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# Introduction to Research Cases in Information Technology and Management

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## Abstract

*Case-based research offers a platform for theory building in that rich and deep insights can be extracted from analysis of the data (Yin, 1989). Case research addresses “how” and “why” questions. Its purpose is to generalize to theory rather than to a population (Yin, 1989). This essay details why we believe that case-based research should be the prevalent research methodology used to address the complexity and dynamics inherent in the MIS field. We discuss current case research and potential outlets for this type of research.*

## Introduction

The gap between MIS research and practice is not narrowing. The pace of change in information systems is accelerating faster than anyone predicted. Corporations are scrambling to adjust to change by investing large amounts of money in technology and business training and education. The training vision is changing to continuous skills improvement and people development. At the same time, corporations are attempting to reengineer inefficient and ineffective business processes to create value-added advantages. Another trend is the transformation of information systems structures to enterprise-wide integration of technology. All of these changes are now part of the strategic planning process rather than limited to information systems plans or tactical/operational levels. What does this accelerated change in MIS mean to researchers? It means that we need to rethink how we approach MIS research. A year ago, there was some discussion in ISWORLD and at AMCIS about the practical and/or theoretical value (or lack of it) of MIS research, the appropriateness of journal content, and the future directions MIS research will take. The reason for this discussion was due, at least partially, to a perception that much of MIS research adds value neither to practice nor to theory. MIS research tends to borrow research methodologies and strategies from other fields such as management, psychology, and sociology. One reason for this is the relative newness of the MIS discipline as it has only been in existence for about 35 years. Another reason is that information technology (IT)

continues to advance at a breathtaking pace. However, MIS researchers will continue to produce non-cumulative results unless researchers band together and attempt to build a “cumulative” tradition. But how is a cumulative tradition built? As a first step, we believe that MIS researchers need to work together, that is, qualitative and quantitative researchers need to band together to reap the best that each methodology has to offer. From our observations, we do not believe that this is happening nor do we believe that this is the trend of the near future.

When dealing with unknown, dynamic, and poorly understood phenomena, qualitative case-based research is the preferred method (Yin, 1989). In the twenty-first century, MIS is a field fraught with unknown, dynamic, and poorly understood phenomena. A recent study revealed, however, that less than 20% of the articles in the seven leading MIS journals (MIS Quarterly, Information & Management, Journal of MIS, Decision Sciences, Information Systems Research, Communications of the ACM, and Management Science) were based on qualitative research and only 10.4% of these used a case study methodology (Palvia, 1999). Admittedly, case-based research is beginning to appear more often in scholarly publications. Nevertheless, the preponderance of quantitative research continues to dominate the mainstream scholarly publication output at over 50% (Palvia, 1999). Although many MIS researchers agree that case-based research is ideal for studying the rapidly changing MIS environment of the twenty-first century, the academic inertia set into motion for at least the past thirty years is extremely difficult to overcome. Case-based research allows us to gather very deep and rich data. From the analysis of the data, we are able to offer valuable insights into how organizations actually approach rapid change and why they choose the technologies and techniques available to solve real business problems. MIS theory should be developed out of practice. Interpretation of the data gathered from cases allows researchers to begin postulating relationships between human, technical, and organizational factors. Of course, results from this type of research can be compared to existing MIS theory (if it exists) to extend or create new theory.

Survey-based research continues to dominate. However, with surveys one only learns the answers to the

questions that are asked (Fowler and Mangione, 1990). Although there is some progress in the direction of qualitative research, it is not enough and much more is needed to better research and document emerging areas (Palvia, 1999). The bias is towards survey-based data gathering instruments with quantitative analysis accomplished by parametric statistical approaches. The advantage of this methodology is the ability to generalize results from a sample to a given population. The disadvantage is that the generalized results are not applicable to information systems in the business environment of the twenty-first century. Why is this the case? One reason that survey-based research is not pertinent is that researchers develop questionnaires based on prior research and their own judgment. Keep in mind that prior research does not necessarily have any practical significance in the fast-paced information systems environment of today. Prior research is also based on even older survey-based research. When researchers develop questionnaires, how can they know if their questions are applicable to what is happening in the environment they are attempting to examine? A second reason is that the intended respondents may never fill out the questionnaire. A secretary may fill it out or it may be passed to another manager. A third reason is that the respondent may not really understand the question. We have seen returned questionnaires with questions scribbled in the margin beside a particular item. The problem with this situation is that it is never addressed in the results of a survey-based study. A common and obvious disadvantage of survey-based research is non-response bias and very low response rates to surveys.

A general complaint about MIS research is that theory development is weak. The major reason for this is that survey-based research does not offer the depth necessary to build theory. Survey research, is mainly used to test and extend existing theory. It addresses research questions limited to “what”, “how many”, “who”, “where”, and “how much”. In contrast, case-based research offers a platform for theory building in that rich and deep insights can be extracted from analysis of the data (Yin, 1989). Case research addresses “how” and “why” questions. Its purpose is to generalize to theory rather than to a population (Yin, 1989).

## Literature Review

Case studies are beginning to appear in scholarly publications. Clark et al. (1997) explore the change-readiness capability of the IS workforce at Bell Atlantic. They posit that the Bell Atlantic model is useful for other organizations dealing with rapid change. Harkness et al. (1996) explore a transformation model at Bose Corporation. It resembles an evolutionary model of organizational learning and information sharing. The study describes the components of the model and the

obstacles Bose had to overcome to bring about change. Vreede (1998) explores a collaborative business engineering approach at the Amsterdam Municipal Police Force. The approach examines the joint application of group support systems to support stakeholder involvement in the organizational change process. McKenney et al. (1997) explore the alignment of strategy and structure through the use of information technology at Bank of America. The study illuminates important lessons learned through this transformation. Fichman and Moses (1999) explore software implementation strategies and their results at Herman Miller. The impact on organizational learning, resistance, and technology-organization-methodology fit is examined. El Sawy et al. (1999) explore new approaches to managing an organization based on lessons from the emerging electronic economy. The authors examine the transformation of Marshall industries into an IT-intensive value-oriented organization achieving success in a highly competitive environment. These are just a few of the case studies being published in quality journals. However, there does not seem to be a cumulative effort aligning the various research streams.

Klein and Myers (1999) recently published an article describing a set of principles for conducting field studies in MIS. The authors lay out a set of principles for conducting and evaluating interpretive field studies in information systems. The article is well written and very rigorous. To date, no case or field studies have used any of these principles for the purpose of rigorous evaluation.

Analysis of the dilemma of MIS research by Palvia (1999) uncovered several important points. First, the nature of MIS research is eclectic given the diversity and change inherent in MIS. We agree with Palvia that this is not necessarily a weakness. MIS researchers should have the freedom to investigate a wide variety of phenomena. Second, many research methodologies are available to MIS researchers. The point is that researchers should use the methodology or methodologies appropriate to the phenomena under investigation. Third, survey research has dominated MIS research. The inertia of survey research is hard to change, especially when few are calling for change. Fourth, more calls for qualitative (especially case study) research are being made. We believe that this is important and healthy to the future of the field. However, the infusion of case research is not enough. We would like to see more dialog about this predicament at the top IS conferences and in editorials in top journals.

## Case Study Journals and Research Outlets

According to Palvia (1999), not a single academic MIS journal publishes exclusively case studies. The only exception is the Journal of Information Technology Cases and Applications (JITCA). MIS Quarterly is beginning to publish more case studies in its regular issues. This is a good sign for the future of MIS research. However, the

cycle time for submission to publication averages approximately two years in length. We believe that this cycle time is much too long. In contrast, JITCA is trying to keep its complete cycle time between three and six months. Cycle time is very critical to MIS research because our field is changing so quickly that ideas may become obsolete in a very short time. One other attempt to provide an outlet for case study research is the Mini-track on Research Cases in Information Technology and Management, which has enjoyed success at The Americas Conference of the Association for Information Systems (AMCIS) since 1998. Other conference outlets are beginning to appear, such as the Mini-track on Research Methods and Approaches in Studying Organizational Systems Technology at the Hawaii International Conference on Systems Sciences (HICSS). This outlet is not dedicated exclusively to case studies, but rather to discussion of all methods.

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