Ontology at Bisnode
Agenda

- Introduction
- Business use case
- Why ontology?
- Architecture, process and tools
- GDPR
- Challenges
Introduction

"Bisnode is the leading European data & analytics provider"
Business use case

1 group offering
smart analytics & decisioning

37 platforms
static credit reports
Why ontology?

Why not?
Why ontology?

Why not?

What else?
Why ontology?

Why not?

Let’s DO IT!

What else?
Architecture
Process

Concepts identification and definition
Reference data
Modeling
Mapping
Extraction and testing
<table>
<thead>
<tr>
<th>Country</th>
<th>Address type</th>
<th>Data Element</th>
<th>English description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>Address type</td>
<td>Visiting address</td>
<td>The primary or physical address of a subject. For a business this is the principal address at which the business is located; the Headquarter's address.</td>
</tr>
<tr>
<td>DE</td>
<td>Address type</td>
<td>Visiting address</td>
<td>In Germany, where a lot of companies have a legal form that is not registered in the German “Handelsregister” (German Company House holding the Trade Registration information), the visiting address is also the official legal address of those non-registered companies.</td>
</tr>
<tr>
<td>FI</td>
<td>Address type</td>
<td>Visiting address</td>
<td>Local format is street name, house number, stairway ID (normally a letter), apartment number.</td>
</tr>
<tr>
<td>SE</td>
<td>Address type</td>
<td>Visiting address</td>
<td>DK</td>
</tr>
<tr>
<td>NO</td>
<td>Address type</td>
<td>Visiting address</td>
<td></td>
</tr>
<tr>
<td>DK</td>
<td>Address type</td>
<td>Visiting address</td>
<td></td>
</tr>
</tbody>
</table>
Tools

- Extraction and testing
- Mapping
- Reference data
- Modeling
- Concepts identification and definition

Bisnode Ontology Browser

HOW CAN I HELP YOU?

My name is BOB

SNEAK PEEK  DASHBOARD

bob@bisnode.com
Tools

- Extraction and testing

- Concepts identification and definition

Extraction and testing

- Concepts identification and definition
Tools

Extraction and testing

Concepts identification and definition

Bisnode Ontology Browser

HOW CAN I HELP YOU?
My name is BOB

Bisnode.com

Tools

11. 10. 2018

patrik.kompus@bisnode.com
Tools

Extraction and testing
Tools

Concepts identification and definition

Extraction and testing

Bisnode Ontology Browser

HOW CAN I HELP YOU?

My name is BOB
Tools

German Registration Number

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>&lt;NUMBER&gt;</td>
<td></td>
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</tbody>
</table>

Comments and rules

The * represents <REG_NUMBER> and <FORMER_REG_NUMBER>.

The German Registration Number is generally speaking - neither mandatory nor unique.

It is mandatory though for specific legal forms. And it becomes unique only if Prefix, Number, Suffix get combined with the location of the court that issued the number, namely the Postcode of the city of registration. Therefore, the mapping takes all of those components into consideration.

The German Registration Number has to have a Prefix and the number itself. A Suffix does not always exist.

Prefix can have various values: e.g. HRA, HRB, PR, VR (no fixed length).

Number is purely numeric: the number of digits varies between 1 and x.

Suffix - if applicable - is alphanumeric with no fixed length.

Example 1: Create the Complete Identifier value by combining Prefix (e.g. HRB) and number (123456) to the full Registration number = HRB123456

Example 2 (with Suffix): Create the Complete Identifier value by combining Prefix (e.g. HRB) and number (123456) and Suffix (Ad) to the full Registration number = HRB123456Ad
Tools
Tools

Number of messages

Show raw data

id: DK00000001

class: BusinessReference

type: http://ontology.bisnode.net/organization/dk/Company

- _id: Object
  - "timestamp": 1538384533,
  - "machineIdentifier": "23860600",
  - "processIdentifier": "1",
  - "counter": "7706385",
  - "date": "1538384533"

- header: Object
  - "uniqueIdentifier": "keys": ["ontologyReference": "org/dk:RegistrationNumber", "value": "DK00000001"]

- data:
  - org/dk:Company:
    - cor:isIdentifiedBy:
      - org/dk:RegistrationNumber:
        - cor:hasCompleteIdentifierValue: "DK00000001"
        - cor:prefix: "DK"
        - cor:value: "00000001"
      - cor:hasSetOfIndustryCodes:
        - org:IndustryCodeSet:
          - cor:hasValidityPeriodObject: ["cor:PeriodOffline": "cor:startDate": "cor:hasDateValue": "1900-01-01"]
          - org:hasPrimaryIndustryCode:
            - ind/dk:07:Subdivision:
              - cor:referenceIRI: "http://ontology.bisnode.net/industrycode/dk/db07#829109"

- @context: Object
  - cor:hasId: ["http://ontology.bisnode.net/core/", "org:hasId: ["http://ontology.bisnode.net/core/IsIdentifiedBy": "http://ontology.bisnode.net"]
### GDPR

<table>
<thead>
<tr>
<th>DataSet</th>
<th>Data manager</th>
<th>Data owner</th>
<th>Country</th>
<th>Legal Ground</th>
<th>Policies / Purposes</th>
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</thead>
<tbody>
<tr>
<td>Årsredovisningar</td>
<td>Svenska</td>
<td>Lars</td>
<td>Sweden</td>
<td>Legitimate Interest</td>
<td>Analyze, Credit, Directory, Marketing, Statistics, Verification and control</td>
</tr>
<tr>
<td>Germany Source Data</td>
<td>Jesper</td>
<td>Ina</td>
<td>Germany</td>
<td>Local legislation</td>
<td>Verification and control, Contact data, Financial specifications</td>
</tr>
<tr>
<td>atlant</td>
<td>BED</td>
<td>BED</td>
<td>Germany</td>
<td>Legitimate Interest</td>
<td>Analyze, Credit, Marketing</td>
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<td>Auctions Sverige</td>
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<td>Slovenia</td>
<td>Legitimate Interest</td>
<td>Credit, Marketing</td>
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</tbody>
</table>
Challenges

Human resources

“Classic” developers
Challenges

Human resources

Constant need of explanation and convincing

“Classic” developers
Challenges

- Human resources
- "Classic" developers
- Constant need of explanation and convincing
- Priority changes
Challenges

- Human resources
- "Classic" developers
- Constant need of explanation and convincing
- Slow results at initial stage
- Priority changes
Questions?

Thank you!