
Using Topic Maps for Visually Exploring Various Data Sources in a Web-based Environment

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- Introduction
- Scalability
 - Prefetching
 - Garbage Collection
- Data Sources
- Technologies for the rich interactive web applications
- Case Study
 - SAP-TM-Viewer
- Conclusion

- Business need
 - Huge amount of data
 - Complex dependencies
 - Heterogeneous data sources

- Challenges
 - Intuitive and user friendly graphical user interface
 - Visualizing large amount of data from already existing data sources
 - Easy navigation/exploration through the data
 - Web-based and easy integration in existing websites (Web 2.0, Mashup)

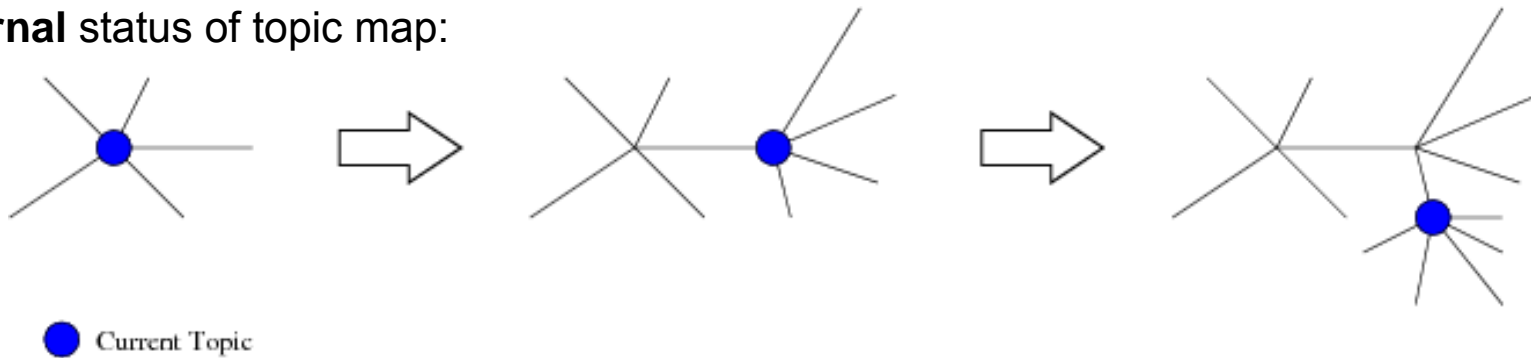
- Approach
 - Graphical metaphor for topic maps

- Project Partner
 - Fraunhofer IGD and SAP Research

- Challenges
 - Huge amount of data (10K to 40K)
 - Complex dependencies
 - Web Solution
 - Visualizing large amount of data

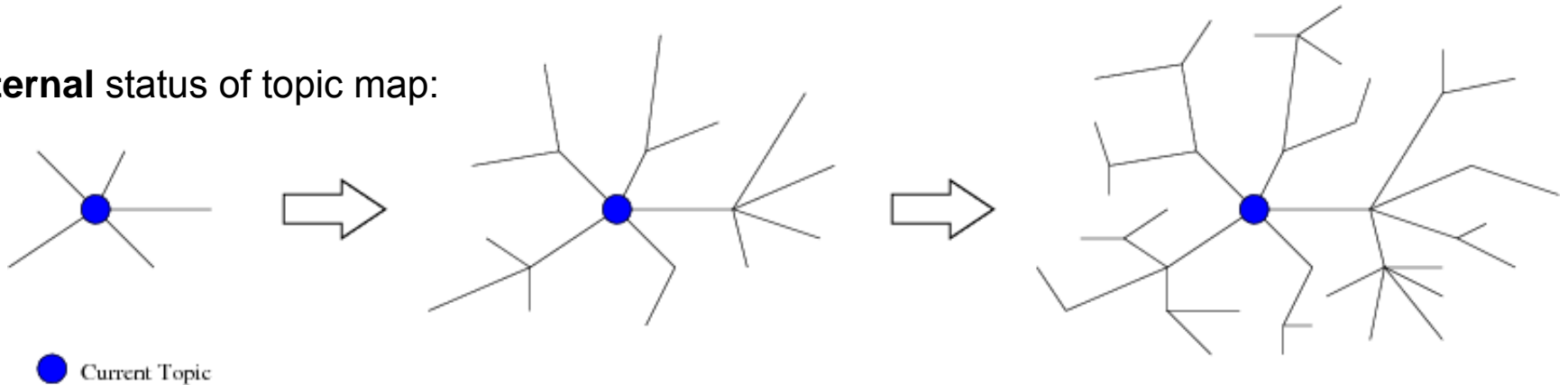
- Normal course:
 1. users selects a topic
 2. context is loaded
 3. merged with local topic map
 4. and displayed

Internal status of topic map:

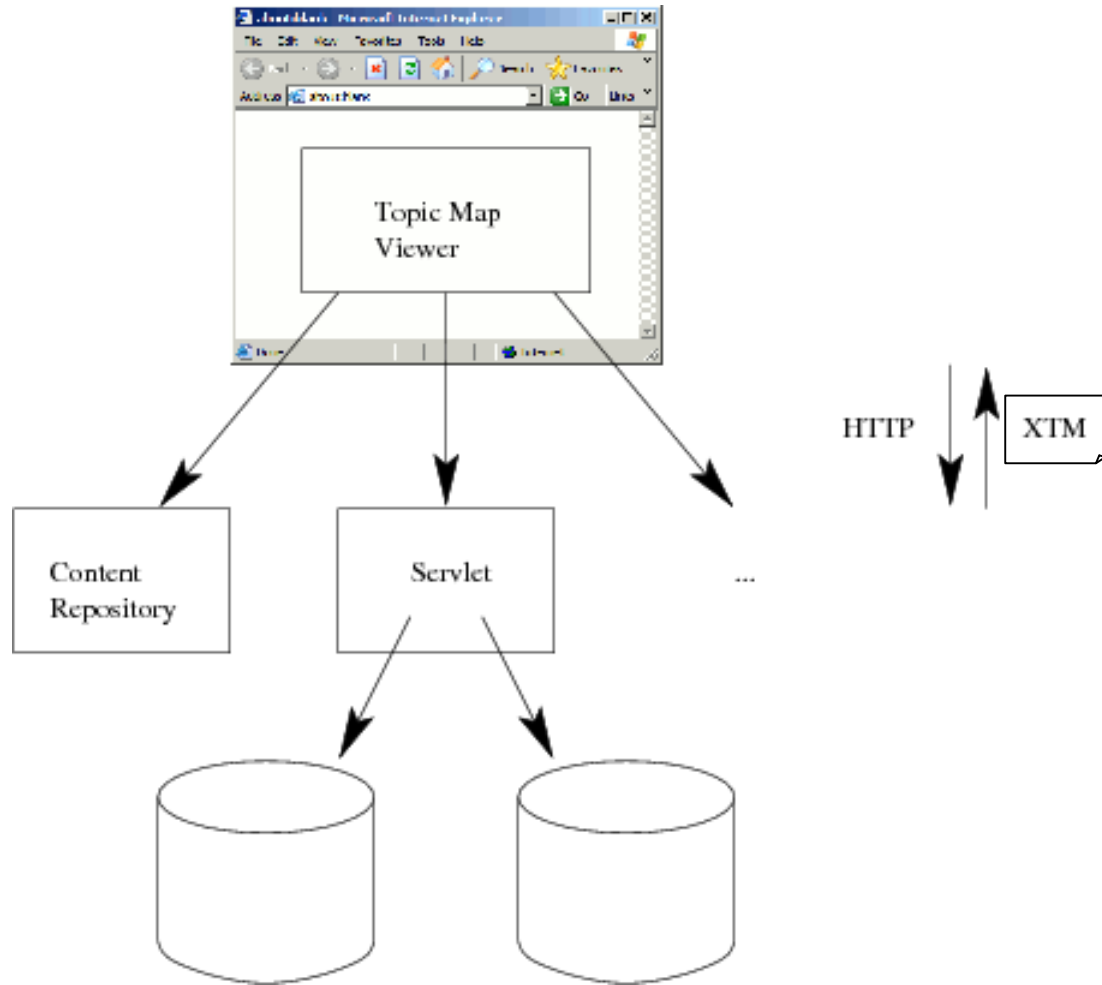


- Normal course:
 1. users selects a topic
 2. **direct** context is loaded
 3. merged with local topic map
 4. and displayed
 5. **next level of context is loaded**
 6. **go to 4**
- Smoother experience

Internal status of topic map:



- Remove unnecessary topics from local Topic Map
- After some time of using/browsing:
 - big internal topic map
 - multiple cluster/island of data (not accessible by browsing)
 - may slow down the viewer
- Possible criteria:
 - how long ago is the last time of display
 - how far away is a topic from current topic
- Justification
 - no server side changes are propagated



- We compare different possible technologies:
 - Flash™
 - JAVA™ Applet
 - other (AJAX, JavaScript ...)
- Indicators:
 - Performance
 - Visual effects (User Experience Design)
 - Ease of distribution

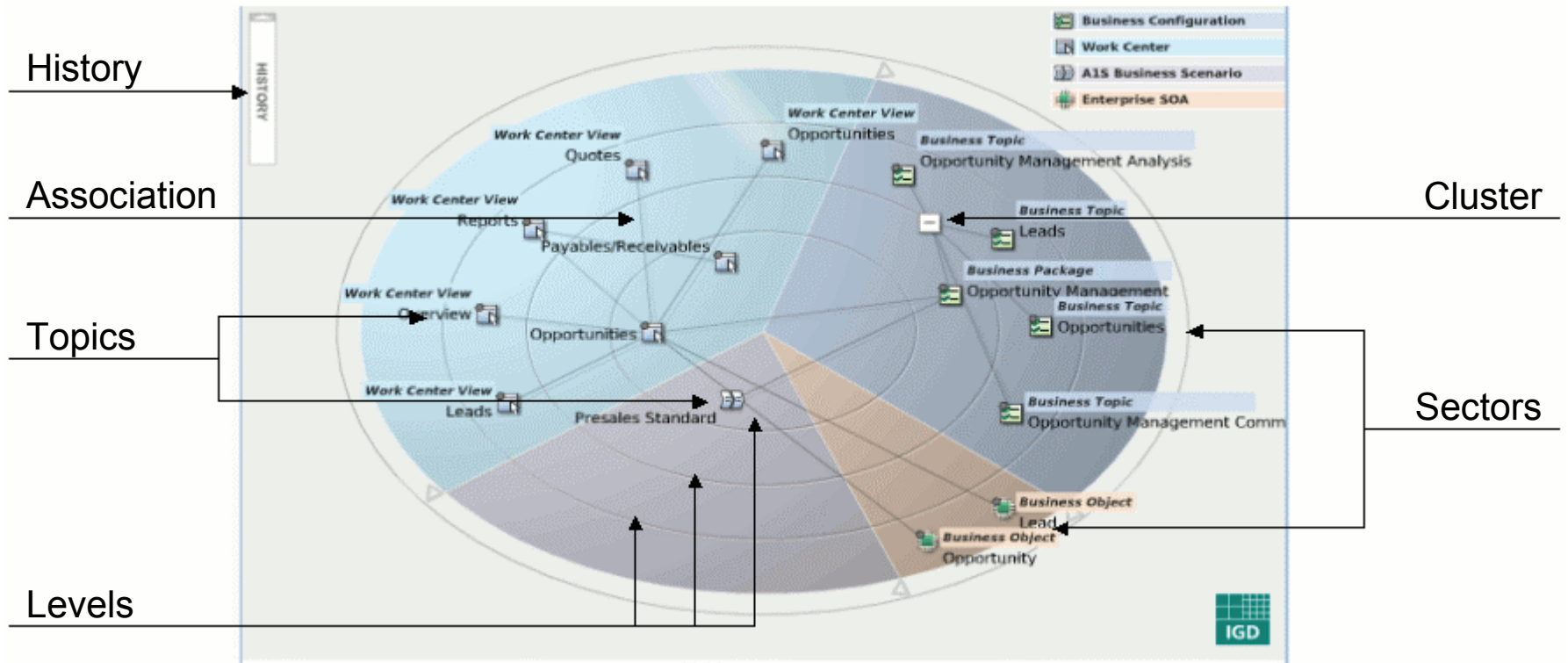
■ Flash™

- + Availability/Penetration (over 98%)
- + Rich interactive web applications (Designer/SW-Developer)
- + Easy XML loading/handling
- +/-

JAVA™ Applet

- - Availability (<85%)
- - Rich interactive applications (Designer/SW-Developer)
- + Libraries
- +/-

- SAP-TM-Viewer
 - Challenges
 - SAP applications integrated information system
 - provide the context specific help
 - huge amount of knowledge items
 - visualize relationship and hierarchical structure of knowledge items
 - SAP business data Model
 - Work Center
 - Work Center View
 - Business Scenario
 - Business Scenario Variant
 - Business Configuration
 - Business Package
 - Business Topic
 - Enterprise SOA



- Using Topic Maps for Visually Exploration
 - Scalability
 - Data sources
 - Technologies for rich interactive web applications
- Case Study
 - SAP TM-Viewer
- Future research topics
 - Collaborative topic maps evolution
 - Awareness (visualize collaborative changes)
 - Aspect oriented topic map views

■ Thank you!

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- Several post-doc, PhD candidate and student positions open in Darmstadt