

3 CONDUCTING AND PUBLISHING PRACTICE-DRIVEN RESEARCH

Robert W. Zmud
Michael F. Price College of Business
University of Oklahoma
U.S.A.

Abstract

This essay describes an approach to applied research termed “practice-driven” research which strives to develop a true partnership between an academic research team and the practicing executives sponsoring a project. Unique aspects of practice-driven research include research topics that are defined by the sponsors, a research design that is a product of researcher-sponsor collaboration, and a research objective continually evolves as learning occurs. The success of practice-driven research depends heavily on research facilitators who provide a structure to the research process, intercede between researchers and sponsors, and attempt to maximize the learning that occurs when researchers and sponsors interact.

Introduction

Scholars undertaking research in the organizational sciences struggle in their efforts to achieve rigor and relevance in their published work. What is meant by the terms “rigor” and “relevance”? Studies considered rigorous are those which are aware of prior theoretical and empirical research on the topic being examined, effectively apply appropriate methods, and convincingly employ tight and concise reasoning in interpreting implications and conclusions. Studies considered relevant are those which address current or enduring topics of interest to practice and which produce easily accessible, implementable outcomes, e.g., frames of reference, guidelines, prescriptions, etc.

Given its applied nature, it should not be surprising that concerns regarding “rigor and relevance” would arise within the field of information systems. But, information systems academics have, as a community, emphasized rigor over relevance in their published work. There are historical, contextual and institutional reasons as to why this has occurred (Benbasat and Weber 1996; Benbasat and Zmud forthcoming; Keen 1980; King and Applegate 1997). Recently, however, the desirability of achieving a more even balance between rigor and relevance in information systems research has been recognized by a number of information systems scholars (Benbasat and Zmud forthcoming; Galliers 1994; Robey and Markus 1998; Saunders 1998; Zmud 1996a, 1996b). What is not clear, however, is exactly how this is to occur.

Most information system researchers receive excellent training in the conduct of rigorous research, and many superb examples of rigorous information systems research can be found in the published literature. Contrarily, most information systems researchers received, at most, very limited training in the conduct of relevant research and most examples of published relevant research is found in the applied, practice-oriented journals such as *Sloan Management Review* and *Harvard Business Review*. Especially absent are research methods targeted at and published exemplars, in high quality academic journals, of research jointly characterized by both rigor and relevance.

The intention of the current manuscript is to describe a new approach for undertaking relevant research, which has the potential of producing published articles characterized by both rigor and relevance. This approach is different from other approaches for conducting relevant research, i.e., applied theory, evaluation research, and policy research (Robey and Markus 1998), in that it is “practice-driven” rather than “researcher-driven.” For this reason, it has been termed *practice-driven research*.

What is Practice-driven Research?

Two sets of features set practice-driven research apart from other research approaches: its distinguishing features and the robust set of actors involved. Each of these are discussed.

Table 1. Practice-driven Research vs. Researcher-driven Research

Practice-driven	Researcher-driven
– topic defined by sponsors	– topic defined by researchers
– end-point is a “moving target”	– end-point is initially known
– framed by nature of phenomena	– framed by a research model
– designed jointly by researcher and sponsor	– designed by researcher

Practice-driven Research: Its Nature

Practice-driven research involves a truly collaborative effort between a research team and the sponsors of the research effort. Invariably, the research team consists of academic researchers while the sponsors consist of the practitioners who have authorized and/or funded the research effort. Table 1 identifies those features of practice-driven research which distinguish it from more traditional approaches to academic research, collectively referred to as researcher-driven research.

Four issues characterize the nature of practice-driven research. First, the topic, or phenomenon, to be studied in practice-driven research is defined by the sponsors, not the research team. Essentially, the research team agrees to examine the topic put forth by sponsors. As discussed later, “what exactly is being studied” is jointly revisited by the research team and the sponsor throughout a project’s life. Second, practice-driven research does not have, at its initiation, a specific research outcome. Sponsors feel the need to learn more about the phenomenon being studied before they are willing to commit to a specific outcome. Typically, a project’s outcome, i.e., end-point, is revisited and renegotiated as this learning proceeds. Third, practice-driven research is framed by the current understanding (held collectively in the minds of both the researcher and the sponsor) of a phenomenon rather than by a well-defined research model. Why the reluctance to adopt a well-defined research model? Adoption of a well-defined research model implies that a “solution” is known *a priori* by the research team. If this is the case, then sponsors question (1) why effort and resources are to be invested in the project and (2) whether such early bounding of the research effort will inappropriately limit the study’s scope. Finally, while the research team is expected (because of its expertise) to propose and direct the research design, sponsors react to and suggest revisions to the design based on their understanding of the phenomenon, the situational contexts being examined, and the nature of the questions they wished answered regarding the phenomenon.

Practice-driven Research: Actors

Two of the actors involved in practice-driven research are referenced above: the research team and the sponsors. Three other actors serve integral roles: research sites, external experts, and research facilitators. The identity of and the nature of the role served by each of these actors is now presented.

Practice-driven research is best served if the *research team* is comprised of academicians rather than consultants or practitioners. Academics bring (1) a needed objectivity to their investigation and recommendations, (2) a required expertise regarding prior research on a topic, relevant theories, and relevant research methodologies, and (3) a strong value to base any findings on observed evidence rather than desired expectations. Not all academics, however, are able to effectively carry out practice-driven research. Successful research teams have members who have previously undertaken work in related topic areas, have first-hand experience with the business and technological contexts involved, are able to quickly develop a rapport with general and technical managers, and are able to adopt a very flexible perspective regarding their research.

The research team, by far, carries the heaviest load in practice-driven research. It is the responsibility of the research team to take the lead role in designing the research project, carrying out data collection, analyzing findings, making sense of the results, and articulating what has been learned through the research.

The *sponsors* are that group of practitioners who have sanctioned, and often have funded, a research project on a particular topic. A unique feature of practice-driven research is that the sponsors are actively involved in the research process itself, although their level of activity is far less than that of the research team. The sponsors periodically meet with the research team in order to be provided with updates on the project's status, listen to the research team describe their findings-to-date as well as their interpretations of these findings, provide their own interpretations of what they heard, and then work with the research team to refine and/or revise the research objectives as well as the research design.

A study's *sites* are obviously critical to the success of any field-based research effort, and practice-driven research is very much dependent on field-based data gathering. Organizations sought as research sites should exhibit marketplace success as well as a solid track record in terms of their success in applying IT to attain marketplace success. Much can be learned from excellent firms. However, unlike researcher-driven research, practice-driven research usually does not seek research designs which contrast successful organizations with unsuccessful ones. Why not? Because it is usually difficult to pinpoint an accurate explanation as to why failure occurs; it can be attributed to too many alternative factors: poor business management, poor IT management, competitor's actions, bad recent decision making, etc.

Should a sponsor's organization serve as a research site? As sponsors are committed to the success of a research project, their participation—where appropriate given the phenomenon being examined—can add considerable depth to the research project. An over reliance on sponsors as research sites, however, does raise the specter of convenience sampling and its threats to both internal and external validity. Further, the sponsors themselves are most often interested in learning about other (“best practices”) organizations, not about themselves. When selected judiciously and sparingly, the use of sponsors as research sites can lead to extremely valuable outcomes. Most often, such practices should be discouraged.

Two factors dominate the identification and selection of informants within a research site: the informant's understanding and relationship with the specific phenomenon being examined and the desire to represent a diverse set of perspectives among these informants at each site. The importance of informant selection cannot be overemphasized. The time and effort spent up-front targeting and screening potential informants often proves to be the key factor in enabling truly insightful observations to be reached.

The use of *external experts*, typically either consultants or academics, can prove to be invaluable with practice-driven research. External experts can serve three very useful roles in a research project: as a source of data (gathered through individual interviews or a focus group), as a “thought leader” (adding fresh insights into the nature of the phenomenon via discussions with the research team and sponsors), or to validate findings (again, either through individual interviews or a focus group).

Finally, the role of a *research facilitator*, who intermediates between the research team and the sponsors, is another unique feature of practice-driven research. It is

strongly advised that the role of research facilitator be formally defined; otherwise, this actor is unlikely to attain the legitimacy necessary for the role to be carried out effectively. The research facilitator works independently with both the sponsors (to help select and frame the topics to be studied; to explain the goals, expectations, and actions of the research team) and the research team (to help develop the research design; to explain the expectations of the sponsors; to help interpret findings). However, the most critical role served by the research facilitator is targeted at enriching interactions between the research team and the sponsors, such that these interactions prove valuable to both. Considerable time is spent working with the research team to prepare for the interaction, managing the interactive session itself, and then debriefing both the research team and the sponsors after the interaction.

What Research Strategies are Employed?

For the most part, the research strategies which have proven successful in practice-driven research are those one would expect to be associated with field-based research. Generally, these involve the nature of the data collected and an emphasis on intensive methods. However, contrasting more successful projects with less successful ones does indicate that three fairly unique attributes characterize the research strategies applied in practice-driven research: scheduling periodic interactions between the research team and the sponsors, designing studies as multiphased projects, and insuring that discrete deliverables are associated with each of a project's phases.

Nature of Gathered Data

The types of research questions of most interest to sponsors tend to emphasize (1) the discovery of resolutions to current or recurring problems as well as descriptions of "best practices" regarding specific organizational, managerial, or technical tactics and (2) the formulation of fresh perspectives regarding organizational, managerial or technical strategies. Additionally, sponsors wish to be able to relate a study's findings to their own business and organizational contexts, in order that they can better interpret these findings given the specifics of their own situation.

In order for a research team to deliver useful research outcomes, the data which is gathered must be context-rich. What does this mean? It means that attention must be paid to history; to external as well as internal factors related to the phenomenon of interest; to particular episodes (i.e, chains of events, decisions, actions and outcomes) which illustrate effective, or ineffective, practice; to temporal effects within and among such episodes; and to the backgrounds, personalities, and intentions of the actors involved in the episodes. While such data often tend to be in the form of stories or anecdotes, the more "hard data" and the broader the explanatory influences, the more likely that the data will prove to be compelling, interpretable, and useable by both the research team and the sponsors.

Emphasis on Intensive Methods

What type of research methods are most useful in generating data such as that just described? Intensive methods, i.e., case histories, interviews (face-to-face and phone; individual and focus group), and observation tend to produce the most interesting, convincing, and insightful findings. Occasionally, field surveys have proven useful to either prepare a research team for a set of interviews with a case site or to collect “benchmarking” data across a much broader and larger collection of sites than would otherwise be possible. Generally, however, the constricted format of field surveys too often produces data which cannot be interpreted. Remember, practice-driven research is not undertaken to confirm an a priori research model, and such an objective is the primary purpose of the field survey.

Interactions Between Research Team and Sponsors

An integral element in the design of practice-driven research is the requirement that the research team and sponsors periodically interact to discuss research directions, strategies, and findings. These interactions, in fact, are the “heart and soul” of practice-driven research as they

- ground the research team in the concerns and thinking of practice,
- ground the sponsors in the challenges of conducting rigorous, objective research,
- enable the research team and the sponsors to learn from one another and to push their thinking forward in ways which otherwise would not occur, and provide the opportunity to redirect a project in order to move it in more important or more interesting directions or to refine it by elaborating specific issues which would benefit from additional data collection.

How frequently should these interactions occur? It depends on the dynamics of each research project. Two key factors tend to determine this frequency. First, an interaction session must be value-adding; that is, sufficient findings have been produced since a prior interaction such that the research team has something real to talk about and the sponsors believe they have obtained value from the interaction. Second, the interaction sessions must be held frequently enough such that the opportunity does exist to redefine and redirect the research project. Experience indicates that arranging meetings between the research team and the sponsors every four to six months seems to work best.

What do sponsors find most valuable about these interaction sessions? Three things stand out above all others:

- tactical actions to consider for use within their organizations,
- new ways of thinking about the phenomenon, and
- the discussions, often on side issues, which evolve both between sponsors and the research team and among the sponsors

In designing presentations for these interaction sessions, research teams must remember to maintain a pragmatic orientation and to push themselves to “go beyond the data.” In other words, research teams should be very willing to push the boundaries of their knowledge as far as they can but to do so in the context of today’s business and technological realities.

Multiphased

Because of this need to have periodic interactions between research teams and sponsors, practice-driven research must be designed as multiphased subprojects, with the specific findings generated at the conclusion of a subphase being the primary subject matter for an interaction session. Table 2 provides examples of two, very different, multiphased studies.

Example 1 is a good example of a “drill down” research strategy. Prior to the first phase, the research team develops a tentative frame for viewing the phenomenon being studied. The first phase is then used to ascertain the key issues, given this frame, associated with the phenomenon, to “test” the frame, and to gain nominations of potential research sites. Analysis of first phase results produces a clearer set of issues to be examined, a refined research frame, and a candidate set of research sites. Ten of these sites are involved with the second phase, where the refined issues are examined within the specific context of these organizations. Analysis of second phase results produces a fairly comprehensive structure for understanding the phenomenon being examined. Six of the ten sites are then identified as being particularly rich and are the subjects of much more intense site visitations. Analysis of third phase results produces the study’s final results.

Example 2 illustrates a very different research strategy. Here, the research team does not believe it can (or should) develop a tentative research frame. Instead, intensive site visitations at three organizations (felt to be exemplars) are used to understand the phenomenon. Analysis of first phase results produces the tentative structure for conceptualizing the phenomenon being examined. Next, a field survey is undertaken to discover firms engaging in particularly interesting activities related to the phenomenon, to identify the right person at an organization to interview regarding the phenomenon,

Table 2. Examples of Multiphased Research Designs

<p>Example 1</p> <ul style="list-style-type: none"> • Phone Survey <ul style="list-style-type: none"> – 25 to 40 sites – single informant • Phone Survey <ul style="list-style-type: none"> – 10 sites • Site Visitations <ul style="list-style-type: none"> – six sites – multiple informants – multiple visits 	<p>Example 2</p> <ul style="list-style-type: none"> • Site Visitations <ul style="list-style-type: none"> – three sites – multiple informants – multiple visits • Field Survey <ul style="list-style-type: none"> – 50 sites – single respondent • Phone Survey <ul style="list-style-type: none"> – 15 sites – single informant • Focus Group <ul style="list-style-type: none"> – phone survey informants – external experts
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and to provide an early but loose test of the tentative conceptual structure (Do responses imply that the structure made sense to respondents?). Analysis of second phase results produces a sampling frame for the interviews. Phone interviews are then undertaken in the second phase to validate the conceptual structure and to explore the strategies and tactics being applied in these organizations. Analysis of third phase results yields a fairly robust structure for the phenomenon as well as effective strategies and tactics for operating within this structure. The fourth phase focus groups are then used to validate these overall findings.

Multiphased research designs, such as those given as Examples 1 and 2, reflect a number of key features of practice-driven research:

- very rich data is generated,
- different types of data are generated,
- the phenomenon is assessed from multiple perspectives,
- each subphase is fairly short, such that intervals between interactive sessions are correspondingly short,
- each subphase ends with a set of findings which can be used to structure the interaction session between the research team and the sponsors

While such research designs often present scheduling and logistical challenges, the opportunities provided by involving the research team and sponsors in productive exchanges does tend to promote the research team to focus on the more relevant, more forward-looking, and more intellectually stimulating aspects of the phenomenon examined.

Multiple Deliverables

Research strategies for practice-driven design benefit in numerous ways from the explicit incorporation of multiple deliverables. Ending each subphase with a deliverable results in (1) the research team having to “make sense” of their findings throughout the entire research project, rather than at the end of the project; (2) a topical basis for an interaction session between the research team and the sponsors; and (3) a value-added “take-away” for sponsors which might be of immediately use with a sponsor’s organization. Once the data gathering for a research project has been completed, these deliverables represent distinct but complementary views of the phenomenon from which a more complete, synthesized final report can be produced.

What types of subphase deliverables have proven most useful from the perspective of sponsors? What is desired are materials that offer fresh insights and learning regarding a phenomenon as well as prescriptions and guidelines for implementing these insights and learning. Generally, deliverables take one of four forms:

Practice-Oriented Literature Reviews. The objective is to provide a concise and accessible review of what is currently known about a phenomenon, as reflected in both scholarly and practitioner sources. A successful design for such literature reviews has a front-end, which describes how the deliverable would be used and provides the major concepts and findings to emerge from the literature, and a back-end, which is comprised of synopses of the more useful items from the literature review. It is particularly important that the front-end be organized in an implementable manner (that is, the reader should be able to easily digest and apply the concepts and findings) and possess multiple

entry points (that is, some form of indexing should be provided to allow the reader to seek information on particular issues).

Case-Study Discussions. The objective is to discover and present best practices, lessons learned, and new insights within a set of specific organizational contexts. A successful design for such case study discussions has a front-end, which highlights the major issues to take away from the case studies and which is cross-referenced to the case studies themselves, and a back-end, which consists of each case study description. It is critical that sufficient contextual information is provided in these case study descriptions so that readers can understand both the contexts to which the findings apply and those findings most relevant to their own organizations.

Thought-Leadership Discussions. The objective is to introduce new conceptualizations and frameworks to enable the reader to develop a fresh perspective on a phenomenon. As such material is by its nature quite abstract, it is critical that numerous examples and anecdotes be used to ground the concepts and frameworks being introduced within today's business reality.

Prescriptions. The objective is to provide a set of implementable prescriptions regarding a phenomenon. It is important that compelling evidence be provided to readers that documents the effectiveness of the offered prescriptions. What evidence is most compelling? Invariably, what readers desire most are the measurable performance outcomes of firms which have followed the prescriptions. When such hard data is lacking, vivid stories highlighting the benefits received from the prescriptions must be provided.

Two other types of deliverables are also involved with practice-driven research. First, an **Executive Summary** should be produced for each interaction session between the research team and the sponsors. This executive summary, which summarizes the major issues to be discussed during the interaction session, serves as a "take away" from the session which documents the session and which can be distributed by sponsors to others within their organizations. Second, a **Final Report** should be produced at the conclusion of the research project which synthesizes the findings from each of the project's subphases to create an overarching treatment of what was learned.

Producing Scholarly Publications from Practice-driven Research

Two forms of scholarly publication opportunities arise with practice-driven research: those directly derived from project deliverables and those developing from both more extensive explorations of the data and insights gained from a project. When additional effort is invested in developing relevant theoretical frames and incorporating relevant prior research, project deliverables can often be crafted into pragmatic pieces targeted at thoughtful executives, at applied academicians, and for classroom use. Typically, such manuscripts make extensive use of the context-rich data gathered in practice-driven research and would be most likely to be published in journals such as *Sloan Management Review* and *MIS Quarterly*. Most well-done practice-driven research should produce at least one such applied manuscript.

It is also possible to produce manuscripts whose contributions are very scholarly in nature, although this should be expected to occur with less regularity. Purely scholarly contributions are unlikely to result directly from practice-driven research. The purpose of most projects is neither to develop nor to test theory. Rather, the emphasis, throughout a project's life, is on delivering thoughtful but useful findings for sponsors. However, with the completion of a project, the research team has the opportunity to step back, think deeply about the phenomenon, and revisit their thinking. Essentially, theoretical models can be developed from the data, or theoretical models can be posited and tested using the gathered data as "secondary data." Given the rich data typically collected and the robust dialogues that ensue between the research team and sponsors, practice-driven research certainly creates opportunities for "breakthrough" theorizing to occur. However, such a "breakthrough" manuscript is very likely to require the research team to dramatically extend the "thinking" they evidenced during the project itself.

What are the Major Hurdles to be Overcome by Research Teams Engaged in Practice-driven Research?

The major hurdles faced by research teams fall into two major categories: those involved with data collection and those involved with communicating results to sponsors. Three difficulties, not unexpectedly, arise in data collection: gaining access to sites, gaining access to informants, and maximizing the information obtained from each informant. The challenge that arises with sponsors involves the necessity to produce interesting and meaningful research findings.

Gaining Access to Research Sites

Gaining access to research sites involves, first, identifying likely sites and, then, convincing executives at a site to participate in the research. The major criterion in identifying sites is to locate well-managed business organizations that are also excellent performers regarding the phenomenon being examined. Often, research team members are aware of such organizations given the members' interest and expertise with the phenomenon. Invariably, however, potential sites are identified through the research teams' efforts to extend their awareness through a variety of sources: sponsors, trade and academic publications, and recommendations from experts (consultants, academics, IT professionals). Finally, once contact is made with a research site, informants can be asked to nominate interesting firms.

Getting a potential site to agree to participate in a research project can be a challenging exercise. One of the nice aspects of practice-driven research is that the project's direct association with a sponsoring group serves to validate the research effort itself. The sponsor association can be further exploited by having individual sponsors personally participate in the site recruitment (i.e., by talking to an acquaintance at the site). Ultimately, however, most organizations agree to be research sites because one or more managers in the organization are very interested in the phenomenon being studied. As a result, research teams must be able to share overall findings with participating

research sites and may wish to prepare a report for each site that explores these findings in the site's unique context. A final inducement which can be offered to potential sites is an invitation to the interaction session where the data regarding the site will be presented.

Gaining Access to Informants at a Research Site

The key to both identifying potential informants and setting up interviews with these informants is to locate an internal champion, an individual who understands the phenomenon and enjoys the respect of others throughout the organization. Often, such an individual is not a research teams' initial contact at the research site. Up-front efforts to locate an internal champion must be the highest priority task at each site.

With the help of this internal champion, it becomes quite easy to identify and gain the participation of informants. The challenge is the logistics of scheduling interviews with these informants. It is not unusual to find that three to five months pass before all the interviews are complete, given the informants own schedules and the inevitable cancellations and reschedulings which will occur.

Maximizing Information from Informants

Given the difficulty of setting up interviews and the necessity to keep these interviews relatively short (generally, one hour at most), it is beneficial to carefully prepare for each interview so that the right questions are asked. Depending on informants' organization roles and their relationships with the phenomenon, the focus and direction of interviews within a research site might vary considerably. Carefully questioning the internal champion about each informant is invaluable. It can also prove useful to have informants complete a (very) short questionnaire prior to the interview such that the questioning of each informant can be more tightly tailored to the individual.

Insuring that Research Findings are Interesting and Meaningful for Sponsors

A common problem faced by research teams is they become engrossed in their interpretation of a project's data and forget that the findings must be interesting and meaningful for sponsors. Why does this occur? It seems to be a natural outgrowth of the fact that the research team spends the vast majority of project time working alone, only interacting with the sponsors at the interaction sessions.

Essentially, it becomes the responsibility of the research facilitator to work with the research team such that this problem does not manifest itself. It is not uncommon for the research team and the research facilitator to cycle through two or three "versions" of a subphase's findings prior to an interaction session. In order to allow ample time for this refining of findings, data collection should cease roughly six weeks prior to an interaction session.

Conclusion

When practiced as described, practice-driven research presents three major benefits to the information systems research community. First, the topics researched are extremely relevant for practice (as they are selected by sponsors, who confront similar issues on a regular basis). Second, the projects themselves are executed in an objective, rigorous manner (as they are performed by well-trained academics, who strive to publish their findings in scholarly journals). Third, the findings are jointly influenced by knowledge and insights from the domains of both practice and academia. As a consequence, research results are more likely to influence both domains than are results obtained through more traditional modes of applied research or through projects undertaken solely by practitioners.

As with all research, the success of practice-driven research largely depends on the abilities and efforts of the research team. It is clearly important that, collectively, the research team possess the various knowledge domains required by a specific project. It is just as important, however, for the research team to adopt a set of behaviors and perspectives which are rather unique to practice-driven research:

- the most experienced and skilled research team members must do most of the research (otherwise, these individuals would not be able to participate actively in interaction sessions),
- research team members must never develop preconceived ideas about the “correct” answer (otherwise, these individuals would not be open to alternative explanations within gathered data or raised by sponsors),
- research team members must always be willing to change a project’s objectives, strategies, and methods (otherwise, fruitful but alternative paths would never be explored), and
- research teams members must keep their commitments to sponsors regarding project deliverables, agreements to answer specific questions, or agreements to change a project’s trajectory (otherwise, they would lose the confidence—and involvement—of sponsors).

Still, successful practice-driven research is, and must be, a tight partnership between the research team, the sponsor, and the research facilitator.

These notions regarding practice-driven research have evolved (and are continually being refined) through six years of experiences with its application by the Advanced Practices Council of SIM, International. Our understanding of how this process works—as well as for what topics it works best—is continually evolving. This essay, consequently, is best viewed as a “work-in-progress” rather than a definitive description of a useable method of undertaking research that produces both rigorous and relevant outcomes. It is hoped above all that these ideas prove useful to all researchers interested in field-based information systems research and encourage others to pursue similar or alternative approaches for cooperative research endeavors between academia and practitioners.

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About the Author

Robert Zmud is Michael F. Price Professor of Management in the College of Business Administration at the University of Oklahoma. His research interests focus on the impact of information technology in facilitating a variety of organizational behaviors and on organizational efforts involved with planning, managing, and diffusing information technology. He holds a Ph.D. (Management) from the University of Arizona, a M.S. (Management) from M.I.T., and a B.A.E. (Aerospace Engineering) from the University of Virginia.

