

LEVERAGING METHODOLOGICAL PLURALISM IN INTERPRETIVE IS RESEARCH: THE EXAMPLE OF ERP AS A COMPLEX PHENOMENON

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Abstract

Over the years, interpretivism has been gradually gaining ground in Information Systems (IS) research. At the heart of this interpretivist movement is a belief in theoretical and methodological pluralism. In this study, we argue the need for a better leverage of methodological pluralism in interpretive IS research. Specifically, we note that greater research insights may be obtained by considering the complementarity of various strategies of inquiry (such as ethnography, grounded theory, case study and action research) with respect to a specific IS phenomenon. Indeed, we suggest that when complementary strategies of inquiry are purposefully employed in a portfolio of separate studies over time, they may collectively help to shed new light on complex IS phenomena.

A good example of such phenomena is Enterprise Resource Planning (ERP). While ERP implementations in the industry reached their peak in the late 1990s, research in this area is still in a stage of infancy. In this study, we use this ERP phenomenon and the symbolic interactionism theoretical perspective to demonstrate the complementarity of three strategies of inquiry: the “descriptive strengths” of ethnography, the “analytical edge” of grounded theory and the “practical contribution” of participatory action research. Individually, each strategy of inquiry boasts a unique platform from which a certain complex IS phenomenon (such as ERP implementations) can be investigated; when purposefully employed in different studies over time, they may help to collectively and synergistically shed new light on the phenomenon in question. By highlighting the possible leverage of methodological pluralism in such a complementary manner, this study may thus have valuable implications for interpretive IS research.

Keywords: Methodological Pluralism, Symbolic Interaction, Ethnography, Grounded theory, Action Research, Enterprise Resource Planning

1 INTRODUCTION

Much of Information Systems (IS) research conducted over the years has been known to reflect a positivistic orientation (Orlikowski & Baroudi 1991, Walsham 1995). However, despite the dominance of positivism, there are indications that interpretivism is gradually gaining ground. The perspective of interpreting information technology based on social action and meanings is becoming more widespread since there is growing evidence that IS, in terms of development and use, is as much a social process as it is a technical one, invariably including problems related to social and organizational aspects of the system (Lyytinen 1987). Interpretivism could therefore, act as an attentive and powerful insight to the interpretation of human consciousness and subjective experience that positivism could otherwise overlook. In this regard, it is important to note that at the heart of this interpretivist movement is a belief in theoretical and methodological pluralism – a position that favours a diversity of methods, theories and even philosophies in scientific inquiry - through the voices of ‘knights of change’ (Landry & Banville 1992). Driven by the view that reality is multifaceted and shaped by people’s values, beliefs and actions, these ‘knights of change’ believe that methodological and theoretical pluralism will offer alternative yet valuable insights in IS research.

In this study, we join the debate by arguing the need for a better leverage of methodological pluralism in interpretive IS research. Specifically, we note that greater research insights may be obtained by considering the complementarity of various strategies of inquiry (such as ethnography, grounded theory, case study and action research) with respect to a specific IS phenomenon. Indeed, we suggest that when such complementary strategies of inquiry are purposefully employed in a portfolio of separate studies over time, they may collectively help to shed new light on complex IS phenomena.

1.1 Increasing complexity of IS phenomena

The role of information technology has become increasingly complex due to its role as a key enabler of social change that shapes new forms of practices, organizations and communities. Indeed, it can be argued that information technology has contributed significantly to the restructuring of businesses and the political economy as a whole. Furthermore, such technologies often induce social change and impact organizations and industries significantly. Hence, in many ways, IS phenomena are becoming increasingly complex due to the seemingly endless trail of functionalities added on to existing technologies and extensive integration and inter-linkage between such technologies and people.

A good example of such complex phenomena is Enterprise Resource Planning (ERP). While ERP implementations in the industry reached their peak in the late 1990s, research in this area is still in a stage of infancy. Recently, the introduction of e-business extensions and the adoption by small-and-medium-sized companies have added to the complexity of understanding this phenomenon. In this regard, the use of processual analysis may be particularly applicable to ERP research (Markus & Tanis 2000). Furthermore, the “human” element is a critical determinant of IS success but yet, user acceptance vis-a-vis resistance during ERP implementations are continuing to be studied with somewhat mixed results in the literature. While theoretical perspectives such as actor network theory and structural theory have been used in ERP research, we note that as an underutilized perspective, symbolic interactionism may be able to offer fresh and interesting insights into the “process” and “human” issues involved in such implementations (Prasad 1993). This is especially important considering the growing interest regarding the role of symbolism within organizations (Turner 1990).

1.2 Toward Complementarity of Strategies of Inquiry

As a theoretical perspective, symbolic interactionism does not offer guidance on the actual conduct of the research. In this study, we select three strategies of inquiry as an example of how complementarity of such methodologies (when appropriately informed by symbolic interactionism) may collectively

help to shed new light on the aforementioned ERP phenomenon: ethnography, grounded theory and participatory action research. Specifically, the “descriptive strength” of ethnography is its ability to provide the necessary thick description of symbolic interactions during the lengthy ERP implementation process. On the other hand, grounded theory (with its focus on the active discovery of theory from data) would contribute to further theoretical development in ERP research with an additional layer of analysis and a much needed “analytical edge” that ethnography studies tend to overlook. Furthermore, we argue that participatory action research would serve as an important methodological complement to ethnography and grounded theory due to its simultaneous focus on the enrichment of academic knowledge and the attentiveness to the practical problems of ERP implementation (MacKay & Marshall 2001).

The rest of this paper will proceed as follows. We begin with a review of the ERP literature, followed by a discourse on the theoretical strengths of symbolic interactionism and its applicability to ERP research. Each of the strategies of inquiry is then considered in turn – ethnography, grounded theory and participatory action research. In particular, we use the ERP phenomenon to highlight their individual merits and complementary strengths. Finally, we conclude with a discussion of how all three strategies of inquiry, with symbolic interactionism as the informing theoretical perspective, may help to collectively shed new light on complex IS phenomena.

2 A COMPLEX IS PHENOMENON: ERP IMPLEMENTATION AND USE

ERP is a comprehensive, packaged software solution that seeks to offer a general overview of an organization from a single information and IT architecture through an integration of business processes, systems and information (Klaus & Rosemann & Gable 2000). Distinguished by its process-oriented view of organizations, ERP serves as a powerful and comprehensive tool in aiding organizations on managing their businesses and over the years, has progressively become a major phenomenon in the Information Technology (IT) marketplace, growing both in prominence and pervasiveness. Nevertheless, despite the increasing trend of ERP systems in practice and its status as a management panacea, related publications within the IS academic community have only begun to emerge recently, suggesting that research on ERP systems is still in its infancy, and that new fields of knowledge remain yet to be explored - with “process” and “human” issues being especially pertinent. In addition, the high failure rate of ERP systems together with mixed results regarding organisational benefits necessitates a more thorough investigation into the implementation, maintenance and ongoing usage of such complex systems.

The highly applied, multi-faceted, and multi-disciplinary nature of ERP systems contributes to its growing complexity as an IS phenomena (Klaus et al. 2000). A survey of the literature reveals some regard business process reengineering (BPR) as a crucial element in ERP systems implementation (Markus et al. 2000) whilst others are of the view that business process change enhances the risk factor of ERP implementation. The importance of business process models is also emphasized by Scheer and Habermann (2000) as ERP systems become more and more complex. However, the practice of BPR brings forth additional challenges, such as the issue of user resistance and acceptance. With the involvement of the myriad of stakeholders in ERP system implementations – from vendors, and consultants to project managers and end users, it is not hard to understand why uncontrollable external events when combined with deliberate and often unpredictable human actions, can often influence the outcomes of the implementation. Furthermore, some existing legacy and in-house systems remain in place even when organisations adopt ERP solutions, thus adding to the complexity of the situations.

In addition, the shift in focus of ERP vendors towards targeting small-and medium-sized enterprises (SMEs) in order to generate new sales (Sommers & Nelson & Ragowsky 2000) may provide a fertile ground for new and interesting research. The growing demand for ERP applications has also spurred vendors to advance beyond core applications, enhancing it to provide support to Web-based applications, e-commerce, customer-relationship and supply-chain management and even business planning. In short, the ever growing demand for ERP applications and its potential to provide support

for e-commerce (set to be the future of traditional brick-and-mortar commerce), makes it an important phenomenon that warrants continued IS research.

In view of the increasing complexity of ERP systems implementation, the use of processual analysis may be particularly appropriate. This will enable analysis of ERP implementations from a longitudinal point of view and may highlight the often volatile relationships between people in organizations and the environment. The implementation of ERP systems involves moving the organization through several phases, which is characterized by key players (from vendors and IT consultants to project managers and company employees), typical activities, problems, appropriate performance metrics and a range of possible outcomes. Drawing from the works of Markus and Tanis (2000), the enterprise systems experience cycle can be viewed in terms of four 'ideal' phases namely, the chartering phase, the project phase, the shakedown phase, and the onward and upward phase. Since different actors are involved in different phases of the enterprise system experience cycle, ERP system implementation therefore revolves around human communities and their often unpredictable interactions which may sometimes give rise to conflicts and disagreements. Thus, ERP system implementation would be a very good example of the complex and dynamic social phenomena with which IS research discipline is focused on - interactions between the technology, its users and the organizational and social context of its use (Orlikowski et al. 1991). In light of this, ERP may be viewed as a developing multidisciplinary phenomenon involving many different stakeholders, from which obtaining insights warrants a multiplicity of strategies of inquiry towards understanding its complexity.

3 SYMBOLIC INTERACTIONISM AS THE INFORMING PERSPECTIVE

As mentioned earlier, while theoretical perspectives such as actor network theory and structuralist theory have been used in ERP research, we note that symbolic interactionism has been underutilized in IS research in general. This is in spite of its obvious theoretical strengths, its influence as one of several key interpretive approaches in social science research and the increasing interest in the role of symbolism within organizations (Turner 1990). A research finding by Jones (2000) reveals that out of the total number of citations referring to social theorists in the IFIP WG8.2 conference literature over the years of 1979 – 1999, 57% of the papers referred to social theorists, amongst which Giddens, Habermas, Foucault and Latour were the four most popular (Dobson 2002). To date, only a handful of some prominent researchers (such as Gopal and Prasad 200) adopt the symbolic interactionist's perspective (in both organizational and technological contexts). As an underutilized perspective, symbolic interactionism may therefore be able to offer fresh and interesting insights into the "process" and "human" issues involved in ERP implementations.

Symbolic interactionism stems largely from the teachings of George Herbert Mead but it was developed most explicitly by Blumer (1969). It is a down-to-earth approach to the scientific study of human group life and human conduct. It may be envisioned as the study of how people interpret their life-situations and conduct activities with others, on a daily basis (Prus 1996). At the core of the symbolic interactionist perspective is the notion that human life is community life and that it is thoroughly intersubjective in its essence. Human communities rely on the development of shared symbols, whilst humans in turn, derive their social essences from the communities in which they are situated (Prus 1996). Apart from being concerned with symbols, symbolic interaction is also concerned with the meanings attributed to objects (symbolically) during daily social "interactions" with others. The emphasis on the continual process of interaction and interpretation indicates that people bring objects into existence by the ways in which they constantly and repeatedly attend to, act upon and ultimately redefine these things (Prus 1996). With this in mind, the diverse meanings that people can attach to objects and the notion of multiple realities will demand a particular attentiveness and awareness on the part of those who are studying phenomena such as ERP systems implementation, which is situated within such social contexts, thus hinting at the use of more than one research method in order to capture the complexity of the phenomena.

3.1 Philosophical Assumptions of Symbolic Interactionism

The relative immaturity of the IS field has led to the 'borrowing' of theoretical and methodological approaches from other disciplines without much regard for their underlying assumptions (Garcia & Quek 1997). It is therefore important to understand the underlying foundation behind such theories as undeliberated assumptions can sometimes appear to be self-confirming. Acknowledging the influence of the underlying philosophy behind theories also provides the possibility of emancipation from the often restrictive domination of one's social and academic grouping.

Originating from the tradition of sociology, the philosophical assumptions of symbolic interaction stems from the fact that it is heir to the intellectual traditions and positions developed in nineteenth-century Europe, with formalism and pragmatism being two vital constituents (Rock 1979). Georg Simmel's formalism posits the idea of sociation as a process (in which social existence is in a state of constant evolution) an idea strikingly parallel to Blumer's notion of human group life as processual (Prus 1996). Pragmatism on the other hand, combined the ideas of Hegel, Darwin and the philosophy of science such that they emphasized the practical and emergent aspects of valid knowledge. Together, the two stress common themes in symbolic interactionism like the evolutionary and embedded character of enquiry, and the central importance of the thinking and observing self, thus highlighting interactionism's ontological and epistemological dimensions (Rock 1979).

3.2 Importance of Symbolic Interactionism to ERP research

The purpose of a good theoretical perspective is to help qualitative researchers orient themselves to the worlds that they study (Locke 2001). A symbolic interactionist's perspective especially, helps in understanding the inner worlds of different stakeholders involved in ERP system implementation. It aids in explaining the different meanings that ERP systems may hold to different people, and subsequently, how these representations can influence their interactions with the technology. It is also particularly appropriate for the study of technological symbolism in organizations as it simultaneously emphasizes both process issues as well as the role of meaning and symbols formed during the interpretive social process (Prasad 1993; Prus 1996). Hence, the notion that symbolic interaction may serve as a potential tool in gaining a deeper understanding in IS research is justified since the discipline itself has always been concerned with the complex and rich phenomena that emerge as a result of the interplay between information technologies, its users and the organizational and social contexts of its use (McKay et al. 2001). In this regard, it is important to note that interactionist researchers would thus require a strategy of inquiry that is empirically sensitive to the human capacity for 'symbolic interaction' (Prus 1996). In the next few sections, we will discuss the individual merits and complementary strengths of the following strategies of inquiry (including their methodological fit with symbolic interactionism): ethnography, grounded theory and action research.

4 ETHNOGRAPHY

The term 'ethnography' was somewhat loosely borrowed from social anthropology, and refers to the situated, empirical description of people and races (Rock 2001). Ethnography requires the researcher to observe, record and engage in the daily life of another culture and write it in descriptive detail (Prus 1996, Schultz 2000) in order to place the phenomena in its social and cultural context. By adopting a flexible and seemingly unstructured research design, ethnographers work to hold back their own frames of reference and preconceptions to assume a role of sensemaking and learning rather than a scientific hypothesis-testing one (Schultz 2000). One of the most significant merits of ethnographic research is its depth (Myers 1999). Because of the amount of time the researcher immerses himself into the field, he thus gains an intimacy and familiarity into human, social and organizational aspects that cannot be achieved otherwise. However, ethnography also has its disadvantages, one of the major limitations being its lack of conceptual depth – in fact, many ethnographic accounts have turned out to be "common-sense" descriptions. However, the use of a theoretical perspective such as symbolic interactionism during the study may help to address this concern.

4.1 Descriptive Strength

Ethnographers generally rely on 3 sources of data, namely: observation, participant-observation and interviews (Prus 1996). Furthermore, a key characteristic of ethnography is the use of thick description to uncover and analyze data (Prasad 1997). 'Thick description' basically refers to a researcher's understanding of a phenomenon through the interpretations of the relevant local actors (Geertz 1973). The ethnographer's task is to present the many facets of a situation based on the complex sets of meanings that it holds for different people. Ultimately, it is in the skillful weaving of these contradictions and complexities that a thick description can be produced (Prasad 1997). Together with meticulous note taking and analytic memos, ethnographers will be able to produce descriptive materials that will offer rich insights into the phenomenon being investigated.

4.2 Methodological Fit with Symbolic Interactionism

The understanding of ethnography's methodological fit with symbolic interactionism can be enhanced through ethnography's notion of technologies as cultural artefacts. Due to ethnography's background in cultural anthropology, technology is viewed as a cultural artefact and also perceived as playing complex roles in different societies because ethnographers often view it as having both functional and symbolic elements (Prasad 1997).

Blumer himself has most explicitly established the link between ethnographic research and the interpretive tradition using the four central conceptions of symbolic interaction (Prus 1996). The first concept (that people act on the basis of the meaning of their objects) implies that to understand his subjects, the scholar must see objects as his subjects see them, since people act based on the meaning that the objects have for them and not on that for the scholar. The second concept (that group life is seen as a process) indicates that people's lines of behaviour have to be observed with respect to the lines of actions of others with whom they are interacting with. It is vital in the study of human group life, to view the given sphere of life under study as a moving process in which participants are defining and interpreting each other's acts constantly. The third concept (that social acts are processual) implies that there is a need to see social action in terms of the actor since it is only actors who act. Lastly, the fourth concept (related to the complex interlinkages of acts that comprise organizations and the like) translates into the fact that such big forms of societal organizations should be viewed as arrangements of people who are interlinked in their respective actions. They have to be seen, studied and explained in terms of the process of interpretation engaged by the participants as they handle situations at their respective positions. As such, ethnography as a methodological stance respects the nature of the empirical world of symbolic interactionism. Symbolic interactionist ethnography would hence allow the researcher to dissect and interpret human worlds using a guiding theory whilst at the same time, have an in-depth familiarity with the phenomena in its particular social and cultural context.

4.3 Shedding Light on the ERP Phenomenon

Ethnography thus has great potential in helping researchers to understand the ERP implementation phenomenon, especially since it views technologies as complex role players, often playing more than an instrumental role. Indeed, it is often a ceremonial tool, reflecting the cultural beliefs that underpin its design, thus exuding a kind of 'magical' symbolism. The temporal nature of meanings associated with ERP systems suggests that an intimate familiarity is necessary in the understanding of ERP systems implementation. This is much provided for with the element of long term immersion that characterizes ethnography. More specifically, researchers can strive to understand how organisational actors interact with the system over time, how they define or interpret the interactions, together with how they incorporate the system into the work environment by which they are constrained and responsible for. The issue of 'myth-making' activities can also be examined, in particular, how the act of myth-making would eventually align ERP implementations to organizational contexts. In addition, as the integration of various enterprise applications (such as SCM and CRM) accelerates, ethnography

can aid in investigating the long term organisational impact of such a phenomenon. The ability of ethnography to provide the necessary thick description of symbolic interactions during the lengthy ERP implementation process makes it an ideal candidate as a strategy of inquiry when developing process theories.

Despite this, it is important to note that the necessity of writing field notes and analytic memos on a daily basis (Myers 1999) implies large amounts of disconnected data which can sometimes be overwhelming. As a result, the ethnographer may lose his orientation vis-a-vis the vast amount of data needing to be analyzed. Hence, it is in this respect that *grounded theory* may provide the needed analytical edge for a greater theoretical understanding of ERP systems.

5 GROUNDED THEORY

Originally developed by two sociologists, Barney Glaser and Anselm Strauss, grounded theory is mainly concerned with the discovery of theory from data. Glaser (1992) defines grounded theory to be “a general methodology of analysis linked with data collection that uses a systematically applied set of methods to generate an inductive theory about a substantive area”. Its primary characteristics lie in its dedication to research and ‘discovery’ through direct contact with the social world studied. The researcher begins with an area of study and from there, allows relevant theoretical constructs to emerge (Parker & Roffey 1997, Urquhart 2001). Explanatory theoretical frameworks emerge from the data collected, from which the development of core concepts and the repeated analysis of data gives rise to the formulation of a grounded, albeit complex theory which ultimately has an intrinsic relationship to the data (Parker et al. 1997). In addition, the originators firmly believe that knowledge can only be emergent when pre-existing constructs and hypotheses are avoided during the process of theory development (Locke 2001).

5.1 Analytical Edge

As mentioned earlier, grounded theory delivers an analytical edge over ethnography through allowing a better conceptual grasp of empirical phenomena. The codes derived in grounded theory are a result of analyzing data and not by applying earlier concepts to it. Indeed, the researcher’s analytic treatment of theoretical categories takes precedence over narrative (Charmaz & Mitchell 2001). Whilst ethnographers describe and narrate stories, grounded theory places an emphasis on conceptual analysis, allowing stories and scenes to play a secondary role (Charmaz et al. 2001). It strives to foster explanatory theoretical frameworks that are representative of the structures and processes observed instead of concentrating on the narration of actors’ navigation through their daily social acts, thus sharpening the analytical edge and theoretical sophistication of theory development (Parker et al. 1997; Charmaz et al. 2001).

5.2 Methodological Fit with Symbolic Interactionism

The link between symbolic interaction and grounded theory is rooted in the very philosophical foundations of grounded theory itself: amongst the disciplinary traditions that helped to inform grounded theory, it is sociology’s symbolic interactionist school of thought in particular, that provided it with a particular perspective on what constitutes social reality and how that reality should be investigated (Locke 2001, Urquhart 2001). Grounded theory is very much reflective of the theoretical and methodological presuppositions of symbolic interactionism regarding the nature of the empirical social world. Theoretically, grounded theorists are always oriented towards understanding behaviour at the symbolic and interactional levels; methodologically, it assumes and underscores the symbolic interactionist belief that the development of theory must be validated through its conception in the empirical world (Blumer 1969, Locke 2001). Therefore, grounded theory is very much consistent with its symbolic interactionist heritage through its form of research practice and focus; symbolic interaction on the other hand, also ties in well with grounded theory as “one of its most important

methodological premise is that all social enquiry must be grounded in the particular empirical world studied” (Locke 2001).

5.3 Shedding Light on the ERP Phenomenon

Grounded theory allows theory to directly emerge from the data in the area of study, hence it is highly relevant when researchers aim to incorporate the complexities of an organizational context in order to produce accurate and useful results (Parker et al. 1997). More specifically, since research on ERP systems is very much in its infancy, grounded theory is particularly suitable in aiding the generation and subsequent “discovery” of theories regarding ERP systems implementation since it has the ability to: capture complexity and produce a multifaceted account of action in context; permit the investigation and theoretical development of new substantive areas; and enliven established and mature theoretical frameworks (Locke 2001). The use of grounded theory not only provides a systematic approach to developing fuller theoretical frameworks for understanding cultural dimensions within organizations but also provides the researcher with technical sensitivity in order to understand/interpret the phenomena (Parker et al. 1997). Specifically, research areas can involve investigating and developing theories regarding critical success factors (CSFs) of ERP implementations, including the extent of top management commitment to resources as related to the organizational climate for implementation effectiveness; the extent and necessity of business process reengineering prior to implementation; and the existence of differences in perception of the importance of CSFs amongst the different stakeholders involved.

The essence and potency of grounded theory lies in its ability to encourage and enliven more established theoretical areas by creating novel categories and concepts (Charmaz et al. 2001). Although it is also rather adept at bridging theory and practice (Locke 2001), the focus on pragmatic usefulness can be further emphasized by *participatory action research*. The use of participatory action research as a methodology would ultimately facilitate and aid research that is in concurrent pursuit of both academic knowledge and practice-oriented insights.

6 PARTICIPATORY ACTION RESEARCH

An important methodological complement to ethnography and grounded theory, action research is often defined as aiming to “to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework” (Rapoport 1970). It can be characterized as a form of systematic inquiry, that is collective, collaborative, self-reflective and critical, aiming towards the mutual enrichment of the literature of knowledge and the practical problems of a particular client system (McKay et al. 2001). Several streams of action research with different emphases and traditions have evolved over the years since the death of its founder, Kurt Lewin. They are: participatory action research, action science and action learning (Lau 1997). Participatory action research, which we will be concentrating on in our discussion, advocates the involvement of practitioners as both subjects and co researchers. This form of action research encourages participants to be involved in the whole process; to solve their own problems by setting their own research agenda, collect and analyse data and control the use of the results. As a research approach, action research is not without its weaknesses: a lack of scientific rigor and discipline. In addition, there is also a lack of validity of data and it is difficult to generalize the results obtained from action research studies. Despite this, in the context of IS research, the strengths of action research, especially its emphasis on pragmatism, outweighs that of its limitations, particularly when compared with other research approaches and paradigms (McKay et al. 2001).

6.1 Practical Contribution

In many ways, the characteristics of action research makes it ideally suited to the study of information systems (McKay et al. 2001), especially through its attempt to make scientific discoveries while also

solving practical problems – participatory action research contributes the type of pragmatism that is needed in IS research. Since participatory action research promotes the active and deliberate self-involvement of the researcher in the context of the investigation, he must work in collaboration with other actors. Hence, there exists a mutual dependence on the skills, competencies and experiences of both the research and the actors involved. Whilst the researcher contributes intellectual frameworks and academic knowledge, the problem owner brings knowledge of context and experience of the situation (McKay et al. 2001, Susman & Evered 1978). This willingness to share and cooperate will thus enhance the competencies of all parties involved, ultimately improving the practical problem situation. However, it is important to note that with the mutual dependence of parties involved, researchers have to be aware of the issue of double hermeneutic – the task of interpreting entities that themselves interpret the worlds they experience (Prus 1996). In this sense, participatory action research may be more problematic than ethnography because of the multiple levels of interaction that may exist between researchers and other actors.

6.2 Methodological Fit with Symbolic Interactionism

From the philosophical viewpoint, action research shares a similar foundation with symbolic interaction, that of pragmatism (Susman et al. 1978). As reflected in the interactionist's perspective and also action research, one of the adherents of pragmatism is to consider the role of the scientist as an actor within the world instead of a spectator. Since action research lodges its study within the empirical social world of its actors, symbolic interaction (as a guiding theory to understanding the process of interaction and interpretation of meanings attributed to objects by these participants) would hence be very much complementary with the (action research) method.

6.3 Shedding Light on the ERP Phenomenon

With its focus on participation and user involvement, action research is suitably equipped for investigating the ERP systems implementation phenomena. The phases of the enterprise systems experience as mentioned above involves many different actors and stakeholders, as such, adopting a socio-technical design approach would have an important “practical contribution” in helping organizations implement change management strategies to deal with user resistance. For example, researchers may choose to investigate to what degree do issues such as ease of use, usefulness and prior expectations of users help determine the level of user acceptance and assessment of the ERP system. In addition, different users may consider different factors as relevant regarding their assessment of the benefits of such a system, hence researchers may want to examine how issues like strong group or departmental identification provides a frame of reference which would eventually determine the user's sense of evaluation. Moreover, since ERP systems implementation has been fraught with difficulties (Markus et al. 2000), action research can aid in actively helping to attend to the practical problems of implementation. Considering the increasingly complex role of IT as a catalyst of social change (for example, ERP may prescribe a division of roles and responsibilities at variance with existing ones thereby spurring disruptive social-technical changes in organisations), action research would help in improving the understanding of such social phenomena (Lau 1997). Specifically, issues like how top management's commitment to change management would affect organisational transformation and the fit between innovation and targeted users' values can be examined. In this way, action research would contribute to theory and practice and enrich the IS process by taking researchers beyond the traditional academic boundary.

7 DISCUSSION AND CONCLUDING REMARKS

In this paper, our main contention is that when complementary strategies of inquiry are purposefully employed in different studies over time, they may collectively help to shed new light on complex IS phenomena. We demonstrate this by using ERP implementation as an example of a typically complex IS phenomenon – such implementations often spur socio-technical changes with impact on business

processes, work culture, organizational structure, employee motivation and job performance. Hence, technology can be said to be socially constituted (Orlikowski 1992) in that organisational issues must be addressed concurrently with technological development. It is in this respect that theoretical perspectives such as symbolic interactionism – a theory resting in the tradition of sociology, can appropriately aid in achieving a deeper and more realistic understanding of complex IS phenomena. However, theoretical perspectives do not offer any guidance as to the actual conduct of the research, and this is where strategies of inquiry (such as ethnography, grounded theory and action research) take their place.

Specifically, the “descriptive strength” of ethnography in its ability to provide the necessary thick description of ongoing symbolic interactions during the lengthy ERP implementation process which would be useful in investigating the interactive and myth-making activities of organisational actors. On the other hand, grounded theory (with its focus on the active discovery of theory from data) would contribute to further theoretical development in ERP research with a much needed “analytical edge” that ethnography study tends to overlook through examination of issues like CSFs of ERP system implementations. In addition, participatory action research would serve as an important methodological complement to ethnography and grounded theory. Its simultaneous focus on practical problem solving and the enrichment of academic knowledge provides a win-win scenario for both researcher and participants in studies of ERP implementation regarding change management issues like user resistance and acceptance. By thus leveraging the combined strengths of these three strategies of inquiry, we argue that valuable and alternative insights into ERP implementations can be obtained.

To summarize, we have highlighted in this paper the potential contribution of symbolic interactionism to IS research work and how as an example of an informing theoretical perspective, it can help facilitate the goal of leveraging methodological pluralism in interpretive IS research. In particular, we have demonstrated how ethnography, grounded theory and action research complement the theoretical perspective of symbolic interactionism such that with ethnography’s “descriptive strengths”, grounded theory’s “analytical edge” and action research’s “practical contribution”, a better understanding of ERP systems implementation can be obtained. The application of such a multiplicity of methods over time will help capture the complexities of ERP systems implementation and allow a multi-perspective understanding of this phenomenon to emerge. More generally, we urge researchers to remain sensitive to the important strands of diversity that exist in various strategies of inquiry in order to ascertain how best to employ them to aid in understanding and making sense of real world phenomena.

Extrapolating from the findings of this study, qualitative IS researchers may similarly wish to leverage *theoretical* pluralism by considering the complementarity of various theoretical perspectives with respect to a specific phenomenon. Indeed, we suggest that when complementary theoretical perspectives (such as symbolic interactionism, critical social theory and adaptive structuration theory) are purposefully employed in a portfolio of separate studies over time, they may collectively also shed new light on a variety of complex IS phenomena. Through this exposition of the synergistic potential achievable by leveraging methodological pluralism (and possibly theoretical pluralism) in a complementary fashion, this study may therefore have valuable implications for qualitative IS research.

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