members of the MAG bring their domain experience and potentially pre-built models with the underpinning of the MDM Procedures Guide to maximize your opportunity for a success.

In order to avoid reinventing the wheel, Pierre Bonnet(\*), founder of the MAG Community, has initiated a complete Guide describing UML procedures to successfully model master data. This guide is freely downloadable (see the [section Download](#)).

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Making your project compliant with the MAG procedures greatly reassures your company by securing state-of-the-art modeling techniques. Your company is not locked in a proprietary method and your systems integrators and consultants are able to concentrate their efforts on real added-value for your business.

The bottom of the page features a diagram showing a flow from "Pre-built" models (ERP, Verticals, Products, Orga, LoB) to "Custom Models", which then leads to "Pre-built or Custom Data Governance Models & Processes provided by Consultants & SI".

# Thank you.



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