Implementation Team Responsiveness and User Evaluation of Customer Relationship Management: A Quasi-Experimental Design Study of Social Exchange Theory

DAVID GEFEN AND CATHERINE M. RIDINGS

DAVID GEFEN is an Assistant Professor of MIS at Drexel University, where he teaches Strategic Management of IT, Database Analysis and Design, and Programming. He received his Ph.D. in CIS from Georgia State University and an M.S. from Tel Aviv University. Dr. Gefen's research deals with trust and social exchange processes as they occur during IT adoption and e-commerce. His research findings have been published or are forthcoming in such academic and professional journals as *MIS Quarterly, DATA BASE, Omega: The International Journal of Management Science, JAIS, eService Journal,* and *CAIS.*

CATHERINE M. RIDINGS is an Assistant Professor at Lehigh University's College of Business and Economics teaching in the Business Information Systems program. She received her Ph.D. from Drexel University. Her research interests include virtual communities in the context of trust, social exchange, and knowledge management, as well as research on IS adoption. Her teaching interests include e-business, e-commerce, systems analysis and design, database design, and Visual Basic. Dr. Ridings has industry experience developing large-scale customer contact systems on distributed platforms.

ABSTRACT: Customer Relationship Management (CRM) systems require extensive configuration during which users come into extensive contact with the technical implementation team. Previous research examining other Enterprise Resource Planning (ERP) modules has shown that user perception of the responsiveness of such teams, as an indicator of a possible *social exchange,* is significantly *associated* with an increased favorable assessment of the new system and ultimately its adoption, the reason being that perceived responsiveness creates a constructive social exchange. However, previous research, using survey data alone, did not examine causation. The objective of this study is to examine, using a quasi-experimental design, whether different degrees of actual responsiveness in different sites during CRM implementation result in significant differences in the users' favorable assessment of the correctness and ultimately their approval of a new CRM. The data support these hypotheses, but show that the downstream effects of actual responsiveness are mediated by perceived responsiveness. Implications concerning the social exchange relationship during CRM adoption are discussed.

Journal of Management Information Systems / Summer 2002, Vol. 19, No. 1, pp. 47–69.

0742–1222 / 2002 $9.50 + 0.00.

KEY WORDS AND PHRASES: Customer Relationship Management, Enterprise Resource Planning, social exchange theory.

ENTERPRISE RESOURCE PLANNING (ERP) software enables organizations to integrate their transaction management and business processes across the entire organization [21]. This integration has enabled ERP to become the de facto replacement of legacy systems [25] and to grow at a 35 to 40 percent annual rate [1] to a $10.9 billion market [9] with some of the leading suppliers expected to report a 15 to 20 percent annual growth rate [31]. In the past this growth was fueled by the rapid adoption of MRP II systems that integrated the supply chain [11]. Industry reports suggest that the next business process that the leading ERP vendors will handle in order to sustain this growth rate will be Customer Relationship Management (CRM) systems [22].

CRMs are parameter-adjustable software packages that are intended to integrate and manage all aspects of customer interactions within the organization, and so considerably improve the ability of the organization to handle customer service, sales, marketing, online transactions, and orders [32, 33]. Some estimates suggest the CRM market alone may reach the $9 billion mark by 2003 [7]. Indeed, industry reports suggest that the leading ERP vendors are investing extensively in building and improving their CRM modules to respond to this expected market (for example [36, 39]). The driving force behind the rise of CRM is the increasing competition brought about by globalization, the rise of e-commerce, and the resulting increase in competition and client expectation for high-quality customized online service [14, 30, 32].

Many issues contribute to the successful implementation of CRM. Some of these issues deal with broad organizational level issues that typically precede the actual implementation, such as gaining senior management support, creating organizational champions, devising appropriate user training programs, and having a suitable information technology (IT) infrastructure. Other issues deal with specific user-level implementation matters, primarily providing user support and configuring the CRM to particular user requests during implementation. In contrast to the former broad organizational level issues, users do have significant input in the latter implementation issues through requests and queries that are submitted to the implementation team. In general, responsiveness to such user requests, and so configuring the new IT so that it will support the users' business processes and work procedures, is needed in systems where the views of senior management may not reflect the actual work procedures as they are performed [4], as is also the case with CRM [26] and other IT where there are many groups of stakeholders with their respective conflicting views and priorities [16]. Past research has shown that responsiveness to such requests is correlated with increased user assessment that an IT is configured correctly—albeit owing to the use of cross-sectional survey data alone, actual causation was not examined by previous research [11, 12].

The objective of the study is to examine, based on Social Exchange Theory (SET) [3, 15, 38] and applying a quasi-experimental design, whether responsiveness to user requests in real-world settings is a plausible *cause* of (and are not just *correlated* with) increased favorable user assessments of the correctness of the configuration and, through these assessments, user willingness to adopt the system. Quasi-experimental designs, unlike cross-sectional survey data, can establish causation to some extent by showing significant differences in outcome variables between treatment groups that are otherwise approximately equivalent [5].

The importance of gaining user approval is highlighted by industry reports suggesting that configuration problems account for an estimated 65 percent of CRM project failures [23] and that user resistance is one of the major reasons ERP implementations fail [19]. Moreover, users, by virtue of being the ones who actually use the CRM in real-world situations on a daily basis, are the best judges of its correct configuration (that is, that the CRM has been customized to support their work procedures and business processes correctly). In addition, because the users of the CRM are typically the organization's personnel who have contact with a large proportion of its clients and the revenue these clients bring, user approval of the way in which the CRM was correctly configured testifies, at least in part, to the ability of the CRM to increase these revenues through its support of client-oriented business processes. Consequently, one of the main tasks of implementation management should be to increase user assessment of the correctness of the configuration of the CRM and through it user willingness, albeit not voluntary, to adopt it.

The study examined the implementation of a new CRM in a large telecommunications company in two totally separate but functionally identical sites in the northeastern section of the United States. One site received extensive responsiveness from the implementation team, whereas the other site, due to organizational policy, received only routine responsiveness from the CRM implementation team. The data show significant differences in all the studied constructs: user assessments of the implementation team's responsiveness and cooperative intentions, user assessment of the correct configuration of the CRM, and user willingness to adopt the CRM. In accordance with the implications of SET, the data also indicate that the effect of responsiveness, both actual and perceived, on user willingness to adopt the new system was mediated through user beliefs about the correctness of the configuration. The data also indicate that actual responsiveness affected these beliefs through perceived responsiveness.

Theoretical Background

CRM Implementation: Configuration and Support

CRMs ARE ERP MODULES THAT SPECIALIZE IN capturing, integrating, managing, and analyzing customer data, such as who, what, when, and how a customer did what with the organization. CRMs integrate and synthesize a wide array of activities related to customer service, sales, and marketing to customers [20, 33]. Combining

these activities into one seamless interaction gives organizations a strategic tool to retain and improve their customer relationships through customized integrated services [7]. In addition, by collecting, retaining, and analyzing this data, CRMs allow companies to handle sales, customer service, and marketing more efficiently and effectively by strategically marketing products or services to customer groups to whom the services or products most apply. CRMs also enable better customer service by combining all the interactions a company has with the customer into one integrated seamless interaction [14, 30, 32]. Current CRM modules consist of operational CRM, which allows a seamless integration of customer interface with back-office transactions; analytical CRM, which allows the organization to analyze its relationship with the customers based on data in a data warehouse; and collaborative CRM, which enables the organization to work closely with selected customers, suppliers, and business partners. Some CRMs also support marketing campaigns and telemarketing [32].

Implementing a new CRM, however, is not a simple "turnkey" project. The complexity of the business processes involved, the unique way in which each company handles its own customer relationship management, and the need to adapt existing work procedures mean that successful CRM implementation requires extensive configuration. CRMs are not different from other ERP modules in this respect, except that in the case of CRM, these hurdles are sometimes more pronounced because managing customer relationship activities is less standardized across industries than other business processes handled by other ERP modules, such as "financials." In addition, because the CRM is a company's interface with its many clients (arguably a larger group with more diverse needs than its suppliers or other business partners), more people with more diverse needs interact with a CRM than with other ERP modules. The 65 percent failure rate of CRM implementation projects [23] is a testimony to these complexities.

Extrapolating from research dealing with user perceptions during MRP II adoption suggests that some of the obstacles in implementing a new CRM, especially those concerning inaccurate configuration, may be related to the nature of the social exchange relationship between the users and the implementation team [12], discussed next.

Social Exchange Theory

SET views interpersonal interactions from a cost–benefit perspective, much akin to an economic exchange—except that a social exchange deals with the exchange of intangible social costs and benefits (such as respect, honor, friendship, and caring) and is not governed by explicit rules or agreements.[1] Like an economic exchange, social exchange assumes that individuals take part in an exchange only when they expect their rewards from it to justify the costs of taking part in it. The major difference between a social and an economic exchange is that a social exchange gives no guarantee that there will be reciprocal rewards in return for the costs invested, because, unlike in economic exchange, there are no rules or agreements that govern the interaction. The only "guarantee" in a social exchange is the assumed cooperative

intentions of the other party (that is, the belief that the other party will reciprocate as they are expected to [3, 15, 38]). This belief in the cooperative intentions of the other party is central to a social exchange, because the lack of explicit rules and regulations means that people have to rely on their belief in the cooperative intentions of the other party to justify their expected benefits from the exchange. Had there been explicit rules and regulations to regulate the exchange, argues Blau [3], it would have been an economic exchange, not a social one, and would not have had social ramifications. Indeed, explicitly stating the motivation behind a social exchange, such as "I will help you if you will respect me," is hardly likely to create a social bond or result in respect [3]. As a result, individuals taking part in a social exchange must have faith in the cooperative intentions of the other individuals with whom they are engaging due to the lack of a mechanism that could enforce an equal exchange. The belief in the cooperative intentions of the other party taking part in the social exchange is so important that without the belief that the other party will reciprocate fairly people are less likely to *voluntarily* take part in a social exchange [3].

These principles of social exchange—a cost/benefit analysis of intangibles, the need to believe in the intentions of the other party, and the social message a social exchange conveys—have been used to understand many phenomena in business interactions (for example [2, 6, 8, 17, 29]), including the interaction between users of a new complex IT and its technical support team [11, 13]. Extrapolating from this research on SET during IT adoption, a case can be built as to why SET can also apply to ERP adoption, in general, and CRM, in particular.

Social Exchange During CRM Adoption

The initial decision to implement an ERP module is typically a top level strategic one [18] that is geared toward gaining strategic benefits by integrating business processes across organizational units [11, 18], receiving a high return on investment (ROI) from these systems [19], reshaping work activities into seamless automated business processes [40], gaining new networked market capabilities [18], and replacing legacy IT [25]. Vendor reports also highlight the high ROI from these systems (for example [33]). Achieving these strategic level benefits depends, however, on a successful implementation process in which the users' support is essential [23].

In contrast to the managers making the initial decision to deploy the CRM, the users have little formal control over the implementation team. Their interaction with the implementation team, as in the case of ERP in general [11], contains many elements of a social exchange. The reason for this is the nature of the relationship between the users and the implementation team: extensive interaction combined with the intangible nature of the benefits that the users expect and the lack of explicit rules of conduct that can guarantee these benefits. One of the major benefits users are likely to gain from the relationship with the implementation team is a new IT that is properly configured to their work procedures and that provides correct and reliable output. This is the case with users of expert systems [13] and with ERP users [11]. SET implies that, in the absence of rules and regulations, the belief in the cooperative

intentions of the social exchange partner as well as manifestations of such cooperative intensions should influence people's assessment of the benefits that they expect to get out of the relationship [3, 6, 15]. In the case of complex IT, these benefits are centered around the correct configuration of the IT [11]. This is especially important in the case of ERP systems in general, because these IT need to be customized to specific user needs before they can be used properly [11, 23, 34, 35].

What indications, then, do users have of the implementation team's cooperative intentions? Previous research examining the applicability of SET to IT adoption has suggested that since a central characteristic of the interaction between the users and the implementation team is user requests for changes and implementation team responsiveness to these requests, the track record of this responsiveness should influence user assessments of their expected benefits from the new IT [11, 13]. The reason for this in the case of CRM implementation is that when the implementation team responds promptly to a user, whether it is regarding the solution to problem report, or simply an inquiry regarding the functionality of the system, the implementation team is signaling an intention to cooperate with users and assist them in gaining the primary benefit from the new IT: its support of the user's work processes through correct configuration [11], which is important because inappropriate customization is a common problem in ERP implementation [21]. Conversely, if the implementation team does not show responsiveness, for example, by not adequately solving reported problems or not incorporating requested enhancements, the user is likely to perceive this behavior as an indication of the implementation team member's lack of cooperative intentions, with all that that implies regarding getting the expected benefits from the new system [11]. In general, being responsive is a central aspect of a social exchange [29].

Research Model and Hypotheses

VIEWING THE INTERACTION BETWEEN THE USERS and the implementation team as a social exchange suggests that in sites where the implementation team is highly responsive users will be more inclined to believe in the cooperative intentions of the team and accordingly to assess the CRM more favorably and to be more inclined to approve of it. The hypotheses developed in this section explain this process in the context of a quasi-experimental design where each treatment has a different level of responsiveness.

During the implementation of a CRM, users and implementation team members interact extensively and the users form a perception of the responsiveness of the implementation team. From a user's point of view, this interaction is reminiscent of a social exchange: there is no formal agreement detailing each participant's obligations, hence the users' hoped-for benefits depend to a large extent on the cooperative intentions and behavior of the implementation team. This is especially the case given that the quality of configuration and support cannot be easily and readily detailed in a legal contract.[2] Past research has shown that such user beliefs regarding correct software customization are highly correlated with user assessments about the implementation

teams' responsiveness to their requests during the configuration and support [11]. Arguably, the same should apply to CRM implementation. The extent to which the users evaluate, based on their firsthand experience, that the implementation team is configuring the CRM in response to their requests should increase user assessments that the implementation team is cooperative and that, accordingly, the CRM will support their specific business processes and work procedures better. Indeed, the complexity of a CRM is such that it is impractical to check every minute detail of an implementation team's work and so the users have no choice but to accept on faith that the configurations are done with their best interests at heart. The hypotheses are developed below. Figure 1 presents the research model.

The first set of hypotheses examines whether belonging to a pilot site treatment group, a site with increased implementation team responsiveness, significantly increased user beliefs that the implementation team is responsive, has cooperative intentions, and that the CRM is configured correctly. The pilot site received the CRM first and was closely monitored by the implementation team to check that the CRM was configured correctly. This support included on-site implementation team presence and a quick turnaround of reported problems into new releases, in addition to routine support of a hot line number. The non-pilot sites were given the CRM but received only routine support of a hot line number. The first hypothesis examines whether a quasi-experimental treatment group receiving increased actual responsiveness from the implementation team also perceives a greater degree of responsiveness from the implementation team:

H1a: Subjects in sites receiving increased implementation team responsiveness will perceive higher degrees of implementation team responsiveness.

In addition, it is hypothesized that, given that the implementation team's declared organizational objective was to assist the subjects (that is, users) and that they assisted the pilot site subjects more than they did the other subjects, the pilot site subjects would acknowledge more the implementation team's cooperative intentions. In other words, it is hypothesized that the subjects in the pilot site, because they experienced more cooperative behavior, would accordingly posit a higher assessment of responsiveness than would subjects in other sites:

H1b: Subjects in sites receiving increased implementation team responsiveness will perceive higher degrees of the implementation team's cooperative intentions.

Since the objective of this increased responsiveness from the implementation team was to configure the CRM according to user requests, to explain problems, and to assist users when any problems arose (the last item being especially important), it is also hypothesized that subjects in the pilot sites (that is, those who had an on-site consultation and a quick turnaround to requests), would accordingly be more likely to assess that the CRM is configured correctly.[3]

H1c: Subjects in sites receiving increased implementation team responsiveness will assess the correctness of the CRM configuration more favorably.

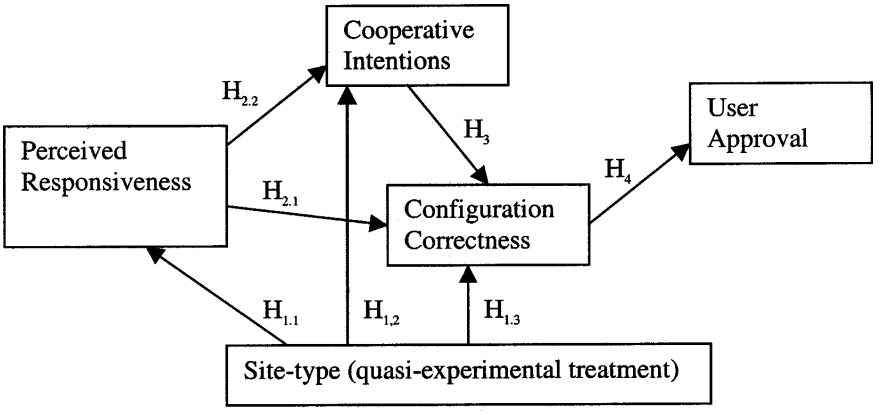

Figure 1. Research Model and Hypotheses.

The main objectives of an implementation team's responsiveness and an integral part of their interaction with the users are typically (1) to configure the CRM so that it will support user needs correctly, and (2) to explain to users how to use the CRM to achieve these results. This was also the declared objective in this CRM implementation project. During this implementation period, however, users generally had no guarantee that the implementation team would grant them their expected benefits from the exchange (that is, a correctly configured CRM that will assist rather than deter them in their work). In such circumstances, extrapolating from SET, the users are likely to justify their expectations based on their assessment of the implementation team's behavior toward them. Since the primary way in which users can influence the configuration of the CRM is through the responsiveness of the implementation team, it is hypothesized that perceived responsiveness would be associated with a more favorable assessment of the correct configuration of the CRM. Moreover, if the implementation team is not responsive to user inquiries and requests, users have little reason to assume that the software will be configured to operate as they would like it to, or that the implementation team really cares about helping them achieve this expected benefit through explaining how to use the software correctly.

H2a: Increased user perception of the implementation team's responsiveness will be associated with increased perception of the correctness of the CRM configuration.

During a social exchange, people's assessment of the cooperative intentions of others is based on perceptions concerning the behavior of those others. When those others are perceived to be doing their fair share of the social exchange, these others are perceived as cooperatively intentioned. SET implies that under these circumstances user assessments about the cooperative intentions of the implementation team should be based on user perceptions of the implementation team fulfilling their expected behavior. Indeed, previous research has shown that perceived responsiveness is associated with increased belief in the implementation team's cooperative intentions [11, 13]. Also, in many CRM implementation projects, including the one examined in this

study, a major explicit objective of the implementation team is to be responsive to user requests and to assist users on-site with explanations about the CRM so that the CRM can be configured according to user needs and so that the users will use it in the best way possible. In fact, the implementation team in this project was trained expressly for this purpose. According to one IT manager, the implementation team's responsibility was to "hold the hands of the users and ensure that their concerns were addressed so that the system installation was a success." Thus, when the implementation team does so, users should be more likely to believe in the implementation team's cooperative intentions.

H2b: Increased user perception of the implementation team's responsiveness will be associated with increased perception of the implementation team's cooperative intentions.

One of the major benefits that users can expect to gain from this kind of a social exchange is a CRM that supports their work processes correctly. Gaining this benefit is predicated on the cooperative intentions of the implementation team who, by being cooperative, can help users achieve this goal or who, by being noncooperative, can make it almost impossible. As SET implies, users realizing this should be more inclined to assess that the CRM is correctly configured when the implementation team is perceived as cooperative.

H3: Increased user perception of the implementation team's cooperative intentions will be associated with increased perception of the correctness of the CRM configuration.

If, as a result of the implementation process, the users believe that they have received a properly configured CRM and that they know how to use it properly, then the users are more likely to approve of the new CRM, regardless of company policy forcing them to use it, simply because such a CRM will support their business processes and improve the quality of their work. Conversely, if the users perceive that the CRM is incorrectly configured or that the on-site help has been insufficient, they will be less likely to *willingly* approve of it (that is, prefer it to an existing system). Since a correctly configured and dependable CRM is essential in achieving the user-related business processes that it is supposed to support, as it is with other ERP modules [11], it is hypothesized that users' acceptance of the new CRM will be correlated with their belief that the CRM has been configured correctly.

H4: Increased user perception of the correctness of the CRM configuration will result in a higher likelihood that the users will approve of the CRM.

Research Design

Quasi-Experimental Design

EXPERIMENTAL DESIGNS INVOLVE AS A MINIMUM using several treatment groups, having each receive a unique treatment, and then measuring and comparing outcome

measures to assess whether the different treatments resulted in significant differences between the groups on outcome variables of interest. Thus, unlike cross-sectional survey data, experimental data can show causation. Typically, showing causation requires showing association, isolation, and temporal precedence. Experimental designs can show all three. Association, as in cross-sectional survey research, can be shown through correlation, regressions, and the like. Isolation can be reasonably established by limiting, or at least controlling, extraneous constructs. Temporal precedence can be shown through experimental design where the cause preceded the effect. However, the external validity (generality) of laboratory experiments cannot be established as soundly as in cross-sectional surveys because of the necessarily limited sample size, because of the artificiality of laboratory conditions, and because of uncertainty whether the subjects really represent the population of interest in real-world settings. Hence, the objective of experimental designs is typically to show causation, whereas the objective of cross-sectional survey research is to show the generality of theoretical implications without establishing causation [5].

Between pure laboratory experiments and cross-sectional survey research is the quasi-experimental design. This research design, like laboratory experiments, deals with treatment groups and outcome measures, but, unlike laboratory experiments, it deals in real-world settings: it examines the research model with representatives of the population of interest in their actual field settings by comparing organizational units that received different treatments. As a result, quasi-experimental designs allow the researcher to assess plausible causation (only "plausible" because such designs cannot establish isolation as successfully as do laboratory experiments). And yet at the same time, quasi-experiments still maintain experimental realism (that is, the "degree to which the experiment is involving to the subject") and mundane realism (that is, "the extent to which a laboratory event is real-world like" [10, p. 432]), which is a typical critique of laboratory experiments. Nonetheless, being conducted in real-world organizations, the researcher can seldom randomly assign subjects to treatment groups or establish complete isolation as convincingly as in a pure laboratory experiment [5].

This study adopted a quasi-experimental design because the objective of the study was to assess plausible causation in real-world settings of actual responsiveness during the configuration and implementation period of a new CRM. A quasi-experimental design was necessary because implementation team responsiveness and the consequences of using a CRM in real-world scenarios cannot be convincingly replicated in a laboratory experiment, whereas causation cannot be examined in cross-sectional survey analysis. Due to the nature of the data and organizational constraints, this study applied a posttest-only design. (There are several types of quasi-experimental designs. See Cook and Campbell [5] for a comprehensive discussion of quasi-experimental designs.) In a posttest design, data from two otherwise equivalent groups are compared after one of the groups received the experimental treatment in real-world conditions. More comprehensive quasi-experimental designs also include a pretest where the same data are also collected before the treatment is administered. However, in the specific case of this study it was questionable whether users could assess the correct configuration of the CRM, or the intentions and responsiveness of

the implementation team, *before* they were given the CRM and came into contact with the implementation team. Accordingly, only posttest data were collected.[4] To account for this inherent shortcoming of this design, specifically that the differences between the groups might be due to an a priori difference between the groups (a selection effect) rather than due to the actual treatment, it is necessary to show that the groups are credibly equivalent. How this was done in this study is discussed in the next section.

Site Selection

The study utilized the implementation of a CRM in a large telecommunications company based in the Northeast United States. Telecommunications industries are among the first that CRM was built to support [39]. The current system that was used by the company to handle its customer orders, not a CRM, was in the process of being replaced by a CRM. The new CRM was customized to the organizational needs. The CRM allowed users to take customer orders and make product recommendations in order to strategically market products to appropriate customers. The user-base of the new CRM numbered in the thousands and was spread over several states. The users interacted with the implementation team during the configuration and installation period of the new IT, and during the ongoing handling of questions and problems relating to the new CRM.

This specific CRM was an operational CRM. (At the time, the CRM did not yet support analytical CRM or collaborative CRM.) The CRM was designed to provide real-time integration and synchronization between the front office interactions with the customer and the various back office fulfillment activities. Within the operational CRM, the modules that were implemented at this stage were order fulfillment and customer service. Specifically, the CRM supported (1) order life cycle process, (2) real-time availability checks, (3) customized product recommendations, (4) order tracking, and (5) service management.

The implementation of the CRM was parallel: users had the option to use either the new CRM or the previous system. In addition, due to the complexity of the system and the existence of users spread out geographically in many offices, the company decided to use a pilot conversion strategy. Any new major release was first installed in one office, the pilot site, and after it was ascertained that this new release was relatively correctly configured and stable, it was installed in all the other offices. This pilot site received special attention. In the words of the implementation project manager, one of the objectives of the implementation team in the pilot site was to "develop a close relationship with the users." Any configuration errors and other glitches found in the pilot site were often fixed very quickly with new mini-releases. Moreover, the implementation team answered any questions users had about using the new CRM. Indeed, often the implementation team was physically on-site at the pilot site. The non-pilot sites primarily received routine support through a telephone "hot line," although problems relating to missing functionality and possible CRM glitches were also received and handled from non-pilot site subjects.

In this study, special care was taken to examine the equivalence of the sites involved in the data collection, except for the additional responsive treatment that the pilot site received, in order to reduce the possibility of a selection bias. As part of the preliminary work, it was verified independently with several contact persons in the organization that the groups were equivalent in all respects except that the pilot site received increased responsiveness, and that this was the first and only time the pilot-site users were members of a pilot site. The posttest demographics also support the equivalence of the groups (see below for details).

The concerns raised by the users fell predominantly into three categories: (1) concerns about system performance, (2) bug reports, and (3) functionality issues. The implementation team addressed performance concerns, such as response time, by working with the developers to speed up database access and other performance bottlenecks, and to redesign the "flow" of the system in order to speed up response time. Bug fixes were assigned priority by a committee of user representatives. Highest priority bug fixes were immediately addressed by mini-releases, and other fixes as well as performance enhancements were done in regularly scheduled maintenance releases. Functionality issues were of two types: (1) cases where the software did not support the users business process, and (2) cases where the software did support the business process but the user did not realize it. The former type was reported to the development staff that configured the CRM appropriately in either a mini-release or maintenance release, depending on the severity of the problem. The latter type was attended to by an explanation given to the user by the on-site implementation team or by the hot line personnel.

The experimental instrument (surveys) was distributed to users who had already taken training sessions, including on-site support and explanations about system configuration, in which they had ample opportunity to raise suggestions and point out possible problems with the system. In other words, the survey measured user beliefs *after* the subjects had interacted with the implementation team either in a pilot site setting or in a non-pilot site setting. This procedure was intended to make sure that the "cause" (that is, the treatment), preceded the "effect" (that is, user perceptions and assessments). Since the organization studied was an "equal opportunities employer" there is little reason to believe that the users do not represent "typical" CRM users.

Instrument Creation and Validation

The items reflecting Perceived Responsiveness (PR) were adapted from the validated Perceived Developer Responsiveness scale [13] that dealt with an Expert Systems implementation team's responsiveness to requests for changes in the system. The scale was later revalidated in the context of MRP II adoption [11]. The scale used in this study adapted this scale to CRM configuration requests and then expanded it, using equivalent items, to also deal with a suggestion line that was used in the sites studied. This suggestion line received calls from subjects dealing with operational questions, inquiries about use of the CRM, possible missing functionality, and glitches in the CRM and its configuration. It was available to both pilot and non-pilot site

users. In accordance with SET, the benefit expected by the users from the exchange with the implementation team was the perception that the software was configured correctly. Perceptions of information systems value and benefits have been supported and justified by other IT researchers as proxies for actual benefits [28, 37]. For this study, IT benefit perception was assessed with the Correct Configuration (CC) scale, which was adapted from a validated scale dealing with the correct configuration of an MRP II system [11]. The perceived Cooperative Intentions (CI) scale dealt with user belief that the implementation team is willing to help them. This scale is also based on a previously validated one in the context of MRP II adoption [11]. Finally, the User Approval (UA) scale was a new scale that reflected user willingness to adopt the new CRM, regardless of whether its use is mandated by management.

Two IT managers, who were not associated with the organization being studied, initially checked the items in order to ensure the clarity of the items and the appropriateness of the items to the constructs they reflect. The managers were asked to flag unclear and inappropriate items. Items that were flagged by one or both of the managers were dropped. The implementation manager of the CRM in the telecommunications company then examined the remaining items to reassess and verify both the clarity and the appropriateness of each item. All the items were measured on a five-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree) with 3 being "neutral." In the items, the IT group was labeled "the software team" to avoid misunderstanding who the IT personnel were. The name of the software system has been changed to SW to maintain the organization's anonymity. The instrument items are shown in Table 1. Item CC2 was later dropped because it cross-loaded on the PR scale in a factor analysis.

Data Collection

The experimental instrument containing the items in Table 1 and demographic questions was administered with an accompanying letter that emphasized that completing the questionnaire was voluntary and anonymous and that the implementation management would receive only aggregate data so no individual response could be tracked. There were 148 questionnaires handed out, and 127 completed usable questionnaires were returned (86 percent response rate). Of the completed questionnaires, 75 were from pilot site subjects and 52 were from non-pilot site subjects. Exactly the same data collection procedure was administered to all the subjects. All the subjects at each site were asked by their direct manager during work hours to take a short break and complete the anonymous survey.

The subjects had mostly either completed high school or had an undergraduate degree (44 each), 74 were women, they worked on average 39 hour weeks, and almost all (97 percent in pilot sites and 92 percent in non-pilot sites) received formal training in the new CRM. There was no significant difference in education level (t = 0.68, p-value = 0.498), gender percentage (t = 0.20, p-value = 0.841), work hours (t = 0.09, p-value = 0.929), or the percentage that received formal training (t = 1.35, p-value = 0.180) between the two types of sites. Subjects in the pilot site had been

Table 1. Instrument Items

Code	Item
PR1	My feedback is reflected in subsequent versions
PR2	The software team is responsive to my requests regarding software functionality
PR3	SW suggestion line is responsive to suggested system design issues
PR4	SW suggestion line is responsive to bug correction
PR5	SW suggestion line is responsive to input
CI1	I believe that the software team will be ready and willing to assist and support me
CI2	The software team has gone out on a limb for me
CI4	The software team can be counted on to do what is right
CI3	The software team expresses willingness to help
CC1	The software is dependable
CC2	I trust the output from the software
CC3	I can trust the results obtained with the software
CC4	The software is reliable
UA1	Even if I had the option not to, I would use the software very often
UA2	Even if I had the option not to, I would use SW on a daily basis
UA3	If I could choose, I would go back to the old system all the time
UA4	Even if it were not company policy I would still use SW

exposed to the new CRM slightly longer, but there was no significant difference between the self-assessed period of time in which they were involved in the new CRM that was being phased in, approximately two years, between the two treatment groups ($t = 0.36$, $p = 0.720$). Thus, the data suggest that pilot and non-pilot sites did not differ significantly based on these demographics. This was confirmed in follow up interviews with the implementation project manager and other members of the implementation team. Table 2 shows the mean, standard deviation, and *t*-value of the research constructs by site type. Significantly, pilot site users assessed the implementation team as more responsive, showing more cooperative intentions, and that the implementation team did a better job correctly configuring the CRM. Pilot site users also showed more approval of the CRM.[5]

Data Analysis

Validity and Reliability

THE DISCRIMINANT AND CONVERGENT VALIDITIES of the experimental instrument were assessed with a factor analysis. The factor analysis showed four factors with eigenvalues above one that together explained 75.9 percent of the variance (after dropping item CI4 that while loading at 0.7660 on its expected factor also loaded at 0.4162 on the CC scale). All the items, except for CI4 that was discarded, loaded highly on the construct they were designed to reflect and below 0.40 on all the other factors. The

Table 2. Mean (Standard Deviation) of Research Constructs by Type of Site

Site	Number of subjects	Perceived responsiveness (PR)	Cooperative intentions (CI)*	Correct configuration (CC)	User approval (UA)
Pilot site	75	2.95 (0.63)	2.74 (0.76)	2.57 (0.83)	2.76 (0.91)
Non-pilot site	52	3.47 (0.83)	3.14 (0.98)	3.20 (0.98)	3.14 (0.97)
t-value (*p*-value)	—	3.54 (0.001)	2.35 (0.021)	3.76 (<0.001)	2.16 (0.032)

Notes: Scale is 1 = strongly agree to 5 = strongly disagree. * The results are after dropping item CI4 based on the factor analysis.

results of the factor analysis after a VARIMAX rotation are shown in Table 3. Scale reliabilities were assessed using Cronbach's alphas. All the scales loaded above the 0.70 threshold [24]: CC at 0.92, UA at 0.85, PR at 0.91, and CI at 0.83.

Hypotheses Testing

The hypotheses were analyzed using stepwise linear regression. Examining a regression with UA as the dependent variable and CI, PR, CC, and site type as the independent variables showed that only CC affected UA ($\beta = 0.55$, $t = 6.386$, p-value < 0.0001; $F = 40.78$, $R^2 = 31$ percent) and supported H4. A second stepwise linear regression showed that CC, in turn, was affected by PR ($\beta = 0.39$, $t = 4.121$, p-value $= 0.0001$), and by CI ($\beta = 0.39$, $t = 4.141$, p-value $= 0.0001$), but not by whether the site was a pilot ($F = 41.67$, p-value < 0.0001, $R^2 = 48$ percent) and supported H2a, H3, but not H1c, respectively. A third stepwise linear regression showed that CI, in turn, was affected by PR ($\beta = 0.60$, $t = 7.479$, p-value < 0.0001) but not by whether the site was a pilot ($F = 55.94$, p-value < 0.0001, $R^2 = 37$ percent) and supported H2b, but not H1b, respectively. Another stepwise linear regression showed that PR was affected by whether the site was a pilot ($\beta = 0.33$, $t = 3.535$, p-value $= 0.0006$, $R^2 = 11$ percent) and supported H1a.[6] A diagrammatic summary of the hypotheses is presented in Figure 2, showing that even though there were significant differences based on the type of site (pilot or non-pilot), as shown in Table 2, these differences were apparently insignificant when perceived responsiveness was included in the analyses. Tentatively, this suggests that the effects of actual responsiveness are mitigated by perceived responsiveness.

Discussion

Summary of Results

THE DATA SHOW THAT THE NATURE of the social exchange during the implementation of a CRM influences user assessments about the CRM and ultimately user willingness to adopt it. These results are in accordance with the conclusions drawn by previous research that applied SET to study the implementation of other new complex IT: perceived responsiveness is associated with an increased favorable assessment of large complex software packages during their implementation. A possible reason for this, extrapolating from SET, is that responsiveness helps confirm user expectations from the implementation team, especially given the necessity of system configuration and support before the system can be deployed successfully.

In this regard, the current study extends the results of previous research dealing with SET during the implementation of a large complex IT by using a quasi-experimental design. Previous research in this stream used cross-sectional survey research, and so was able to show association in accordance with theoretical implications but not to indicate causation. The advantage of a quasi-experimental design is its ability

Table 3. Factor Analysis with VARIMAX Rotation

Item	Correct configuration (CC)	Perceived responsiveness (PR)	User approval (UA)	Cooperative intentions (CI)	Item communality
PR5	**0.83088**	0.18798	0.16938	0.19437	0.79217
PR3	**0.81147**	0.27200	0.12295	0.26171	0.81608
PR1	**0.79132**	0.13083	0.01861	0.09298	0.65230
PR2	**0.72239**	0.32384	0.05994	0.29697	0.71851
PR4	**0.68576**	0.38825	0.05873	0.21725	0.67165
CC2	0.30082	**0.84055**	0.18159	0.18424	0.86394
CC3	0.26666	**0.79530**	0.27815	0.25237	0.84467
CC4	0.32776	**0.79077**	0.19001	0.15276	0.79219
CC1	0.24907	**0.71249**	0.18692	0.32938	0.71310
UA1	0.07617	0.29578	**0.85179**	0.14522	0.83991
UA2	0.10783	0.32230	**0.84788**	0.09442	0.84332
UA3	0.09084	0.11745	**–0.74993**	–0.33277	0.69517
UA4	0.24355	0.21340	**0.73469**	–0.06836	0.64930
CI1	0.18477	0.30146	0.13429	**0.81384**	0.80539
CI3	0.29472	0.28840	0.20284	**0.73626**	0.75326
CI2	0.36565	0.15238	0.08810	**0.73163**	0.69997

Note: Item loadings on their theoretically associated factor are highlighted in bold.

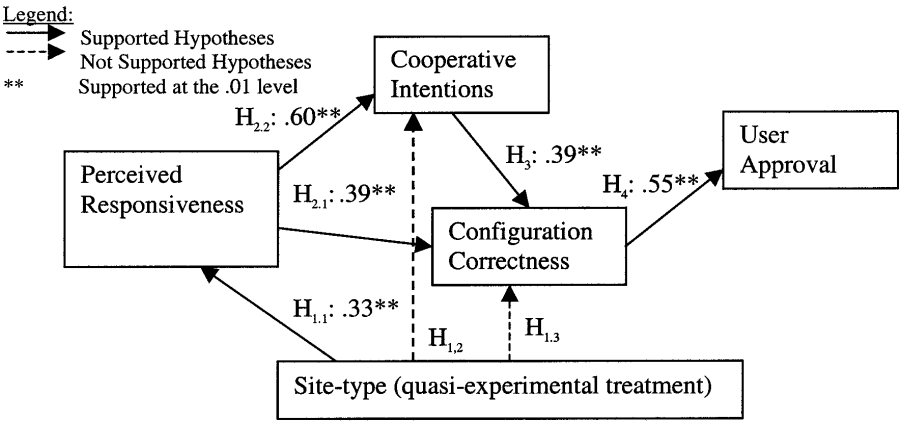

Figure 2. Supported and Unsupported Hypotheses with Standardized Coefficients

to examine plausible causation, and not only the associations (correlations) it implies, whereas retaining experimental realism.

The data lend support to the hypothesized implied causation related to implementation team responsiveness by showing that subjects in the treatment group that received high degrees of responsiveness perceived the implementation team significantly as more responsive and more cooperative-intentioned. This treatment group also significantly assessed the CRM as better configured and were significantly more willing to adopt it than subjects who were not in the pilot site. The data also indicated that perceived responsiveness might mitigate these effects: actual responsiveness influences perceived responsiveness, but its influence on other downstream beliefs is through perceived responsiveness.

Although the results are indicative of the theory, they should be taken cautiously because the objective of quasi-experimental design is to show plausible causation in field settings, not to establish the generality of the results; this is especially pertinent in this study as the sample consisted of only one company.

Limitations and Additional Research

The objective of this study was to examine the social exchange aspects of CRM implementation. There are many other issues affecting the successful implementation of IT that will presumably also apply to CRM, such as user training, organizational champions, hardware infrastructure, and top management commitment. Examining the effect of such issues was not possible in the quasi-experimental setting because the organization's policy dictated equivalence across sites, with the exception of the pilot site receiving special responsive support. Additional research is needed accordingly to examine such aspects and compare them with responsiveness.

In this study, extraneous causes based on demographics were shown to be statistically insignificant. The equivalence of the sites, with the one exception of one site being a pilot in this single implementation, was also confirmed in interviews with

knowledgeable contact persons in the organization. However, achieving experimental isolation also required controlling for all other extraneous variables or randomly assigning subjects to treatment groups. Doing so was not possible in this study because of the real-world setting and so a degree of caution is called for in assuming causation.

Related to this limitation is the analysis of only two sites and in only one organization, because of the need to select equivalent sites without introducing extraneous variance. The two sites selected were deliberately chosen from the same geographic area in an attempt to control for extraneous variance based on local culture. The unavoidable trade-off, as is typically the case with experimental designs in general [5], is that it limits the generality of the results. In addition, the lack of a data collection before the CRM was implemented (pretest data) or of a randomized allocation of subjects to treatment groups means that causation cannot be clearly established in this case. (These pretest data were not collected because users could hardly be expected to assess the correct configuration of a CRM or the intentions and responsiveness of an implementation team before they examined the CRM or met the implementation team.) Although the study design went to great lengths to try to establish that there were no significant differences between the pilot and non-pilot site subjects except in the treatment, as recommended by Cook and Campbell [5], establishing isolation beyond doubt is not possible. Hence, the results imply only plausible causation. Additional quasi-experimental research is needed in other organizations and with other CRMs, where possible with pretest data included, in order to show the generality of the results by replicating them in other settings and providing additional evidence of causality.

Additional research is also needed to examine the influence users have on the implementation team. SET implies a two-way relationship: the users and the implementation team influence each other's expectations. Due to organizational setting and sample size limitations (the implementation team was considerably smaller than the user population) the current study examined only user beliefs. Examining implementation team members' beliefs could extend this study and reveal additional aspects that affect CRM users.

Implications for Practitioners

Implementation managers are naturally concerned that their system meets with user approval because users are the ultimate test of its correct configuration. In the case of a large complex IT, users' assessments during implementation are influenced by the nature of the social exchange they perceive to be having with the implementation team [11]. This study lends additional support to this conclusion, providing managers with a resource, within their control, to influence user beliefs about the CRM: the responsiveness of their implementation team to user requests. Implementation managers can direct their team members to promptly answer user concerns, incorporate user feedback into CRM configuration, and to answer problems quickly and accurately. Implementation managers can also address the perception of cooperative intentions by showing the users that they are available and willing to help. Conversely,

implementation teams that are not responsive to user requests likely imply that user contribution to CRM functionality is not welcome, thus creating an impression that their intentions are not cooperative.

This research suggests ways that managers can show this responsiveness to users, based on these treatment groups. The responsive treatment in this quasi-experiment indicates that on-site presence and quick turnaround of problems are two ways of doing so. In addition, support systems should give some indication to the user that their request has been received and, further, the ultimate disposition of this request. Thus these follow-up actions not only contribute to responsiveness but also to the perception of cooperative intentions. As shown through the quasi-experimental design, the pilot site that received increased actual responsiveness showed an increase in perceived responsiveness, implying plausible causation that in turn was associated with increased perceived cooperation.

Managers should be aware, however, that social exchange is built over time in a process where the history and context of previous exchanges cannot be ignored [3, 15, 38]. In accordance with the importance of history and context, the data suggest that pilot site users were only just slightly more than neutral in their assessment that the implementation team was responsive, even though the implementation team, because of the complex nature of CRM configuration, was more than usually responsive in the pilot site. The follow-up interviews suggest that this is possibly because of the lingering effect of previous interactions. But history and context affect assessments both ways. Also in accordance with the importance of history, the non-pilot site users who were accustomed to receiving good helpful software from the implementation team thought the implementation team had cooperative intentions, even though there was less actual responsiveness with these users. Perhaps more importantly in this regard, the study suggests that what users *perceive* as responsiveness rather, than *actual* responsiveness, is what directly has these effects. Managing public relations with the users, and not only being responsive, should thus be part of the tools that implementation managers apply.

Implications for Researchers

Causation is more than correlation. Establishing plausible causation also requires isolation and temporal precedence. These can be plausibly shown with a quasi-experimental design, but not with cross-sectional studies. Adding this *plausible causation* to existing research by applying SET to IT adoption in general, and ERP module adoption in particular, is the main contribution of this study, whereas *isolation* could only be tentatively indicated in this study. This contribution is strengthened by the fact that the experimental subjects were real CRM users in a real-world field setting.

Another contribution of the study is that it helps clarify the relative role of actual versus perceived responsiveness of an implementation team. Previous research, examining only perceived responsiveness through cross-sectional survey research, was forced to make a conceptual leap of faith by assuming that actual responsiveness as displayed by the implementation team leads to an increased user perceptions of imple-

mentation team responsiveness. Although arguably the case, the data were not there to attest it. The current study confirms this assumption and indicates that actual responsiveness probably operates through perceived responsiveness.

Epilogue

Implementing a new IT is the key to gaining value from it. Organizations gain the benefits from a new IT, at least with regard to managers' perceptions of these benefits, when the IT supports the primary activities on Potter's [27] Value Chain of that company [28] and in doing so supports both the operations and the market focus of the organization [37]. A CRM is all of these. It supports operations by increasing efficiency and effectiveness and at the same time helps place the organization in a strategic advantage. Understanding the importance of gaining user approval of the new IT is necessary to achieve these gains. There is more to CRM implementation than correct configuration and good training. Although both are clearly essential in the successful implementation of CRM, there is also, as in many other human endeavors, a social exchange side to it too. Being responsive to user requests and clarifications is an easy way an implementation team can serve both these needs.

Notes

1. A good example of a social exchange is a senior colleague helping a junior colleague: spending time and effort providing advice, attention, and help (intangible costs) in an implicit anticipation for respect, recognition, and esteem (intangible benefits). And, just like in an economic exchange, if the senior colleague does not expect to receive adequate respect, recognition, and esteem from the junior colleague to justify the time and effort, the senior colleague is less likely to willingly take part in the social exchange by helping the junior colleague. Of course, the senior colleague has no guarantee that the junior colleague will reciprocate as expected. It is a matter of belief in the other party's cooperative intentions. If the junior colleague justifies these beliefs by reciprocating as expected, the reciprocity is likely to lead to ever-expanding social exchanges between the two. On the other hand, if the junior colleague fails to reciprocate, their behavior is likely to be interpreted as a social offense and will probably lead to reduced future social exchanges between the two, hence, the "social" aspect of a social exchange and the importance of the belief in the cooperative intentions of the other party [3].

2. Although the quantity of customization and support, for example, can be explicitly quantified in terms of work hours, the *quality* cannot.

3. There were also some glitches in the working version of the CRM. Reporting, handling, and circumventing these glitches through appropriate configuration were also part of the configuration process and the responsibility of the implementation team. Users reported both these glitches and the configuration errors to the implementation team without distinguishing between the two types.

4. Applying a posttest-only design has become a "tradition in economics and sociology" [5, p. 99], among other reasons, because of the difficulty involved in collecting data at several periods in real organizational settings [5, p. 99]. Although this cannot rule out a selection bias, research typically tries to address the inherent problem caused by the lack of pretest data by showing that the treatment groups are equivalent [5].

5. The data, while showing significant differences in all the constructs between the two groups, also show that PR was close to neutral in the pilot site and that CI was close to neutral in the non-pilot site. We discussed these results with implementation managers at the

telecommunications company who suggested that the pilot site PR assessment was so because the problems with the CRM (configuration errors, software glitches, and so on) colored the user's opinion of the implementation team. So no matter how responsive the implementation team was, since they were associated with a system that had some problems they got lower PR scores. The CI value in the non-pilot site was explained as the result of the organizational context. In the past, the implementation team, although maybe not very responsive to user requests, was still cooperative in other respects, such as displaying a willingness or desire to help the users. For example, contacts with the implementation team have been friendly and indicative of cooperation. However, the specific users' request may not have been implemented in the system due to prioritization or budget concerns, rendering the exchange in the users' eyes as cooperative but, ultimately, not responsive. As a result, even the non-pilot site was neutral rather than negative about their cooperative intentions.

6. Additional analyses of the two insignificant hypotheses shows that both CC ($\beta = 0.30$, $t = 3.389$, p-value = 0.0010, $R^2 = 9$ percent) and CI ($\beta = 0.22$, $t = 2.352$, p-value = 0.0206, $R^2 = 5$ percent) are affected by site type when site type is the only independent variable. These results suggest that the effects of actual responsiveness are mitigated by perceived responsiveness.

REFERENCES

1. Adam, F., and O'Doherty, P. Lessons from enterprise resource planning implementation in Ireland—Toward smaller and shorter ERP projects. *Journal of Information Systems, 20,* 4 (2000), 305–316.

2. Anderson, J.C., and Narus, J.A. A model of the distributor's perspective of distributor-manufacturer working relationships. *Journal of Marketing, 48,* 4 (Fall 1984), 62–64.

3. Blau, P.M. *Exchange and Power in Social Life.* New York: Wiley, 1964.

4. Brown, J.S., and Duguid, P. Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Xerox PARC,* 1991. Available at www.parc.xerox.com/ops/members/brown/papers/orglearning.html.

5. Cook, T.D., and Campbell, D.T. *Quasi Experimentation: Design and Analytical Issues for Field Settings.* Chicago: Rand McNally, 1979.

6. Crosby, L.A.; Evans, K.R.; and Cowles, D. Relationship quality in services selling: An interpersonal influence perspective. *Journal of Marketing, 54,* 3 (July 1990), 68–81.

7. Davids, M. How to avoid the 10 biggest mistakes in CRM. *Journal of Business Strategy, 20,* 6 (1999), 22–31.

8. Dwyer, F.R.; Schurr, P.; and Oh, S. Developing buyer-seller relationships. *Journal of Marketing, 51,* 2 (April 1987), 11–27.

9. Eskow, S. ERP: Ugly name belies healthy market. *Upside Today,* November 5, 1998. Available at www.upside.com/texis/mvm/story?id=3640cd810.

10. Fromkin, H.L., and Streufert, S. Laboratory experimentation. In B. Dunnette (ed.), *Handbook of Industrial and Organizational Psychology.* Chicago: Rand McNally College Publishing, 1976, pp. 415–465.

11. Gefen, D. It is not enough to be responsive: The role of cooperative intentions in MRP II adoption. *The DATA BASE for Advances in Information Systems, 31,* 2 (2000), 65–79.

12. Gefen, D. Nurturing clients' trust to encourage a long-term relationship during the customization of ERP systems. *Omega: The International Journal of Management Science,* 2002, forthcoming.

13. Gefen, D., and Keil, M. The impact of developer responsiveness on perceptions of usefulness and ease of use: An extension of the technology acceptance model. *The DATA BASE for Advances in Information Systems, 29,* 2 (1998), 35–49.

14. Goff, L. CRM: The cutting edge of servicing customers. *Computerworld, 3,* 9 (2000), 98. Available at www.computerworld.com/home/print.nsf/all/000228F146.

15. Kelley, H.H., and Thibaut, J.W. *Interpersonal Relations A Theory of Interdependence.* New York: John Wiley & Sons, 1978.

16. Kilker, J., and Gay, G. The social construction of a digital library: A case study examining implications for evaluation. *Information Technology and Libraries, 17,* 2 (1998), 60–70.

17. Konovsky, M.A., and Pugh, S.D. Citizenship behavior and social exchange. *Academy of Management Journal, 37,* 3 (1994), 656–669.

18. Kumar, K., and Hillegersberg, J.V. ERP experiences and evolution. *Communications of the ACM, 20,* 4 (2000), 23–26.

19. Laughlin, S.P. An ERP game plan. *Journal of Business Strategy, 20,* 6 (January–February 1999), 32–37.

20. Mankoff, S. Ten critical success factors for CRM: Lessons learned from successful implementations. *Siebel* (2001). Available at www.siebel.com/downloads/about/pdf/10_success_factors.pdf.

21. Markus, M.L.; Axline, S.; Petrie, D.; and Tanis, C. Learning from adopters' experience with ERP: Problems encountered and success achieved. *Journal of Information Technology, 15,* 4 (2000), 245–265.

22. Maselli, J. CRM market heats up. *InformationWeek* (March 30, 2001). Available at www.telecomlibrary.com/article/IWK20010330S0002.

23. McKinley, J.M. Planning for success after "go-live." *Strategic Finance, 81,* 10 (April 2000), 54–58.

24. Nunnally, J.C., and Bernstein, I.H. *Psychometric Theory,* 3d ed. New York: McGraw-Hill, 1994.

25. Parr, A., and Shanks, G. A model of ERP project implementation. *Journal of Information Technology, 15,* 4 (2000), 289–303.

26. Petersen, G.S. *Customer Relationship Management Systems.* Downers Grove, IL: Strategic Sales Performance, 1998.

27. Potter, M.E. *Competitive Advantage.* New York: Free Press, 1985.

28. Ragowsky, A.; Stern, M.; and Adams, D.A. Relating benefits from using IS to an organization's operating characteristics: Interpreting results from two countries. *Journal of Management Information Systems, 16,* 4 (Spring 2000), 175–194.

29. Ramaswami, S.N.; Srinivasan, S.S.; and Gorton, A.S. Information asymmetry between salesperson and supervisor: Postulates from agency and social exchange theories. *Journal of Personal Selling and Sales Management, 17,* 3 (1997), 29–50.

30. Robinson, R. Customer relationship management. *Computerworld* (2000). Available at www.computerworld.com/home/print.nsf/all/000228F14A.

31. Rohde, L. SAP expects record profits. *Computerworld* (2000). Available at www.computerworld.com/home/print.nsf/CWFlash/000107DA6E.

32. SAP. mySAP Customer Relationship Management. White paper, SAP AG, Walldorf, Germany, 2001. Available at www.sap.com/solutions/crm/crm_over.htm.

33. SAP. mySAP Customer Relationship Management. White paper, SAP AG, Walldorf, Germany, 2002. Available at www.sap.com/solutions/crm.

34. Scott, J.E., and Kaindl, L. Enhancing functionality in an enterprise software package. *Information & Management, 37,* 3 (2000), 111–122.

35. Soh, C.; Kien, S.S.; and Tay-Yap, J. Cultural fits and misfits: Is ERP a universal solution. *Communications of the ACM, 43,* 4 (2000), 47–51.

36. Stedman, C. SAP boosts development efforts. *Computerworld* (January 25, 2000). Available at www.computerworld.com/home/print.nsf/all/000125E37A.

37. Tallon, P.P.; Kraemer, K.L.; and Gurbaxani, V. Value of information technology: A process-oriented approach. *Journal of Management Information Systems, 16,* 4 (Spring 2000), 145–173.

38. Thibaut, J.W., and Kelley, H.H. *The Social Psychology of Groups.* New York: John Wiley & Sons, 1959.

39. Vijayan, J. SAP offers customer relationship manager module for telecom companies. *Computerworld* (1999). Available at www.computerworld.com/home/news.nsf/all/9910111sap1.

40. Willcocks, L.P., and Sykes, R. The role of the CIO and IT function in ERP. *Communications of the ACM, 43,* 4 (2000), 32–38.