



Working in the shadows: Understanding ERP usage as complex responsive processes of conversations in the daily practices of a Special Operations Force

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Summary In this paper we explore how ERP systems are used and impact local practice in a specialized unit within The Danish Defense. We draw on Stacey's theory of complex responsive processes to inspire our observations of how ERP systems are used and impact local practice specifically focusing on what role conversations about the system plays in enabling and constraining everyday local practice and the handling of complexity and uncertainty at the organizational front-line. Our findings suggest that the use of ERP does lead to an increased awareness of control, but that this awareness emerges in unintended and creative ways through different communicative patterns. Furthermore our findings suggest that implementing ERP systems may lead to unlearning the ability of trusting professional intuition.

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Introduction

Organizations are met with increasing demands for being in strategic control. According to conventional managerial wisdom, clearly defined tasks, uniform processes, thorough documentation and strategic oversight are all perceived as part and parcel of making large and unwieldy organizations manageable, transparent and efficient (Johnson, Scholes, & Whittington, 2008; Kaplan & Norton, 2008). To live up to these demands, numerous efforts have been undertaken, including the design and implementation of management information systems. These systems, as epitomized in Enterprise Resource Planning (ERP) systems, seek to bring the organization under strategic control by creating a unified

infrastructure for collecting and analyzing data from virtually all fields of organizational operations to enable planning and monitoring of activities (Kallinikos, 2006). Expectations of these systems at all levels of the organization are high as they are expected to create organizational transparency and oversight for decision making (Hanseth, Ciborra, & Braa, 2001). In this paper, we explore how ERP systems are used and impact local practice in a specialized unit within The Danish Defense. Specifically, we ask what role SAP R/3¹ plays in enabling and constraining everyday local practice and the handling of

¹ SAP R/3 is the product name of an ERP system developed by the company SAP, originally called *Systemanalyse und Programmentwicklung*. The name R/3 comes from two characteristic features of the system, namely a three-tiered infrastructure (hence the "3") and its real-time functioning (hence the "R"). Numerous variants of the system have been created which adapt to different organizations.

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complexity and uncertainty at the organizational front-line. We draw on a case study conducted in a Special Operations Force unit within the Danish Defense, "The Frogman Corps". The case illuminates the difficulties of using ERP systems for management control in organizations experiencing complex operational conditions, including tension between centralized control and uniformity on the one hand and unpredictability and need for de-centralized decision making on the other hand.

It is generally agreed that implementing and using ERP systems is a complex affair involving technical, organizational and social aspects (Boudreau & Robey, 2005; Elbanna, 2007; Krumbholz, Galliers, Coulianos, & Maiden, 2000; Vogt, 2000). Furthermore previous research has shown ERP systems to have numerous side-effects (Chae & Lanzara, 2006). Academics as well as practitioners have blamed ERP for obstructing creativity and flexibility (Trott & Hoecht, 2004), causing information overload (Kallinikos, 2009) and reducing managers to the sum of their tools (Cadili & Whitley, 2005; Kallinikos, 2009; Tangkjær, 2005). It has also been suggested that the systems do not make the organization more controllable, but rather give the illusion of control while in fact increasing complexity and obscuring local risk handling (Hanseth et al., 2001). Critical research on ERP systems has highlighted the de-coupling between the organizational front-line and the strategic back-office. This de-coupling has been shown to manifest itself in challenges to professional and organizational identity (Skærbæk & Thorbjørnsen, 2007) and unpredictable re-organizations of work patterns (Scapens & Jazayeri, 2003). Despite all these valuable insights on the organizational consequences of using ERP systems, little is still known about what causes this de-coupling and how it is related to the everyday practice and conversations about the system.

We draw on Ralph Stacey's theory of complex responsive processes to inspire our empirical observations (Stacey, 2007, 2010) and provide a lens for understanding and challenging patterns of everyday practice. We pursue the research question: *How do ERP systems shape and get shaped by managers' everyday conversations about organizational control?*

The theory of complex responsive processes helps us to address the micro details of the local interactions in which people use systems tools of information and control. It focuses attention on how people's ongoing conversations around a system's use, as well as their use of the system, give the system meaning. The theory thereby defocuses attention on the tool itself and has primarily been empirically explored using narrative and reflexive approaches (e.g. Shaw & Stacey, 2006; Stacey & Griffin, 2005). Although the theory enables a perspective on complexity as a fundamental attribute of organizational life that must be handled in the everyday work practice, it is largely unused in IS studies. Understandings of complexity have been employed in IS studies (e.g. Kim & Kaplan, 2006) and organizational studies more broadly (Crevani, Lindgren, & Packendorff, 2010; Stacey, 2010), but Stacey's thinking on how conversational practices maintain and develop organizational action in complex and inherently unpredictable conditions has yet to be explored empirically within IS studies as it has been in studies of for example leadership in healthcare (Davidson, 2010) and public sector strategic change processes (McMillan & Carlisle, 2007).

Applying this novel theoretical framework and understanding IS use in terms of its micro detail makes it possible to offer alternative interpretations of empirical patterns of a range of current issues in IS. First, in IS research there is a tendency to understand work-arounds and local adaptations of systems as an expression of resistance (Doolin, 2004; Ferneley & Sobreperez, 2006; Lapointe & Rivard, 2005). Thus, they are either seen as failures and an argument for not engaging with IS in general or as a form of resistance to change to be either overcome or praised (Thomas & Hardy, 2011). Instead, our findings show that sidestepping of IS in the form of locally developed add-ons to the system may be a way that employees actively seek to make use of the system. This suggests that the application of a micro-level view of the use of systems in practice provides new, more nuanced understandings of front-line employees' intentions of sidestepping and locally adapting the systems (e.g. Dechow & Mouritsen, 2005; Hanseth & Lundberg, 2001; Maccarrone, 2000; Rom & Rohde, 2007). Second, our study challenges the conventional understanding of control and practice as a strict dichotomy (see e.g. Davenport, 1998; Kallinikos, 2009; Poston & Grabski, 2001). Rather, we find that in the micro level interactions, control and practice are inseparably interwoven in one process as part of the conversational life of the organization. Third, while earlier research has argued that IS increases the complexity of managing organizations (Ciborra, 2006; Hanseth & Braa, 2001), we find that in conversational practice it is less a question of increased complexity than it is of the systems delegitimizing the existing practices of coping and living with uncertainty and unpredictability, thus bringing about an undesired unlearning of flexibility and intuition.

The paper is structured as follows. First, we present a review of previous studies of the use of ERP systems in organizations in order to position our study. Then, we provide a brief description of Ralph Stacey's theory of complex responsive processes and explain how we use the theory to explore the empirical observations. This is followed by a presentation of the research setting and the methodology used in the case study. We then present and analyze the empirical findings before discussing them in relation to earlier empirical research. Finally, we conclude with the theoretical and practical contributions of the study.

Organizational implications of using and implementing ERP

To create an overview of the extensive literature addressing the organizational challenges of implementing ERP systems, we conducted a literature review following a concept-centric approach (Webster & Watson, 2002). This was done to categorize the diverse body of literature dealing broadly with social and organizational issues of implementing and using ERP in general and SAP R/3 in particular, as this was the system used in the empirical case.

In the following we present four themes that emerged from our reading of the literature: "Standardizing contextualized practice", "Restructuring control, increasing uncertainty", "Complications of usage", and "Changing decision making".

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