The Social Reality of Business Activity:
A Contingent Methodology for Knowledge Elicitation and Mapping

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ABSTRACT

This article describes a contingent methodology developed for the elicitation of working knowledge from policy makers within an Australian government agency. The purpose of the knowledge elicitation was to create an inventory of the kinds of knowledge required to develop complex policies for natural resource management. This inventory was then to be used for investigating knowledge management solutions to address information loss, staff attrition and operational effectiveness. Therefore a methodology was developed to combine soft systems methodology, causal cognitive mapping, and brainstorming to provide a set of knowledge requirements. The methodology appears to offer an effective platform for making sense of nonroutine, yet rigorous knowledge work, identifying all forms of relevant knowledge and articulating challenges to managing that knowledge. We locate our discussion within the conceptual space of social constructivist ontology.

Keywords: cognitive mapping; knowledge mapping; knowledge work; methodology; ontology; soft systems

INTRODUCTION

The elicitation and analysis of operational and management knowledge and the design of systems to contain and give access to that knowledge still seem to focus largely upon explicit forms of knowledge. Even design ontologies (Guarino, 1998; Maedche, Staab, Stojanovic, Studer & Sure, 2003), which appear to offer comprehensive methods for the rigorous capture of shared conceptualisations, generally remain in the comfort zone of knowledge that can be written down. For example, Robillard (1999, p. 92) says: “Software engineers have placed a great deal of emphasis on documenting the final representation of the knowledge structure, or the source code, but only recently the rationale, or process, of knowledge crystallisation.”

Using a single case study, this article argues that any type of knowledge which is used for effective action should be considered
in the search for systems or managerial solutions. Design formalisms, such as UML class diagrams and activity models (Bennett, McRobb & Farmer, 1999), business process modeling notation (Object Management Group, 2006) or entity relationship models (Chen, 1976) are generally used to capture and present business information in a compact, digestible form to support systems analysts and designers in creating business process or IT-based solutions. In this article we argue that these formalisms can be used to capture tacit, role-related and relationship knowledge and therefore provide context for those other explicit items of knowledge which may be candidates for process improvement, computerisation or Intranet-based tools. This research shows a path to that formalism by linking business process modeling, the soft systems methodology, causal cognitive mapping and brainstorming to elicit knowledge from staff in a government agency.

This methodology seeks to address two common issues. Firstly, there is the well-known difficulty of eliciting knowledge from groups of people who are experts, colleagues or co-stakeholders engaged in a business activity. Secondly, as these inputs are articulated and documented, there is a loss of much contextual knowledge when one moves from the fuzziness of the social world to the hard requirements of software engineering or systems design. Because this contextual knowledge is itself tacit or not amenable for computerisation, it may not be captured and passed on to designers of solutions. When requirements and design considerations are transcribed, they become de-contextualised, alienated from their original situation: meaning is lost, even though the words may appear to be clear. Westrup (1999) claims that because of this, more attention must be paid to the practice of eliciting the knowledge and ensuring that knowledge is not lost (for cognitive, social or political reasons). Or as Winograd (1996) more bluntly states: “A sealed set of requirements as blueprint for software designer is a disaster waiting to happen” (p. xvii).

We propose combining a number of elicitation methods and adopting a philosophical stance based upon the social construction of knowledge (Berger & Luckmann, 1967; Schutz, 1972). Constructivism takes the view that our knowledge of the world is shaped by language, convention and culture and that we create and maintain these constructs through ongoing social interaction and dialogue. It is these constructs that, to a large extent, constitute our reality or “ontology”.

The nature of the work is that it is an iterative and dynamic form of learning and development and we situate the research within the tradition of organisational learning and methodological refinement that comes from employing such a process. Vygotsky (1978, p. 251) described this approach, with reference to learning and cognition as the search for method: “The search for method becomes one of the most important problems of the entire enterprise of understanding the uniquely human forms of psychological activity. In this case, the method is simultaneously prerequisite and product, the tool and the result of the study.” The phrase is similarly relevant in this situation. The application of the methodology to a real-world problem situation necessarily refines both the user’s view of the problem and the methodology itself.

**CAPTURING KNOWLEDGE**

There are many formal notations and methods to rigorously capture and document information for the purposes of business analysis or systems design, acquisition and implementation. But in the messy world of nonroutine knowledge work, the interesting elements are often those which evade documentation. There is now a multiplicity of knowledge management solutions (such as yellow pages of expertise, bulletin boards and multimedia) which can assist in managing access to all kinds of knowledge and expertise (Vail, 1999), so there may well be advantages in documenting the existence, if not the content, of those elements in our formalisms. If we do not, we may be in danger of committing the error of looking under the lamp: although the light is brightest there, it is not where the most important gems are hidden.
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