
Managing knowledge in virtual organisations: an introduction

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1 Defining knowledge management in virtual organisations

Modern organisations are increasingly decentralised over multiple bases of knowledge and expertise worldwide. A key success factor is the exploitation of local knowledge to the benefit of the entire organisation, and much effort has gone into securing this competitive advantage. However, sharing and transferring local knowledge effectively is difficult even in highly networked organisations. Knowledge flows are hindered by physical distances, costs of set-up and maintenance of communication structures, socio-psychological and cultural factors, and a host of other impediments.

Virtual organisations and virtual teams have been touted as ideal conduits of inter-organisational and decentralised knowledge flows. Furthermore, virtual organisations have become commonplace in most industries and companies, partly due to the availability of more advanced information and communication technologies (push effect) but also due to the demands in the marketplace and the decentralisation of overall business (pull effect). Therefore, there is a strong interest both by users and providers of information within organisations to improve knowledge transfer and knowledge management capacities of virtual organisations.

Thus, this issue focuses on various approaches to managing knowledge – including the creation, transfer, utilisation and conversion of knowledge – by individuals, project teams, or companies connected through virtual organisations and teams. Improving

knowledge management in this context is expected to have implications for managing innovation, new technologies, people, and corporate resources worldwide.

What are virtual organisations? Two major characteristics set them apart from traditional organisations [1,2]:

- they are highly networked organisations, usually relying on electronic information and communication technologies
- individual membership in virtual organisations is temporary and the boundary of the virtual organisation is often unclear.

Since members of virtual organisations are not necessarily collocated, other linkage mechanisms such as shared business processes, common values and objectives, and, specifically, virtual teams are of paramount importance. Lipnack and Stamps [3] define a virtual team as a group of people or entities who interact through interdependent tasks guided by common purpose, working across space, time, and organisational boundaries with links strengthened by information, communication, and transport technologies. Participation in such virtual teams may be temporary for individual members and their actual contribution may be undefined. It is not necessary to assume that members in virtual teams never meet face-to-face (e.g. [4]), but a substantial part of the communication is likely technology-supported [5].

Managing knowledge in traditional, i.e. relatively clearly delineated and collocated organisations, has provided management research with a rich literature. Definitions for knowledge management abound. As a framework in this special issue, an inclusive definition as put forward by the Graduate School of Business at the University of Texas is used [6]. Knowledge management is

“the systematic process of finding, selecting, organising, distilling and presenting information in a way that improves an employee’s comprehension in a specific area of interest. Knowledge management helps an organisation to gain insight and understanding from its own experience. Specific knowledge management activities help focus the organisation on acquiring, storing and utilising knowledge for such things as problem solving, dynamic learning, strategic planning and decision making. It also protects intellectual assets from decay, adds to firm intelligence and provides increased flexibility.”

Given this context, some of the main problems of managing knowledge in virtual organisations include:

- knowledge transfer and learning
- virtual communities of interest and practice
- collaboration, coordination and competition in networks
- capturing and re-utilising dispersed knowledge
- inter-firm and intra-firm knowledge management
- supporting virtual teams with ICT
- managing innovation in networks
- team organisation and team management
- culture, language and behaviour in decentralised teams
- knowledge modes in virtual teams.

The papers included here address only a subset of these problems, but it is hoped that this special issue triggers a wider discussion on this theme in this journal and other platforms of scholarly and professional discussion. Among the many highly qualified papers submitted following the initial call-for-papers, some contributions had to be rejected for lack of fit with the overall theme of this journal, while others were redirected to later issues. The present collation of papers focuses partly on knowledge transfer issues, partly on practical applications of making knowledge and technology transfer work within networks and virtual teams. In this issue's first paper, Mark Resnick [7] makes the point that knowledge management is not only a matter of sufficient IT investment and deployment, but also accompanying management policies and processes. He presents a model for the design of knowledge management systems, the CaSIDA model, that describes the inputs and information flows of critical stages of knowledge management.

Petra M. Bosch-Sijtsema [8] and Kah-Hin Chai and Chee-Meng Yap [9] studied knowledge transfer in virtual teams. In case study research Bosch-Sijtsema pursued the questions of what kind of knowledge was transferred and to whom, and finds that the greater the degree of virtuality, the less tacit knowledge is transferred while the greater the need for more social and organisational knowledge to be transferred. Chai and Yap, however, addressed the question of when and what transfer mechanisms to use. They find that knowledge with high degree of tacitness should be transferred by rich media, while knowledge with high embeddedness should be transferred by media with high transfer capacity.

Khaleel Malik's [10] paper highlights the challenges of intra-firm technology transfer faced by companies that have multiple operations in different countries and serve different national markets, particularly in the context of high-tech companies. His research demonstrated that pre-transfer planning is often inadequate or neglected, as are formal managerial processes and end customer marketing input into the knowledge transfer processes.

Ettore Bolisani and Enrico Scarso [11] discuss the role of assisted technology transfer for e-commerce projects in virtual organisations. They examine the approaches and problems of two distinct models of local transfer organisations, and derive implications for managing the transfer of e-commerce technologies to small companies.

Margaret Dalziel [12] gives an account of the applicability of user networks for technology-market linking. User networks serve to transform the dispersed, tacit, and conflicting knowledge of individuals into accessible, explicit, and consensual knowledge, which ultimately can be utilised by technology development organisations to identify research priorities and design technology development projects.

In the final contribution, Kathryn Cormican and David O'Sullivan [13] focused on the challenges of a knowledge-focused network environment for R&D, which included effective communication, collaboration and coordination structures. They present a groupware architecture that supports the coordination of members in a networked R&D environment, thus assisting innovation and product development in virtual organisations.

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