

12-31-2001

# ERP Implementation Teams, Consultants, and Information Sharing

Olga Volkoff  
*Worcester Polytechnic Institute*

Steve Sawyer  
*The Pennsylvania State University*

---

## Recommended Citation

Volkoff, Olga and Sawyer, Steve, "ERP Implementation Teams, Consultants, and Information Sharing" (2001). *AMCIS 2001 Proceedings*. Paper 202.  
<http://aisel.aisnet.org/amcis2001/202>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2001 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# ERP IMPLEMENTATION TEAMS, CONSULTANTS, AND INFORMATION SHARING

**Olga Volkoff**

Worcester Polytechnic Institute  
ovolkoff@wpi.edu

**Steve Sawyer**

The Pennsylvania State University  
sawyer@ist.psu.edu

## Abstract

*A major part of the cost of ERP implementations is for consulting support, yet the roles consultants play in ERP implementations are largely unexplored in academic literature. In our research we examine these roles by exploring the information sharing that occurs as ERP implementation teams perform their work. Through comparative analysis of four case studies we are building a model of collaborative information creation and sharing among teams and team members, focusing on the specific roles played by ERP consultants.*

## Introduction

Enterprise Resource Planning (ERP) packages promise a variety of spectacular business benefits. Monsanto, for example, cut production planning from six weeks to three, trimmed inventories, and reduced working capital. In 1997 they estimated that their implementation of SAP's R/3 software was saving the company \$200 million a year (Edmondson, Baker and Cortese, 1997). To achieve such gains, however, organizations must spend large sums (often over \$100 million) – and they usually spend more on the implementation support provided by consultants than they do on the technology itself. Some estimates suggest that of the total cost, as much as 80% may be for consulting services (Scheer and Habermann, 2000).

Sometimes, despite such large sums spent on implementation expertise, the outcomes are disappointing – or even disastrous. In one well documented case, FoxMeyer Drugs filed for bankruptcy when its implementation of SAP's R/3 software went badly wrong. The company sued both SAP and Anderson Consulting, its implementation partner (Jesitus, 1997). While relations with consultants rarely deteriorate to that point, a degree of discontent with the relationship is a common outcome of the implementation effort (Gable, 1996).

The challenges inherent in any ERP implementation arise both from the considerable technological complexity of these software packages and the degree of associated changes to business processes and organizational structure. While some of these issues have been studied (e.g. Ang, Thong and Yap, 1997; Baskerville, Pawlowski and McLean, 1999; Gable, Scott and Davenport, 1998; Markus and Tanis, 2000; Robey, Ross and Boudreau, 2000; Soh et al, forthcoming), the specific role of consultants has not been explored.

In this research we examine the processes that ERP implementation teams undergo and the roles that consultants play in this process. The research question we pursue is: “What is the role that installation partners (consultants) play in the acquisition of knowledge by the users on an ERP implementation team?”

## ERP Implementation Teams

There are several ways to characterize an ERP implementation. We view ERP implementation as a set of tasks split among software vendors, software consumers and implementation consultants. In general, third-party vendors develop the software but typically have very little do with the ensuing implementation. Software consumers (organizations who purchase ERP software) take these packages and assemble them into information systems, blending the new functionality with existing systems and processes. Implementation consultants help consumer organizations to configure and derive value from an ERP package, providing both product knowledge and process guidance.

The organizational locus of an ERP implementation is a team comprised of people from various functional areas in the organization and a set of consultants who have product knowledge of the ERP package. Together these people lead the decision-making about how the organization's processes will be mapped (and often-reconfigured) to take advantage of the integrative functionality embedded in the ERP software.

ERP implementation teams bring together, often for the first time, a range of functional experts from within the implementing organization. Combined with the implementation consultants from a third party, these teams can be large, heterogeneous and span organizational boundaries, making them complex entities to understand.

## **An Information Sharing Perspective on ERP Implementation Teams**

Most ERP implementation teams have a four-part information-sharing problem. The functional experts need to share information about organizational processes and norms with each other and with the implementation consultants. They must also learn about the ERP software from the consultants. These two inputs combine in a semi-structured process where learning occurs and decisions about how the system will be enacted are made. Finally, information about these decisions and the ERP functionality must be shared with other members of the implementing organization.

ERP teams are complex entities that are tasked with gathering, creating, sharing and transferring information. For this work we differentiate between information and knowledge by defining information as data structured in a way for people to use, and knowledge as the ability to extrapolate among different pieces of information (Taylor, 1982). Our particular interest in this work is to focus on information sharing among consultants and organizational members of the ERP implementation team. More generally, information sharing within and among teams reflects a larger organizational problem, goal, and ethos – a multi-level phenomenon spanning individual, group and organizational levels of analysis. This demands that we conceptualize, operationalize and analyze the data we collect to account for multi-level effects.

Information sharing can be conceived from a number of perspectives, including organizational learning (Easterby-Smith et al., 2000), diffusion of information (Attewell, 1992), work-based learning (Raelin, 1997), and communities of practice (Brown and Duguid, 1991). Each of these perspectives differ on dimensions such the conceptualization of information, the roles of information and communication technologies, and the importance of organizational structures and incentives.

For our work the principal differentiation among these perspectives is their respective conceptualizations of information sharing. Typically, information (about both the ERP technologies and organizational processes) is seen as an object that can be transferred from those who have it to those who don't. Whether the primary mode of transfer is conducted through some form of communication (Rogers, 1983) or done through behavioral modeling (Bandura, 1986), there is information and a set of skills that must be acquired and distributed, and then interpreted and stored (Huber, 1991). This view is implicit in current implementation practices. Consultants are contracted to help reduce knowledge barriers, and "knowledge transfer" is often written into contracts.

From a social constructionist perspective, information is not simply acquired but must be built-up through the interaction of members of the relevant community (Pentland, 1995; Sarkar, 2001). The group may include experts such as consultants and vendors, but the outcome of the knowledge creation process will differ from the starting position of all participants.

One such perspective on constructing information, and the one we use to frame this research, emphasizes the importance of viewing knowledge and learning in the work context (Lave and Wenger, 1990) or community-of-practice (Brown and Duguid, 1991) where it will be used. From this perspective new knowledge is created and shared by an informal group that has come together to solve a specific work problem. Learning in this context follows an apprenticeship model, where the learners "acquire that particular community's subjective viewpoint and learn to speak its language" (Brown and Duguid, 1991). Information is transmitted through the stories that are told about how specific problems have been dealt with, and new knowledge is created by the combination and recombination of old stories.

## **Research Approach**

In pursuit of our research question we are drawing on extended data sets previously collected from four case study sites. These sites differ by type of organization, size, use of consultants, implementation approaches, and the ERP being installed. We chose divergent case study sites to maximize conceptual differences and to better enable theory elaboration.

We will present preliminary results at AMCIS with the analysis shaped by questions such as:

1. What roles do the consultants play on an ERP implementation team.

2. What kind of information is brought into an ERP implementation team (infused) and how is this information learned, shared and diffused?

## Expectations

We have three expectations for this research. We expect to contribute to the current literature on information sharing by exploring the roles of team-level efforts to create and share information. In particular, we expect to develop insights on information sharing relative to member location on the team and the particular roles of technical consultants. We also expect to highlight specific features and function of the ERP software that affect the sharing and learning of information. Finally, we expect to develop a model of collaborative information creation and sharing in ERP implementations.

## Selected References

- Ang, K.-T., Thong, J.Y.L., and Yap, C.-S. "IT Implementation Through the Lens of Organizational Learning: A Case Study of Insuror", *Proceedings of the eighteenth International Conference on Information Systems, Atlanta Ga*, 1997.
- Attewell, P. "Technology Diffusion and Organizational Learning: The Case of Business Computing," *Organization Science* (3:1), 1992, pp. 1-19.
- Bandura, A. *Social Foundations of Thought and Action: A Social Cognitive Theory*, Englewood Cliffs, NJ : Prentice-Hall, 1986.
- Baskerville, R., Pawlowski, S. and McLean, E. "Enterprise Resource Planning and Knowledge Management: Convergence or Divergence?", *Georgia State University Department of Computer Information Systems Working Paper 99-6*. 1999.
- Brown, J.S. and Duguid, P. "Organizational Learning and Communities-of-Practice: Towards a Unified View of Working, Learning and Innovation," *Organization Science* (2:1), 1991, pp. 40-57.
- Easterby-Smith, M., Crossan, M., and Nicolini, D. "Organizational Learning: Debates Past, Present and Future," *The Journal of Management Studies* (37:6), 2000, pp. 783-796.
- Edmondson, G., Baker, S. and Cortese, A. "Silicon Valley on the Rhine," *Business Week*, November 3, 1997, pp. 162-166.
- Gable, G.G., "A Multidimensional Model of Client Success When Engaging External Consultants," *Management Science* (42:8), 1996, 1175-1198.
- Gable, G.G., Scott, J.E. and Davenport, T.D. "Cooperative ERP Life-cycle Knowledge Management", *Proceedings of the Ninth Australasian Conference on Information Systems*, 29 September-2 October, Sydney, Australia, 1998, pp. 227-240.
- Huber, G. "Organizational Learning: the Contributing Processes and the Literatures," *Organization Science* (2:1), 1991, pp. 88-115.
- Jesitus, J. "Broken Promises?", *Industryweek*, November 3, 1997, pp. 31-36.
- Lave, J. & Wenger, E. *Situated Learning: Legitimate Peripheral Participation*, Cambridge: Cambridge University Press, 1991.
- Markus M.L. & Tanis, C. "The enterprise systems experience – from adoption to success," in R.W. Zmud (Ed.), *Framing the domains of IT research: Glimpsing the future through the past*, Cincinnati, OH: Pinnaflex Educational Resources, Inc., 2000, pp. 173-207.
- Pentland, B. "Information Systems and Organizational Learning: the Social Epistemology of Organizational Knowledge Systems," *Accounting, Management and Information Technology* (5:1), 1995, pp. 1-21.
- Raelin, J.A. "A Model of Work-Based Learning," *Organization Science* (8:6), 1999, pp. 563-578.
- Robey, D., Ross, J.W., and Boudreau, M. "Learning to Implement Enterprise Systems: An Exploratory Study of the Dialectics of Change," Working paper, 2000.
- Rogers, E. *The Diffusion of Innovation*, 3<sup>rd</sup> edition, New York: Free Press, 1983.
- Sarkar, S. Toward a Methodology for Managing Information Systems Implementation: A Social Constructivist Perspective, *Informing Science* (3: 4), 2001, pp. 195-205.
- Scheer, W. and Habermann, F. "Making ERP a Success," *Communications of the ACM* (43:4), 2000, pp. 57-61.
- Soh, C., Sia, S.K., Boh, W.F. and Tang, M. "Misalignments in ERP Implementation: A Dialectic Perspective," *International Journal of Human Computer Interaction*, forthcoming.
- Taylor, R. S. Value-Added Processes in the Information Life Cycle. *Journal of the American Society for Information Science* (33:3), 1982, pp. 341-344.