Chapter 102
Mapping Group Knowledge

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INTRODUCTION

During group meetings it is often difficult for participants to effectively: *share* their knowledge to inform the outcome; *acquire* new knowledge from others to broaden and/or deepen their understanding; *utilise* all available knowledge to design an outcome; and record (to *retain*) the rationale behind the outcome to inform future activities. These are difficult because, for example: only one person can share knowledge at once which challenges effective sharing; information overload makes acquisition problematic and can marginalize important knowledge; and intense dialog of conflicting views makes recording more complex.

This article reports on the social process of mapping group knowledge which aims to better support the processes of sharing, acquiring, utilising and retaining, knowledge during group meetings. Mind mapping, causal mapping (Eden, forthcoming), concept maps (Gaines & Shaw, 1995a), and various mapping techniques reported in Huff and Jenkins (2002) have been used to structure and represent individual thinking and

knowledge about an issue. Software now exist to support these mind-mappers (e.g., MindMap®, KMap, Decision Explorer). However, often individuals cannot solve problems themselves and instead need insight from a range of people who can collectively address the problem. For example, groups are often used where issues are so complex that they require the involvement of a number of diverse knowledge holders. Also groups are often used where political considerations suggest that the involvement of various key people would facilitate the implementation of actions.

Thus, the principles of mapping individual knowledge have been applied to small groups of people to support their collective structuring and thinking about an issue. Approaches such as Dialog Mapping (Conklin, 2003), concept mapping (Gaines & Shaw, 1995a), and Journey Making (Eden & Ackermann, 1998a) can all support the process of mapping group knowledge during meetings. While it is possible to deploy these approaches using flipchart paper and pens, software have been developed to support these particular approaches (i.e., Compendium, KMap, and Group Explorer, respectively). These software aim to capture, represent, and model the participants' knowledge in a more versatile manner

than is possible on paper, enabling more effective navigation and consideration of the breadth and depth of issues.

This article begins with an introduction to the research on mapping knowledge. Then it reviews the benefits for knowledge management of engaging groups in mapping their collective knowledge. An example of a computer-based mapping methodology is briefly introduced—the Journey Making approach. Future research directions and implications for knowledge management conclude the article.

BACKGROUND TO RESEARCH ON MAPPING

Much work has been performed on the applications of cognitive and causal mapping, for example mapping for: negotiation (Bonham, 1993), strategic management (Carlsson & Walden, 1996), strategy (Fletcher & Huff, 1994; Bougon & Komocar, 1994), communication (Te'eni, Schwartz, & Boland, 1997), litigation (Ackermann, Eden, & Williams, 1997), IS requirements planning (McKay, 1998), consumer branding (Henderson, Iacobucci, & Calder, 1998), and knowledge management (Shaw, Edwards, Baker, & Collier, 2003b).

Also work has been conducted on other types of mapping, for example: knowledge networks, which represent the knowledge around a process (Gordon, 2000); mapping knowledge contained on an intranet (Eppler, 2001); and integrating concept maps with other applications to build the knowledge base (Gaines & Shaw, 1995b). With the exception of knowledge networks, that work differs to cognitive/causal mapping which concentrates more on the social process of generating knowledge through personal reflection and/or collaboration.

This article focuses on maps built by groups of knowledge holders during facilitated workshops. This body of literature is smaller, but includes: exploring how to facilitate the process of capturing

knowledge from groups using mapping (Johnson & Johnson, 2002), group mapping using computers (Eden & Ackermann, 1998a; Shaw, 2003), using group mapping in a research study (Casu, Thanassoulis, & Shaw, 2002; Edwards, Collier, & Shaw, 2004), and using group mapping for knowledge management (Gaines, 2002). These studies tend to focus on improving the process of conducting a group mapping session and building group maps.

In terms of analysing the content of maps, research has focused on analysing the nature of individual cognitive maps, for example, analysing the themes in the maps (Jenkins & Johnson, 1997), and the number of concepts in the maps and the number of in/out arrows linking concepts (Eden, forthcoming). Some exploration of the properties of group maps (albeit sometimes group maps which have been generated by merging the cognitive maps of individuals) has also been performed (e.g., McKay, 1998; Eden & Ackermann, 1998b; Shaw, 2003). Shaw, Ackermann, and Eden (2003a) offer a typology for how managers access and share knowledge during group mapping activities.

The research on mapping concentrates on the deployment, evaluation, and improvement of the methods often leading to practical and theoretical advances of mapping techniques.

We now review the general benefits of mapping group knowledge.

MAPPING KNOWLEDGE FOR KNOWLEDGE MANAGEMENT

To structure the following discussion, we return to the sharing, acquisition, utilisation, and retention of knowledge to explore how mapping supports each of these. Below we assume that there are 5-12 people (participants) in a group who are mapping their knowledge. The knowledge is being captured in a map, and the process of mapping is being supported by a facilitator. This map is publicly displayed for all participants to see. This arrangement is characteristic of Dialog

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