

A virtual integration—The management control system in a multinational enterprise

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Abstract

This paper draws on actor-network-theory, especially Law and Hassard [Law, J., Hassard, J. (Eds.), 1999. Actor Network Theory and After. Blackwell, Malden, MA] and Latour [Latour, B., 2005. Reassembling the Social. An Introduction to the Actor-Network-Theory. Oxford University Press, Oxford] to investigate how a division-wide management control system was created in a multinational enterprise. The empirical findings were gathered from different actors involved in the implementation of enterprise's ABC and ERP projects. Our study focuses on the ontological politics [Mol, A.-M., 1999. Ontological politics. A word and some questions. In: Law, J., Hassard, J. (Eds.), Actor Network Theory and After. Blackwell, Malden, MA, pp. 74–89] required for the creation of a new management control reality, and also on the interaction between objects and subjects with potential for creating new agencies [Latour, B., 1999. On recalling ANT. In: Law, J., Hassard, J. (Eds.), Actor Network Theory and After. Blackwell, Malden, MA, pp. 14–25; Latour, B., 2005. Reassembling the Social. An introduction to the Actor-Network-Theory. Oxford University Press, Oxford]. In our case unit (one division of the enterprise), the new agency was labelled 'virtual integration', its purpose being to enable a new vision of the profitability of the division's production chain. Our results highlight the unstable and complex nature of such systems, which no doubt impedes their use. We contribute to the understanding of such systems, with a special emphasis on the use of metaphors in the political process that accounting information systems must pass through in order to become established as an enterprise-wide management tool.

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1. Introduction

“The virtual corporation began as a vision of futurists, became a possibility for business theorists, and is now an economic necessity for corporate executives. All of this has occurred in little more than a decade.” (Davidov and Malone, 1992, p. 5)

Since the textbook ‘The Virtual Corporation’ by Davidov and Malone (1992), researchers have discussed the possibilities of electronic markets and value chains on the information superhighway (Benjamin and Wigand, 1995) and the role of ICT in organisation design (Lucas and Baroudi, 1994). In general, virtual organisation may be understood as a new kind of organisation structure or a novel visualisation in order to manage operations, in which ICT plays a

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E-mail addresses: timo.hyvonen@uta.fi (T. Hyvönen), janne.jarvinen@oulu.fi (J. Järvinen), jukka.pellinen@econ.jyu.fi (J. Pellinen).

major role (Bloomfield and Vurdubakis, 1997; Clarke and Clegg, 2000; Quattrone and Hopper, 2001b; Chapman and Chua, 2003). According to Hunton (2002, p. 56), “the blending of ICT and business process integration manifests itself in enterprise resource planning (ERP) systems, which serve as the foundation for linking multiple, related business entities into integrated supply chains”. The process of integrating independent business entities implies that management control must also be centralized.

Today, the centralized control of large organisations requires ICT systems that make the periphery visible to the centre. In practice, large networks employing different ICT systems are constructed that collect data from local-level units and transfer it to headquarters to be analysed. This data collection process involves many tradeoffs and choices between various alternatives, with the result that only part of the information becomes management ‘facts’ while the rest of the information remains unseen by the top management. The differences in the information requirements of local levels and the headquarters have the potential to create ‘trading zones’ and local-level customized information systems (Dechow and Mouritsen, 2005; Quattrone and Hopper, 2006). From an ICT perspective, this kind of system can be criticised for its complexity. ERPs can function as a data collection device, but they also exhibit complexity, which is evident from the numerous links to other information systems, updates of versions, data collection problems, the need for checkups, arranging information storage, etc. In practice it seems that for management control purposes the ERPs have to be supplemented with other information systems such as Excel, ABC software packages, BSC software packages, report generators, etc. (Quattrone and Hopper, 2006; Hyvönen et al., 2006; Granlund, 2007).

When investigating the role of such information systems as a part of management control, the object of research becomes a *messy object* in the sense of Law and Singleton (2005). In such cases, the unique and difficult-to-predict situation in which the system is constructed becomes very important for the creation of the object (Quattrone and Hopper, 2001a; Dechow and Mouritsen, 2005; Andon et al., 2007). Due to the messy and complex nature of large organisation’s management control systems, it may be difficult to define the research object’s boundaries exactly (Quattrone and Hopper, 2001a; Andon et al., 2007; Hyvönen et al., 2006). Because they are also decentralized geographically and are abstract in nature, the systems are always partially invisible to a single observer. Hence representing and visualizing systems becomes so important (Bloomfield and Vurdubakis, 1997; Quattrone and Hopper, 2001b).

By creating various representations the messy object can be described *in terms of another*, with no need for the object itself being present (Latour, 1987). This allows the creation of relevant facts out of complex and abstract issues, so that actors who participate in the process can understand and utilize them, i.e. making complex issues manageable (Cooper, 1992, p. 255). As ICT objects are represented in various social frames, they can create different meanings and visions of the organisation (Bloomfield and Vurdubakis, 1997). The prerequisite of such rational organisation of various meanings is the actors’ willingness to (re)cognize and (re)create their world and their work in terms of such constructs (Bloomfield and Coombs, 1992).

The study of centralized control mechanisms has evoked strong theoretical concepts (cf. Schulze and Orlikowski, 2001; Lodh and Gaffikin, 2003) such as *panopticon*, a means of centralized totalitarian control where the objects of control will eventually end up controlling themselves (Foucault, 1977; Miller and O’Leary, 1987). However, we argue that in practice management accounting controls systems can only achieve a partial visibility, and partial forms of control. Such control systems can be called *oligopticon* (Latour, 2005), which is a general term for locations that can be named, but that work contrary to panopticon:

‘they see much too little to feed the megalomania of the inspector or the paranoia of the inspected, but what they see, they see it well [. . .] From oligoptica, sturdy but extremely narrow views of the (connected) whole are made possible – as long as connections hold.’ (Latour, 2005, p. 181)

Such oligoptica are susceptible to errors—a small disturbance can blur vision entirely. Often, but not always, the controlling centres can be distinguished by their physical links to the objects observed. Even if the centre is immaterial, its maintenance requires action to be taken and various tools to be used. The object of our research is the development of such oligoptica in a European division of a multinational paper manufacturing enterprise. In technical terms, it is an ABC software application that collects data from the ERP system (via transfers in Excel) implemented in 11 factories all over Europe. This information is then used as a basis of various financial analyses in company headquarters in Helsinki. In management control terms, the ICT solution seeks to create a new centralized form of control, which allows the headquarters to see the financial situation of the factories better, and to create new facts for use in strategic decision-making. The findings of our study illustrate what is required for such accounting information technology (AIT) systems to function, and what limitations they have in management control. By so doing, we seek to increase the

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