XBRL business intelligence and its consequences for abstract modelling

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Excellence in Business Intelligence

Introduction

Why does analytics and data modelling belong together?

- How is data analysed?
  - Through semantics
- Semantics enable conclusions
- Bring data into a different context
- See the bigger picture

- Methods
  - combining, grouping, separating facts
  - showing them next to each other
  - Time series

- Successful analytics depends on semantics as a key component

Introduction

Why does analytics and data modelling belong together?

- XBRL is know as carrier of semantics
- Most of the semantics are in the meta framework (taxonomy)
  - Labels-, references-, presentation-, definition-, calculation-, formula linkbase
- Some are also in the instance
  - Period, entity name / identifier, typed dimensions

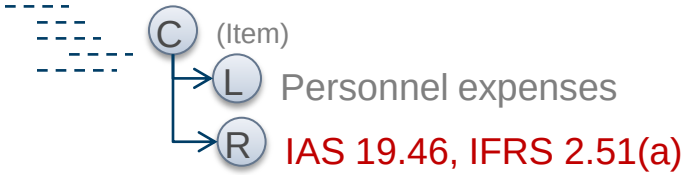
- XBRL is very flexible in the way taxonomy designers can express those semantics (taxonomy architecture, filing manuals)
  - Validations (Calculation vs. Formula)
  - Presentation (Mirror presentation and definition + inlineXBRL vs. rendering linkbase vs. table linkbase)?
  - **Providing meaning to concepts** (reference to underlying standard vs. dimensional split)
  - Grouping of information (tuples vs. dimensions)
  - …

Introduction

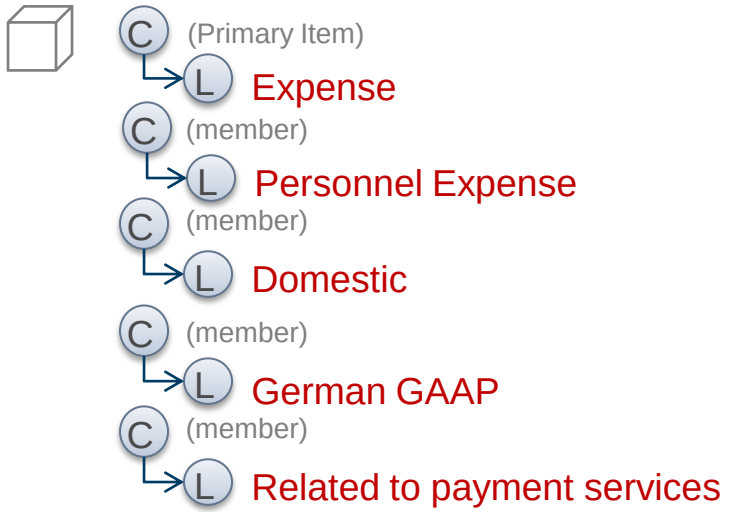
Why does analytics and data modelling belong together?

- **Providing meaning to concepts**
  Where are the semantics stored in both approaches?

Non-dimensional data modelling



Dimensional data modelling



- All semantics is in the reference (single xbrl component)

- Semantics is split up on different dimensions / members (multiple xbrl components)

Introduction

Why does analytics and data modelling belong together?

- Architectural decisions result in a data model of XBRL taxonomy which does effect the ways in which the data can be analysed afterwards!
- Many taxonomy creators are not aware of that
- General approach taken by taxonomy creators:
  - Analyse the reporting requirements written down in the literature
  - Build a taxonomy which reflex the requirements appropriately
  - Consult / review the taxonomy
  - Publish the taxonomy
- Not included in the taxonomy process:
  - What conclusions are expected from the data and how is it going to be analysed? Why is the literature requiring something and is the data model supporting that?
  - Analytical questions have not been included into the taxonomy due process
    - Lately questions arised in the XBRL world: Who is using the data?
    - **If taxonomy creators (mostly regulators) do not have a strategy for analysing the data and reflect that in the data model of the taxonomy stakeholders have a much harder time to analyse that data**

Introduction

How to analyse the data?

- Get data into an analytical system:
  - Build an analytical system on top of XBRL
  - Ensure that XBRL taxonomy data model fits into already existing analytical systems

Build analytics on top of XBRL taxonomy	**Ensure that XBRL taxonomy data model fits into already existing analytical systems**
+ very flexible	- Additional requirements for the XBRL taxonomy
- Reinvent the wheel, can not leverage on decades of performance improvements in the BI sector	+leverage on performance
- Proprietary solution does not fit into the overall company IT landscape	+ Protect investments already made
	+ people are familiar with tools
Small companies with small user group	Huge companies with lot of users

Data Modelling approaches for taxonomies

How to analyse the data?

- Comparing different taxonomy data modelling approaches

Data Modelling approaches for taxonomies

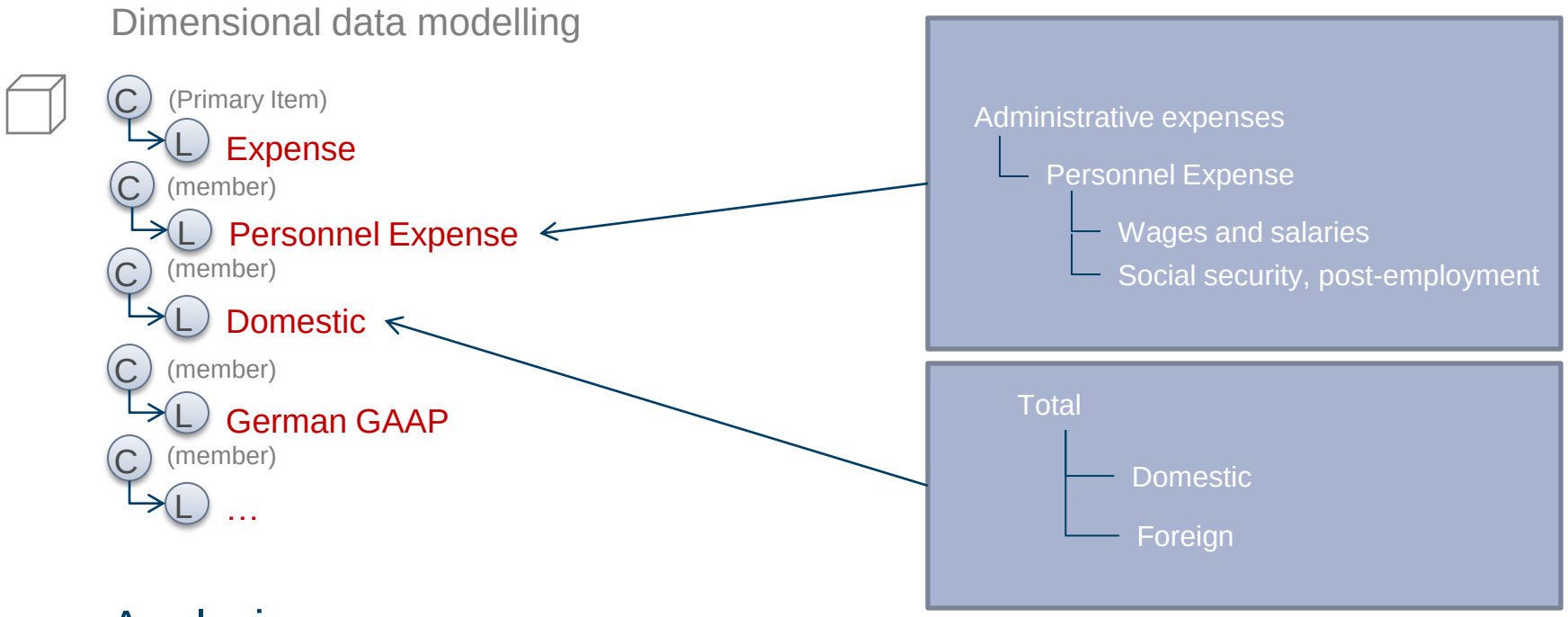
How to analyse the data?

- Non-dimensional data modelling
- Analysis methods
  - Comparing individual items +
  - Time series +
  - Grouping items o
    - Grouping of instances +
    - Grouping of concept meaning –
- More separate semantics lead to a more granular analysis results
  - Time is separate in the instance
  - Concepts are independent
  - But meaning from the reference is not

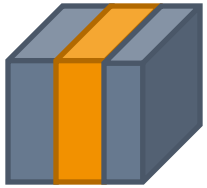
Data Modelling approaches for taxonomies

How to analyse the data?

- Dimensional approach – huge advantage – more semantics separate



- Analysis on
  - Members (slicing and dicing)
  - On hierarchies of members



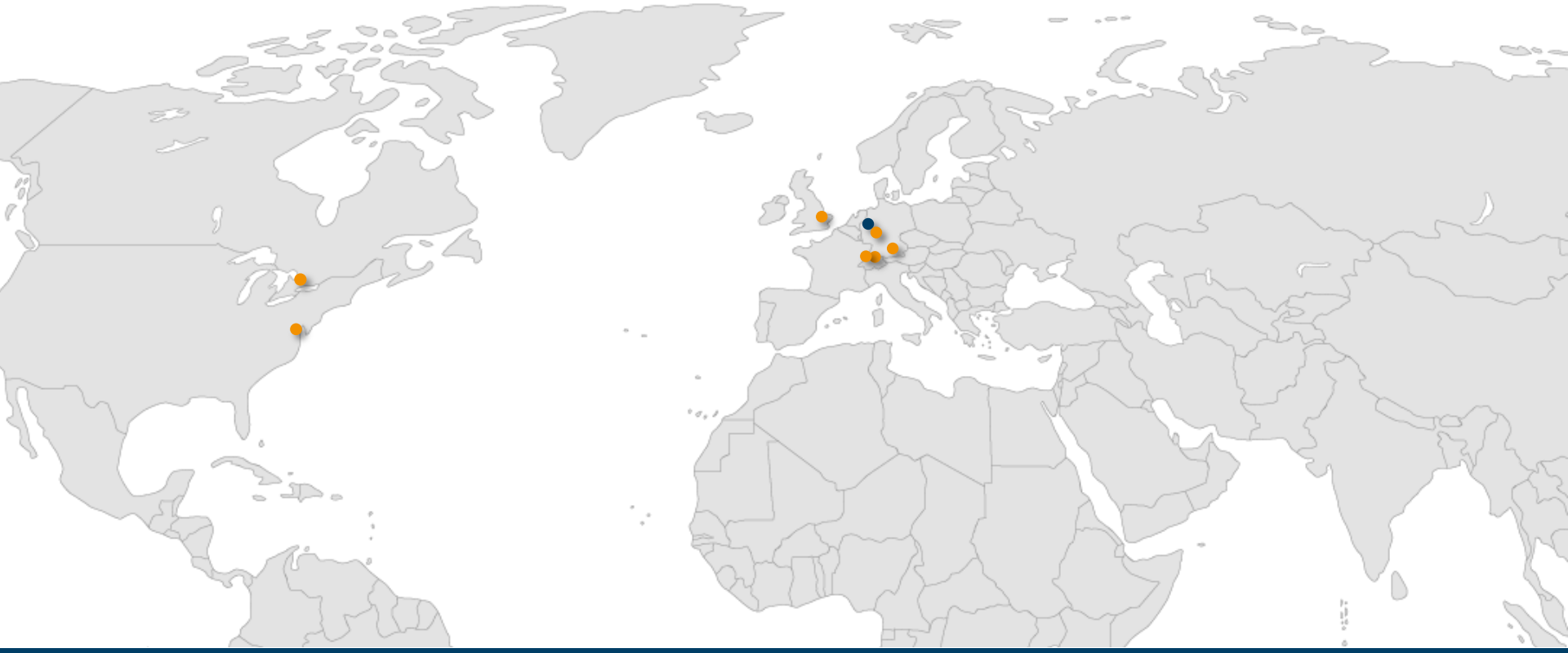
Data Modelling approaches for taxonomies

How to analyse the data?

- Cundus AG is developing the
  "*Taxonomy driven data analysis approach*"

- From 2013 COREP / FINREP is becoming mandatory in Europe
  - Fully dimensionally taxonomy

- DEMO



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