

Chapter 15

Using Actor–Network Theory to Facilitate a Superior Understanding of Knowledge Creation and Knowledge Transfer

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ABSTRACT

Given today's dynamic business environment it becomes essential for organisations to maximise their intellectual assets in order to ensure that they are able to support flexible operations and sustain their competitive advantage. Central to this is the ability to extract germane knowledge to enable rapid and effective decision making. At present, knowledge creation techniques tend to focus on either human or technology aspects of organisational development and less often on process-centric aspects of knowledge generation. However, to truly understand knowledge creation and transfer, thereby enabling an organisation to be better positioned to leverage the full potential of its intellectual capital, it is important to view knowledge creation and all socio-technical organisational operations that result in knowledge generation through a richer lens. Actor-network Theory is proffered in this article as such a lens.

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INTRODUCTION

Knowledge is now considered to be central to organisational performance, and integral to the realisation of a sustainable competitive advantage (Bali et al., 2009; Wickramasinghe & von Lubitz, 2007; Davenport & Grover, 2001; Drucker, 1993). The rapidly evolving field of knowledge management (KM) provides various tools and techniques necessary for the enhancement of the efficiency of core business processes, the support of continuous innovation and the facilitating of rapid decision making in dynamic and complex environments; all being essential ingredients of a sustainable competitive advantage.

A central issue within KM concerns the way knowledge is created and transferred. Since this naturally has a very important bearing on all subsequent steps of the KM process it should come as no surprise that a significant amount of attention has been devoted to the manner in which knowledge is generated (Bali et al., 2009; Davenport & Grover, 2001; Drucker, 1993; Malhotra, 2000; Wickramasinghe, 2003; 2006; Markus, 2001; Alavi & Leidner, 2001). Within the KM literature many different conceptual frameworks exist for explaining knowledge creation. To date however, these frameworks tend to view knowledge creation from one of two perspectives; either a people-oriented perspective (Bali et al., 2009; Wickramasinghe, 2003, 2006; Polyani, 1958, 1966; Nonaka & Nishiguch, 1994; Nonaka, 1994; Newell et al., 2002; Schultz & Leidner, 2002), or a technology-based perspective (Bali et al., 2009; Adriaans & Zanninge, 1996; Cabena et al., 1998; Bendoly, 2003; Fayyad et al., 1996; Holsapple & Joshi, 2002; Choi & Lee, 2003; Chung & Gray, 1996; Becerra-Fernandez & Sabherwal, 2001). More recently, we can see the appearance of a third process-centric perspective (Bali et al., 2009; von Lubitz & Wickramasinghe, 2006; Wickramasinghe & von Lubitz, 2007). Recognising the limitation of taking a narrow perspective to knowledge creation many have advocated the

need for a new holistic approach (von Lubitz & Wickramasinghe, 2006; Wickramasinghe, 2006; Bali et al., 2009) in order to provide a more flexible instrument for interaction with the increased dynamics of the business environment. We contend that in order to enable such a perspective a rich framework is required in which a wide lens can be used to identify knowledge created through various socio-technical organisational operations. In this article we propose that Actor-network Theory (ANT) provides such a suitable lens since it enables the analysis of all the socio-technical operations of an organisation in one inter-connected network which combines actants; including both technology and people and their interactions.

KNOWLEDGE CREATION

Succinctly, knowledge management (KM) involves four key steps of creating/generating knowledge, storing knowledge, using/re-using and dissemination of knowledge throughout the organisation (Bali et al., 2009; Davenport & Grover, 2001; Drucker, 1993; Malhotra, 2000; Wickramasinghe, 2003; Markus, 2001; Alavi & Leidner, 2001; Holsapple & Joshi, 2002; Becerra-Fernandez & Sabherwal, 2001). Given that knowledge creation is the first step, it is important that the quality of inputs is high and that the knowledge generated is germane since this impacts the consequent steps and thereby will also determine the quality of the output (Wickramasinghe, 2006; Bali et al., 2009).

To date the domain of knowledge creation has been dominated by two main streams of thought. We classify one of these as people-centric as it has its roots in behavioural theories, and the other as technology-centric as it is strongly rooted in its computer science ancestry. Furthermore, knowledge itself has also been viewed from various philosophical perspectives; Burrell and Morgan's (Schultze & Leidner, 2001) well-established framework of objective and subjective characterisations or a more recent approach elaborated

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