米に関する知識・情報ポータルにおける集合知生態系の管理における研究

Collective Intelligence Ecosystem on Rice Knowledge Portal

Frederic ANDRES   Asanee KAWTRAKUL   Richard CHBEIR   Hiroshi ISHIKAWA

WHAT FOR ?

This project introduces a collaborative multi-lingual semantic management of digital resources related to Rice domain. We provide a framework that combines approaches based on Semantic Computing and Language Engineering with topic map data model (ISO 13250) to provide an effective semantic service.

HOW ?

The platform combines a topic maps-based semantic support to the 5W1H model (Where, Who. When, What, Why and How). The MetaSemflow approach merges a local semantic indexing (metadata, feature vector) of multimedia documents and a vertical global semantic management according to end-users expertise and profile.
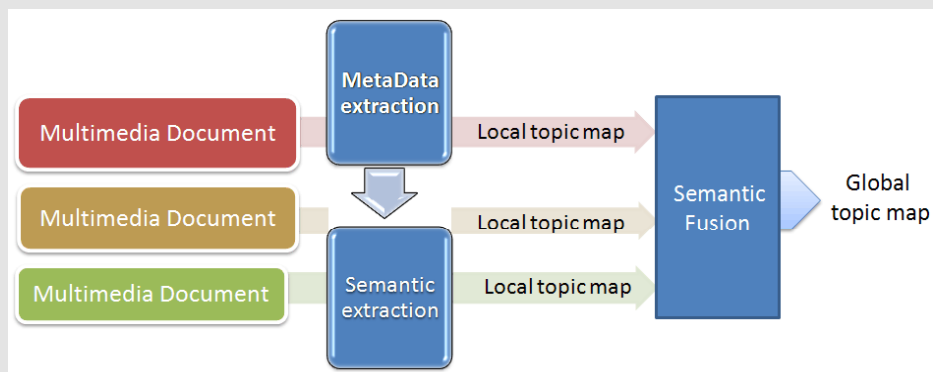
1. Background

- Explosion of agriculture-related digital archives accessible over Internet
- Needs to improve the semantic of multi-lingual multi-disciplinary agricultural rice studies
- Large agriculture community
- Management of the semantic interoperability based on scopes & profiles

2. MetaSemFlow Model

LSA-enriched Topic Map data model (iso 12350)

$Global\_topic\_map = Semantic\_fusion (local\ LSA,\ Global\_topic\_map)$ where local $LSA = U\sum(U\sum k)T$

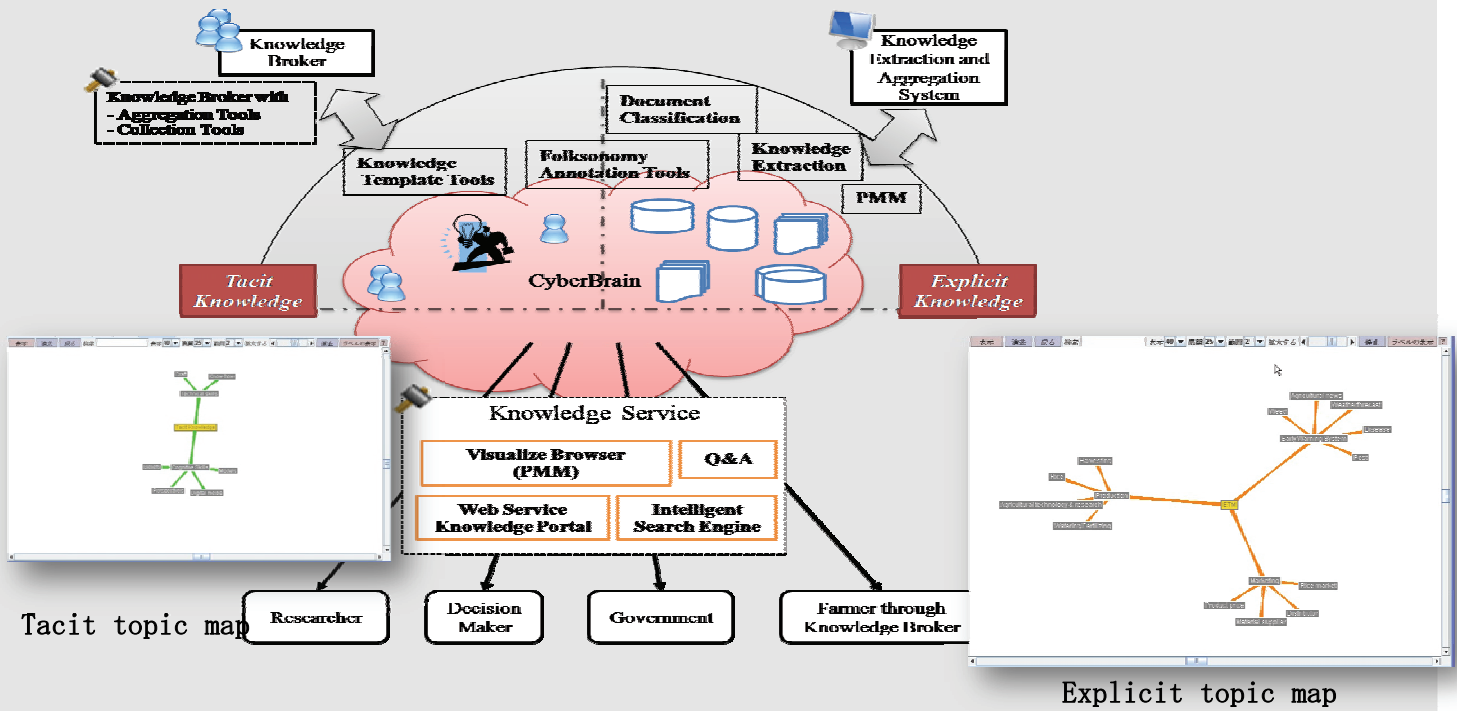## 3. MetaSemFlow Process

4. References

Okamura, T., Fukami, N., Robert, C., and Andres, F., 2007, Digital Resource Semantic Management of Islamic Historical Buildings Case study on Isfahan Islamic Architecture Digital Collection, the International Journal of Architectural Computing, Multi-Science Publishing Co Ltd, Volume 5, Number 2, June 2007, pp. 356-373(18)
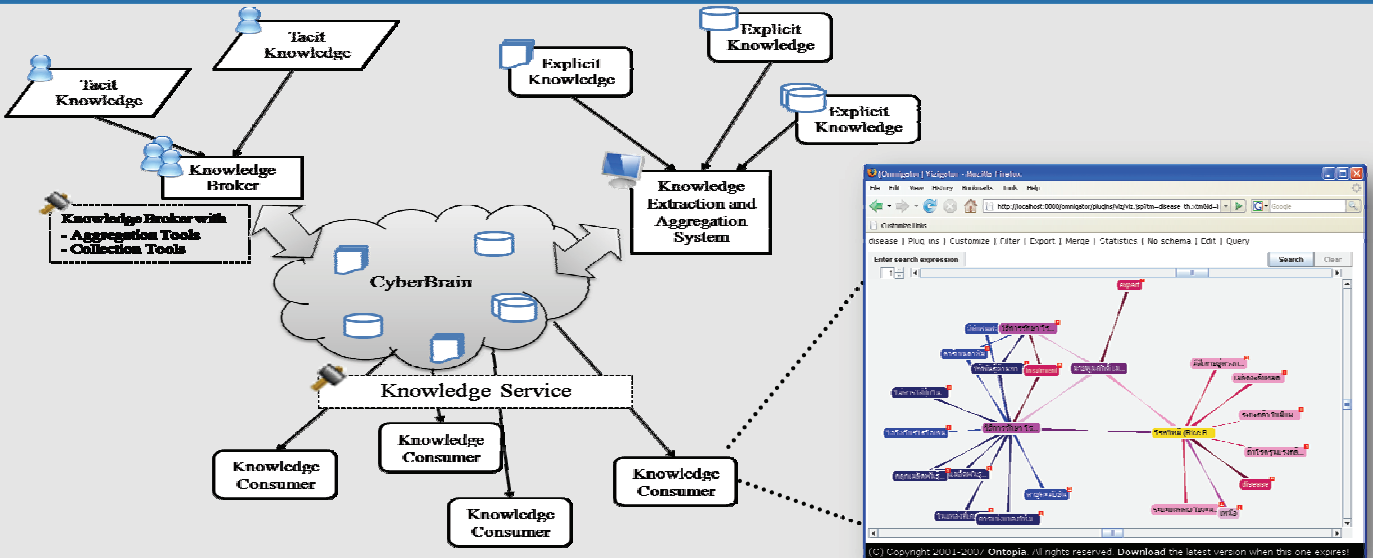
Andres, F., Kawtrakul, A., Chbeir R., and Rajbhandari, S.,Collective Intelligence Management on Digital Agriculture Resources, 2nd Int. Conference on Software, Knowledge, Information Management and Applications (SKIMA 2008), Kathmandu, Nepal, March 18-21 2008,ISBN 9781851432516, pp 112-117

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Target Application: Cyberbrain

CyberBrain is a knowledge framework aiming to be applied in agricultural, health, traditional, and cultural domains.

Knowledge Broker

Knowledge Broker with
- Aggregation Tools
- Collection Tools

Knowledge Extraction and Aggregation System

Document Classification

Knowledge Template Tools

Folksonomy Annotation Tools

Knowledge Extraction

PMM

CyberBrain

Tacit Knowledge

Explicit Knowledge

Knowledge Service

Visualize Browser (PMM)

Q&A

Web Service Knowledge Portal

Intelligent Search Engine

Tacit topic map

Researcher

Decision Maker

Government

Farmer through Knowledge Broker

Explicit topic map

Deployment of Community Servicing

Tacit Knowledge

Tacit Knowledge

Explicit Knowledge

Explicit Knowledge

Explicit Knowledge

Knowledge Broker

Knowledge Broker with
- Aggregation Tools
- Collection Tools

Knowledge Extraction and Aggregation System

CyberBrain

Knowledge Service

Knowledge Consumer

Knowledge Consumer

Knowledge Consumer

Knowledge Consumer

TM Problem-solution Methods-solving Man (PMM) browser