An architecture for ad-hoc and collaborative business intelligence

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Agenda

1. Problems
2. Architecture
3. Our approaches (within the future research project)
<table>
<thead>
<tr>
<th>Challenge</th>
<th>Description</th>
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<tbody>
<tr>
<td>No focus on individual needs</td>
<td>Business users cannot fulfill their individual information needs but have to rely on standard reporting and predefined analytical content; they depend either IT administration or enhanced technical skills to generate business reports.</td>
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<tr>
<td>Lack of business context information</td>
<td>No definitions, business goals, strategies, business rules, or best practices are provided in addition to the analytical data; business users have to understand the semantics of the data using additional data sources.</td>
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<td>Limited support for collaboration</td>
<td>Despite the fact that decisions making is a collaborative task, today’s BI solutions only provide fundamental collaboration capabilities.</td>
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<td>Closed business intelligence world</td>
<td>Today’s BI solutions have a strong focus on structured, internal information but lack of integrating external and/or unstructured information.</td>
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Architecture

- End Users

- Ad-doc and Collaborative Analysis
  - Information
    - Self-Service Environment
  - Collaboration
    - Rooms

- Integration and Enrichment
  - Data Provisioning
  - Business Configuration

- Global Business Data Store

- Internal Data Sources (IT Managed: Data Warehouses, ERP, …) and External Data Sources
Global business data store

Flexible data model for business meta data
- Separate technical from business point of view
- Data Spaces:
  - Technical point of view
  - Represents data
  - Comprise meta data i.e. data how to access the data such as queries
- Info Spaces:
  - Business representations of the data
  - Represent business entities and relationships among them (KPI, Metric, Objective, Goal, Strategy, Tactic, Business Rule, Business Policy)
  - Group data spaces for a specific user group/task
- Allow for representation and modification of business relevant entities and their relationships - > RDF

Efficient and scalable RDF data store
- Main-memory database (+ distribution)
- Customized index structures for RDF-base (self-)joins
Business configuration methodology

- **Goals:**
  - Configuration driven by business questions
  - Enables self-service

- **Approach:**
  - Develop a methodology for an (re-) configuration process for power users: Checklists, requirements navigation, ...
  - Support BI Lifecycle
    - Initial creation of Dataspaces and Infospaces
    - Adaptation of Dataspaces and Infospaces
Information Self-Service

**Goals:**
- Fulfill own information needs
- Integration of external information sources

**Approach:**
- Methodology to configure the environment:
  - Identify an Info Space (scoping)
  - Detailed configuration (wizard-based fine-tuning)
  - Select appropriate Data Spaces
- Information mash-ups
- Support BI Lifecycle
  - Add, change, remove business metadata such as KPI definitions, Activities, …
Integrated collaboration environment

Goal:

- Develop/Extend collaboration environment
  - in which business users are able to share, comment and take joint decisions
  - which support all phases of the decision making process

Approach:

- Apply existing technologies to the BI system
Contribution and Q+A

- No focus on individual needs
  - Information self-service
  - Flexible data model
  - Efficient and scalable data store

- Lack of business context information
  - Business configuration methodology
  - Flexible data model
  - Efficient and scalable data store

- Limited support for collaboration
  - Integrated collaboration environment

- Closed business intelligence world
  - Information self-service