Master Data Management (MDM) enables IQ at Tetra Pak

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Executive Summary/Abstract: Supply Chain efficiency and financial reporting are significantly dependent on adequate Information Quality. Treating Master Data as a corporate asset has been identified as a critical success factor. Implementing and following a corporate Master Data Strategy enables the organization to identify and prioritize key issues relating to Master Data Management. Following an organizational and process related integration builds the architectural foundation for a holistic MDM framework approach on this increasing and challenging topic.

Objectives of this presentation

- Explore an evolutionary journey of a Master Data Management (MDM) integration approach following an Information Quality Strategy
- Provide best practices and an overview on key success factors how MDM could enable a TDQM approach
- Demonstrate the concept and implementation of an MDM framework architecture
Tetra Pak Core Business

Tetra Pak can offer packaging machines for a wide range of packaging alternatives. The company produces packaging machines as well as packaging material.

Tetra Pak supplies complete processing and packaging lines, and takes total responsibility for the equipment supplied. Processing equipment includes separators, heat exchangers, homogenizers and evaporators, as well as equipment for aseptic processing and flow.

A large number of different types of distribution equipment, such as conveyors, tray packers, film wrappers, crates and roll containers are developed, produced and marketed by Tetra Pak.

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Tetra Pak Figures 2004

- Packaging machines in operation 2005: 9,014
- Packaging machines delivered in 2004: 630
- Processing units in operation 2005: 22,546
- Processing units delivered in 2004: 1,816
- Distribution equipment in operation 2005: 12,355
- Distribution equipment delivered in 2004: 1,373
- Market companies: 58
- Number of employees: 20,905
- Number of liters of products delivered in Tetra Pak packages in 2004 (million): 60,700
- Number of Tetra Pak packages delivered in 2004 (million): 110,800
- Net sales in 2004 in MEUR: 7,525
Background / Drivers for a MDM implementation

- **Intense & challenging ERP Project and roll-out plan**
  - Global solution approach
    - Started in 1998, ends in 2008 (13 clusters)
  - Target coverage of 80% of the overall business transactions
  - Challenging technical architecture (MDRS)
  - Multilanguage approach (UNICODE)

- **Supply Chain automation impact (Global Trading)**
  - Sales order and related transactions could not be executed due to missing or wrong attributes in Master Data Objects
  - E-Biz processes (in general B2B processed) highly exposed to correct DQ
    - In general the higher the automation the higher the dependence on DQ

- **Reporting impact**
  - Different interpretation and understanding of meta data and semantics
  - Compliance follow-up impossible or only via enormous resource effort
  - Sell & buy trends difficult to identify (BW cubes highly dependent)

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### ERP ROLL-OUT Plan

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<tr>
<th>2001</th>
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<td>Cluster 4</td>
<td>Cluster 5</td>
<td>Cluster 6</td>
<td>Cluster 7</td>
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<tr>
<td>TPPC &amp; TPDB</td>
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<td>TR – Sunne PAS pilot</td>
<td>Nordic (&amp; Proc)</td>
<td>FSSC for FR, DE</td>
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<td>Netherlands and Moerdijk</td>
<td>FSSC for Italy</td>
<td>APO</td>
<td>魔术表</td>
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<tr>
<td>Cluster 1</td>
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<td>Cluster 3</td>
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<td>Magic table</td>
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<td>FSSC for Italy</td>
<td>APO</td>
<td>魔术表</td>
</tr>
</tbody>
</table>

Rollout sites in Europe
- Rollout sites in Asia & American
- New Design
- Tetra Box
ERP ROLL-OUT Plan cont.

<table>
<thead>
<tr>
<th>2005</th>
<th>2006</th>
<th>2007</th>
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**First indications of lacking Information Quality**

- **Inaccurate legacy conversion due to:**
  - Insufficient preparation of legacy sites
  - Master data ownership not addressed
  - Missing method, processes, definitions
  - Lack of business knowledge
  - Legacy systems -> ERP mapping not properly done

- **Results in:**
  - Customer/employee dissatisfaction
  - Supply chain interruptions short after go live and hyper care
  - Huge effort to fix wrongly populated data
  - Setting the focus on conversion activities

**Set-up of a conversion method**
System Landscape

Where is the correct information?
Is the information consistent across platforms & processes?
Who can sort it out?

First steps on Information Quality process implementation

- Focus on conversion processes and Master Data documentation
  - Workshops addressing definition and criteria’s for Master Data
  - Identification of Master Data objects and related framework, analysis of the “grey zone”
  - Setting up a method for the conversion process
  - Defining a common repository for meta data
  - Initialization of the documentation

- Results in:
  - All Master Data processes documented
  - Data object repository implemented and operational
  - Significant change management efforts
  - First iteration of a conversion method live

Initialization of a Master Data Strategy
Information Quality Issues

Inconsistent and redundant information; related components created without correct naming conventions:

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<th>MATNR</th>
<th>Makt</th>
<th>LBTXT</th>
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Correctly maintained components with global naming conventions:

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</tr>
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</table>

Information Quality Issues cont.

Sales orders volume increased 3 folds
Errors volume decreased 7 folds

Error Rate: 2.1%

Error Rate: 14.7%
**Master Data Strategy elements with focus on MD Standards**

1. **Methods**
   - Methods are often available but seldom formalized nor ready for corporate usage, hence identification, harmonization and visualization of methods are key.

2. **Processes**
   - Master data processes are critical and prerequisite for transactional activities.
   - Often impacting cross-platforms and cross-processes, therefore requires high attention and awareness.

3. **Definitions**
   - Definitions have normally a short lifecycle due to a rapidly changing business environment.
   - Ownership and communication needs to be formalized in order to set adequate measurements.

4. **Meta Data**
   - Semantics on Master Data objects requires documentation and communication.
   - Representing a virtual view on data integrity.

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**Master Data Strategy elements orbited by activities**

1. **Conversion**
   - Periodic activity, appears with each roll-out of a new cluster (normally twice a year).

2. **Maintenance**
   - Distinguish between data owners and data maintainers.
   - Challenging to harmonize with overall business processes.
   - Good opportunity for formalization.

3. **Quality Control**
   - Without a fundamen of ownership and adequate KPI’s not applicable.
   - Top management support crucial.

4. **Reporting**
   - Dedicated reports for monitoring Information Quality.
   - Understand the top priority processes and objects to monitor.

5. **Cleansing**
   - “Negative entropy” effect works!
   - Periodic activity, often perceived as a one off event.
   - Might reach easily project character in terms of dimensions and complexity.
Conversion (legacy)

- **Objectives**
  - Formalization of the process, roles and documentation
  - Applying a data preparation phase, application of a cleansing strategy, involvement of data owners
  - Initialize Master Data documentation
  - Sharing meta data / semantics / business rules of data objects amongst the business & technical audience

- **Results in:**
  - Method covering conversion and related processes & tools
  - Implementation of global Master Data process documentation (ISP online Help)
  - Implementation of a global DOR (Data Object Repository)

**Focus on the conversion process and Master Data process documentation**

Data Conversion Method & High Level Plan

- **Allow early start**
  - Get organizational alignment initialized
  - Mitigated risk of exploring "time bomb’s"
  - Change Management addressed (incl. Top Mgmt.)

- **Focus on data preparation**
  - Allow time for analyzing data and setting the DC strategy
  - Understand the workload

- **Followed by cleansing**
  - What, How and When clean
  - Ramping up data ownership
  - Supported by business and project
  - Sites get familiar with data
DOR III Data Object Repository

**Containing**
- Meta Data of all ERP Master Data objects
- Business roles, ownership, approved objects

**Conversion usage**
- Enables conversion process control
- Allows snapshots from previous versions
- Generates file mappings (ETL)

**Designer (Maintenance) community usage**
- Enables MD object control
- Maintenance of documentation formal part of designer audience
- Used to build the on line help for Master Data Maintenance Processes

**Business usage**
- Access information via the web
- Using approved objects for local MDM web workflow
- Base for own built local Quick Reference Guides

<table>
<thead>
<tr>
<th>MDM roles</th>
<th>Objects</th>
<th>Views</th>
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<td>Local</td>
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<tr>
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<tr>
<td>Total</td>
<td>68</td>
<td>291</td>
<td>1'160</td>
</tr>
</tbody>
</table>

Example Data Object Repository (DOR)
Master Data Maintenance

**Objectives**
- Data ownership / accountability 100% defined
- Limited MDM accesses/escalation points (concentration of maintenance)
- Local MDM processes defined in compliance with global MDM processes
- Adequate local MDM documentation

**Results in:**
- Central MDM teams vs. local MDM teams (SLA’s & KPI’s)
- Standard MDM implementation for planned roll-out sites
- Post Implementation package
- Specific MDM business roles & documentation
- Workflow tool’s for global and local owned MDM objects & processes
- Reporting instance dedicated to Master Data objects

Focus switched to the maintenance aspect of Master Data (daily business operations)

MDM organizational integration overview

**Local MDM teams**
- Red dots representing concentrated Master Data team at local sites
- Interacting with global teams
- Local workflow

**MDMc Community**
- Builds the framework for local / global teams
- Represents the network for MDM
MDM Business Roles

- **In practice;**
  - “Building Blocks”
  - Actually a specific “super user” role with dedication to Master Data
  - Covering global and local roles
  - Can’t be “split-up”
  - also account for segregation of duty rules
  - Focused training of MDM staff
  - Balanced score card relevant

MDM Architecture Framework

- **MDMweb (Central MDM teams)**
  - Global Workflow for global MD objects
  - Information Quality Reports

- **LMDMweb (Local MDM teams)**
  - Local Workflow for local MD objects
  - Local Process Documentation

- **DOR**
  - Meta Data, Business Rules
  - MDM roles

- **Online Help (ISP Help)**
  - Global Process Documentation
Central MDM Teams

- **Objectives**
  - Execute ownership on global owned Data Objects or execute maintenance on behalf of global Data Owners
  - Focus on customer, material and vendor codes
  - Set the relevant standards and guidelines
  - Enable “follow the sun” support in order to allow transactional execution
  - Monitor Service Level Agreements and Key Performance Indicators
  - Acting as a competence centre for local sites
  - Coordinate activities with local MDM teams

- **Results in:**
  - Central MDM Team’s in Lausanne, Lund, Modena, Panama & Singapore
  - Harmonization of global Data Standards and global maintenance processes

MDMWeb global workflow (maintain customer information)
Local MDM teams

- **Objectives**
  - Execute ownership on local owned Data Objects or execute maintenance on behalf of local Data Owners
  - Allow target concentration of approx. 10 %
  - Apply the relevant standards and guidelines
  - Monitor Service Level Agreements and Key Performance Indicators
  - Acting as a competence centre within the local sites
  - Coordinate activities with global MDM teams

- **Results in:**
  - Local MDM Team’s in Switzerland, Sweden, Italy, Hungary, Portugal, Spain, Germany, Austria, US, Canada, Brazil, Argentina, Russia, Ukraine, Turkey
  - Local MDM workflow processes
  - Local Documentation QRG’s (Quick Reference Guides)
  - Master Data Information Quality Reporting

Central MDM teams & local MDM teams building the MDMc Community

MDMWeb local workflow (maintain vendor information)
Local MDM set-up’s

- **Networked**
  - LMDM Manager (dark blue)
  - Set-up as a network reflecting dept. structures
  - Concentration level ca. 10%
  - Normally no full-time assignments
  - Maintaining critical objects / processes

- **Concentrated**
  - Maintainers (light blue)
  - Fully concentrated
  - Concentration level ca. 10%
  - Entering Master Data for the whole site
  - Normally full-time assignments

MDMc Community Objectives

- Get the "voice of the business" and highlight MDM issues with clear business impact (local AND global)
- Prioritize the MDM topics/issues and understand/address them via focused workgroup
- Formalize business input in MDM methodology
- Escalate the MDM issues and get feedback
- Stimulate Knowledge sharing with adequate structure and acceptable workload
MDM Key Elements

Summary & Status

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<thead>
<tr>
<th>ELEMENTS</th>
<th>Status</th>
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<tbody>
<tr>
<td>MD Standards</td>
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Questions