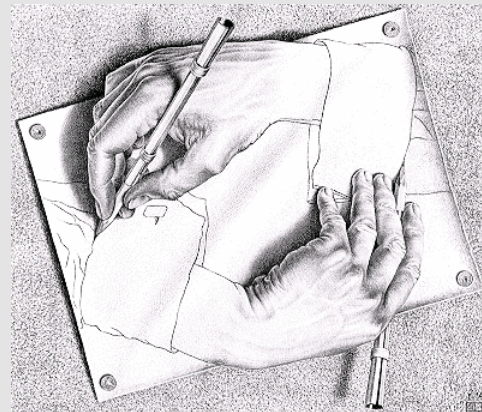




# TMchartis

a Tool Set for Designing Multiple Visualizations  
for Topic Maps



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## Structure

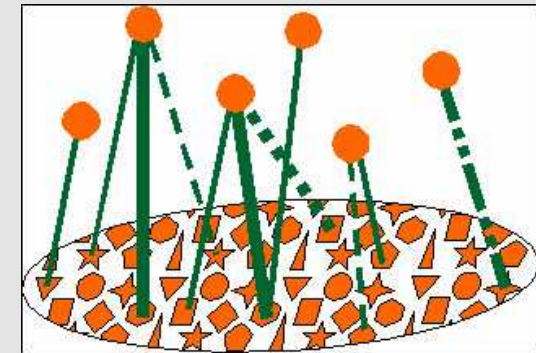
1. Introduction
2. Traditional Topic Map Visualization Concept  
(e.g. Ontopia's Vizigator)
3. Intelligent Design Approach
4. Prototypical Implementation *TMchartis*
  - *TMchartis* Editor
  - *TMchartis* Webviewer
5. Summary



## 1. Introduction

Topic Map is a powerful knowledge representing paradigm:

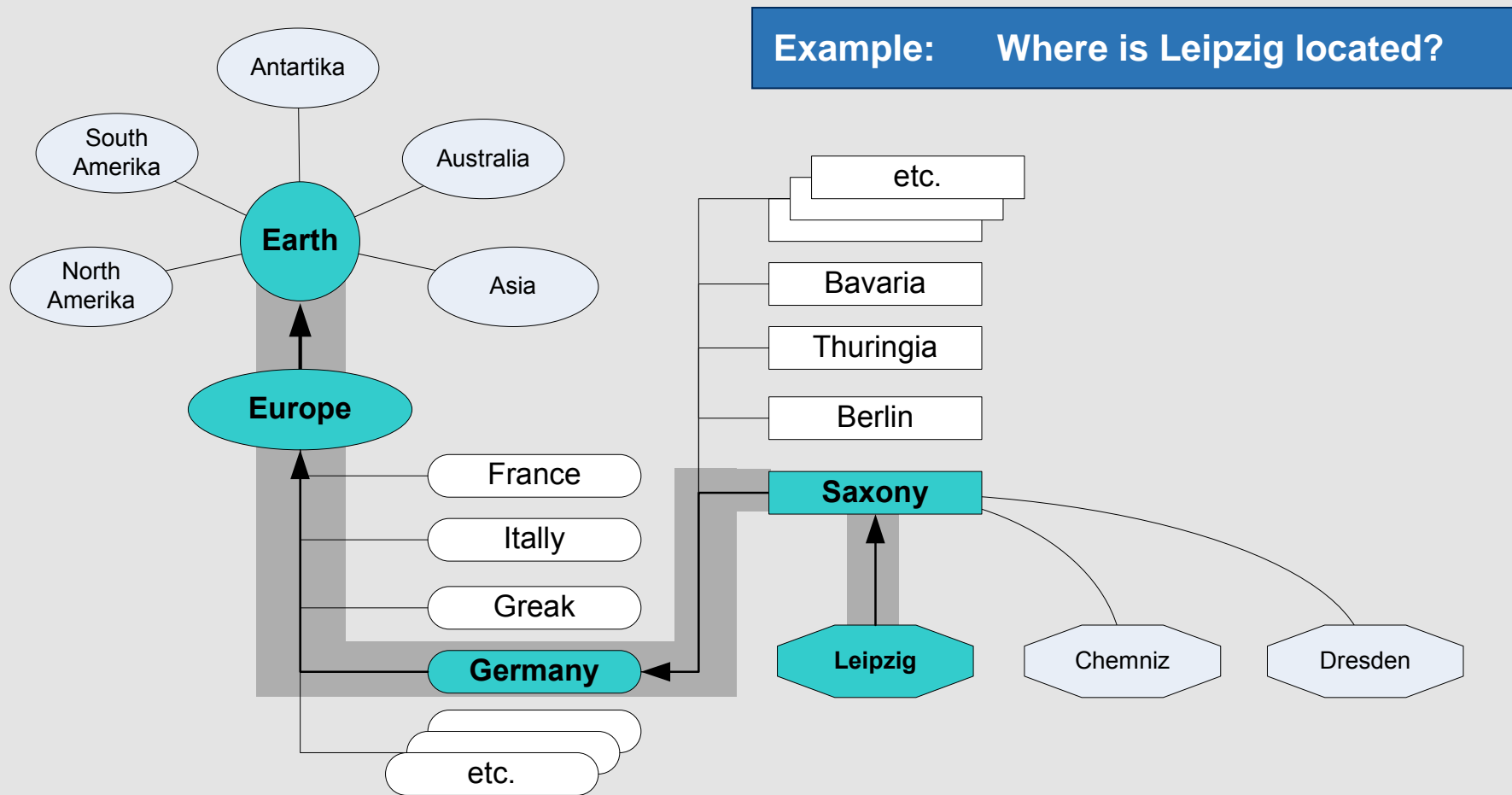
- contains much and detailed information (names, variants, scopes, relation types)
- to supports retrieval and navigation
- ➔ not helpful to visualize all modeled information

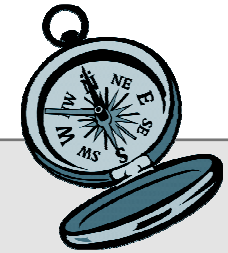


**Central issues:** Which information of the Topic Map should be displayed?  
Which visualization is suitable to support the user?

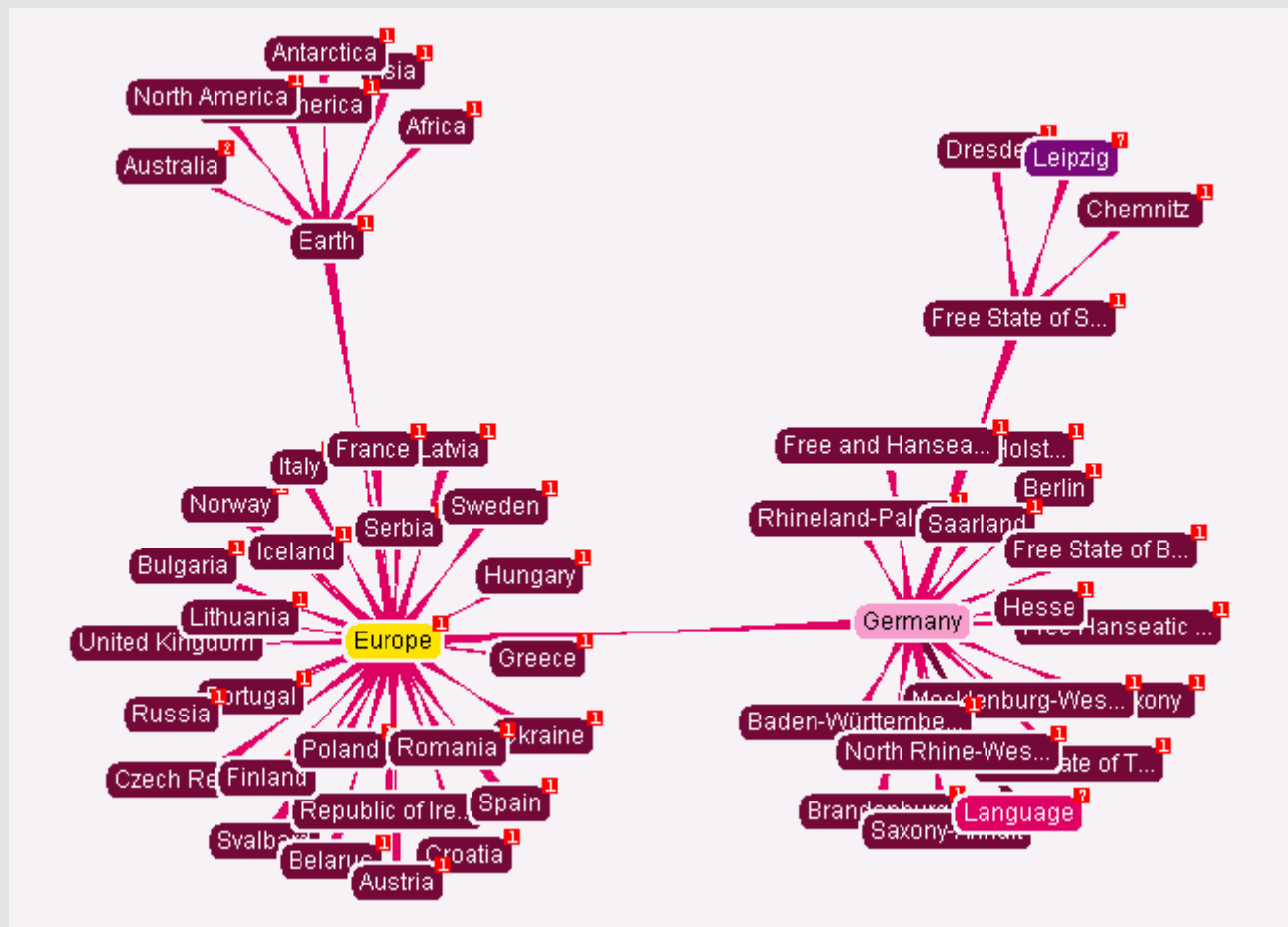


## 2. Traditional Topic Map Visualization Concepts - Example





## 2. Traditional Topic Map Visualization Concepts - Ontopia's Vizigator





## 2. Traditional Topic Map Visualization Concepts - Summary

### Advantages:

- detailed information of a topic
- applicable to any Topic Map
- can be generated automatically ➔ fast and cheap

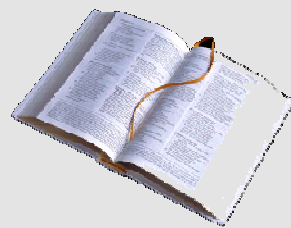
### Disadvantages:

- for every node a new graph is generated ➔ constantly changing visualization  
= *user can not create a mental model of the information structure*
- no big picture
- usability is poor
- only one visualization concept = net graph

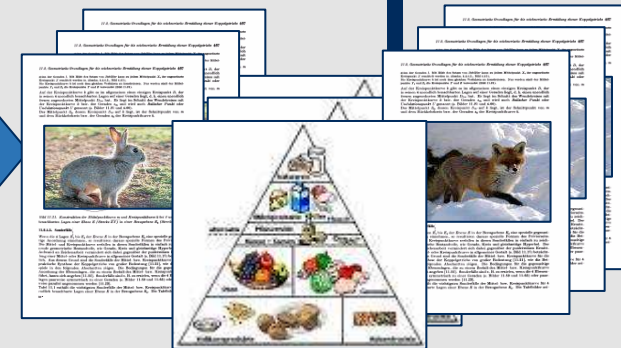
➔ insufficient support of navigation or retrieval tasks



## 3. Intelligent Design Approach – Problem oriented Views (1/2)



Knowledge Base:  
Animal Book



problem oriented views

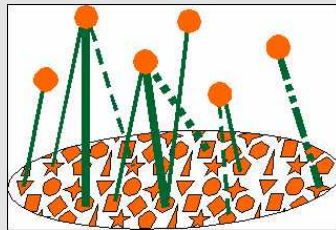


Question:  
“Why is the rabbit afraid of the fox?”

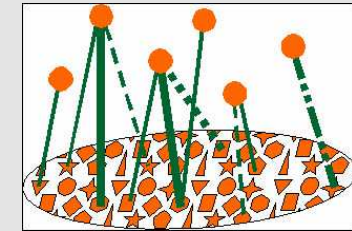




## 3. Intelligent Design Approach – Problem oriented Views (2/2)

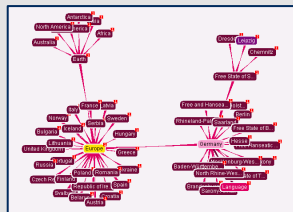


Knowledge Base:  
Topic Map



**Traditional  
Visualization Approach**

**Intelligent Design  
Visualization Approach**



Question:  
“Where is Leipzig?”

**multiple, problem oriented  
views**





## 3. Intelligent Design Approach – *Requirements*

### Topic Map Visualization must

- depend on the focused task (overview, detailed information etc.)
  - ➔ *need of multiple visualization of a Topic Map*
- combine different knowledge structuring concepts
- be constant to support the creation of a mental model

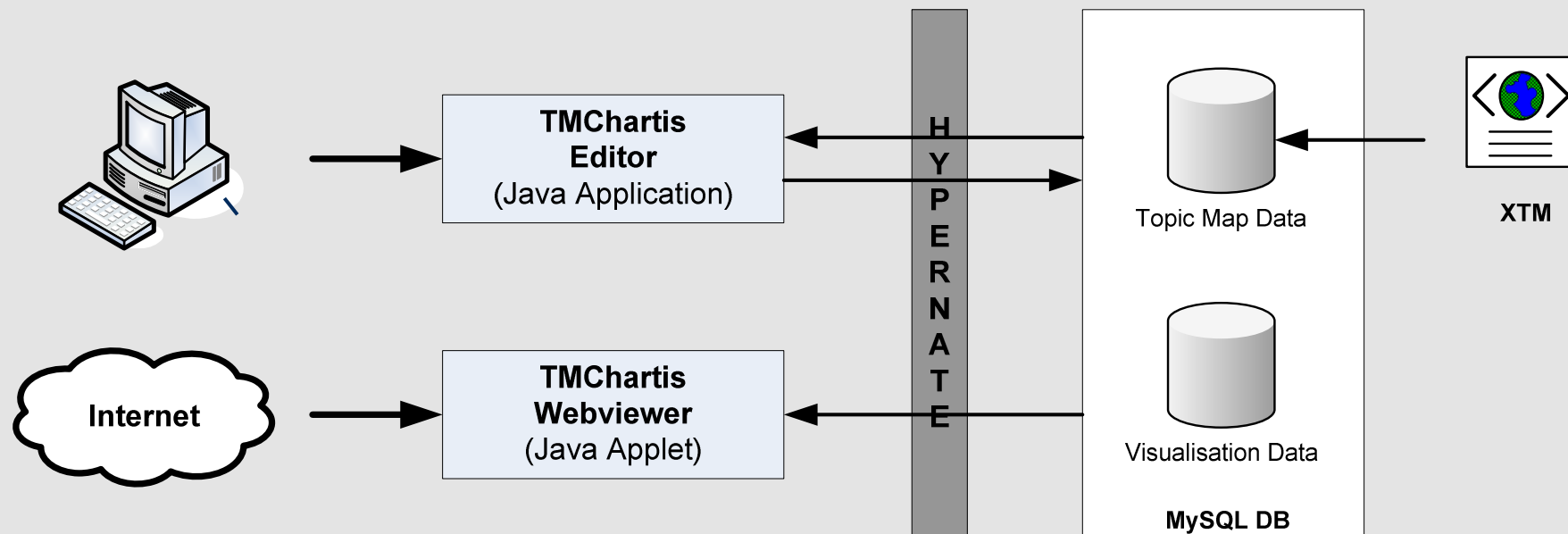


**Paradigm shift:**

**Automatic Graph Generation ➔ Intelligent Design Approach**



## 3. TMchartis – a tool set for designing multiple tm visualizations

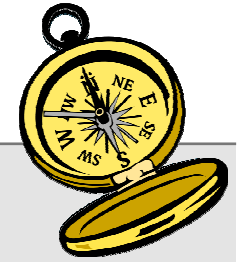


➔ Prototypical Implementation of the Intelligent Design Approach



## 3. TMchartis – a tool set for designing multiple tm visualizations

The screenshot displays the ToMe - Topic Map Editor interface. The central visualization is a radial topic map with 'Germany' (whole) at the center, connected to various German states (part). The right-hand side shows the 'Properties' panel with tabs for 'Style: Shape Editor', 'Transformations: Curve Editor', and 'Topic-Map Objects: Edge Properties'. The 'Style: Shape Editor' tab is active, showing shape selection tools and a 'Curve Editor' section with 'Linetype: linear', 'Enable' checkbox, and coordinate fields for CV1 and CV2. The 'Edge Properties' section shows 'Visibility' checked and 'Show Roles' unchecked.



## 4. Summary

- **TMchartis** tool set for creating and publishing of multiple, problem oriented views on Topic Maps
- **Open Tasks:**
  - Include images and other node shapes
  - Extend the displayed information (occurrences, scopes etc.)
  - Add assistant for knowledge structuring principles

**only a combination of automated layout & intellectual design can provide the user with helpful problem oriented views to support navigation and retrieval**



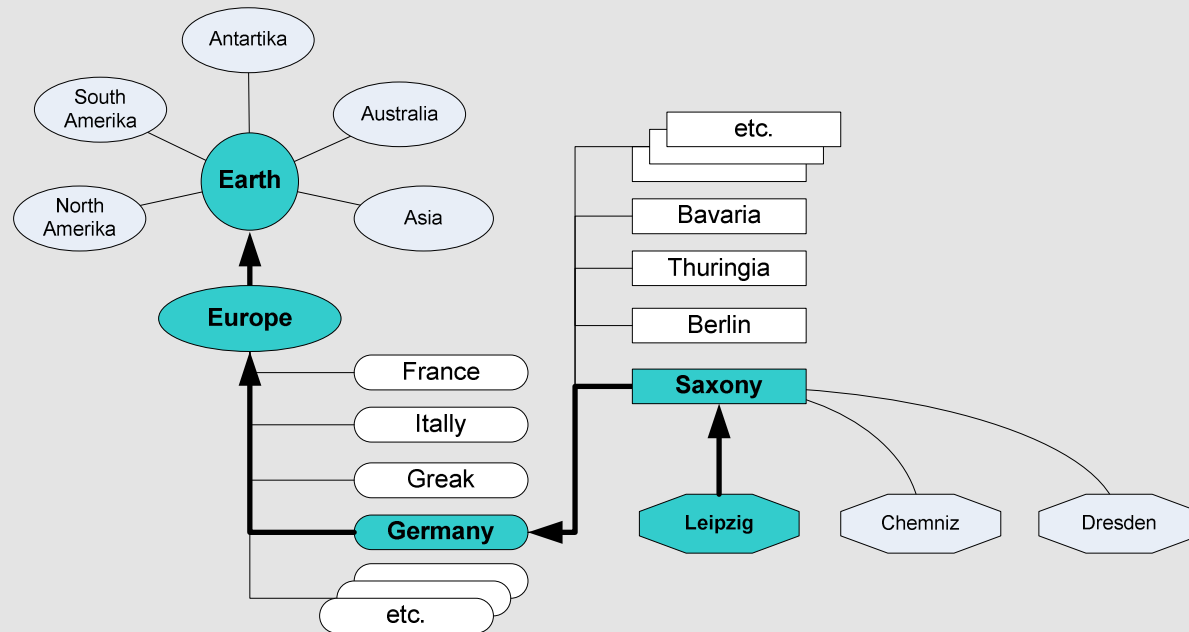
Thanks for your attention.



## 3. Concept of TMchartis – knowledge structuring concepts

- based on the focused task, a combination of different knowledge structuring concepts can be appropriate, like

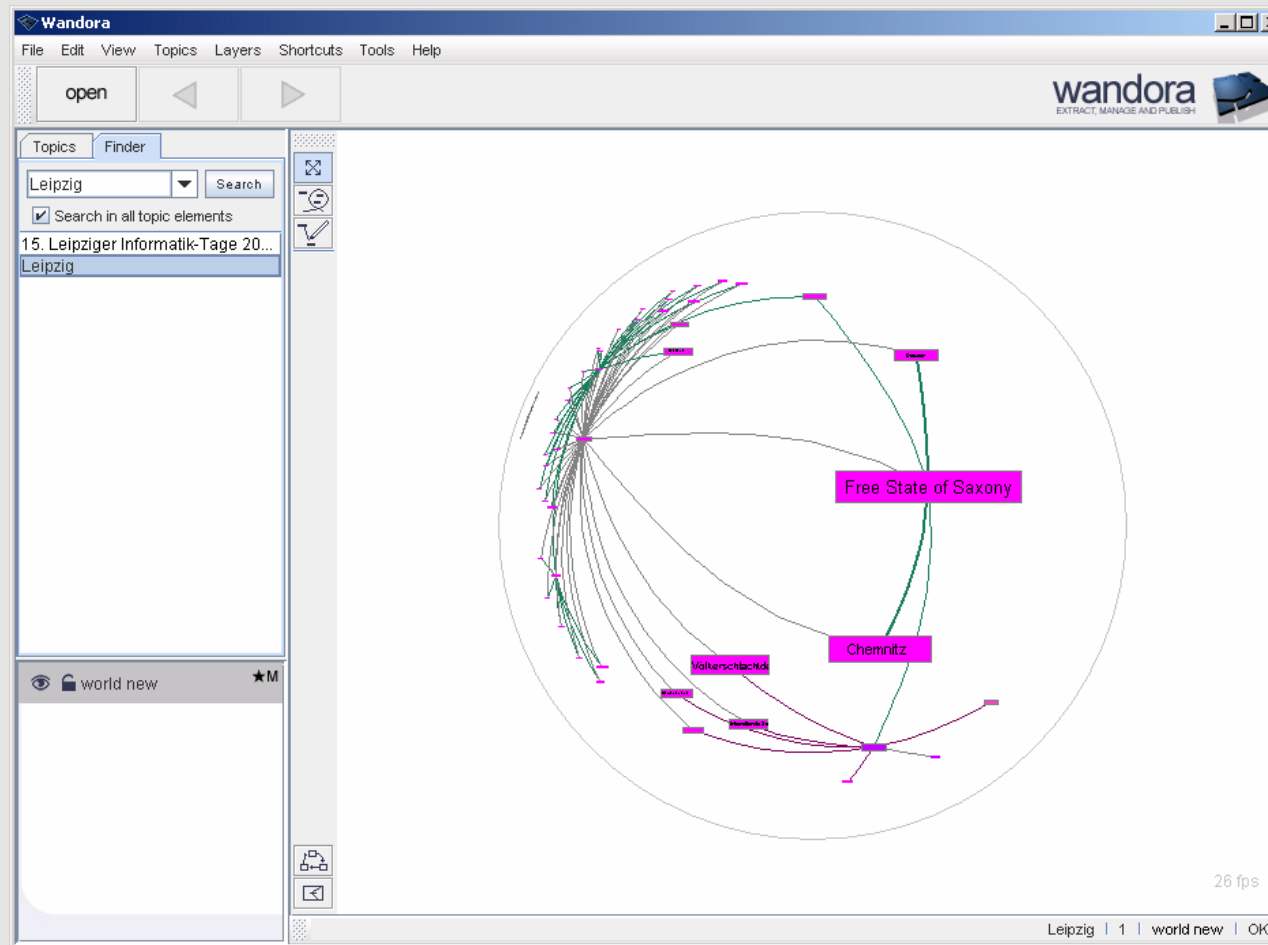
- network
- tree
- list
- metaphor



# TMchartis – Designing Multiple Visualizations for TMs



## 2.2. Traditional Topic Map Visualization Concepts - Wandora





## XSLT for Topic Map