

# Supporting multiple perspectives with folksonomies

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# Context

- ▶ Collective decision-making over wicked/ill-structured problems
- ▶ Emergent behaviours within the web 2.0
- ▶ Opportunities in knowledge management and shared visualizations

# A simple model of decision making

The **IMC** model from Simon, 1960 counts the three following processes as the steps of decision-making:

1. Intelligence (problem framing and significant factors)
2. Modelling (identification and evaluation of alternatives)
3. Choice (comparison of alternatives and choice)

While such analytical breakdown is still commonly used it has indeed been argued that:

- ▶ Decisions don't always follow an incremental logic (Mintzberg and Westley, 2001)
- ▶ Unstructured decisional processes do occur (Mintzberg et al., 1976; Padgett, 1980; Pinfield, 1986; Starbuck, 1983)
- ▶ The decision-making process can be regarded as a cycle (McKenna and Martin-Smith, 2005) or as a set of interconnected decisions (Langley et al., 1995).

# More complex decision-making models

Environmental decision-making is cyclic and interconnected “by nature”.

- ▶ The environment evolves: former intel, models and choices may require revisions.
- ▶ Decisions may involve several scales/areas/domains/populations thus impacting different scales/areas/populations.
- ▶ Participatory approaches.

# Collaborative design

Design is a decision-making process  $\leftrightarrow$  decision-making is a design process.

Some collaborative design situations (concurrent engineering, open source software development) share some issues with environmental decision-making:

- ▶ The context (security, practices, knowledge) is always evolving.
- ▶ Local and global decisions may impact each other.

# Best practice vs. Reality

In engineering and software development: tools and efforts for tracking changes and maintain reproducibility.

In environmental decision-making:

- ▶ Once out of the laboratory reproducibility is the issue (meta-analysis)
- ▶ What kind of changes need to be tracked when “building a decision”?
- ▶ How are decisions derived from previous decisions?
- ▶ How to support multiple perspectives?

# Knowledge management

Knowledge used to be essentially managed by central authorities (librarian, scholars).

- ▶ Such authorities typically produce ontologies.

ICTs now provide many opportunities for “anyone” to contribute by creating/sharing ressources and indexing/cataloging said ressources.

- ▶ Folksonomies make possible the creation/sharing and merging of individual knowledge organization schemes.

# Folksonomies

*a minima* a set of triplets of the form (U = user, R = resource, T = tag)

- ▶ Allows a given resource to exist within several organization schemes (one per user for instance).
- ▶ Useful (enough) for resource navigation and retrieval.
- ▶ Can be set “conversationally” (Twitter and the likes) thus also linking a fragment of discourse to a resource.



An online tool for collaborative mapping.

- ▶ Provides a shared representation (map - and soon legends and themes)
- ▶ Keeps track of changes at the dialogue level (chat)
- ▶ “Fuzzy” indexing and navigation
- ▶ A few more (necessary) features to be implemented soon...

# AMORAD : the task

At least 9 participants - 3 from 3 different broad domains (“bio”, “geo”, “eco”)

- ▶ Each participant is involved in two interdisciplinary teams.
- ▶ Each team has to build a map for a specific site.
- ▶ Each map has at least 2 different layers: domains interactions and knowledge mapping.
- ▶ Each layer can have several sub-layers. . .

# AMORAD : the maps

- ▶ One shared map per site
- ▶ One layer for highlighting the interactions and stakes at the domains' interfaces. -> at least 3 different sub-layers!
- ▶ One layer for mapping where we already have useful knowledge, where we will have useful knowledge (by the end of the project) -> at least 3 different sub-layers!

# Outcome

An *ad hoc* knowledge repository

Folksonomy as a support for environmental decision-making?

- ▶ Evolution of global/personal folksonomy and discourse through an interdisciplinary task.
- ▶ Use and evolution of folksonomy through “decision-porting” tasks.

# How one can help me?

- ▶ Identify relevant participants
- ▶ Populate the map beforehand
- ▶ Relevant “marine raster(s)”
- ▶ User interface