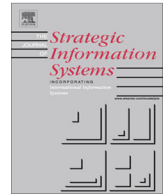


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# A strategic activity model of Enterprise System implementation and use: Scaffolding fluidity

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## ABSTRACT

This paper builds on a Strategic Activity Framework (Jarzabkowski, 2005) and activity based theories of development (Vygotsky, 1978) to model how Enterprise Systems are used to support emerging strategy. It makes three contributions. Firstly, it links fluidity and extensiveness of system use to patterns of strategising. Fluidity – the ability to change system use as needs change – is supported by interactive strategising, where top managers communicate directly with the organisation. Extensiveness requires procedural strategising, embedding system use in structures and routines. Secondly, it relates interactive and procedural strategising to the importance of the system – procedural strategising is more likely to occur if the system is strategically important. Thirdly, using a scaffolding metaphor it identifies patterns in the activities of top managers and Enterprise System custodians, who identify process champions within the organisational community, orient them towards system goals, provide guided support, and encourage fluidity through pacing implementation with learning.

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## 1. Introduction

This paper uses a Strategy as Practice lens (Whittington, 1996; Jarzabkowski, 2005) supplemented by activity based theories of development (Vygotsky, 1978) to examine how leadership teams and Enterprise System custodians guide an organisational community into using its Enterprise Systems to support strategic goals. The strategic role that Enterprise Systems play in organisations is complex. Such systems, which integrate key business processes within and between organisations, offer opportunities for better integrated data, optimised processes, and better access to management information (Seddon et al., 2010). Organisations differ, however, in their ability to make use of such systems, for several reasons.

Firstly, the potential benefits of Enterprise Systems are not always directly related to an organisation's strategy. Organisations may have business models based on highly tailored, flexible processes that would not benefit from standardisation, for example (Davenport, 1998; Davenport et al., 2004). They may also have multiple strategies (Jarzabkowski, 2005), each impacted differently, if at all, by Enterprise Systems. The differences in strategic benefits that organisations can obtain from such systems is reflected in a wide variety of business cases for them (Markus and Tanis, 2000; Robey et al., 2002). This complexity in the relationship between potential benefits and organisational strategies leads to the first research question:-

*How are Enterprise System practices related to the multiple strategies of the organisation?*

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Secondly, strategies are dynamic and emergent (Mintzberg and Waters, 1985; Brown and Eisenhardt, 1998) and Enterprise Systems must therefore support changing needs (Lee and Myers, 2004). This does not always happen: implementation and use of Enterprise Systems consists of several phases, and activities in earlier phases can limit further opportunities. (Markus and Tanis, 2000; Dechow and Mouritsen, 2005). Systems can be: “like cement... highly flexible in the beginning, but rigid later” (Davenport, 2000, p. 16). Preventing this rigidity requires an involved, knowledgeable organisational community: one that learns. (Robey et al., 2002; Srivardhana and Pawlowski, 2007).

Such learning requires motivation and time. The activities of the top management team in continuing to motivate the organisational community are important in this regard (Davenport, 1998). So, too, are the activities of the custodians of the Enterprise System – the team responsible for its use within the broader community (Volkoff et al., 2004; Srivardhana and Pawlowski, 2007). The second research question explored in this paper, therefore, is:-

*How do the activities of the Top Management Team and Enterprise System custodians guide the organisational community with regard to evolving Enterprise System practices?*

This paper extends previous research in three ways. Its first contribution is to link patterns of strategising by top managers during each phase of an implementation with the fluidity and extensiveness of system use. Fluidity requires motivating individuals to learn to use the system knowledgeably – to understand its process and data implications. High levels of interactions between top managers and members of the organisational community can motivate such learning. Extensive system use is encouraged by procedural activity by top managers, embedding system use in roles, routines and structures. Integrating interactive and procedural strategising – integrative strategising – can help ensure both fluidity and extensive use.

The second contribution is to explore the relationship between an organisation's strategies and its Enterprise Systems. There is broad variation in this relationship – some strategies are directly impacted by the systems, others tangentially, or not at all. Top managers are more likely to use integrative strategising where the system is seen as critical to strategic need.

The third contribution is to identify the practices of top managers and Enterprise System custodians in supporting organisational learning. These can be described using a modified scaffolding metaphor (Wood et al., 1976; Wood, 1988; Stone, 1998) based in activity theory (Vygotsky, 1978). Four main scaffolding practices are identified: recruitment within the organisational community, goal orientation, provision of guided support, and encouragement of fluidity. Mechanisms used as part of these scaffolding practices include the provision of governance structures and processes, identification of and support for Enterprise System ‘champions’, culture change initiatives, establishing principles of engagement, demonstrating the benefits of using the system, linking the system to broader organisational goals, and prioritisation and pacing to facilitate informed system use.

This paper contributes to improved practice in Enterprise Systems use. Investment in Enterprise Systems is very large, of the order of tens of billions of (US) dollars worldwide (Seddon et al., 2010). There has been a large number of failed, compromised and incomplete Enterprise System implementations across a wide range of industries (Scott and Vessey, 2000; Davenport et al., 2004), including the University sector which forms the basis of the research in this paper (Sillince and Mouakket, 1998; Baumber and Mullarvey, 2000; Auditor's Report, 2003).

## 2. Literature review

The literature review is in three sections. Previous literature on Enterprise Systems and strategy is discussed, and the need for a practice approach endorsed. This is followed by a review of the Strategy as Practice literature, and a review of activity based theories of development.

### 2.1. Enterprise Systems and their strategic role

Enterprise Systems are integrated solutions that support key business processes within and between organisations (Seddon et al., 2010). Such systems include Finance, Human Resources, Supply Chain, Sales and Marketing, Management Reporting and Metrics, Planning and Analysis, Performance Management, Product Development, and Customer Relationship Management (Davenport et al., 2004). They also support the core activities of specialist sectors, such as medical records and patient administration in the health care sector, and student records and administration in education.

Variance, process and actor models have been developed which shed light on the relationship between Enterprise Systems and their strategic role. Variance models identify the outcomes from Enterprise Systems implementations, and link these to antecedent conditions. Process models seek to explain emergent change. Models based on agency specifically explore human and technical agents, and the way they interact. Table 1 summarises these models which are now discussed further.

### 2.2. Variance models

Variance models have identified three potential strategic benefits from Enterprise Systems: improved integration of data; optimisation and standardisation of processes; and accessibility to management information. In the long term, these

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