



Towards holistic knowledge creation and interchange

Part I: Socio-semantic collaborative tagging

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Goal

- The long term goal of the Information Design research group at the University of Oslo is to develop an open and democratic platform for the creation and sharing of holistic and polyscopic knowledge

Motivation

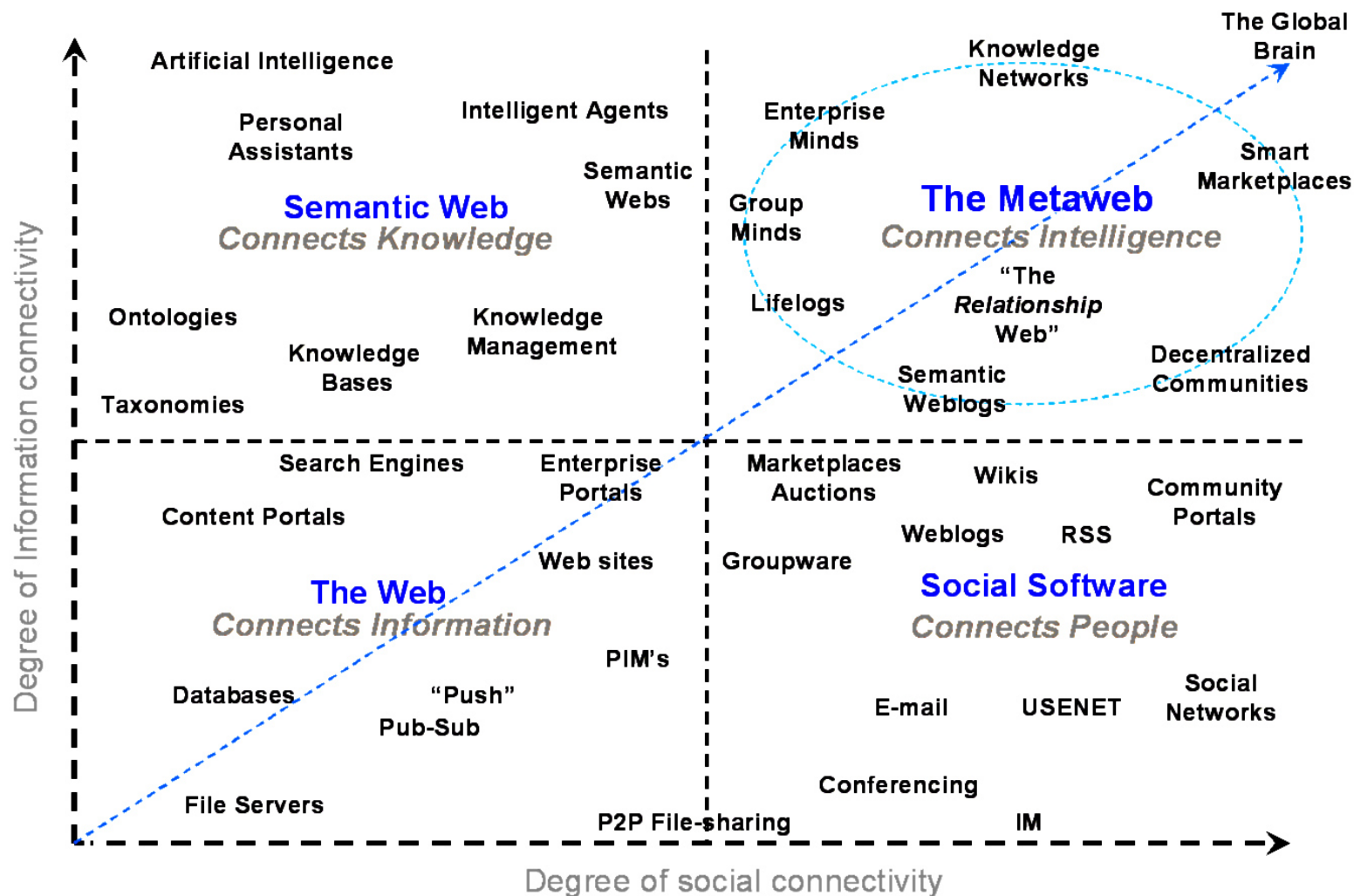
- Information overload
- Maximize the long-term common good by using information in new ways
- A shift from reductionism to qualitative holism
- **Empower** people to create **meaning**
 - Discover truths
 - Develop new ideas
 - Foreseeing consequences
 - Create consensus knowledge
 - Share knowledge
 - Spark scientific research

Key concepts

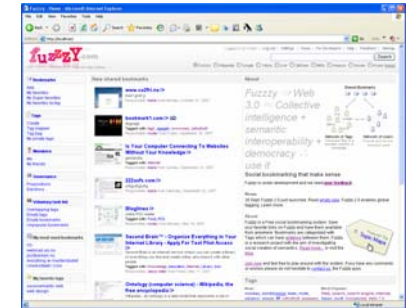
- Knowledge creation and sharing
 - Discovery, mapping of reality
- Enlightened democracy
 - Let everyone participate but recognize knowledge and wisdom
- Polyscopy
 - Enable multiple views, both high level and low level information
 - Priority, key point, the essence
- Holism
 - Discovering the whole truth
 - Seeing the whole, interrelations, transdisciplinary

Approach

- Socio-semantic web
 - Users are paramount, let everyone participate
- Folktology
 - Because the domain of discourse is evolving
- Topic Maps
 - For semantic interoperability and its flexible and intuitive knowledge model



Introducing Fuzzy.com



Social bookmarking using a folktology (folk + ontology)

Mix between folksonomy and ontology

Folksonomy benefits: (bottom up)

- Wisdom of crowds
Diverse opinions, independent decision-making, decentralization of power, and a way of aggregating opinions.
- Low cost
- Rapid adaptability to changing vocabularies
- Low barriers to cooperation
- Serendipitous browsing
- Reveals popularity (desire lines)

Ontology benefits: (top down)

- Solves synonym and homonym problems
- Solves morphological, syntactic and semantic term variation
- Enable multi lingual support
- More granularity
- More precise
- Oriented towards the common good through design
- Enables inferencing and reasoning
- Explicit semantics enables machine processing and integration

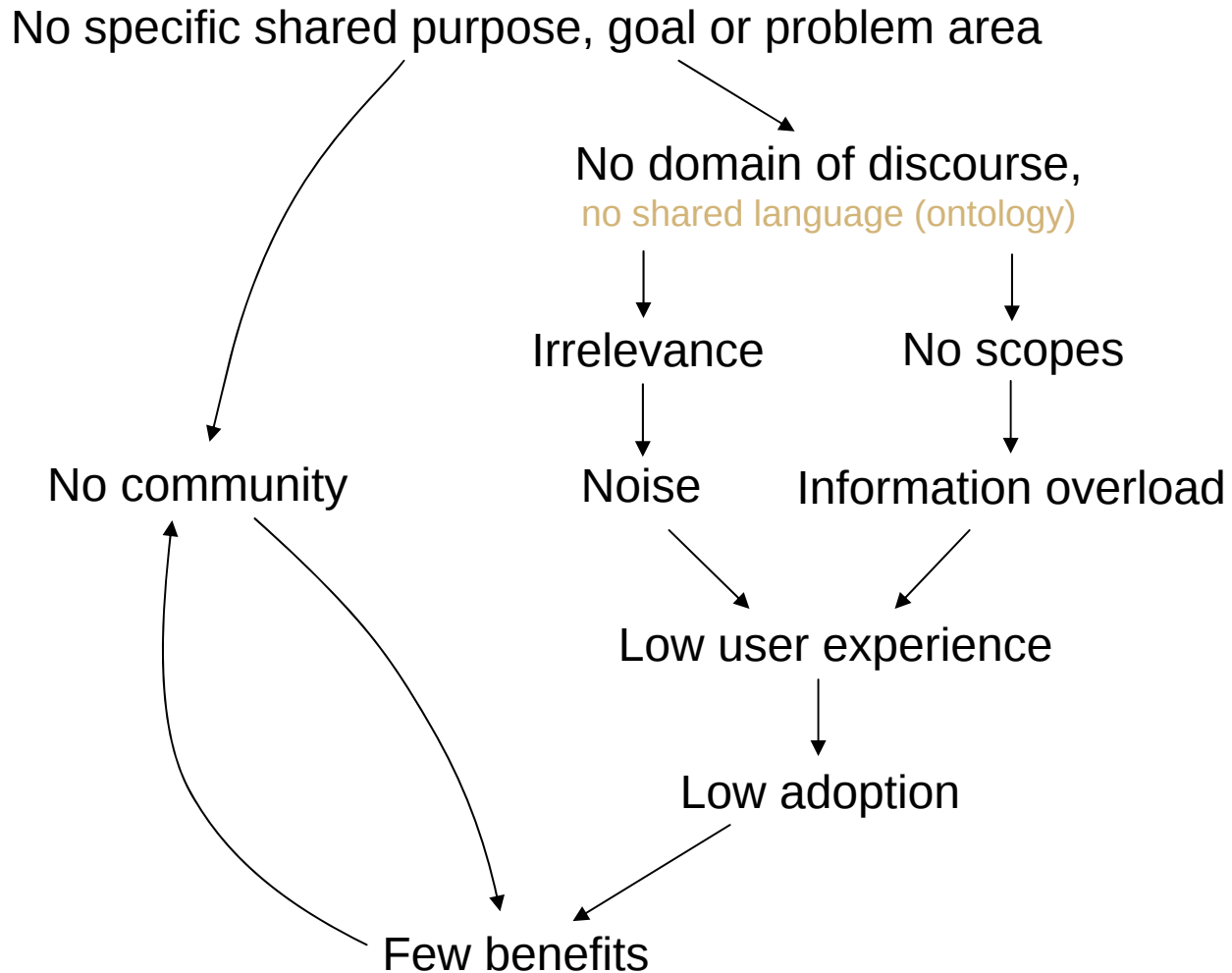
Fuzzy.com results

- Knowledge creation and evolution works
- Tags are more intuitive, meaningful, less ambiguous , search and retrieval is more precise
- Very few users (~1%) are willing to create semantics
 - High cognitive load without immediate benefits
 - No need to externalise semantics
- Low adoption of the system (~2%)
 - Other bookmarking services
 - Why collaborate. No shared purpose or sense of community
 - Complex GUI
 - Bookmarks are personal

Problems with large scale open collaborative Folktoologies

- Scopes
 - Info overload can not be solved with scopes
- Fuzzzyness
 - Different world views -> Different terms/vocabularies, languages and contexts
 - User errors add noise
- Relevance
 - Different views of what is important

Folktologies and relations between problems



How to tackle the problem

Community netcentric application development

Developing a knowledge creation infrastructure to be used in specific domains or problem areas. Accommodate a purpose and clearly stated goals within a specific domain of discourse.

Either through:

1. A distributed network or
2. A single highly compartmentalized system

- Low adoption and reluctance against creating metadata
- Information overload
- Scopes
- Relevance
- Fuzziness

Motivation, dedicated users, recognition

Design, to the point instead of large pools

A defined domain

A defined problem

In tune, shared language, motivation for gardening work

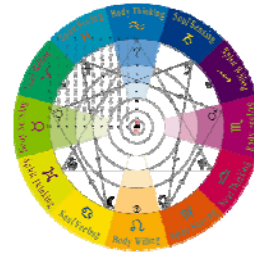
Our proposal: Holoscopia

- Holistic knowledge through distributed online communities
- Different from Wikipedia:



Wikipedia

- *“Compendium that contains information on all branches Of knowledge or a particular branch of knowledge”* wikipedia
- Contains facts: **What, when, where, who, (how)**

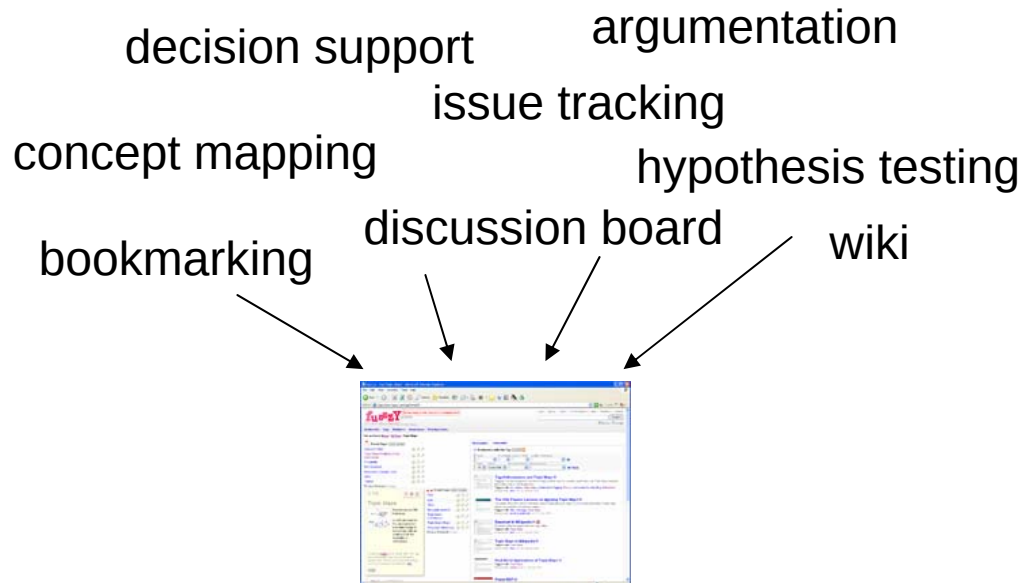


Holoscopia

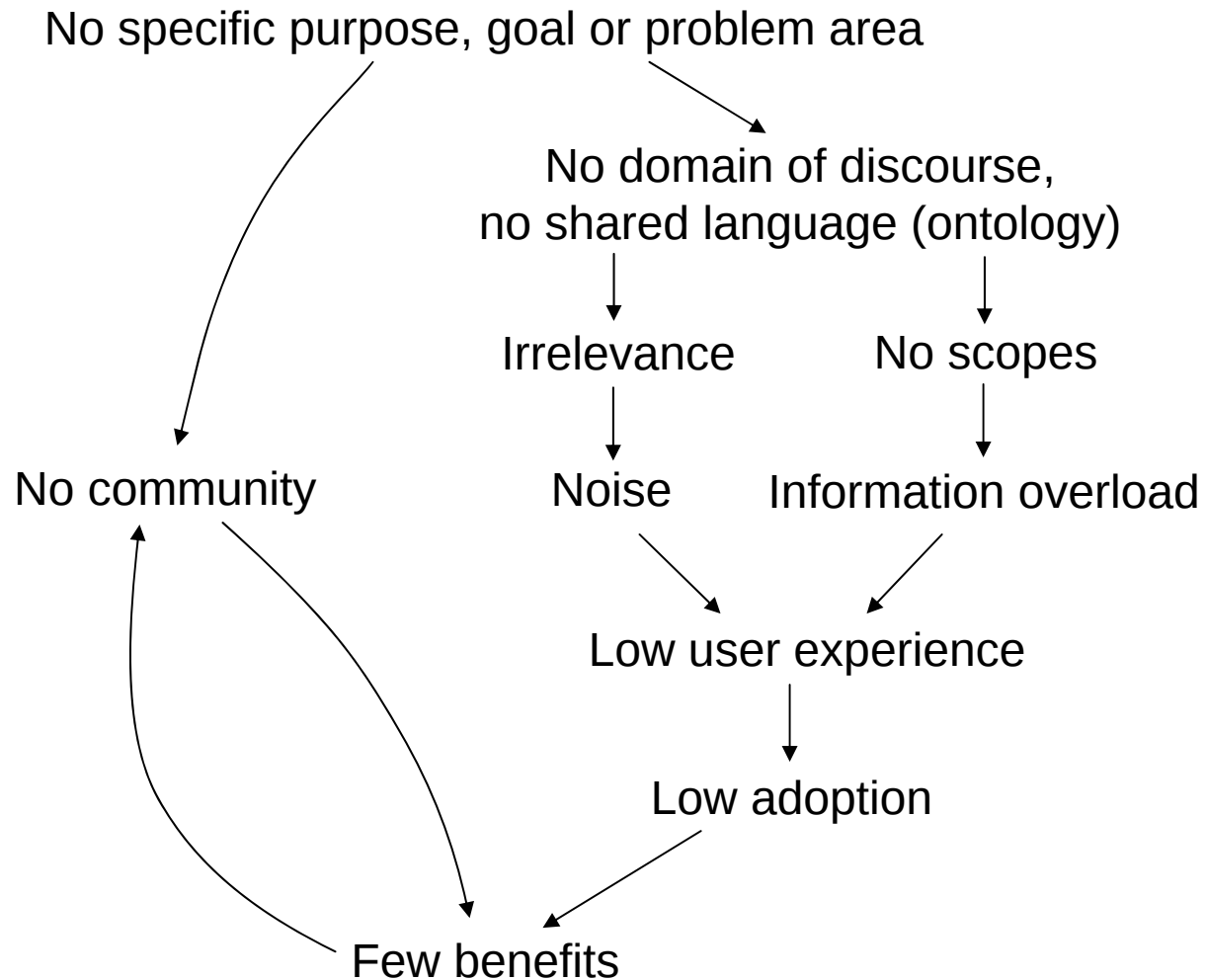
- Tool for synthesis of new knowledge
- Contains problems and hypothesis for discovering **Why**
- Points to wikipedia and other resources

Envisioned system

- Open distributed infrastructure with
- Interconnected knowledge hubs



Folktologies and relations between problems



Knowledge creation in Holoscopia

No specific purpose, goal or problem area

No domain of discourse,
no shared language (ontology)

Leads to (association)

Resulting situation
(Topic Type)

Problem (Topic Type)

Information overload

Low user experience

Low adoption

- disproves

serendipitous
browsing and
discovery

Few benefits

No community

Irrelevance

Noise

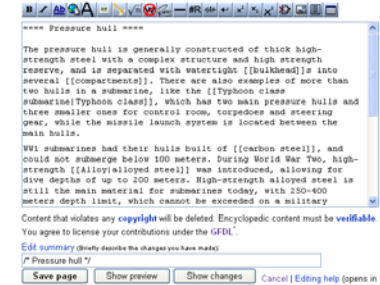


Emne	Dato:Ti
Norsk versjon? (Bak)	06.10.07 11:16
Re: Norsk versjon? (Agamenon)	06.10.07 15:24
Re: Norsk versjon? (Bak)	06.10.07 12:01
Nar fahn Jack (Bak)	06.10.07 10:20
Re: Norsk versjon? (Bak)	06.10.07 11:05
Er den noe å siende av versjon? (Bak)	06.10.07 00:16
Re: Er den noe å siende av versjon? (Bak)	06.10.07 09:58
Re: Er den noe å siende av versjon? (Bak)	06.10.07 07:53
Re: Er den noe å siende av versjon? (Bak)	06.10.07 10:18
XP SP 3 (Bak)	05.10.07 17:18
Bra Wot (Bak)	05.10.07 15:55
Narvot? (Bak)	05.10.07 15:34
Re: Narvot? (Bak)	05.10.07 15:38

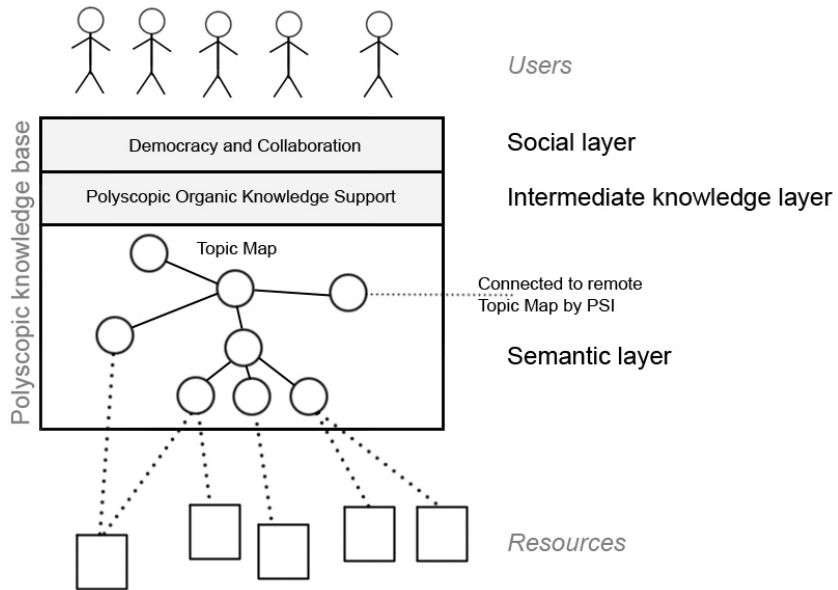


...to repay odious debts is to encourage lending to pariah regimes. If banks could lend to apartheid South Africa in the face of global opposition and global calls for sanctions, and still collect on the loans, then the signal to international banks is that they can lend to any regime, no matter how repugnant. There is a "moral hazard" here: that we will encourage immoral lending.

— *Paying twice for apartheid*, *Action for Southern Africa*, May 1998



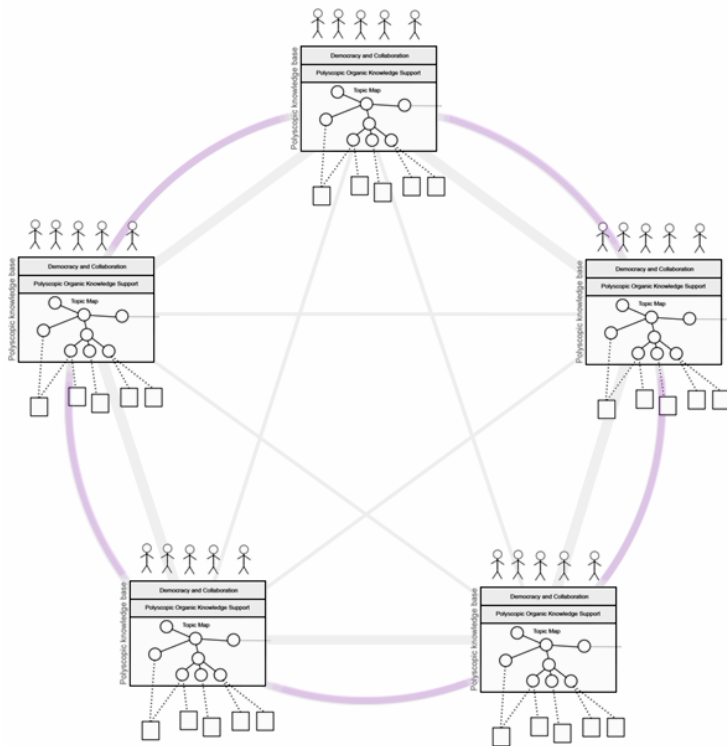
Polyscopic knowledge base



System components

- User management and democracy
(Elections, voting, propositions)
- Intermediate knowledge creation layer
(Consensus funnelling, organic ontology evolution)
- Topic Map
(Semantic interoperability)

Holism i Holoscopia



System components

- Discovery service / replication
(Connectivity)
- Fixed core ontology
(Interoperability, peer fragment import, interscopic search)
- Semantic proximity detection
(Hub semantic distance)
- Aggregation Web services
(Insights, keypoint)

Conclusion

- Creation of semantics require dedicated users and a domain of discourse which can be achieved by developing specialised knowledge creation tools and infrastructures for knowledge centric communities

Questions?



Thank you for your attention

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