Teamwork in Knowledge Work: Organising for complexity

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Abstract

Following the trend for teamworking to improve speed, quality and efficiency in manufacturing environments, it has also been advocated as an organisational design for complex organisations (Galbraith, 1994) that are performing "knowledge work" as distinguished from repetitive production (Mohrman et al., 1995). This paper considers what teamworking means in such complex settings, and analyses two case studies of knowledge-intensive, high-tech firms that have implemented contrary organisational designs to solve the same problems.

The paper begins by setting out what is termed the Organisational Behaviour textbook theory of teamworking. This traditional orthodoxy stresses factors that contribute to a strong group mentality and cohesiveness within a team. These factors include homogeneity and personal attraction among colleagues and advocate team-building exercises as a prerequisite for effective performance.

By contrast the literature on group cognition presents a picture where group formation and the development of "collective mind' (Weick & Roberts, 1993) are separate processes. Furthermore team performance does not depend on a strong group mentality and may even be undermined by it. In addition, the current phenomenon of cross-functional teamworking shows the benefits of diversity within teams (Gobeli & Larson, 1987; Griffin, 1997; Leonard & Sensiper, 1998; Holland et al., 2000) rather than the homogeneity favoured by the OB textbook theory.

This diversity includes the combination of dissimilar knowledge bases, which is increasingly necessary for the production of today's complex products and systems (Hobday, 1998) in today's Multi-Technology Corporations (Patel & Pavitt, 1994; Granstrand, 1997). Teamworking in such settings is typically organised around modular architecture, often reflecting that of the product (Sanchez & Mahoney, 1996; Simon, 1999; Grant, 2001). It has been shown however that the knowledge bases of firms are typically broader than their activities (Brusoni et al., 2001) and that the knowledge bases of teams are typically insufficient to fulfil complex tasks. This is shown by Allen's (1984) studies of successful R&D projects, where engineers spend substantial amounts of their time consulting with colleagues *not* assigned to their teams.

The importance of this "gatekeeping" function is confirmed by more recent research by Hansen (1999) and Keller (2001). While cross-functional teamworking brings benefits it would appear these are derived from the privileged access to communities outside the team, and it is the interfaces between the neat modular organisational units that are messy and most critical (Grant, 2001). Brown & Duguid's (2001) work is instructive here, which stresses that knowledge "sticks" across the boundaries of communities of practice, sometimes entailing a "balkanisation" of the firm around its disciplines. Brown & Duguid suggest "intercommunal negotiation" as a remedy for this organisational ill.

The paper then analyses two case studies of organisations attempting to manage such intercommunal negotiation. These are similar firms in high, multi-tech, knowledge-intensive businesses. Both are project-based, in the same geographical region and about the same size, yet they have taken their organisations in contrary directions. The first has moved from organisation around functional disciplines to product-based, cross-functional teams, while the second has done the reverse. The paper reviews the effects of these different organisational solutions on the processes of knowledge integration within the firms, the effects on communities of practice and the ways in which the systems have developed and adapted in response to the reorganisations. The paper concludes with some implications for the meaning of teamworking in knowledge-intensive, complex settings, stressing organisational design and the content of knowledge bases, rather than the behavioural dynamics of OB textbook orthodoxy.

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