Components for Material Master Data Management in Swiss hospitals

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eProcurement

Service provider

Supplier A
Supplier B

SAP

Bern University of Applied Sciences | Healthcare of the Future
Master data – master data management

- Material master data
  - reference description
  - swaps, bandages, scissors or injection syringes ...
- Key problem for material master data management
  - gathering and updating of information
    → information flow ...
- Situation in Switzerland
  - no standard update procedure within hospitals
  - no overview about available infrastructures and technologies
Methods

- Project in context of «Hospital of the Future live»
- Based on two previous student projects
  - complete hospital supply chain from the manufacturer to the patient (medication)
  - process chain for eProcurement in hospitals
Semi-structured interviews with specialists in Swiss hospitals
  - one university hospital (hospital A)
  - a hospital chain (hospital B)
  - a regional hospital (hospital C)
Additional interviews
  - large supplier (Johnson & Johnson)
  - logistics company (Kühne und Nagel)
  - two electronic data interchange providers (EDI provider)
Current situation

- SAP MM (materials management) system
- Material master data: information used
  - item designation
  - unique item ID
  - one or several article classifications
  - packaging sizes
  - specific storage requirements, e.g. temperature or dangerous goods advice
  - storage location(s)
  - minimum quantity
  - minimum order quantity
  - price
  - manufacturer and distributor
### Current situation

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Catalogue</th>
<th>Automated updates</th>
<th>Nbr articles</th>
<th>Specialities</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>shadow data master catalogue</td>
<td>yes</td>
<td>~50'000</td>
<td>tool of Consense GmbH</td>
</tr>
<tr>
<td>B</td>
<td>Proprietary master data catalogue</td>
<td>partially</td>
<td>~60'000</td>
<td>centralised data warehouse (ZENLOP) for 4'700 articles</td>
</tr>
<tr>
<td>C</td>
<td>EDI provider master data catalogue</td>
<td>yes</td>
<td>~14'000</td>
<td>search for substitute products</td>
</tr>
</tbody>
</table>
Available standards and classifications: update

- GS1 standard **Global Trade Item Number** (GTIN, formerly EAN)
  - (replaced the former Pharmacode for drugs in 2012)
  - Up to 150 GTIN numbers for the same article
- GS1 **Catalogue Item Notification** (CIN messages)
  - CIN 2.3: csv
  - CIN 3.1: XML
- **Global Data Synchronization Network** (GDSN)
  - source data pool
  - classification of articles into groups and classes of materials is essential

![Diagram of Catalogue Item Notification]
Available standards and classifications: product classification

▶ eCl@ss
  ▶ cross sectoral product classification
  ▶ 41’000 product classes in four levels
  ▶ used in Germany, rarely used in Switzerland
  ▶ CIN 3.1 as additional classification

▶ GS1: Global Product Classification GPC
  ▶ four levels of hierarchy
## Overview

<table>
<thead>
<tr>
<th>Problem</th>
<th>Potential Solution</th>
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</thead>
<tbody>
<tr>
<td>Insufficient master data quality</td>
<td>Manufacturers and suppliers should improve source master data quality</td>
</tr>
<tr>
<td>Missing automated master data updates</td>
<td>Use of GDSN in combination with CIN 3.1</td>
</tr>
<tr>
<td>Unstructured communication of master data</td>
<td>Use of GDSN in combination with CIN 3.1</td>
</tr>
<tr>
<td>Restrictions in current MM IT systems (e.g. field length)</td>
<td>Improve MM IT systems for better support of healthcare requirements</td>
</tr>
<tr>
<td>Duplicate catalogue entries</td>
<td>Improved update control</td>
</tr>
<tr>
<td>Different use of catalogue fields</td>
<td>Improved education of catalogue maintainers</td>
</tr>
<tr>
<td>Complex order process</td>
<td>Connect to EDI provider</td>
</tr>
<tr>
<td>Difficult search for replacement articles</td>
<td>Use standard catalogue such as eCl@ss or connect to EDI provider.</td>
</tr>
</tbody>
</table>
Johnson & Johnson

Oracle CRM → CRM 2 → Price

Supplier A

Suppliere B

Medical Columbus

GS1 GDSN

Hospital C

Hospital A

SAP MM → IS-H → other systems

Master data generator

shadow master

CIN 3.1

Oracle CRM

CRM 2

Price

MC-Importer → MC Navigator → MC-Exporter

CIN 3.1

CIN 3.1

CIN 3.1

MC-Importer

MC Navigator

MC-Exporter

MC-Importer

MC Navigator

MC-Exporter

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Conclusions

▶ Solutions do exist
▶ Connection to the GDSN network either directly or via an EDI provider
   ▶ semi-automated update of the SAP MM master material data catalogue
▶ New version Catalogue Item Notification (CIN) 3.1
   ▶ not yet common place
   ▶ the digital delivery of material master data is not a standard for small and highly specialized manufacturers in the healthcare sector
Conclusions

Potential for improving material data management in hospitals
▶ automatable workflows based on existing standards, especially those
  ▶ GTIN for article and package identification
  ▶ Global Location Number GLN for manufacturer identification
  ▶ Global Data Synchronization Network GDSN for exchange of material master data
  ▶ eCl@ss or Global Product Classification for highly-granular product classification
Thank you very much for your attention