

Using the PSM to Solve Information Strategy Planning Problem

Problem-solving methods (PSM) provide reusable architectures and components of dynamic reasoning knowledge required for executing a task. Several PSM libraries are now available , but we are interested in how to apply reusable pre-existing problem-solving method to independent problem. Many organizations have viewed information strategy planning as a key issue. But it is usually difficult for considering a lot of uncertain factors, which includes the external environment and internal constitution. Therefore we hope to use PSM to solve the information strategy planning problem.

Our research will discuss how to apply the pre-existing PSM to the problem in two dimensions, which are architecture and steps (see Figure 1).

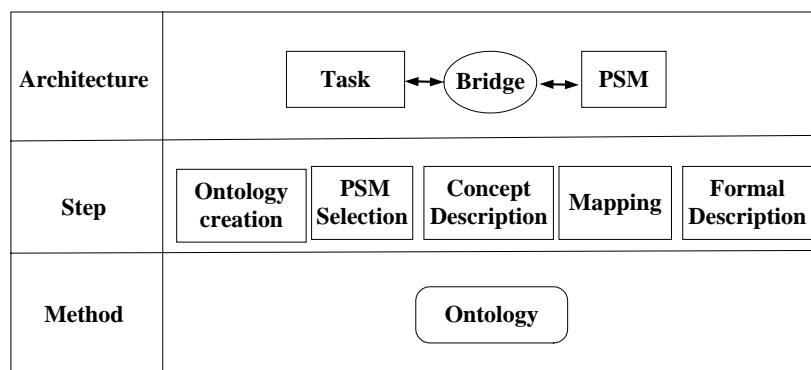


Figure1. PSM application architecture and step

1. **Architecture.** This is a concept model for describing how to use the problem-solving method. It consists of three different elements, which are Task, PSM, and Bridge.

- **Task** : define the problems that should be solved, which include the goals, assumption, and precondition.
- **PSM** : define the reasoning process .
- **Bridge** : defined the connector between Task and PSM.

2. Steps.

- **Ontology creation**: define a task ontology that describe the classes of concept in the application and slot of these classes
- **PSM selection**: select a problem-solving method, which can solve the task.
- **Mapping**: define mapping relation, which identify how elements of the task ontology can satisfy the data requirements of the PSM.
- **Conceptual Description** : define the mapping relation with semi-formal structure. It should include a list of the concepts involved in the problem and their relations explicitly identified and an algorithm to represent the necessary control to solve the task.
- **Formal Description** : formalize the defined concepts and relations and the necessary inferences to solve the task.

We will apply the problem-solving method, propose & revise, to the information strategy planning. First we create the task ontology, information strategy planning, and then decompose the task into several subtasks, which are independent to the

original task. Finally formalize the mapping relation in the protégé environment.

This article shows how to apply per-existing problem to solve the task. The result can help the organizations realize the problem and apply a lot of different reusable problem-solving methods when solving the complex problem of information strategy planning.