Chapter V

Looking into Virtual Organisations—Interaction and Coordination Issues

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This chapter attempts to build up a framework of virtual organisation on the basis of concepts taken from complexity theory. On the basis of the dimensions of interaction and coordination, four ideal types of virtual organisation are identified, all illustrating a shift from bureaucratic structure towards network structure—a shift made possible by the introduction of new information and communications technologies. Furthermore, this shift may also be seen as a transformation from a transactional perspective represented by neoclassical economics based on external coordination towards a more integrative perspective, where networks become institutionalised and where coordination takes place internally within the virtual organisation.

INTRODUCTION

It is the aim of this chapter to make a conceptual contribution to the field of virtual organisation by drawing on complexity theory. A further purpose is to investigate whether complexity theory can be an aid in explaining the rising turbulence caused by information technology in the business community, and finally to give indications as to a framework of different ideal types of virtual organisation.

The difficulty in using complexity theory is that it is a new, all-encompassing, but not-very-well-developed theory. However, modest attempts have been made to apply complexity theory to economics. This has mainly been done by way of explaining stable macro structures with chaotic microelements. This is possible because complexity denotes order resulting from the interactions of many heterogeneous objects. As an example, an organisation may be stable even though it consists
of many heterogeneous individuals, each with their own ambitions and goals. Likewise with a market, even though it consists of a number of heterogeneous firms and customers all interacting, coordinating, cooperating or competing, the market as such may be said to constitute a stable structure or a recognisable pattern. When this recognisable pattern is found at another—higher—level of description than the interaction of the heterogeneous objects, the pattern is often said to hold emergent properties.\(^2\) Hodgson (1993, pp. 246-248) speaks of complex hierarchical systems where each level has emergent properties, meaning that a higher level of analysis cannot be explained only by knowledge of the components or interaction among these, of an underlying level. As such market behaviour cannot be explained solely by firm behaviour and firm behaviour cannot be explained only in terms of its smaller parts. A consequence is that explanations based on extreme reductionism or methodological individualism\(^3\) must to some degree be questioned, depending on the level of turbulence at the higher degree. This implies that the more turbulent the higher level of description, the less accurate it will be to use methodological individualism as a method for analysing economic phenomena.

**FROM ORGANISATION TOWARDS VIRTUAL ORGANISATION**

The accelerated speed of development induced by information and communication technologies (ICT) causes firms and markets of today to change, not only in a quantitative or qualitative way, but in a way where the conception or meaning of the terms themselves are under transformation. The evolution of technological progress implies constraint removal and upgrade (Hirschhorn, 1984), that is, the introduction of new technology, here ICT, removes the constraints for what is possible. If firms and markets are seen as clusters of activity (Normann and Ramirez, 1994) then, due to ICT, these activity clusters will be broken up; they become unbundled because a different logic of how value is created is at play. This logic, that is a consequence of ICT, includes lowered cost of coordination, which eventually results in a more coordination-intensive business and market structure. Furthermore, increased interaction between people both within the single firm and across company boundaries may be anticipated, resulting in distinctive patterns of organisation and self-reinforcement (these points will be elaborated below). Eventually, new ways of rebundling activity clusters and hence creating new organisational forms such as the virtual organisation may be the result of more interaction and increased coordination. The concept of the virtual organisation should therefore be seen as a working construct that attempts to conceptualise an amalgamation of the firm and the market into an activity cluster.

The virtual organisation is furthermore seen as an emergent structure created by the dialectic tension between parts and the whole. The parts may be firms, departments within firms, groups, individuals, etc., and the whole constitutes the virtual organisation as an entity. Thus, the virtual organisation is an emergent structure that is created or constructed by the interaction between the two levels that the parts and the whole constitute. The parts influence the whole and the whole influences the parts. Therefore, the virtual organisation is never fully developed—it is always in the process of being created. A consequence is that the parts cannot
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