Synthetic Wisdom: The Design of a Mixed-Mode Modelling System for Organizational Decision Making

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This paper discusses some of the early thinking about the development of a conference-based decision support system. It presents a scheme for the practical development of the mapping of argumentation ('cognitive mapping'), particularly in the field of strategic planning. The objective is to redesign software (COPE) so that it may become both an effective conferencing system for the collection of 'synthetic wisdom' and yet also facilitate the analysis of the qualitative and quantitative features of the models so constructed. It stresses the need for the system to be able to cope with both the political and the behavioural aspects of the decision-making arena.

INTRODUCTION

This paper describes the early stages of a project to enhance an existing approach to organizational decision making. It sets out the objectives of the research and considers the implications of these objectives for:

- the managerial decision-making arena, including the politics of team problem-solving;
- the interaction of qualitative and quantitative data.

These issues are not independent of one another. Figure 1 shows some of the issues that will be addressed in the paper and how they relate to one another.

Our central objective is to enhance senior management’s understanding of strategic issues. We seek to do this by converting the everyday thinking and concerns of competent senior management into ‘synthetic wisdom’—this combination of several persons' experience and wisdom is the synergy which may lead to the effective resolution of strategic issues. Most strategic planning designs fail to attract and hold the attention of busy managers, probably because the sophisticated techniques of forecasting, financial modelling and economic scenario-building focus upon a subset of the problems which are too small and too specialist to be seen as directly relevant to managers.¹² Current strategic-planning practice contrasts sharply with our vision of a manager taking part in the strategic debate effectively and willingly. We envisage, therefore, a different approach to strategic planning.

One aspect of this work is founded on the belief that a highly efficient involvement of senior managers in building a strategic scenario will lead to an organization better equipped to control and manage the future. Because managers need to (or at least choose to) be predominantly concerned with the short-term, and often day-to-day, problems of their part of the organization, the designed involvement of managers in thinking about the future must be highly time-efficient if it is to stand any chance of succeeding. They must be allowed to contribute to a view of the future in their own terms and their own language. The process needs to be exciting and stimulating so that the activity does not become a chore, or a request made by others, but rather an enjoyable part of their role and something which they believe is going to be of direct relevance to their own managerial issues and problems.

Drawing managers carefully into the process of reviewing strategic issues is associated with other objectives: building higher group-trust, facilitating team development, giving managers a wider role in the organization, increased learning from one another about strategies for solving common problems, higher levels of commitment to the action plans of the strategic-planning process, and encouraging more time for both individual reflection and reflection on team problems. The process

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should therefore increase the chance of the organization identifying future problems, devising ways of reducing their impact, and creating opportunities.⁴

Although this is an ambitious portfolio of objectives, they may be seen as natural consequences of the central objective, which, if not attained in their own right, will certainly damage the attainment of our goal of drawing people into strategic debate.

Another primary objective provides for an emphasis on the interaction between qualitative aspects of a problem and the insights that may be provided by quantitative modelling—'mixed-mode modelling'. This may be in the context of strategic or operational problems. In fulfilling this objective, we emphasize problem solving rather than scenario building, and thus we do not focus upon facilitating conferencing between managers but on the problems of a particular manager or small management team who are grappling with a commonly identified problem. The intention is to devise a helpful way of enabling a manager to construct and specify his problem in a more intelligent and aware manner than would otherwise be possible.⁴ By this we mean that the manager, or team, is more aware of the quantitative data (of relevance to the problem) which is already available in the organization and is thus able to specify problems that enable management scientists to construct more appropriate quantitative models. This means attempting to provide problem-structuring help within the context of the services that can be provided by an internal consulting department predominantly staffed by operational researchers. The ability to generate a problem definition that can form the basis of terms of reference for an O.R. project and also guide the nature of the model building undertaken by operational researchers is a specific subordinate outcome that we have in mind.

Our premise of O.R. modelling skills being better exploited by the organization through the ability to build more relevant mathematical models and set them in an appropriate context of qualitative elements guided the design of the approach. Our aim is to find more effective ways of combining the experience, hunch and intuitive knowledge of the manager with the specific expertise of the analyst and the techniques he is able to command in his role of problem-solving professional without direct experience of the manager's problem.⁵