Chapter 127
Practice-Based Knowledge Integration

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Category: Processes of Knowledge Management

INTRODUCTION

For organisations, the tension between integration and specialisation has become a key issue as the knowledge of work is becoming increasingly fragmented through specialisation (Becker, 2002; Grant, 1996; Kogut & Zander, 1992). Specialisation, as knowing more about less, distributes the overall accomplishment of work on several entities (Aanestad, Mørk, Grisot, Hanseth, & Syvertsen, 2003; Becker; Berg, 1997; Hutchins, 1995) with the consequent need for the integration of different competencies and types of expertise. Becker (p. 3) provides the following definition of knowledge integration:

By knowledge integration we mean solving problems raised by specialisation: Specialisation leads to a dispersion of specialised bodies of knowledge that are held by different specialists...Knowledge integration refers to how this drawing on different bodies of specialised knowledge is organised.

DOI: 10.4018/978-1-59904-931-1.ch127

The capability of relying upon specialisation and the ability to integrate specialised knowledge have been identified as critical factors in the competitiveness of an organisation (Grant, 1996; Kogut & Zander, 1992). Because of this, integration has become a theme for numerous research efforts.

A first line of research looks at knowledge integration as the transferring of knowledge to where it is supposed to be used (Berends, Debackere, Garud, & Weggeman, 2004). By transferring knowledge to someone who is able to use it and combine it with his or her own work practice, knowledge is integrated. If we are able to capture and model the content of knowledge, we can disseminate it and make it usable across contexts. As an integration mechanism, transfer is problematic because "it is costly and counters the necessary specialisation of organisation members" (Berends et al., p. 4). Moreover, the notion of knowledge as something that can be externalised and combined is problematic in itself (Blackler, 1995; Walsham 2001, 2004).

Current discourse on knowledge is filled with ambiguities and varying conceptualisations (see, e.g., Alvesson, 2001; Blackler; Boland & Tenkasi, 1995; Carlsen, Klev, & von Krogh, 2004; Cook

& Brown, 1999; Davenport & Prusak, 1998; Fitzpatrick, 2003; Gherardi, 2000; Walsham, 2001), and a detailed discussion of this issue is beyond the scope of this article. For this article, we will recall that the underlying tenet grounding most of the existing views is a distinction between explicit and tacit knowledge. Explicit knowledge refers to knowledge that is movable and easy to convey, while tacit knowledge is intimately connected to our identity and is thus hard to formalize (Polanyi, 1966). Nonaka and Takeuchi (1995, p. 61) claim that the conversion between tacit and explicit knowledge is "a 'social' process between individuals and not confined within an individual." While popular, their view on tacit knowledge as something to be externalised and combined has been criticized (see, e.g., Blackler, 1995; Walsham 2001, 2004). As human interaction is always mediated by representations, our experiences and the way we perceive the world can never be replicated perfectly. Hence, Walsham (2001) argues that the knowledge-management discourse in general, and knowledge-management systems in particular, should pay closer attention to the contextual sides of knowledge.

This different understanding of knowledge leads to a second line of research on knowledge integration: one that is first and foremost paying attention to the relational and situated nature of knowledge (Brown & Duguid, 1991; Lave & Wenger, 1991; Suchman, 1987). Rather than trying to single out the knowledge entities and how they could merge, the focus is on understanding how knowledge is deeply embedded in situated practices and closely connected to people's ability to act (see, e.g., Carlsen et al., 2004; Cook & Brown, 1999). In this article, we discuss research in this direction. In particular, we elaborate on the practice-based perspective on knowledge integration to understand better the role of artefacts. In our opinion, it is not enough to look at the practice in terms of human interaction; we also need to look at the overall system where integration takes place. Our perspective is illustrated with an example from the health care domain. We will look in particular at the patient list, an A4 format template created by nurses to support their everyday activities and used in different settings in the hospital ward. We illustrate how the patient list serves various functions within the ward and how it, along with other actors, helps the integration of different aspects of work. For the ongoing efforts of introducing information technology in health care, understanding the implicit roles of existing material arrangements is essential as it helps us identify how technology might be better designed.

The article is organised as follows. In the next section we discuss research on knowledge integration and the relevance of adopting a practice-based perspective, paying attention to the artefacts used within practices. The section after introduces health care as a relevant domain to study integration and presents a concrete example on how the patient list integrates different aspects of work. The last section sums up the contribution of this article.

KNOWLEDGE INTEGRATION

While the literature abounds in diverse classifications on how to coordinate the efforts of specialists (see, e.g., Becker, 2002; Berends et al., 2004; Ditillo, 2002; Willem & Scarbrough, 2002), we remain at their common reference point: the work of Grant (1996). Grant identifies four different organising mechanisms for integrating knowledge: (a) rules and directives, (b) sequencing, (c) routines, and (d) group problem solving. Rules and directives are standards that regulate interaction between workers (e.g., policies and rules). These standards or artefacts can be said to accumulate knowledge. In health care, for example, the transition from paper-based to electronic health records (EPR) has imposed new rules and directives on how to handle EPRs (e.g., security and privacy).