

Building Internet Services with Layered Topic Maps

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Presentation

- ⊕ Topic Maps
- ⊕ Wandora
- ⊕ Layered Topic Maps

Topic Maps

- ⊕ Alternative to RDF
- ⊕ Base concepts
 - ⊕ Topic: Any entity or concept you may want to state something about
 - ⊕ Association: A relation between two or more topics
 - ⊕ Occurrence: Textual data about a topic or a link (URI) to an external resource

Topic Maps and RDF

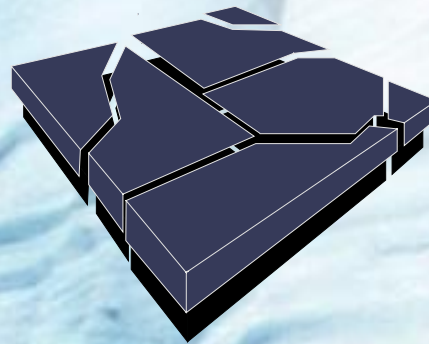
- ✦ Essentially same but
 - ✦ Each topic may have several unique identifiers (subject identifiers)
 - ✦ Topic names can have a scope describing the relevant context
 - ✦ Associations can have more than two players

Merging of Topics

- ⊕ Topic map standard specifies rules for merging of topics:
 - ⊕ Two topics have the same base name
 - ⊕ Two topics have the same subject identifier
 - ⊕ (And a few others)
- ⊕ Merged topic has all properties of all merging topics

Wandora

- ⊕ Knowledge extraction, management and publishing environment based on topic maps
- ⊕ Utilizes the layered topic map paradigm



Wandora administration

File Edit View Topics Layers Shortcuts Tools Help

open

Topics Finder

Wandora class

- Schema type
 - Association type
 - Content type
 - Association type
 - Content type
 - Occurrence type
 - Role
 - Schema type
 - Occurrence type
 - Role
 - Role class
 - Association type
 - Content type
 - Occurrence type
 - Role
 - Role class
 - Schema type
 - Wandora class
 - Wandora language
 - Wandora variant name version

Base name: Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)

Subject locator:

Variant names

	English	Finnish	Lang.indep.	Swedish
Display name				
Sort name				

Classes

Text data

Data type	English	Finnish	Lang.indep.	Swedish	Delete
Plot	U.S. Air Force General Jac...				Delete

Associations

Actor

Actor	Role name	Show
Stephens, Roy	Frank (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
O'Neil, Robert (I)	Adm. Randolph (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
Pickens, Slim (I)	Maj. T.J. 'King' Kong (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
McCarthy, John (I)	Burpelson AFB Defense Team member (role nam...	Dr. Strangelove or: How I Learned to Stop Worryin...
Bull, Peter (I)	Russian Ambassador Alexi de Sadesky (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
Creley, Jack	Mr. Staines (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
Berry, Frank (I)	Lt. H.R. Dietrich (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
Tanner, Gordon (II)	Gen. Faceman (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
Jones, James Earl	Lt. Lothar Zogg (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
Rimmer, Shane	Capt. G.A. 'Ace' Owens (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
Wynn, Keenan	Col. 'Bat' Guano (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
Scott, George C.	Gen. 'Buck' Turgidson (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
Sellers, Peter	Group Captain (G/C) Lionel Mandrake/President M...	Dr. Strangelove or: How I Learned to Stop Worryin...
Herder, Laurence	Burpelson AFB Defense Team member (role nam...	Dr. Strangelove or: How I Learned to Stop Worryin...
Beck, Glenn	Lt. W.D. Kivel (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
Reed, Tracy (II)	Miss Scott (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
Galili, Hal	Burpelson AFB Defense Team member (role nam...	Dr. Strangelove or: How I Learned to Stop Worryin...
Tamarin, Paul	Lt. B. Goldberg (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...
Hayden, Sterling	Brig. Gen. Jack D. Ripper (role name)	Dr. Strangelove or: How I Learned to Stop Worryin...

Director

Director	Show
Kubrick, Stanley	Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb (1964)

Base

- imdb_actors
- imdb_directors
- imdb_plots
- imdb_actresses

Dr. Strangelove or: How I Learned to Stop Worrying and Lov... | 0:1:1:1:1 | imdb_actors | OK

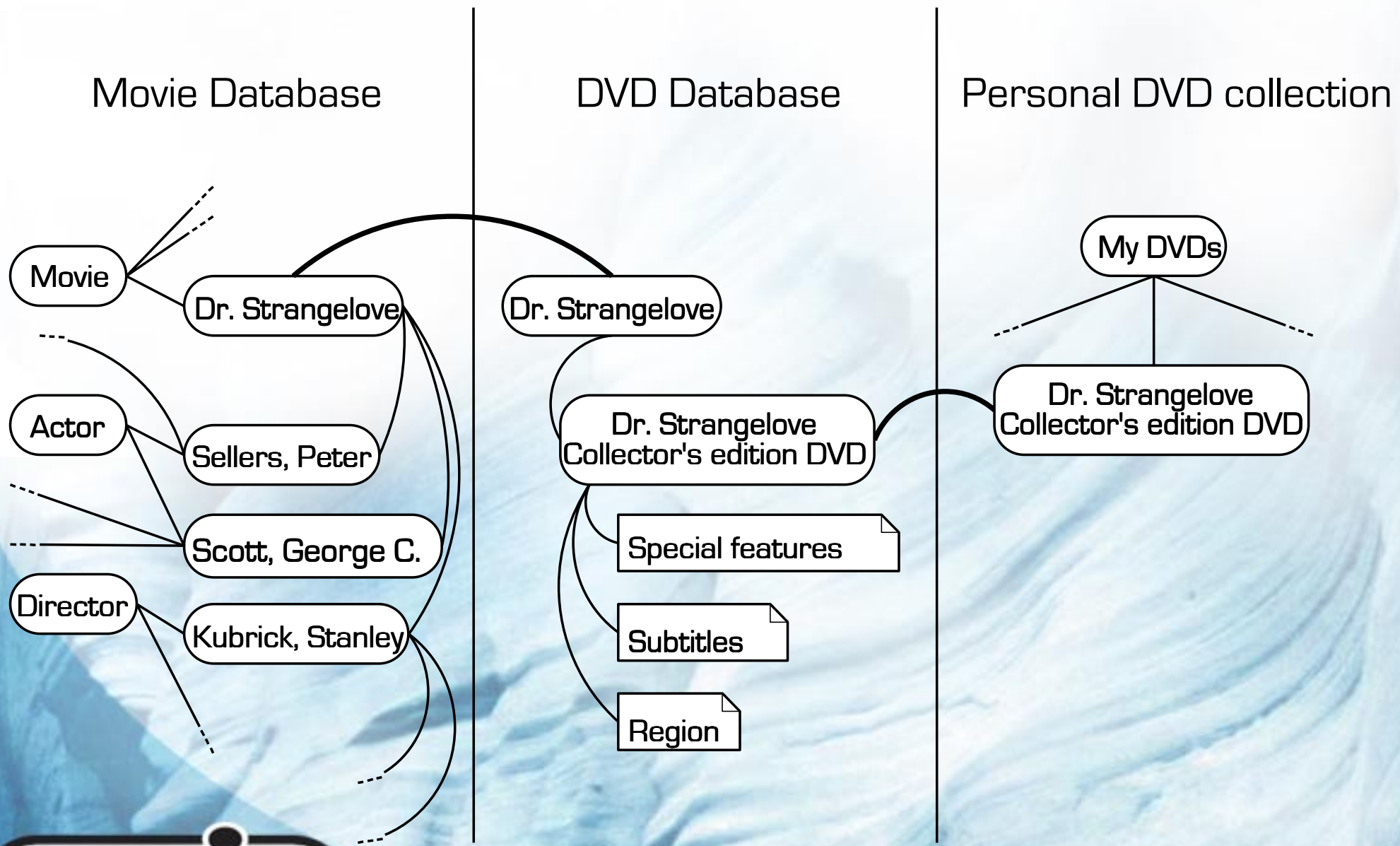
Layered Topic Maps

- ⊕ There is a need to combine several knowledge packages
- ⊕ Topic merging rules make this possible
- ⊕ At the same time should be able to keep different sources separate
- ⊕ Layer paradigm keeps topic maps internally separate but presents them to user as one merged map

Applications of Layered TM

- ✦ Combine information with third party topic maps
 - ✦ Updates to third party topic maps are possible because of layers
- ✦ Toggle layer visibility to see only information that is relevant
- ✦ Organize information with layers

Example Layer Application



Example Layer Application

- ⊕ User only needs to manage the simple personal topic map
- ⊕ Information automatically merges with DVD database
- ⊕ DVD database links user's DVDs with vast cinematographic information in the movie database
- ⊕ Updates to third party topic maps are straightforward because of layers

Layered RDF?

- ⊕ RDF and topic maps are equally powerful languages, conversions from one to the other are relatively simple
- ⊕ Merging in RDF is somewhat different
- ⊕ RDF still has the same motive to keep different information sources separate
- ⊕ No major obstacles using the same idea with RDF

Summary

- ⊕ Layered topic maps enable knowledge building on existing knowledge
- ⊕ Updates to third party maps are straightforward because of layers
- ⊕ There are many immediate applications for layered topic maps
- ⊕ Same idea could be used with RDF

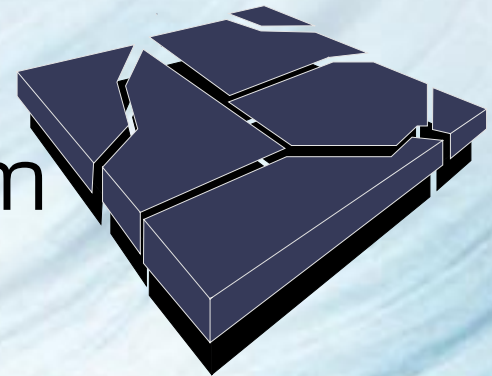
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- ✦ Wandora is now freely available for non-commercial use

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