

REEXAMINING THE LINK BETWEEN CUSTOMER ORIENTATION AND BUSINESS PERFORMANCE: THE ROLE OF INFORMATION SYSTEMS

Zhen Zhu and Cheryl Nakata

Customer orientation is said to strengthen business performance, but empirical research has not consistently supported the claim. In this study, we reexamine the important relationship between customer orientation and business performance. The study is based on the literature that suggests that business performance is multidimensional (consisting of market and financial dimensions), and that customer orientation is facilitated by information systems (consisting of information technology, or IT, capability and information services). We determined through a survey that customer orientation contributes to business performance, first by influencing market performance, which in turn, determines financial performance. Importantly, a dimension of information systems—IT capability, but not information service quality—positively moderates the impact of customer orientation. The study points to a more complex relationship between customer orientation and business performance than previously described.

A long-standing marketing principle is that understanding and satisfying customers leads to superior business results. Two firms illustrate this principle. Whirlpool discovered certain customers wanted stylish washers and dryers, and were willing to pay a premium for them. Consequently, Whirlpool developed a line of high-end designer washers and dryers. The products were so well received that they helped generate record revenues for the firm, with customers placing back orders on sold-out models (*BusinessWeek* 2004). Similarly, IBM identified a growing demand for information technology (IT) and support services among large as well as small businesses. In response, IBM created and offered a portfolio of complete e-systems solutions. Not only did the move reduce the firm's dependence on the hardware business but also sales of the e-systems helped reverse its financial decline (Massey, Montoya-Weiss, and Holcom 2001).

These and other examples suggest that attentiveness to customers, or customer orientation, reaps large rewards. Cu-

riously, however, empirical support is very mixed. Studies show that customer orientation has positive, neutral, and even negative ties with profitability, sales growth, customer retention, and other indicators of business performance (e.g., Appiah-Adu and Singh 1998; Balakrishnan 1996; Voss and Voss 2000). Given the popular appeal of customer orientation, but lack of consistent evidence of its performance benefits, we reexamine the customer orientation-business performance relationship. The purpose of our study is to better understand the existence and nature of this relationship. For the sake of clarity, customer orientation refers to the firm-level ability to "identify, analyze, understand, and answer user needs" (Gatignon and Xuereb 1997, p. 78). As elaborated later, this orientation is distinct from market orientation, and its conditions and consequences are likewise unique (Rindfleisch and Moorman 2003; Slater and Narver 1998, 1999).

Our study is guided by two observations from the extant literature. The first observation is that past studies isolating customer orientation have examined its highly varied and specific performance outcomes, such as subscription theater ticket sales, number of me-too products launched, and return on investment in small enterprises (e.g., Lukas and Ferrell 2000; Voss and Voss 2000). Not surprisingly, some studies have concluded that customer orientation makes a contribution to performance, whereas others have determined that it does not. Even though each study has generated insight on the issue, in aggregate they present a contradictory picture of customer orientation's impact. We propose studying customer orientation in relation to business performance again, but with the latter broadly

Zhen Zhu (Ph.D., University of Illinois-Chicago), Assistant Professor of Marketing, Sawyer School of Management, Suffolk University, Boston, MA, zzhu@suffolk.edu.

Cheryl Nakata (Ph.D., University of Illinois-Chicago), Associate Professor of Marketing and International Business, College of Business Administration, University of Illinois-Chicago, Chicago, IL, cnakat1@uic.edu.

The Center for Research on Information Management (CRIM) at the University of Illinois-Chicago is gratefully acknowledged for providing a grant and other forms of support to conduct this study.

conceived to encompass its multiple dimensions. Increasingly, business performance is said to be complex (Hussain and Gunasekaran 2002; Said, HassabElnaby, and Wier 2003), consisting of financial and market components (Eskildsen 2003; Homburg and Pflesser 2000; Morgan and Piercy 1996). Conceptualizing business performance this way, which has not been done in earlier customer orientation studies, enables capturing a diverse yet comprehensive set of effects.

The second observation is that prior studies have emphasized the direct influence of customer orientation on business performance. Although the interest is understandable, it may be that the effect depends on the presence of other factors. Puzzled by the fickle association between customer orientation and business performance, researchers have recommended that moderators be investigated as a possible explanation (e.g., Singh and Ranchhod 2004; Voss and Voss 2000). We propose studying two factors as potential moderators: IT capability and information services quality, which represent the two major components—technological and human, respectively—of a business information system. As best we know, this is the first study to look empirically at the role of information systems in relation to customer orientation. Businesses today invest heavily in information systems (\$965 billion in 2004, according to International Data Corporation 2005), and direct many toward rapid, comprehensive, and accurate tracking and responses to changing buyer needs. An example is customer relationship management (CRM) platforms (Grover and Ramanial 1999; Varadarajan and Yadav 2002). Because these practices suggest that firms expect information systems to support their customer orientation efforts and thereby strengthen business performance, IT capability and information services quality deserve examination as potential moderators.

Our study addresses two specific questions: (1) is customer orientation linked to business performance, and, if so, (2) do IT capability and information services play moderating roles in that relationship? The first question centers on the existence of the relationship, and the second focuses on the nature of the relationship.

LITERATURE REVIEW AND CONSTRUCT DEFINITIONS

Customer Orientation and Business Performance

Customer orientation is the firm-level ability “to identify, analyze, understand, and answer user needs” (Gatignon and Xuereb 1997, p. 78; see Narver and Slater 1990 for a

similar definition). Users refer to customers, as noted by Gatignon and Xuereb (1997, p. 78). More tangibly, customer orientation is the organization-wide gathering, sharing, and use of intelligence about customers, and coordinated actions based on that intelligence (Deshpande, Farley, and Webster 1993; Kohli and Jaworski 1990; Narver and Slater 1990). When these activities occur consistently and well, customer orientation is achieved. Importantly, customer orientation is distinct from market orientation. Customer orientation is about determining and addressing the preferences of buyers, generally to the exclusion of other concerns (Slater and Narver 1998; 1999), whereas market orientation is more encompassing, including competitor orientation and interfunctional coordination (Gatignon and Xuereb 1997; Kohli and Jaworski 1990; Narver and Slater 1990). Researchers have recommended customer orientation be studied separately from market orientation because its nature as well as outcomes are distinct (Balakrishnan 1996; Gatignon and Xuereb 1997; Kennedy, Goolsby, and Arnould 2003; Slater and Narver 1998; 1999).

Relative to market orientation, customer orientation has not been extensively studied as an isolated construct despite the above recommendation and despite managerial belief that it is the *raison d'être* of any business and a requisite for superior market and financial results (Day 1994; Drucker 1954). Although many market orientation studies have been conducted over the past decade (see the meta analysis by Kirca, Jayachandran, and Bearden 2005), customer orientation per se has not been as frequently studied nor its effects on performance distinguished from those of market orientation as a whole or from those of other market orientation components. Moreover, our review of the literature indicates that, on the whole, prior research has not clearly demonstrated that customer orientation contributes significantly to business performance (see Table 1 for a sample of studies).

For example, in some studies, customer orientation has been positively associated with sales growth, return on investment, and new product success (Appiah-Adu and Singh 1998); services quality and satisfaction with employee performance (Brady and Cronin 2001); innovativeness and aggregated performance (Deshpande, Farley, and Webster 1993); and new products (Lukas and Ferrell 2000). In contrast, in other studies, it has been found that customer orientation is not linked to relative profitability, satisfaction with profitability, customer retention, and repeat business (Balakrishnan 1996) and returns on assets and sales (Noble, Sinha, and Kumar 2002). In other studies, it has even been determined that customer orientation is detrimental, lowering ticket subscriptions and detracting

Table 1
Customer Orientation–Business Performance Studies

Study	Sample Composition	Business Performance Measures	Findings
Appiah-Adu and Singh (1998)	101 British small and medium-sized manufacturers and service firms	<ul style="list-style-type: none"> • New product success • Sales growth • Return on investment 	<ul style="list-style-type: none"> • All positive relationships
Balakrishnan (1996)	139 machine tool manufacturers	<ul style="list-style-type: none"> • Relative profit • Satisfaction with profit • Repeat business • Customer retention 	<ul style="list-style-type: none"> • No relationship for any
Brady and Cronin (2001)	649 student-recruited consumers evaluating services of three auto lube, video rental, and amusement parks firms	<ul style="list-style-type: none"> • Service quality 	<ul style="list-style-type: none"> • Positive relationship
Dawes (2000)	93 Australian firms in <i>Business Who's Who</i>	<ul style="list-style-type: none"> • Profit performance 	<ul style="list-style-type: none"> • No relationship
Deshpande, Farley, and Webster (1993)	50 Japanese firms listed in the Nikkei Stock Exchange	<ul style="list-style-type: none"> • Relative business performance (composite of profits, size, market growth, market share) 	<ul style="list-style-type: none"> • No relationship for marketers • Positive relationship for customers
Gatignon and Xuereb (1997)	393 consumer goods and industrial technology/computer firms	<ul style="list-style-type: none"> • Innovation performance 	<ul style="list-style-type: none"> • Negative relationship in uncertain markets • Positive relationship in certain markets
Han, Kim, and Srivastava (1998)	134 banks	<ul style="list-style-type: none"> • Net income • Return on assets 	<ul style="list-style-type: none"> • No direct relationship, but an indirect one
Kennedy, Goolsby, and Arnould (2003)	2 schools	<ul style="list-style-type: none"> • Academic student performance 	<ul style="list-style-type: none"> • Positive relationship
Lukas and Ferrell (2000)	194 manufacturers	<ul style="list-style-type: none"> • Number of line extensions launched • Number of me-too products launched • Number of new products launched 	<ul style="list-style-type: none"> • No relationship for line extensions • Negative relationship for me-too products • Positive relationship for new products
Noble, Sinha, and Kumar (2002)	4 market leaders in the mass merchandising industry	<ul style="list-style-type: none"> • Return on sales • Return on assets 	<ul style="list-style-type: none"> • No relationship for either
Rindfleisch and Moorman (2003)	380 firms engaged in new product alliances and listed in the <i>Federal Register</i>	<ul style="list-style-type: none"> • Antecedents of customer orientation examined, not performance consequences 	<ul style="list-style-type: none"> • Not applicable
Singh and Ranchhod (2004)	93 British machine tool companies	<ul style="list-style-type: none"> • Business performance (aggregate of customer retention, new product success, market share, sales growth, and return on investment) 	<ul style="list-style-type: none"> • Positive relationship
Voss and Voss (2000)	109 nonprofit theaters	<ul style="list-style-type: none"> • Subscription sales • Single-ticket sales • Overall financial performance 	<ul style="list-style-type: none"> • All negative relationships

Note: A sample, rather than an exhaustive compilation, of recent customer orientation studies.

from innovation performance (Gatignon and Xuereb 1997; Voss and Voss 2000).

Given the importance of this relationship to marketing practice and theory, we study it anew. As noted earlier, disparate and highly specific performance outcomes may have

obscured the influence of customer orientation in previous empirical work. Hence, we conceptualize business performance in a broad but multidimensional way to reflect the varied output of firms and to enable comparisons across industries. Following Brady and Cronin (2001), Homburg and

Pflesser (2000), and Morgan and Piercy (1996), we specify *business performance* as consisting of two components: (1) market performance, which is the relative effectiveness of an organization in market domains (indicated by product quality, customer retention, and other market-tied measures), and (2) financial performance, which is the relative effectiveness of an organization in financial domains (indicated by gross profit margin, return on equity, and other traditional accounting-based measures).

Role of Information Systems

Information systems have long been thought to aid firms in a host of customer intelligence tasks and response activities, from collecting detailed data on purchase habits and disseminating that data across functions to analyzing critical market trends and developing actionable marketing plans (Day 1994; Glazer 1991). However, as best we know, there has been no empirical examination of the enabling role of information systems in customer orientation. Moreover, although the customer orientation-business performance relationship is thought of as dependent on other factors, knowledge of what these moderators are and how they influence that relationship is said to be nascent (Noble, Sinha, and Kumar 2002; Singh and Ranchhod 2004). Consequently, we look at IT capability and information services quality, the two major components of information systems, as potential moderators of the customer orientation-business performance relationship (Bharadwaj 2000; Pitt, Watson, and Kavan 1995).

IT capability, the technological component of information systems, is the ability of a collection of computers and related technologies in an organization to store, process, and communicate information (Bakos and Treacy 1985). Storage, processing, and communicating information are considered the key functions of an IT capability (Molloy and Schwenk 1995). Due to differences in components and configuration, IT capabilities vary in capacity, quality, and speed to carry out these information functions. Consistent with this notion, IT has been conceptualized by information systems researchers as tools orchestrating and amplifying information tasks, such as data analysis and communications (Orlikowski and Iacono 2001).

Information service quality, the human component of information systems, is the degree to which information services provided by computer technicians to systems users have desired service properties, including timeliness, appropriateness, and reliability (Pitt, Watson, and Kavan 1995; 1997). The rise of microcomputing, advent of the Internet, and an explosion of IT products have only increased the

demand for and diversity of information services. Services range from the rather mundane (e.g., manning technical help desks) to the highly evolved (e.g., integrating legacy systems). Many of these services are clearly in the domain of customer orientation, such as assisting and training marketing managers to operate CRM platforms.

RESEARCH HYPOTHESES

The root of customer orientation is the marketing concept. This concept came to fore in the mid-1950s, when it was articulated by Peter Drucker (1954) and others as the business philosophy directing all activities of the firm toward fulfilling customer wants. Drucker asserted back then that satisfying customers was a business' ultimate purpose and fulfilling that purpose leads to market gains. The marketing concept and its more expanded formulation, customer orientation, have since become ensconced in the managerial mind-set. Researchers have likewise espoused the benefits of "staying close to the customer." As discussed by Day and Wensley (1988) and Hult and Ketchen (2001), when firms consistently identify and then satisfy the desires of customers, they accrue a positional advantage over competitors as reflected in growing sales and larger market share. The reasoning is that buyers perceive that the firm offers greater value in its products and services—and along dimensions that matter—and consequently shift purchases away from rivals. Satisfied customers are also more loyal and generate positive word of mouth, furthering market inroads by the attentive firm. The notion of positional advantage suggests that greater customer orientation corresponds with higher market performance or more rewards from the marketplace (Day 1994; Kohli and Jaworski 1990; Narver and Slater 1990).

Along with positional advantage, there is another reason customer orientation may be linked to market performance. Firms attempting to satisfy customers must be especially sensitive to market reactions to product and service offerings, because those reactions hold insight on how best to deliver on expectations. The reactions are reflected in customer satisfaction level, service quality rating, new product evaluation, and other market performance indicators. In other words, if a business is intent on fulfilling the deepest wants of current and prospective customers, it refers regularly to market performance measures in order to monitor how well it accomplishes that aim. The measures help the business benchmark itself, identify areas that are weak, and make adjustments over time to improve its generation of value-based products and services (Brady and Cronin 2001; Narver and Slater 1990). Suggestive of this dynamic,

customer-oriented firms have been observed as relying heavily on customer loyalty metrics, relative market share of target segments, and comparative product evaluations to gauge overall effectiveness (Day and Nedungadi 1994). The above leads us to posit the first hypothesis:

Hypothesis 1: Customer orientation is positively related to market performance.

IT capability exponentially multiplies the effects of human effort through automation and connectivity (Huber 1990; Orlikowski and Iacono 2001) and may thereby facilitate the intelligence tasks comprising customer orientation. One such task is gathering customer information. IT capability has been applied toward collecting large amounts of customer data quickly and affordably. The most salient example is the Internet, which allows companies to obtain specifics on buyers' demographics, shopping habits, and product and service preferences through their own or others' Web sites (Sawhney and Zabin 2002).

IT capability has been applied toward another intelligence task, sharing customer information. The rapid and convenient exchange of information is said to be one of the most powerful advantages of computers (Huber 1990). One IT form providing this advantage is electronic data interchange (EDI), an open system of continuously updated databases accessible by separate units within and outside the firm. Firms such as Procter & Gamble have developed EDI systems in order to disseminate customer, sales, and related data across the firm and even to outsiders (with suppliers and retailers) on a real-time basis. Other tools are electronic bulletin boards and knowledge directories. Empirical research has tied the availability of advanced IT with increases in range, amount, and velocity of information flows within and across organizations (Scott 1998; 2000).

Another intelligence task is customer analysis. Businesses have for decades used computers in analytical routines, but recent movements toward relationship marketing and customerization (Wind and Rangaswamy 2001) are expanding this application. Relational databases, data-mining software, and artificial intelligence programs are helping to compute buying probabilities at the individual buyer level. Some firms are constructing customer information files, which house personal purchase history data, to calculate each customer's lifetime value to the firm. This information is then used to target more valued customers, improving cost efficiencies of always-limited marketing budgets (Glazer 1999; Sawhney and Zabin 2002; Varadarajan and Yadav 2002).

IT capability can aid a fourth set of intelligence tasks—problem solving, decision making, and planning based on customer information. In general, computer use has been

empirically associated in businesses with (1) a deeper understanding of problems through greater data access; (2) a larger number, and more consideration, of alternatives; (3) more intensive discussion of recommendations; and (4) increased confidence in decision making (Molloy and Schwenk 1995). More specific to customer orientation, studies show that computer use aids the formation of tactical and strategic marketing plans, significantly easing and expediting marketing decision making (Good and Schultz 1997; Good and Stone 1995). Therefore, we posit the following:

Hypothesis 2: IT capability strengthens the positive relationship of customer orientation to market performance.

Traditionally, the information services group provided a fairly narrow and static set of services to the organization. That set centered on designing, assembling, and implementing the organization's IT or computer architecture (Pitt, Watson, and Kavan 1995). However, the breadth and complexity of services have greatly expanded in recent years due to reasons given before. The information services group—whether housed inside or outside the firm—must now additionally assist in selecting hardware and software, installing and testing devices and components, training employees to use programs and systems, developing communications networks for dispersed operations, constructing user-friendly Web interfaces for internal as well as external parties, and reconfiguring existing systems to improve work flows, among other services. The group has thus evolved from a developer and operator of computer systems into a provider of diverse and continually changing IT-tied services (Jiang, Klein, and Carr 2002).

Marketers are recognizing the value of these services, particularly how they can enhance critical customer-centric routines (Glazer 1999; Varadarajan and Yadav 2002). As illustrations, information services may be directed to the following areas: development of a Web site to gather detailed product preferences among current customers, creation of an intranet platform to rapidly share this information between marketing and other functions, installation of analytical software to simulate market responses to new products, and support to marketing personnel in using an executive decision support system for strategic planning purposes. Importantly, it is not only the provision of these services that matters but also their quality. Without quality, the services are unlikely to aid, and may instead hinder, marketing and other personnel in successfully carrying out customer-oriented tasks. Studies point to quality of information services being a significant determinant of whether

or not organizational intentions are met and efficiencies are gained through implementation of IT (Kettinger and Lee 1997; Watson, Pitt, and Kavan 1998).

Empirical studies are suggestive of the supportive role of information services quality in customer orientation. Reich and Benbasat (1990) concluded that the success of customer-oriented information systems depends on the proactiveness and competence of information services groups in a firm. These groups are staffed by persons with high levels of technical, interpersonal, and business skills. Clark et al. (1997) reported that leveraging IT knowledge into strategic, customer-driven business applications requires an empowered, energized, and entrepreneurial information services group. Mata, Fuerst, and Barney (1995) observed that any sustained competitive advantage derived from a strategic information system, such as Wal-Mart's cost advantage based on its difficult-to-imitate IT architecture, rests on the tacit knowledge and abilities of the information services group. In view of the above, we forward the following:

Hypothesis 3: Information service quality strengthens the positive relationship of customer orientation to market performance.

Managers are using market-based measures to assess business performance (Ittner and Larcker 2001; Said, HassabElnaby, and Wier 2003). A recent study showed that the majority of marketing executives report at least one such metric to their boards, most commonly market share and product/service quality (Barwise and Farley 2003). By looking at market performance, executives monitor and align organizational efforts with strategic objectives, ensuring their firms' financial success. Put more simply, market performance provides a glimpse of a business' progress before the financial verdict is in, so that corrective actions can be taken sufficiently in advance to direct that outcome (Ittner and Larcker 2003; Kokkinaki and Ambler 1999). This logic forms the premise for positing that marketing performance precedes and influences financial performance.

This notion is embraced not only by managers but researchers have discussed and proposed it as well. Anderson and Sullivan (1993) and Day and Wensley (1988) pointed out that customer satisfaction and other aspects of market performance are precursors to financial performance. Reichheld (1996) contended that customer loyalty, a market performance indicator, increases firm profitability by lowering operating costs and diminishing investments to gain new customers. Demsetz (1973) elaborated that firms with higher market share, another market performance measure, gain efficiencies that translate into greater profitability. And Smallwood and Conlisk (1979) described how market share

acts as a signal of product quality to buyers, furthering acceptance of those products and yielding higher profits for quality-conscious companies.

Moreover, there are empirical studies pointing to market performance as a likely antecedent of financial performance. In a meta analysis of determinants of financial performance, Capon, Farley, and Hoenig (1990) found that market share, sales growth, and quality of products and services are positively tied to financial performance. In another meta analysis, Szymanski, Bharadwaj, and Varadarajan (1993) learned that market share is a significant contributor to profitability. No less compelling, Behn and Riley (1999) determined that customer satisfaction is associated with future financial performance in the airline industry, while Banker, Potter, and Srinivisan (2000) identified the same association in the hotel industry. The above leads us to forward this last hypothesis:

Hypothesis 4: Market performance is positively related to financial performance.

METHODOLOGY

Sample Selection and Data Collection

We obtained a database of U.S.-based strategic business units (SBUs) from Dun and Bradstreet. A list of SBUs, rather than corporations, was chosen because the SBU represents the most appropriate level of examination of the customer orientation-business performance link. As noted by Jaworski and Kohli (1993), a business unit-level analysis allows us to closely trace the effects of strategic orientations on organizational outcomes. In contrast, a corporation-level analysis may be misleading because corporations are holding entities for multiple business units that can diverge in size, industry, geography, capital investment, and other characteristics (Dedrick, Gubanxani, and Kramer 2003; Narver and Slater 1990).

Next, we selected from the database all SBUs that were profit driven (versus not-for-profit). This was done to ensure that business performance issues (e.g., profitability) would be meaningful to the organizations participating in the study. The filtering resulted in 1,471 SBUs in a range of sizes (from 100 to 20,000 employees), business types (business-to-business [B2B] and business-to-consumer [B2C]), and industries (510 SIC codes, including food manufacturing, financial services, advanced electronics, and heavy machinery). The wide breadth of firms was intentional, allowing us to conduct a fairly strong test of the conceptual model. Moreover, the firm characteristics would serve later as control variables.

We then identified the senior-most marketing executive in each SBU as the key informant. A key informant is a person who is well informed about the phenomena of interest in a study (Huber and Power 1985). Because the senior executive in charge of marketing is constantly considering how to deliver and improve value to customers (monitors and directs customer orientation activities), has profit and loss responsibilities (knows and must deliver business performance targets), directs his or her staff to use and himself or herself uses the IT capability (is familiar with the IT capability and how it serves customer orientation endeavors), and is served by the information services group (can evaluate the quality of services provided), we thought he or she would be the most appropriate individual in the organization to serve as key informant. Furthermore, by virtue of his or her senior position, he or she represents one of the primary users of the organization's information system, and has a bird's-eye view of that system's functions and efficacy. The user perspective is well reflected in information systems research, where users are often asked to assess the capability, quality, and outcomes of computer infrastructures and technical support personnel (e.g., Pitt, Watson, and Kavan 1995; Shaw, DeLone, and Niederman 2002).

After identifying the key informants in each SBU, we drafted a questionnaire adopting or adapting existing measurements in the literature (detailed hereafter). We asked ten academicians from the marketing, management, and information systems disciplines to review the questionnaire for wording and face validity. The questionnaire was revised based on this feedback. Then we observed ten marketing vice presidents complete the questionnaire, and conducted interviews immediately thereafter to assess the instrument's length, clarity, organization, appropriateness, and relevance. Based on this feedback, we made additional changes to the questionnaire. Importantly as well, we determined that senior marketing executives were quality key informants, because all said the questions were appropriate and not difficult to answer, including questions on IT capability and information services quality.

Finally, the questionnaire, along with a cover letter explaining the study and a postage-paid return envelope, were mailed to a senior marketing executive in each SBU. Study results were promised as an incentive for participation. As prescribed by Huber and Power (1985), to increase the quality of key informant responses and reduce common method variance, we guaranteed participants anonymity and confidentiality in the analysis and reporting of results. Seventy completed questionnaires were returned after the first mailing. One week later, a reminder postcard was sent and, after another week, a replacement copy of the ques-

tionnaire was mailed to nonrespondents. An additional 136 questionnaires were returned after the third mailing for a total of 206 returns, a response rate of 14 percent. Of the 206 returns, 189 were usable. The return rate was similar to those reported in other strategic orientation surveys of senior marketing executives (e.g., Gatignon and Xuereb 1997; Homburg and Pflesser 2000).

To assess nonresponse bias in the final sample, chi-square tests of differences were performed on key sample characteristics, including firm size and industry. There were no significant differences between early and late respondents or between respondents and nonrespondents, reducing the likelihood of systematic nonresponse bias.

Measures

All measures used in this study were adopted or adapted from prior studies. After data collection, we subjected the measures to item analysis and maximum likelihood exploratory factor analysis (EFA). Items with substantial cross-loadings or low loadings on their intended factors were eliminated from further analyses. Results of the EFA indicated that 33 items, converging on the expected five constructs, were appropriate (see the Appendix for scale items). We discuss hereafter each measure, which used a seven-point agree/disagree Likert scale (1 = strongly disagree, 7 = strongly agree) unless otherwise noted.

Customer Orientation (CO)

Narver and Slater (1990), Jaworski and Kohli (1993), and Deshpande, Farley, and Webster (1993) developed scales that, in whole or part, are the most prominent assessments of customer orientation. Narver and Slater (1990), for example, generated a customer orientation measure as a subset of a market orientation instrument. We identified items specific to customer orientation from this and the other two scales to form a 10-item measure. The EFA indicated that one item needed to be removed, resulting in a nine-item scale with a Cronbach's alpha of 0.84. The reliability level was above Nunnally's (1978) cutoff of 0.70.

Business Performance (BP)

Based on Brady and Cronin (2001), Homburg and Pflesser (2000), and Morgan and Piercy (1996), we identified 10 items to describe the marketing and financial dimensions of business performance. All were subjective assessments of performance. Studies have shown that subjective measures of business performance closely correspond with objective ones (Dess and Robinson 1984; Wall et al. 2004), and offer

the advantages of making comparisons across organizations and eliciting responses from managers reluctant to release actual performance data.

Market Performance (MP): The five items centered on market assessments included market share, sales level, customer retention, product quality, and new product success. Factor analysis led to the elimination of one item. The Cronbach's alpha of the resulting four-item scale was 0.78.

Financial Performance (FP): The items reflected commonly used financial metrics for businesses, such as gross profit margin and return on investment. Two items were removed through factor analysis, producing a three-item measure with a Cronbach's alpha of 0.95.

IT Capability (ITC)

The measurement, adopted from Bakos and Treacy (1985), consisted of nine items to evaluate the three primary functions of an IT capability (storage, processing, and communicating information) on three performance dimensions (speed, capacity, and quality). The measurement used a seven-point Likert scale (1 = extremely low and 7 = extremely high). Based on factor analysis, one item was dropped prior to creating scale scores. The Cronbach's alpha was 0.88.

Information Service Quality (ISQ)

SERVQUAL, the best-known measure of services quality (Parasuraman, Zeithaml, and Berry 1988), was adapted and validated by Pitt, Watson, and Kavan (1995; 1997) to evaluate information services quality. The measure reflected service quality dimensions well established in the marketing literature, such as responsiveness and empathy. Due to stronger predictive validity, we used the shortened form of the Pitt, Watson, and Kavan scale tested and recommended by Kettinger and Lee (1997). The shortened form consisted of 13 items describing key information service attributes, including timeliness and reliability. Four items were removed through factor analysis, resulting in a nine-item measure with a Cronbach's alpha of 0.94.

Control Variables

We included three control variables in the analysis—firm size, business type (B2C versus B2B), and information services outsourcing. Firm size was selected because it potentially influences customer orientation intensity and results (Appiah-Adu and Singh 1998; Pelham and Wilson

1996). For firm size, we used the natural log of the number of employees in the SBU. Business type was chosen as the second control variable because customer focus might be expected and rewarded more in consumer than industrial firms (Gatignon and Xuereb 1997; Szymanski, Bharadwaj, and Varadarajan 1993). For business type, the percentage of revenues from sales to consumers versus sales to industrial buyers was used. (Thus a figure of 100 percent indicated all revenues were derived from consumers, whereas 0 percent indicated all sales came from industrial buyers.) For the final control variable, we selected the extent of information services outsourcing. Information services is typically one of the first functions that organizations contract in whole or part to outside suppliers. The practice has gained momentum in recent years due to the belief that it improves information services quality and business profitability (Kakabadse and Kakabadse 2005; Mahnke, Overby, and Vang 2005). We measured outsourcing as the percentage of an SBU's total information services that are externally provided.

Psychometric Properties of Measures

To validate the psychometric properties of the measures, we conducted a confirmatory factor analysis (CFA) using LISREL 8.3. All five constructs—customer orientation, market performance, financial performance, IT capability, and information service quality—were included in a single model. The approach allowed for simultaneous examination of all constructs, consistent with prior studies (Bentler and Chou 1987; Jöreskog and Sörbom 1990). In the CFA, each of the observed indicators loaded significantly ($p < 0.01$) on its intended factor. The hypothesized five-factor CFA model had acceptable fit ($\chi^2_{(504)} = 812.26$, $p < 0.05$, nonnormed fit index [NNFI] = 0.91, comparative fit index [CFI] = 0.92, incremental fit index [IFI] = 0.92, goodness-of-fit index [GFI] = 0.80, root mean square error of approximation [RMSEA] = 0.06). We then created scale scores by averaging the items intended to measure each construct. The reliabilities of the scores, as reflected in their Cronbach's alphas, were all above Nunnally's (1978) cutoff of 0.70 (see the Appendix).

Discriminant validity was determined by using the procedure outlined by Bagozzi and Yi (1988). All two-factor pairs were assessed by comparing (1) the chi-square in a model constraining the correlation parameter between two latent variables to unity, with (2) the chi-square in a model freeing this parameter (Jöreskog 1971). For all possible pair-wise cases, the chi-square values were significantly lower for the unconstrained models, and the change in chi-square between the two models exceeded the critical

value ($\Delta\chi^2_{(1)} > 3.84$) for statistical significance. This suggested that the variables exhibited discriminant validity. A complementary assessment of discriminant validity was also performed in which the confidence interval of ± 2 standard errors around the correlation estimate within each factor pair was found to exclude 1.0. The additional test supported the conclusion of discriminant validity among all constructs (Anderson 1987).

Due to the self-reported nature of the data, there was a potential of common method variance. Two tests were conducted to determine the extent of method variance. The first was the Harman one-factor test (Podsakoff and Organ 1986). Test results indicated the presence of five discrete factors in the data set, which was consistent with the hypothesized model, suggesting that common method was not a likely contaminant. To confirm these results, a second test was performed, following the procedures outlined by Podsakoff et al. (2003), Widaman (1985), and Williams, Cote, and Buckley (1989). In this approach, comparisons were made between models including and excluding a common method single factor. The results showed that although inclusion of the factor improved model fit, the factor accounted for only a small portion (15–20 percent) of total variance, which was well within, and generally on the lower end of, the range for method variance (16–42 percent) in previous studies (per Williams, Cote, and Buckley 1989). The average trait variance (41–42 percent) also fell in the range (32–68 percent) of prior studies (Widaman 1985). Finally, the model structures remained the same after controlling for method variance (Podsakoff et al. 2003). Together these findings suggested that common method bias was not a major issue in the study.

ANALYSIS AND RESULTS

The means, standard deviations, and Pearson correlation matrix for all variables are shown in Table 2. Overall, our results indicated that the variable measures had reasonable psychometric properties and were suitable for analysis.

The hypotheses were tested simultaneously using LISREL 8.3. The covariance matrix of composite measures was used as input, with single-score indicators for each construct. Prior to creating the interaction terms, the variables were mean-centered to reduce multicollinearity. The product of two mean-centered variable scores was used as the score of each interaction. Numerically, the interaction term was $XY = (X - \text{Mean}_X) \times (Y - \text{Mean}_Y)$ (Jaccard and Wan 1996; Kenny and Judd 1984). The hypothesized model, which controlled for the direct effects of IT capability and information service quality on market performance, yielded the following fit

statistics: $\chi^2_{(26)} = 46.82$, $p < 0.01$; GFI = 0.95; AGFI = 0.90; CFI = 0.90; RMSEA = 0.06. The ratio of sample size to the number of estimated parameters was in the 5:1 to 10:1 range as recommended by Bentler and Chou (1987). The squared multiple correlations for structural equations (R^2) were 0.30 and 0.27 for market performance and financial performance, respectively. The fit statistics met or exceeded the criteria established by Bagozzi and Yi (1988), leading us to conclude that the goodness-of-fit statistics were satisfactory, and the model provided an acceptable representation of the data. Results of the direct and indirect effects of the exogenous variables in the path model are reported in Table 3.

As for the main effect, H1 stated that customer orientation is positively related to market performance. The standardized path coefficient was 0.35, which was significant ($p < 0.01$) and supported H1. According to H2, IT capability interacts with customer orientation, strengthening the relationship between customer orientation and market performance. The coefficient of the interaction term was 0.17, significant at the $p < 0.01$ level, providing support for H2. H3 posited that information service quality plays a similar role to that of IT capability—namely, that it positively moderates the relationship between customer orientation and market performance. The interaction term was not significant (the standardized path coefficient is -0.01 , $p > 0.05$), failing to support H3. Finally, we proposed in H4 that market performance is positively related to financial performance. The path model revealed a positive and significant path from market performance to financial performance (the standardized path coefficient is 0.52, $p < 0.01$). Hence, H4 was supported.

Because the results for H2 and H3 differed unexpectedly—with IT capability playing a significant moderating role but information service quality not—we were curious about any potential direct effects of these two variables on market performance. The structural equation model indicated that IT capability on its own had no direct tie to market performance (standardized path coefficient of 0.10, $p > 0.05$), whereas information service quality did (standardized path coefficient of 0.18, $p < 0.01$). These findings suggested that the two components of information systems behaved in distinct fashions: IT capability contributed to market performance interactively with customer orientation, but information service quality contributed autonomously. Thus, both components of information systems enhanced market performance but in unique ways.

Although we did not hypothesize the indirect effects of the exogenous variables on financial performance, these paths were sufficiently interesting to warrant post hoc examination as well. By using command EF in the LISREL

Table 2
Means, Standard Deviations, and Correlation Matrix of Variables

	Mean	Standard Deviation	CO	ITC	ISQ	CO x ITC	CO x ISQ	MP	FP	Firm Size	Industry Type	OUT
Customer Orientation (CO)	4.85	1.06	1.00									
IT Capability (ITC)	4.98	1.14	0.25**	1.00								
Information Service Quality (ISQ)	4.74	1.23	0.27**	0.36**	1.00							
CO x ITC	0.30	1.32	0.06	-0.07	0.17*	1.00						
CO x ISQ	0.35	1.63	-0.09	0.15*	-0.14	0.17*	1.00					
Market Performance (MP)	5.21	1.01	0.44**	0.21**	0.30**	0.21**	-0.02	1.00				
Financial Performance (FP)	4.74	1.54	0.24**	-0.01	0.20**	0.13	-0.17*	0.52**	1.00			
Firm Size	5.20	1.46	-0.02	-0.16*	-0.23**	-0.06	-0.08	-0.03	0.00	1.00		
Industry Type	0.35	0.45	0.02	0.02	-0.15	-0.05	0.06	0.05	-0.03	-0.11	1.00	
IS Outsourcing (OUT)	0.20	0.26	0.06	-0.16*	-0.16*	0.07	-0.03	0.14	0.01	0.10	0.01	1.00

* Significant at 0.05; ** significant at 0.01 (two-tailed).

Table 3
LISREL Results for Direct and Indirect Effects

Effect from	Direct Effects on Market Performance		Direct Effects on Financial Performance		Indirect Effects on Financial Performance	
	Path ¹	t-Value	Path	t-Value	Path	t-Value
Size	0.05	0.72	0.02	0.26	0.02	0.72
Industry	0.08	1.29	-0.05	-0.87	0.04	1.28
Outsourcing	0.15	2.40*	-0.06	-1.00	0.08	2.30*
Customer Orientation (CO)	0.35	5.40**	—	—	0.18	4.52**
IT Capabilities (ITC)	0.10	1.47	—	—	0.05	1.45
Information Service Quality	0.18	2.61**	—	—	0.10	2.49*
CO × ITC	0.17	2.62**	—	—	0.09	2.50*
CO × ISQ	-0.00	-0.07	—	—	-0.00	-0.07
Market Performance	—	—	0.52	8.31**	—	—

Notes: Overall model fit is $\chi^2(26) = 46.82$, GFI = 0.95, AGFI = 0.90, RMSEA = 0.06, CFI = 0.90. ¹ Completely standardized solution for path coefficients.
* Significant at $p < 0.05$; ** significant at $p < 0.01$ (two-tailed).

program, we estimated the coefficients and significance of the indirect effects within the structural model (Jöreskog and Sörbom 1996, p. 93). We found that customer orientation had a significant indirect effect on financial performance (standardized coefficient of 0.18, $p < 0.01$). This finding, together with evidence for H1 (that customer orientation influenced market performance) and H4 (that market performance affected financial performance), indicated customer orientation had a sequential and mediated relationship through market performance to financial performance. The EF command output also showed that information service quality and the customer orientation-IT capability interaction had significant indirect effects on financial performance; the standardized path coefficients are 0.10 and 0.09, respectively ($p < 0.05$).

Finally, we examined three control variables—firm size, business type, and outsourcing of information services—to determine their influence, if any, on the hypothesized relationships. Among the three variables, only outsourcing of information services was found to be significantly related to market performance (the standardized path coefficient is 0.15, $p < 0.05$) and indirectly related to financial performance through market performance (the standardized path coefficient is 0.08, $p < 0.05$). Firm size and business type did not affect the customer orientation-business performance relationship.

A Rival Model

To further understand the adequacy of the hypothesized model, we examined one logical competing model. In the hypothesized model, customer orientation does not have a direct path to financial performance; instead, it has a fully

mediated effect on financial performance through its link to market performance. An obvious nested rival model is one in which customer orientation has a partially rather than fully mediated effect on financial performance. This model is identical to the hypothesized model except for inclusion of a direct link from customer orientation to financial performance. The overall fit of the rival model was not significantly better than that of the hypothesized model ($\Delta\chi^2_{(1)} = -0.05$, $p > 0.05$; $\chi^2_{(26)} = 46.77$, $p < 0.01$; GFI = 0.95; CFI = 0.90; RMSEA = 0.07; AGFI = 0.90). Importantly, the direct path between customer orientation and financial performance was nonsignificant (the standardized coefficient is 0.02, $t = 0.22$, $p > 0.05$). Because the only distinction of the rival over the hypothesized model was the direct path from customer orientation to financial performance, yet that path turned out to be nonsignificant, parsimony dictated that the hypothesized, albeit simpler, model be deemed superior.

DISCUSSION

The purpose of this study was to reexamine the customer orientation-business performance relationship in order to better understand its existence and nature. More specifically, it was to address these questions: (1) is customer orientation linked to business performance, and, if so, (2) do IT capability and information services play moderating roles in that relationship? We surveyed marketing executives in a wide range of firms and industries to conduct a fairly comprehensive examination of these questions.

With respect to the first question, we learned that customer orientation is linked to business performance, but in a more complex way than previously conceived. Specifically,

we found that customer orientation is related to market performance (H1), and that market performance is associated with financial performance (H4). However, customer orientation has no direct tie to financial performance, only an indirect one. Together, these results suggest a chain effect in which customer orientation influences market performance, which in turn, affects financial performance. This chain effect can be interpreted as a fully mediated relationship, as elaborated by Kenny, Kashy, and Bolger (1998). These results help explain the conflicting findings of prior studies, some showing and others denying that customer orientation enhances business outcomes. Our study confirms a positive effect, but specifies it as sequential, with enhancement first of market outcomes, followed by financial results.

For the second question, we examined IT capability and information service quality as potential moderators. IT capability was found to interact with customer orientation (H2), elevating market performance. Thus, computer technologies facilitate a firm's customer intelligence efforts and responses to intelligence, resulting in better products, higher sales, and other market gains (Day 1994; Glazer 1991). IT capability on its own, however, is not related to market performance. This additional finding, along with support for H2, suggest that IT capability is a true contingent variable. Contrary to prediction (H3), information services quality was found not to interact with customer orientation. Nonetheless, information services quality is not unimportant. It was determined to be a direct antecedent of market performance, a relationship not hypothesized. Put another way, computer technologists can be a potent force, contributing independently to an organization's market performance.

MANAGERIAL IMPLICATIONS

There are several implications of our study for marketing managers. The most important is that customer orientation should be cultivated. We found that customer orientation enhances business performance, regardless of the size of the firm and industry it is in. Therefore, it is worthwhile for a wide range of commercial enterprises to pursue customer orientation. The finding also suggests that concerns over the detrimental effects of customer orientation may be greatly exaggerated. Marketing managers have been told that customer orientation threatens the viability of their businesses by enslaving them to the tyranny of the served market (Christensen and Bower 1996; Hamel and Prahalad 1994). Claims have been made that the orientation results in an inordinate attention to current markets and failure

to observe emerging trends. Although catering to every passing whim of extant customers is not a good strategy—if anything because it is impractical—ignoring customers and assuming they will take whatever is proffered is likewise to be ineffective. In addition, customer orientation does not mean that new or potential customers are overlooked, but rather that both existing and nascent segments are studied and served through appropriate, value-laden offerings (Balakrishnan 1996; Gatignon and Xuereb 1997).

But how can managers pursue customer orientation, apart from simply being intentional? Although we did not examine antecedents of customer orientation, and future research can be directed to this issue, several studies are suggestive. Jaworski and Kohli (1993) observed that market orientation is preceded by top management emphasis, interdepartmental cooperation, and a market-based reward system. Rindfleisch and Moorman (2003) determined that firms in competitor-dominated strategic alliances retain their customer orientation over time when third-party monitors are present. Neither study examined direct means of strengthening customer orientation per se, but each points to certain structural elements and managerial policies that may be helpful: having senior managers reinforce the importance of customers to the rest of the organization, such as through mission statements; removing barriers between functions to encourage organization-wide responses to customers, such as through cross-functional teams; creating programs tying monetary incentives to market metrics, such as determining bonuses based on customer satisfaction ratings; and monitoring strategic alliances to reduce collusive activities so customers are better served, such as by engaging impartial third parties.

Another managerial implication of our study is that market indicators should be emphasized more than financial indicators in assessing the impact of and guiding customer orientation efforts. We learned that market performance is a direct result of customer orientation, whereas financial performance is a consequence of market performance. Thus, for firms intent on being customer oriented, market measures more closely reflect success in actualizing this intent than do financial measures. Market metrics provide the added benefit of providing near-term gauges of performance, so that adjustments can be made to customer orientation efforts in a timely manner, later resulting in strong financial outcomes. For example, if the market metric of product quality is low, marketing managers can address the quality deficiency by identifying the weak features and then removing or reducing them. The improved product should then sell better, lower the scrap rate, and minimize inventory costs, all of which raises profitability.

An additional managerial implication of our study is to build and continuously improve the IT capability. We learned that IT capability is an effective means of supporting a firm's customer orientation efforts, thereby strengthening business performance. Plainly, one way of building and improving this capability is investing in expansion and upgrade of the IT infrastructure. Businesses are directing sizable amounts of capital to that infrastructure, surpassing spending on plant and manufacturing equipment. Another way to increase the IT capability, one more specific to customer orientation, is installing computer tools to expedite customer information handling and marketing staff work flows. Developing Web sites to automate the collection of detailed customer data, installing intranet platforms to share marketing best practices in real time across global subsidiaries, and using artificial intelligence software to sift out profitable micro segments and track purchase patterns are only a few of the many IT applications available to support marketing and customer-centric activities.

Finally, our study suggests that increasing information service quality is a direct route to improving market performance. Although we had expected information service quality to play a contingency role, we learned instead that it contributes on its own to performance outcomes. Given this result, it behooves managers to view the information services function not as a mere appendage to others, but rather as a strategic organizational asset and capability. More particularly, managers should make concerted efforts to support and strengthen the information services staff. Some possible avenues are developing clear career tracks for information services personnel, including into senior management ranks; providing technical as well as business training to this group to elevate their skills; and establishing an IT user satisfaction program to monitor and continuously improve the quality of information services.

FUTURE RESEARCH AND STUDY LIMITATIONS

Future research can be conducted along several lines, building on findings from this study. One direction is to investigate specific forms of IT capability and its facilitating role in customer orientation. Perhaps most salient is CRM technologies, which have seen a large increase in adoption over the past few years. CRM tends to have a rather all-encompassing architecture integrating, for example, back-end phone service center with a front-end Internet customer Web site. There has been some backlash against CRM due to perceptions of underperformance. It may be that these technology solutions were oversold—that is,

promising results that they could not deliver because of the rapid evolution of features as well as idiosyncrasies of organizations. Research specifically on CRM architectures can build on this study, leading to the development of more particular customer orientation-IT capability models.

A second line of future inquiry is to examine other potential moderators or mediators to explain the customer orientation-business performance relationship. Research on intermediary or interacting variables is relatively nascent, despite recognition of the knowledge gap by marketing scholars (e.g., Singh and Ranchhod 2004; Voss and Voss 2000). This is one of the first studies to examine such variables, looking at two components or corollaries—IT and information services—constituting a firm's information system. Among other intervening variables worthy of investigation are exogenous factors such as market turbulence, and endogenous factors such as innovativeness (Menguc and Auh 2006).

Finally, research can be done to further understand the role of information service quality. As already noted, we were surprised to learn of this variable's direct and indirect effects on components of business performance. Yet it raises the question of the exact mechanism by which these effects occur. Because the computer technology staff serves not only marketing personnel, but all functions in the organization, information service quality represents a potentially complex driver of business performance. Studies may be conducted to trace this intricate effect in greater detail. This will require theorizing and empirically demonstrating the process by which information service quality augments work routines and thus improves business results. A useful starting point may be a qualitative study where observations are conducted of computer specialists assisting employees to apply IT tools.

Our study helps to resolve the debate about the value of customer orientation in terms of performance outcomes. It shows that customer orientation indeed contributes to business performance, albeit through a sequential path affecting separate components. Moreover, it reveals that IT capability and information service quality have interactive and main effects, respectively. Nevertheless, our findings must be interpreted in the context of limitations. One limit is perceptual performance measures. Although objective measures are more desirable, subjective measures are closely corresponding. A second limit is the cross-sectional data, making it difficult to confirm causal ordering between variables. A longitudinal study is necessary for such determinations. Nonetheless, we hope this study expands understanding of the customer orientation-business performance link. Marketing managers seeking ways to improve

their organizations' top and bottom lines can look to this research for ideas, focusing on the contributions of customer orientation, IT capability, and information service quality.

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APPENDIX Measurement Scales

Construct	Items	Cronbach's Alpha	Item Loading ¹
Customer Orientation (CO)	My SBU's business objectives are driven primarily by customer satisfaction.	0.84	0.51
	In my SBU, we rarely monitor our level of commitment and orientation to serving customer needs. (R)		0.67
	In my SBU, we freely communicate information about successful customer experiences across all business functions.		0.87
	Strategy for competitive advantage is based on customers' needs.		0.50
	We measure customer satisfaction unsystematically, infrequently. (R)		0.67
	We have routine or regular measures of customer satisfaction.		0.60
	We are more customer focused than our competitors.		0.62
	We poll end users at least once a year to assess the quality of our products and services.		0.53
IT Capability (ITC)	Data on customer satisfaction are disseminated at all levels in this SBU on a regular basis.	0.88	0.68
	Speed of IT in communicating information.		0.57
	Capacity of IT in communicating information.		0.63
	Quality of IT in communicating information.		0.72
	Speed of IT in storing information.		0.74
	Capacity of IT in storing information.		0.74
	Quality of IT in storing information.		0.62
	Capacity of IT in processing (accessing, retrieving, analyzing) information.		0.65
Information Services Quality (ISQ) ²	Quality of IT in processing information.	0.94	0.63
	When information services (IS) promises to do something by a certain time, they do so.		0.79
	People in IS are rarely willing to help users. (R)		0.77
	People in IS are consistently courteous to users.		0.75
	IS has people who give personal attention to users.		0.72
	IS provides services at the time they promise to do so.		0.75
	People in IS give users prompt service.		0.81
	People in IS are too busy to respond to user's requests. (R)		0.61
Market Performance (MP)	People in IS are always willing to help users.	0.78	0.91
	IS gives individual attention to users.		0.86
	Product or service quality compared with the major competitors.		0.70
	New product or service success compared with the major competitors.		0.62
Financial Performance (FP)	Customer retention rate compared with the major competitors.	0.95	0.78
	Sales level compared with the major competitors.		0.66
	Return on equity compared with the major competitors.		0.93
	Gross profit margin compared with the major competitors.		0.90
	Return on investment compared with the major competitors.		0.99

Notes: ¹ Factor loading of completely standardized solution. ² Questionnaire instructions specified IS as "the group of people responsible for servicing users of IT within your SBU." (R) = reverse coded.