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Abstract

This paper details the early phases of ongoing research in the context of a business process redesign initiative in an ERP implementation at a mid-sized research university in the United States. This university has adopted the ERP technology in most areas of the administrative system. However, initial assessments of the implementation have determined that, while the technical aspects of the implementation have been largely successful, the university has generally failed to take advantage of the system capabilities in changing 'silo' processes to 'enterprise' processes. In response, the administration has formed a specific enterprise process improvement initiative to coincide with an impending major ERP version upgrade. The researcher employs an interpretive case study methodology to document how the university tries to develop a culture of 'enterprise thinking' to align the organization with the ERP. The study focuses on the activities of a newly-formed team of process improvement managers. Perspectives from symbolic interactionism emphasizing the influence of self and reference groups in human actions provide theoretical guidance in examining the cultural dynamics of this study of IT-based organizational change.

Keywords: ERP; BPR; social identity; case study; symbolic interactionism

Introduction

Enterprise resource planning (ERP) systems are an increasingly popular class of packaged software designed to integrate organizational computing infrastructures across multiple functional units of an organization. I*ntegration* is, in fact, a term frequently associated with the benefits of ERP systems (Kumar & van Hillegersberg, 2000). However it is important to note that there is both a technical and an organizational dimension to the notion of integration. I use the term *technical integration* in this research to refer to the capabilities of ERP systems to create a seamless and transparent interoperability among the potentially disparate systems and data within an organization. It is perhaps the meaning most prevalent in use for integration. The historical beginnings of ERP technology can be traced to efforts in the late 1960s to bring together "islands of mechanization" – i.e., the often incompatible, stand-alone systems of individual functional units of the organization (Blumenthal, 1969). I use the term *organizational integration* to refer to the purported capabilities of ERP to facilitate the redesign of the business processes of an organization in a way that emphasizes enterprise, versus local ("silo"), models of process (Davenport, 2000). Implicit in this latter aspect of integration, also, is the notion of *social integration*, since the ways that people work are inextricably bound with the social milieu that develops around such work.

In a broad sense, the research documented in this paper is concerned with system implementation; specifically, ERP implementation. I represent information system *implementation* in terms of efforts to bring about a convergence between the technical and organizational processes described above. This conforms to the broader, less technically defined interpretation of Sarker (2000) who states that [implementation is] "all that must be done by a specific organization for it to be able to harness the capabilities of a particular information technology as envisioned" (p. 195). Success in implementation requires that the technical

and organizational processes be developed in a mutually adaptive manner with the goal of a hypothetical *alignment* between the two (Leonard-Barton, 1988).

The more specific focus of the study is on the processes of business process redesign in an ERP context. The "crisis" of Y2K emphasized the capabilities of ERP in providing technical integration in organizational computing systems. However, in the longer term, it is in the potential of ERP to transform models of business through an integration of business processes across organizations that will be the ultimate measure of the success of the technology (Davenport, 2000). Despite the continuing popularity of ERP technologies, there is evidence that the anticipated benefits in business process change are often not realized in post-implementation use (Smith, 1999). Prior research has emphasized the importance of business process reengineering (BPR) as a key to the success of enterprise projects (e.g.,Sumner, 2000). This implies a need for aggressive business process improvement initiatives during system implementation. However, evidence suggests that such initiatives often take a backseat to the ongoing technical exigencies of the exceedingly complex ERP technology (Sawyer & Southwick, 1997).

In this paper I report on a case study examining an ERP-based business process redesign initiative at a mid-sized research university in the United States. Initial phases of the study focus on a single case where assessments of the ERP project have revealed that, despite a largely successful technical implementation, functional units within the organization have failed to adapt business processes in a way that optimizes the ERP technology. Quite simply, the implementation has adopted the technology of the ERP, but not the promised improvements in business operations. In response to this finding, and in anticipation of an upcoming major revision to the ERP software, the university administration has formed a new department within the administrative structure to work with individual functional units of the organization to evaluate and improve processes vis-à-vis the respective ERP modules. The study uses the core team of process analysts (PAs) within this Enterprise Process Improvement (EPI) department as a primary lens for data elicitation and analysis.

I view this as a unique opportunity to explore the strategies used and the problems encountered in implementing enterprise processes within an organization. My conceptual orientation in this regard is essentially *cultural*. That is, I view the task of enterprise process redesign to be concerned with the integration of shared meanings (Geertz, 1973) among individuals and groups toward a common understanding of reality. The genesis of this culture takes place through the more explicit tasks associated with process redesign: e.g., building process maps, identifying workflows, evaluating return on investment (ROI) metrics, etc. The underlying symbolic expression of this culture in the context of the ERP-based process improvement project is captured in a term coined by university administrators: *enterprise thinking*. That is, a central goal or vision of the administration is in changing the way individuals and groups within the organization perceive business processes; from functional to enterprise thinking in planning and execution.

The study is motivated by the following primary research questions.

- *How do organizational managers overcome the organizational obstacles to implementing enterprise processes in an ERP implementation?*

- *What is meant by the notion of "enterprise thinking"?*

- *How do the identities of the ERP process redesign team change over time?*

Conceptualizing the Problem/Approach

Alvarez (2002) has interpreted a similar situation (a university ERP) as a discursive process of *myth-making*, terming the disconnect between the anticipated outcomes of the ERP implementation and the actual outcomes a "myth of integration." Her rationale is based on a view that ERP carries with it a mythology about what it can do for an organization. This myth becomes a driver of the implementation process as it filters through the organization in social interactions. A prominent example of this myth is the widespread belief that ERP serves as a kind of *processware* through its ability to impose b*est practice* functionality on business operations (Davenport, 2000). This, of course, ignores the lessons of history repeatedly demonstrated in the field of information systems (IS). Success in information system implementation necessitates an accounting of the complex web of social and cultural influences as well as the technological (Kling & Scacchi, 1982). Alvarez' paper suggests that the mythology accompanying ERP may conflict with the reality of the university culture, resulting in a failure to achieve anticipated process improvements. Allen and Kern (2001) have taken a similar, but more "critical" perspective on the place of ERP in higher education, seeing it as a clash of managerial and academic ideologies. Alvarez uses the term myth in the sense of something that

is untrue – i.e., it is not true that ERP does what the industry says it does; at least, not without significant changes within the organizations.

While not disputing these views of the phenomenon, I address the issues *within* the level of organization, endeavoring to understand *why* there may be a disparity between the discourse (or myth) and the reality of implementing ERP. I begin with the contextual assumption that both the organization and the ERP project are best conceptualized as a collective of subcultures holding, at once, consensual and conflicting interests (Schein, 1992). My perspective is formed through the further assumption that the reason for inadequate adoption of the ERP technology is that some or many of these subcultures of the organization have failed to *identify with* the process redesign aspects of the ERP implementation. That is, they may have failed to assume the broader *organizational identity* in favor of local identities. Assuming a management perspective on the issue, I view the problem as a challenge in managing an organization-wide *negotiation* (Strauss, Schatzman, Ehrlich, Bucher, & Sabshin, 1963) of consensual and conflicting social identities – i.e., in "unfreezing" (Lewin, 1947) local identities to incorporate the broader perspective (vis-à-vis IT-based process) of enterprise identities. The EPI team is seen as instrumental in this goal, acting as both a participant within, and a facilitator of, this organizational change.

As a theoretic guide for analyzing the phenomena I apply the perspectives of *symbolic interactionism*, following the lines of theory emphasizing the contribution of perceptions of self in social action. In particular, I consider the perspective of the *reference group* (Hyman, 1942) and its use of the identity concept. The reference group perspective underlies a variety of more specific theories of group behavior in social psychology where efforts to explain "inconsistency in behavior as a person moves from one social context to another is accounted for in terms of a change in reference groups" (Shibutani, 1955). The reference group perspective assumes that people have multiple frameworks for social action based on multiple identifications with groups (i.e., reference groups) according to the dynamic contexts of daily life. For instance, a person can be a woman, a mother, a lover, a wife, and an executive. Metaphorically, she can also be a peacemaker, bridge-builder, courier, etc. Each of these identities provides a template for meaning-making and action in social relations with oneself and others.

The methodology of the study is in line with Walsham's (1993) guidelines for the interpretive case study. It follows the contextualist approach (Pettigrew, 1985, 1990) where theory and method and context and process are viewed as tightly integrated. Analysis is linguistic, based on an assumption of the organization as a rhetorical (Cheney, 1991), biographical (Kimberly, 1987) entity. The focus of analysis is directed toward culture, expressed (linguistically) by multiple participants in words, metaphors, and stories of identification with groups and organization.

Discussion — Initial Findings

I propose the following key reasons for applying a symbolic interactionist framework and the social identity perspective in the study. (1) Symbolic interactionism is an important sociological tradition underlying interpretive lines in organizational research. In particular, I cite the influential concepts of "negotiated order" (Strauss et al., 1963) and "occupational communities" (Van Maanen & Barley, 1984). These ideas are reflected in interpretive streams of IS research (see e.g., Barley, 1990; Prasad, 1993). (2) Identity is a central conceptual component in multiple social and psychological theories. As such, it provides a link to theory in theory-building case study research (Eisenhardt, 1989). As a component of the reference group perspective, in particular, it is linked to deductive applications of theory from social psychology. Straub (Straub, Loch, Evaristo, Karahanna, & Srite, 2002), for instance, has suggested the use of social identity theory (SIT) as a more well-specified means for measuring organizational culture. (3) The identity concept offers a "conceptual bridge" between levels of analysis (Ashforth & Mael, 1989). I view this as consistent with the contextualist perspective, where "vertical" dimensions of context are seen as multiple (embedded) and dynamic (Pettigrew, 1985). (4) The identity concept is inherently reflexive, making it a valuable methodological tool for eliciting data, and potentially for linking research to practice.

> "The struggle with recognizing and acknowledging who we are permits and encourages self-criticism and self-knowledge, which can act as a fulcrum around which new patterns of communication can occur. Through these new patterns, altered structures and processes of organizing will emerge; that is, organizational change will occur." (Fiol, Hatch, & Golden-Biddle, 1998, p. 59)

(5) Finally, The social identity perspective is inherently dialectical. To ask who we are is also to reveal who we are not. In terms of groups (and larger group collectives, such as organizations), social identities can be seen as both a basis for cohesiveness (within group) and for conflict (with outgroups). Burke expresses this in terms of "congregation" and "segregation," respectively (Burke, 1973). Citing Van de Ven and Poole's (1995) categories of theoretical primitives, Robey and Boudreau argue for the

value of a *logic of opposition* in examining organizational change processes (Robey & Boudreau, 1999; Robey, Ross, & Boudreau, 2000).

Two aspects of the latter dialectical aspect of identity have emerged in the early phase of the study and will be used as a preliminary framework for further data collection. (1) The first is with the social conflict between ingroup cohesiveness/differentiation and boundary spanning that exists within groups. This has emerged at two levels: among functional units; between the EPI team and functional groups. This latter aspect is of interest to the research and also challenging to the EPI team. An example of this is in efforts to impose more rigorous ROI metrics as part of the process redesign. Certain managers in the university have met this effort with skepticism. "We are a university, not a business!". (2) The second dialectic can be expressed as the conflicting forces of technological and functional expertise. Here, the EPI department, in an effort to establish and differentiate itself within the university community, wishes to emphasize its functional expertise. However the pervasive influence of the ERP implementation on process often forces them to assume a more technical identity, or to be perceived that way by others. This has been expressed in sentiments such as, "This is not what I was hired to do!".

Future plans in the study call for more directed methods for eliciting a baseline of espoused and in-use identities in specific contexts of process redesign. These will be used as reflective cues for the researcher, clients of the EPI team, and the team members themselves to reflect on the problems encountered, and to devise alternative strategies for future ERP-based process redesign activities.

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