

Electronic Commerce Customer Relationship Management: An Assessment of Research

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ABSTRACT: The status and maturity of electronic commerce customer relationship management (ECCRM), an emerging subfield of management information systems (MIS), are investigated through an exhaustive literature review of 369 articles from the first published article in 1984 through conference papers given in 2001 and 2002. The results indicate some trends that should be of interest and concern to researchers in this area and in MIS as a whole. First, exploratory surveys dominate the research literature, which in itself may be problematic. More troubling, most of the survey instruments were not validated, and the authors did not mention validation procedures. Second, there has been little theoretical development, and few empirical studies use hypothesis testing. Third, cumulative tradition has hardly emerged, with each study developing a new conceptual model, new constructs, and new instruments. On the positive side, ECCRM researchers have employed a wide range of methods and studied a broad range of topics. The subfield of ECCRM is young, but is growing rapidly, and professional activity in the MIS research community illustrates its importance. Specific recommendations for further development are provided.

KEY WORDS AND PHRASES: Electronic commerce customer relationship management, epistemology in MIS research, introspective study, MIS journals and conferences.

Since 1984 more than 300 papers concerning electronic commerce customer relationship management (ECCRM) have been published in the literature on information systems (IS) or by IS researchers in referent discipline publications. The rapid increase in the volume of research in this context over the past several years suggests that a new subdiscipline of management information systems (MIS) is emerging. ECCRM is now and will continue to be an important subfield of MIS research, as well as of relevant reference disciplines such as marketing, computer science, library science, and psychology. As an emerging subfield, it is an object of interest and worthy of study in and of itself [15]. With this in mind, the present paper investigates the development and maturity of ECCRM to gain an understanding of its evolution and current status, and to provide insights as to directions for future research. The analysis paints a picture of the ECCRM subfield of MIS through an objective representation of the growing body of literature from multiple perspectives: published journal and conference articles, epistemology and research approach, authors and institutions, research areas, and keyword topics.

The research was partially supported by the New Jersey Center for Pervasive Information Technology (NJPIT).

Background

This study is the third in a series on ongoing research in the subfield of customer relationship management (CRM) in management information systems (MIS) and particularly in electronic commerce (EC). The first study was a brief informal examination of the literature from major IS journals and conference proceedings for the five-year period from 1995 to 1999 and the first part of the year 2000 [34]. The results of the first investigation revealed that a great deal of ECCRM research was ongoing and being published both in journals and conference proceedings. These publications were scattered among many different tracks and minitracks at conferences and in topic areas of journals. It also found that the MIS research community was planning extensive ECCRM-related professional activities. The second study reviewed the epistemology and research approach of 211 published journal and conference articles [35]. The present paper builds upon the two previous studies by considering a larger body of literature and performing additional analyses in terms of authors, institutions, and research topics.

Study Motivation

This study was undertaken for two reasons. First, there is a need for analyses of MIS subfields and especially of electronic commerce customer relationship management. Second, the rapid growth of professional scholarly activities in this area illustrates the increasing importance the IS community places on ECCRM research.

A Need for Subfield Analyses

As Farhoomand points out, an evolving field of research itself becomes an object of interest and study [15]. Keen asserts that even emerging fields have a history and are likely to atrophy if they fail to pause and reflect about themselves [28]. Culnan argues that it is important to track the state of “youthful” academic disciplines to provide an understanding of relationships to referent disciplines and a guide to scholarship for doctoral students and researchers in other fields [11]. Finally, several studies emphasize the importance of having a benchmark from which to track the status of an emerging discipline that is based on published research and not biased by conventional wisdom [1, 8, 11, 20].

Pervan reports that there have been few systematic examinations of the IS literature for subfields of the discipline [32]. Group support systems (GSS) is the one IS subfield where there have been several studies of this kind [18–20, 32]. The recent work by Fjermestad and Hiltz in GSS has revealed important insights into the process of GSS and IS research, and opened directions for future research. No prior meta-analyses of the research literature on ECCRM or even on electronic commerce were found, in spite of the increasing number of published articles over the past seven years, although a recent study by Firth mentioned the growth of ECCRM literature [17]. For these reasons, an

analysis of the ECCRM subfield has merit and will be useful to researchers investigating any area of MIS.

Professional Activities

Banville and Landry maintain that what a research community says about itself is one measure of its evolution [3]. The IS research community has been “saying” a great deal about ECCRM over the past several years and continues to do so. Recent activities suggest that it is considered an important MIS research area by a substantial portion of the community. First, over the past several years there have been an increasing number of ECCRM publications in both conference proceedings and journals. Second, many journals have published (or soon will) special issues on electronic commerce that are highly likely to contain articles related to CRM (see Figure 1). Third, there are new and growing minitracks at both AMCIS and HICSS and at other conferences (see Figure 2). It is obvious from all this that ECCRM is regarded as an important area for continued research.

The rapid increase in research publications, recent and forthcoming special journal issues, and emerging conference mini-tracks, as well as recent articles studying other MIS subfields all contribute to the motivation for the present study. The end of this multiyear period of increasing research activity seems an excellent time to consider the maturity and status of ECCRM research in the IS community.

Methodology

This research was conducted as an exhaustive literature analysis of all the articles about ECCRM in IS research that were *available* to the authors. Articles were identified, analyzed, classified, coded, and recorded based on a technique adapted from the work of the authors of several similar introspective studies [1, 8, 18–20, 32]. The details of the methodology are described below in terms of publication selection, research articles included, article classification framework, article inclusion/exclusion procedure, and article classification procedure.

Publication Selection

The purview of this study was not limited to specific journals chosen by the researchers, or even to journals alone, as was the practice of other meta-analyses [1, 8, 32]. Instead, following the strategy employed by Fjermestad and Hiltz, it considered everything available from refereed journals and IS-related conference proceedings [18–20]. The inclusion of conference proceedings ensures that the most recent research is analyzed, because journal articles are usually not published until a few years after the research is completed. The study also considered articles published in journals and conferences other than those known to regularly publish MIS research, as suggested by Culnan [11]. This strategy provided an unbiased set of all the available articles on the

Decision Support Systems published a special issue on "Decision Support Issues in Customer Relationship Management and Interactive Marketing for e-Commerce" in December 2001 (vol. 32, no. 2). Guest editors were Professors P. K. Kannan (PKannan@rhsmith.umd.edu) and H. Raghav Rao (mgmtrao@buffalo.edu). Available at www.elsevier.com/cgi-bin/cas/tree/store/decsup/cas_free/browse/browse.cgi?year=2000&volume=32&issue=2.

Electronic Markets published a special issue on "Electronic Commerce and Marketing" in September 2000 (vol. 10, no. 3). Guest editors were Professor Beat F. Schmid, Professor Torsten Tomczak (Torsten.Tomczak@UNISG.CH), Dr. Marcus Schögel (Marcus.Schoegel@UNISG.CH), and Professor Brigitte Buchet. Available at www.electronicmarkets.org/netacademy/publications.nsf/all_pk/1519.

Industrial Marketing Management published a special issue on "Internet-based Business-to-Business Marketing" in July 2000 (vol. 29, no. 4). The guest editor was George T. Haley (gthaley@asia-pacific.com). Available at www.elsevier.com/inca/publications/store/5/0/5/7/2/0/index.htm.

Logistics Information Management published a special issue on "SPECS: A New Approach to Strategic Planning for E-Commerce Systems," on January 14, 2001, guest-edited by Ray Hackney (R.hackney@mmu.ac.uk) and Janice Burn (j.burn@ecu.edu.au). See www.emeraldinsight.com/lim.htm.

European Journal of Information Systems will publish a special issue on "Personal Aspects of E-Business" in June 2002, to be guest-edited by Dr. Patrick Y.K. Chau. See the call for papers at www.business.hku.hk/~pchau/special_issue/ejis.htm.

Journal of Electronic Commerce Research will publish a special issue on "Exchange Relationship in the Digital E-commerce Economy" in May 2002, to be guest-edited by Al F. Salam and L.S. Iyer. For submission guidelines, see www.csulb.edu/web/journals/jecr/s_g.htm.

Business Process Management Journal will publish a special issue on "Customer Relationship Management in Information Systems" in early 2003, to be guest-edited by Nicholas C. Romano, Jr. (Nicholas-Romano@MSTM.OKSTATE.EDU) and Jerry Fjermestad (Fjermestad@ADM.NJIT.EDU). See the call for papers at www.emeraldinsight.com/journals/bpmj/call2.htm.

Information Technology & Management will publish a special issue on "Strategic Planning for E-Commerce Systems (SPECS): Value Returns and Alliances" in the spring of 2003, to be guest-edited by Ray Hackney (r.hackney@mmu.ac.uk), Janice Burn (j.burn@ecu.edu.au), and Gurpreet Dhillon (dhillon@ccmail.nevada.edu). See kapis.wkap.nl/journalhome.htm/1385-951X.

Figure 1. Journal Special Issues Related to ECCRM

topic area. No attempt was made to determine what would be a representative sample. Instead the entire population of articles was examined. As a result, more than 400 papers were identified as candidates for inclusion in the analysis.

Research Articles Included

The initial literature review found more than 400 papers concerning electronic commerce customer relationship management. Everything that could be lo-

<p>AMCIS 2000: ECCRM Minitrack, August 10-13, 2000, Long Beach, CA (five papers), www.csulb.edu/conference/ais2000.</p> <p>HICSS-34 2001: ECCRM Minitrack, January 3- 6, 2000, Maui, HI (six papers), www.hicss.hawaii.edu/hicss_33/apahome3.htm.</p> <p>AMCIS 2001: ECCRM Minitrack, August 3-5, 2001, Boston (twenty-one papers), ecampus.bentley.edu/org/amcis2001.</p> <p>Second International We-B Conference: We-B2C: Current Practice and Future Implications Minitrack, November 29-30, 2001, Perth, Western Australia, www.we-bcentre.com/conf2001/webconferenceINDEX.htm.</p> <p>HICSS-35 2002: ECCRM Minitrack, January 7-10, 2002, Kona, HI (six papers accepted), www.hicss.hawaii.edu.</p> <p>ISOneWorld 2002: CRM Track, April 4-5, 2002, Las Vegas, NV, www.isoneworld.org.</p> <p>Third Annual Global Information Technology Management (GITM) World Conference: Customer Resource & Supply Chain Management, track chair: Barry Shore, June 23-25, 2002, New York, www.uncg.edu/bae/isom/gitma/conference%20tracks.htm#1.</p> <p>AMCIS 2002: ECCRM Minitrack, August 9-11, 2002, Dallas, hsb.baylor.edu/amcis2002.</p>
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Figure 2. Recent and Forthcoming Conference Minitracks on ECCRM

cated both in print and electronically, published in English, was considered and analyzed. A number of articles were excluded because they did not meet certain criteria. First, since it had been decided to accept only articles published in refereed journals or conference proceedings, unpublished dissertations, conference presentations, magazine articles, books, and book chapters were excluded. Second, acceptable articles had to specifically address some aspect of ECCRM. The scope of this criterion was broad and included five major areas identified in an earlier study [34] and shown in Figure 3.

Journal articles from 2001 were not included because time and access constraints would have led to an unrepresentative sample made up only of journals that the authors subscribe to personally or can read in their libraries or through other subscription sources. Papers were included, however, from two important 2001 conferences, the Americas Conference on Information Systems (AMCIS) and the Hawai'i International Conference on System Sciences (HICSS), because both were fully available electronically and included minitracks dedicated to this topic. The HICSS 2002 minitrack was also included because these papers represent the latest published ECCRM research.

Third, articles selected had to specifically address MIS research. This criterion meant that many articles published in marketing journals by marketing researchers, or in other referent disciplines, were excluded. Finally when a conference paper was revised and published in a journal, it was not double-counted, and only the journal version was included in the analysis.

The search in 2001 was limited to readily available conference proceedings because of time limitations and the availability of journal issues. Certainly some papers were overlooked, and with the volume of research underway in this area, new articles are published almost weekly, so it is practically impossible to be comprehensively current. This study faced the same challenges

1. Markets
2. Business Models
3. Knowledge Management
4. Technology
5. Human Factors

Figure 3. Five ECCRM Research Areas [33]

Fjermestad and Hiltz did in their assessment of GSS articles [20]. Every effort was made to review all available articles for inclusion in the analysis. In doing so several problems were encountered, and these are discussed later as limitations.

Although earlier studies considered 10-year or longer intervals [8, 11, 32], the new subfield of MIS research has only begun to emerge strongly in the literature in the last several years. Even with the restriction to this limited time period, the number of articles considered approaches the number covered in earlier studies, most likely because today there are more IS researchers, journals, and conferences than at the time of the earlier studies, and because conferences were considered as well as journals. Earlier volumes of all journals and conference proceedings were analyzed back to 1990 to locate articles specifically addressing ECCRM.

Article Classification Approache

Many criteria have been suggested as suitable for evaluating the development, evolutionary status, or maturity of the field of MIS or its many subfields. Not surprisingly, many of the proposed criteria have their roots in referent disciplines. Van Horn, Galliers, and Galliers and Land classified MIS “empirical” research by type [22, 23, 42]. Their taxonomies were initially reviewed for use in this study, however much, as Pervan found in his review of the literature on group support systems (GSS) [32], they were inadequate for classifying the large volume of “nonempirical” studies found in the literature on ECCRM. Cheon et al. cite Banville and Landry’s suggestion that a field’s maturity can be evaluated based on its research methods, research topics, variables, and what the research community says about itself [3, 8]. Alavi and Carlson investigated the disciplinary development of MIS by examining topics, themes, and research strategies in the literature [1]. Vogel and Weatherbe, Culnan, and Pervan all considered individuals or clusters of researchers to assess the progress of MIS research [11, 32, 44]. Vogel and Weatherbe, and Pervan too, examined research institutions and author affiliations [32, 44]. Pervan employed Alavi and Carlson’s classification to analyze the GSS literature [1, 32].

After a review of several classification schemes, the one developed by Alavi and Carlson to classify MIS research was adopted [1]. This framework was, for several reasons, best suited for an analysis of the newly emerging subfield of ECCRM. First, the framework included nonempirical studies, a category including roughly half of the articles. Second, it also considers research approach and epistemology. Third, it was fairly recently (1992) developed spe-

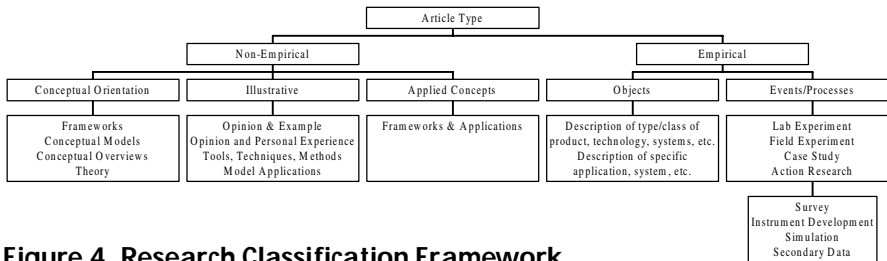


Figure 4. Research Classification Framework

Source: based on [1, 31].

cifically for the classification of MIS research. Finally, it was employed to classify research articles in a subfield [32]. The taxonomy was amended from Alavi and Carlson's original in two ways [1]. Following Pervan, action research was added [32]. So too were simulations. The updated framework used to classify the articles by type is shown in Figure 4.

Candidate Article Identification Procedure

Working together, two researchers searched through the tables of contents, keywords, full texts, and abstracts of all IS and referent discipline journals and conference proceedings to identify articles that might concern EECRM. Keywords including but not limited to "customer," "consumer," "relation," "relationship," "B2B," "B2C," and "service" were used to identify potentially relevant articles. Since many journals are now on-line, and conference proceedings are on CD-ROM or available through digital libraries, the search was much easier and faster than it would have been if done entirely by hand. The ACM and IEEE digital libraries were used to search all respective publications, and CD-ROM proceedings were used for IS conferences, such as AMCIS, Decision Sciences International (DSI), International Conference on Information Systems (ICIS), and HICSS. Article search services like Info Track and First Search were used to locate candidate articles. The on-line journal collections of three major research libraries were also used to obtain articles. When digital publications were unavailable or inaccessible, bound hard copies were used. Once an article was identified as a candidate, a soft copy was obtained if possible, otherwise only a hard copy was obtained. As articles were acquired, their reference lists were reviewed to assist in locating additional articles for possible inclusion in the study. Through this method more than 400 candidate articles were found.

Article Inclusion/Exclusion Procedure

Using the criteria for inclusion described above, two researchers examined each article and made independent decisions on inclusion. Each researcher compiled a list of all the articles he thought should be included in the analysis, and then the two lists were compared. The level of agreement between the two researchers was fairly good, as shown by the fact that 357 articles

were selected for inclusion by both of them. One researcher identified another 14 articles for inclusion that the other had not, and the second identified 10 that the first had not. Each of the articles identified by only one researcher was reviewed again and discussed until the two agreed on inclusion or exclusion. After review and discussion, 12 of the 24 articles were added to the 357 for a total of 369. The level of agreement across all 369 articles was very high, as 359, or 93 percent, were selected for inclusion or exclusion by both researchers independently. The final set of articles for analysis consisted of 369, or 72 percent of the total article set. Some articles were excluded because they were published in reference discipline journals or conferences, by reference discipline authors, and others because they did not have an overall ECCRM or MIS focus even though their titles or abstracts contained ECCRM keywords. Perhaps a future study might include the referent discipline and other articles outside the IS research literature in a comprehensive cross-disciplinary analysis.

Article Classification Procedure

Two researchers classified the articles independently according to the procedures discussed below. Based on experience in an earlier study [36], a specialized prototype coding application was designed and developed that assisted in the coding process (*see Figure 5*). Both researchers classified each article according to the classification schemes in Figures 3 and 4. Each coder independently reviewed each article, classifying it as either empirical or nonempirical and then according to the appropriate scheme for the two sub-levels, and assigned all the applicable research areas shown in Figure 3. On average coding an article took about 20 minutes, which is consistent with the 20 minutes that Alavi and Carlson estimated in their study [1].

The reliability of the classification scheme was assessed by calculating the interrater agreement between the two authors using the Kappa (κ) Coefficient [21]. The widely accepted standard for interrater agreement in the MIS discipline is 0.80. Other disciplines accept values as low as 0.70. Perfect interrater agreement is when Kappa is equal to 1. The interrater agreement was greater than 99 percent ($\kappa = 0.9916$, $Z = 41.37$), which means that κ is significantly greater than zero.

Literature Analysis Results

Although more than 400 papers were examined and analyzed in the course of this study, the discussion of results in this section is restricted to those that met the criteria explained above and determined through the procedure already described. Two early papers are included because they are frequently cited in the more recent articles, and one of them has been the source of several validations and extensions in the literature. The results in this section are presented from five perspectives: historical overview, authors and institutions, epistemology and research approaches, research areas, and keyword topics.

The screenshot shows a software interface titled "Papers" with various fields for article classification. The title is "The Mindmine Comment Analysis Tool for Collaborative Attitude Solicitation, Analysis, Sense-Making and Visualization". The author list includes Romano, N.C. Jr., Bauer, C., Nunamaker, J. F. Jr., and Chen, H. The interface includes dropdown menus for author, institution, region, country, and acquisition price, as well as checkboxes for research approach and epistemology. A table at the bottom shows independent and dependent variables.

Variables	Independent	Dependent
IND Var 1		DEP Var 1
IND Var 2		DEP Var 2
IND Var 3		DEP Var 3
IND Var 4		DEP Var 4
IND Var 5		DEP Var 5
IND Var 6		DEP Var 6

Figure 5. Article Classification Application

Historical Overview

Starting with Ives and Learmouth's paper on the customer resource life-cycle (CRLC) [24], this study classifies 369 articles about CRM in the MIS literature, all but two in the context of EC. More papers have been written on this topic, but the study was limited by the criteria and procedures discussed above. Figure 6 and Table 1 present the number of articles by publication medium and year. Both illustrate the trend toward an increase in scholarly publications on ECCRM. Of special interest is the rapid increase in conference papers, which almost doubled from 1998 (35) to 1999 (61), because many of these papers may be revised and submitted to journals for publication within one to three years. Also of interest is the fact that although for the year 2001 only first- and second-quarter conference data were available, and two of the major IS conferences (DSI and ICIS) had not yet taken place, the total number of publications was already nearly 60.

Firth reported the same growth trend in terms of the articles listed in the ABI/Inform database relating to CRM, which includes both refereed and nonrefereed articles (see Figure 7) [17]. Clearly the MIS research and practitioner communities have a great deal to say about ECCRM.

Table 2 presents the publication figures by year and conference. The analysis reveals that at least eight different refereed conference proceedings have published articles on ECCRM. AMCIS and HICSS are the venues with the most articles to date, but the number of articles published at DSI and ICIS has also been increasing.

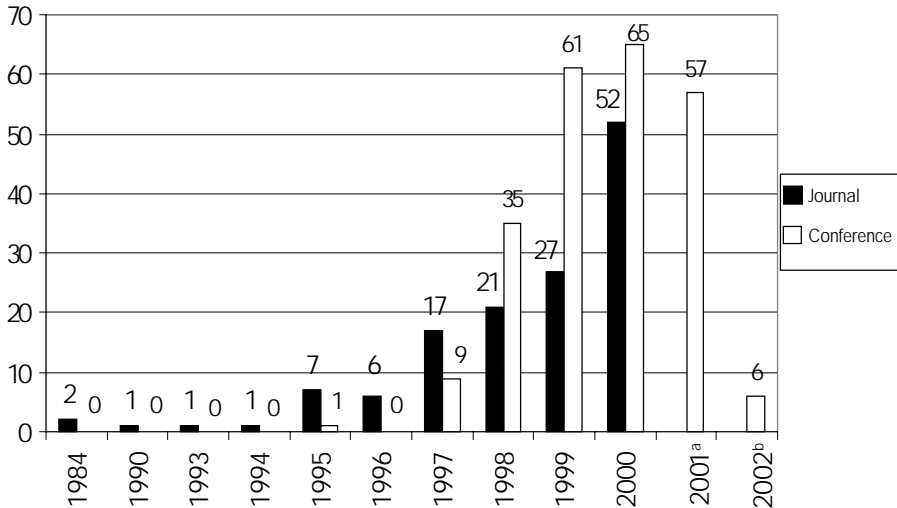


Figure 6. Number of Articles by Publication Medium and Year

^aConferences only, not including DSI or ICIS.

^bHICSS ECCRM minitrack papers only.

Table 3 presents the number of articles by journal and year. It shows that 28 different journals have published articles on ECCRM. As with the conference proceedings, this illustrates the breadth of the research in this area published across the MIS field. Six refereed journals have published at least 10 articles on ECCRM topics: *Communications of the ACM*, *Internet Research*, *Electronic Networking Applications and Policy*, *International Journal of Electronic Commerce*, *Decision Support Systems*, *Information and Management*, and the *Journal of Computer-Mediated Communication*. Together these six journals represent 21 percent of the 28 journals and account for 63 percent (84) of the 132 journal articles.

Three mainstream MIS journals, *Management Information Systems Quarterly*, *Journal of Management Information Systems*, and *Information and Management*, accounted for only 14 percent (18) of the 132 articles. This is not surprising, considering the strict standards, rigorous review processes, and theoretical basis required by *Management Information Systems Quarterly* and the *Journal of Management Information Systems*. It will be interesting to watch and see whether these and other mainstream MIS journals, such as *Information Systems Research*, publish more ECCRM papers in the near future. Interestingly, 10 non-MIS-specific journals have all published articles on ECCRM: *Academy of Management Executive*, *Communications of the ACM*, *Computers and Operations Research*, *Decision Sciences*, *Interfaces*, *International Journal of Human-Computer Studies*, *International Journal of Quality and Reliability Management*, *Management Science*, *Organization Science*, and the *Information Society*. The fact that 28 different MIS or MIS-related journals, not including marketing and other referent discipline journals, have published ECCRM articles further illustrates both the importance of this research area to the MIS research community and its referent disciplines and the breadth of research that has been undertaken.

Publication medium	1984	1990	1993	1994	1995	1996	1997	1998	1999	2000	2001 ^a	2002 ^a	Total	% Total
Conference	0	0	0	0	1	0	9	35	61	65	57	6	234	63.41
Journal	2	1	1	1	7	6	17	21	27	52			135	36.59
Total	2	1	1	1	8	6	26	56	88	117	57	6	369	

Table 1. Number of Articles by Publication Medium and Year.

^a Partial list

Conference	1995	1996	1997	1998	1999	2000	2001 ^a	2002 ^a	Total	% Total
Americas Conference on Information Systems				21	23	20	37		101	43.16
Hawai'i International Conference on System Sciences Meeting of the Decision Sciences Institute			7	6	15	9	19	6	62	26.50
International Conference on Information Systems			2		10	12			24	10.26
Bled Electronic Commerce Conference					1				1	0.43
IEEE International Conference on Fuzzy Systems	1								1	0.43
Fifth Australian World Wide Web Conference	1				1				2	0.85
Information Resources Management Association	1				1				2	0.85
Total	3	0	9	35	59	66	56	6	234	

Table 2. Conference Articles by Conference and Year.

^a Partial list.

Authors and Institutions

The information recorded about the authors of the articles in the study included their names, their academic or practitioner status, and the institutions they were affiliated with when their papers were published. To assess which authors and institutions have had the most influence on ECCRM research, the number of occurrences for each author and institution were calculated. This is what Lindsey described as the "normal count" [30]. Lindsey also proposed two alternative counts: the "straight count," in which only the first author (and institution) are counted, and the "adjusted count," in which each author (and institution) for a paper is counted as only a portion (one divided by the total number of authors) of a paper [30]. Pervan points out that none of the three counts is ideal, because contributions by various authors are rarely exactly equal [32]. Following Pervan, the fairest measure is the adjusted count, because the straight count omits many of the contributors to multiple-author papers, and the normal count may lead to disproportionate weighting of pa-

Journal	1984	1990	1993	1994	1995	1996	1997	1998	1999	2000 ^a	Total	% Total
<i>Communications of the ACM</i>	1							9	3	8	21	15.91
<i>Internet Research</i>									1	17	18	13.64
<i>International Journal of Electronic Commerce</i>						3	3	2	3	4	15	11.36
<i>Decision Support Systems</i>	1						5	3		1	10	7.58
<i>Information and Management</i>						1	2		1	6	10	7.58
<i>Journal of Computer-Mediated Communication</i>					5				5	2	10	7.58
<i>Electronic Markets</i>							1	3	3		7	5.30
<i>Journal of Management Information Systems</i>			1		1			1		2	5	3.79
<i>International Journal of Human-Computer Studies</i>										4	4	3.03
<i>Management Information Systems Quarterly</i>					1		1	1	1		4	3.03
<i>Information Systems Journal</i>	1		1							1	3	2.27
<i>Management Science</i>									3		3	2.27
<i>Communications of the AIS</i>										2	2	1.52
<i>Computers and Operations Research</i>										2	2	1.52
<i>Journal of Global Information Technology Management</i>										2	2	1.52
<i>Journal of Information Technology</i>								1	1		2	1.52
<i>Journal of Operations Management</i>							1		1		2	1.52
<i>The Information Society</i>							2				2	1.52
<i>Academy of Management Executive</i>		1									1	0.76
<i>Accounting Management and Information Technologies</i>								1			1	0.76
<i>Decisions Sciences Journal</i>						1					1	0.76
<i>Information Strategy: The Executive's Journal</i>						1					1	0.76
<i>Information Technology & Management Journal</i>										1	1	0.76
<i>Interfaces</i>										1	1	0.76
<i>International Journal of Quality and Reliability Management</i>							1				1	0.76
<i>Journal of Knowledge Management</i>							1				1	0.76
<i>Journal of Organizational Computing & Electronic Commerce</i>										1	1	0.76
<i>Organization Science</i>									1		1	0.76
Total	2	2	1	1	7	6	17	21	22	54	132	

Table 3. Journal Articles by Journal and Year.^a Partial list.

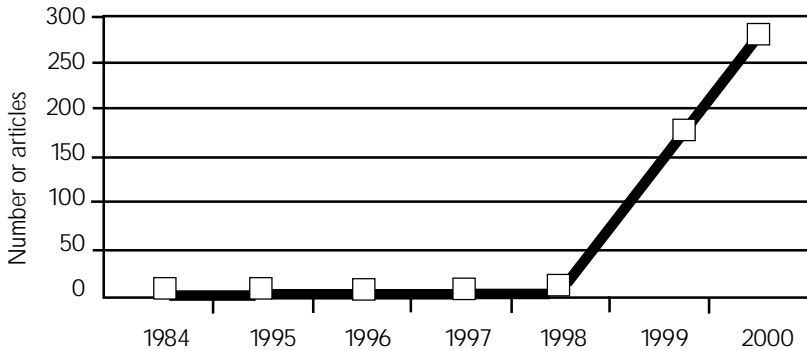


Figure 7. Growth in Number of Articles in ABI/Inform Relating to CRM

pers with multiple authors from the same institution through double-counting. All three counts are presented in the results here, but the adjusted count is the measure least distorted by differing author contributions.

Across the 369 articles there were 665 unique authors, who worked for 307 different institutions (based on normal and adjusted counts; with a straight count, first authors only, this drops to 214 Institutions), of which 623 (94%) were academic and 42 (6%) practitioners. The authors represented 26 different countries, which reflects the truly international breadth of the rising ECCRM research phenomenon.

In order to ensure objectivity, Table 4 presents all three measures, adjusted, normal, and straight counts, for the top-10-ranked institutions in terms of articles published. These 10 institutions produced 46 percent of the published articles on ECCRM, yet constitute only 3.5 percent of the 307 institutions that have had authors publish ECCRM scholarly articles, based on adjusted count rankings. The listing of all three ranks illustrates that the straight count, which includes only first authors, significantly overlooks prolific institutions. For, example Texas–Austin drops to the bottom of the straight ranking, while it is second and third respectively in the adjusted and normal rankings.

The three lists are very consistent—the University of Memphis is ranked first for all three measures, seven institutions appear in the top rankings in all three counts (City University of Hong Kong, Mississippi State, Pennsylvania, St.-Gallen, Southern Illinois Carbondale, Wisconsin–Milwaukee, listed alphabetically), and nine institutions appear in the top rankings in at least two of the counts (including NJIT and South Carolina, listed alphabetically). These results show which institutions are currently most active in publishing on ECCRM.

Again to ensure objectivity, Table 5 presents all three measures, adjusted, normal, and straight counts, for the top-10-ranked authors in terms of articles published. These top authors produced 13.7 percent (49) of the 369 published articles on ECCRM, yet they constitute only 1.7 percent of the 665 authors who published ECCRM scholarly articles, based on adjusted count rankings.

The three lists are somewhat consistent. Nicholas C. Romano, Jr. is listed as the first author in two of them, three authors appear in the top rankings in all three lists (N.C. Romano, Jr., N. Sukpanich, L.R. Vijayasathy, listed alphabetically), and 12 authors appear in the top rankings in at least two of the

Ad-justed rank	Institution	Ad-justed count	Normal rank	Institution	Normal count	Rank	Institution	Straight count
1	Memphis	9.05	1	Memphis	20	1	Memphis	10
2	St.-Gallen	8.00	2 ^a	Texas–Austin	18	2	St.-Gallen	8
3	Texas–Austin	7.06	2 ^a	Mississippi State	18	3 ^a	Pennsylvania	7
4	Southern Illinois–Carbondale	7.00	4	NJIT	16	3 ^a	Southern Illinois–Carbondale	7
5	Mississippi State	6.25	5	Wisconsin–Milwaukee	15	5	Wisconsin–Milwaukee	6
6	Wisconsin, Milwaukee	5.97	6	St. Gallen	14	6 ^a	City University of Hong Kong	5
7	Pennsylvania	5.16	7	SUNY Buffalo	14	6 ^a	Florida State	5
8	Hong Kong Baptist	5.00	8		12	6 ^a	Mississippi State	5
9	New Jersey Institute of Technology	4.99	9 ^a	Rochester Southern Illinois Carbondale	11	6 ^a	Rochester	5
10 ^a	City University of Hong Kong	4.67	9 ^a	Pennsylvania	11	6 ^a	South Carolina	5
10 ^a	South Carolina	4.66	9 ^a	City University of Hong Kong	11	6 ^a	Texas–Austin	5
			9 ^a	Hong Kong University of Science and Technology	11	6 ^a	USC	5

Table 4. Adjusted, Normal, and Straight Counts and Ranks by Institution.

^a = Rank tied (listed alphabetically).

counts (L. Chen, J. Fjermestad, J.M. Jones, C. Liu, A. Muthitachoen, A.F. Salam, A. Seidmann, C. Sohn, T.J. Strader, A.B. Whinston, listed alphabetically). Not surprisingly, five of the top authors in the adjusted count are from highly ranked institutions. Three are from the top-ranked University of Memphis, illustrating its leadership in this area of research. Three of the top authors were affiliated with institutions that are not in the top 10 but still highly ranked overall (J.M. Jones and L.R. Vijayarathy, with sixteenth-ranked North Dakota State, and A. Seidmann, with fourteenth-ranked Rochester). Note that some authors have moved and therefore have more than one institutional affiliation in Table 6.

Research Type and Epistemology

Table 7 and Figure 8 present results for the overall set of articles categorized with the extended version of the Alavi and Carlson scheme (see Figure 4),

Ad-justed rank	Author	Ad-justed count	Nor-mal rank	Author	Nor-mal count	Rank	Author	Straight count
1	N.C. Romano, Jr.	2.75	1 ^a	J. Fjermestad	6	1 ^a	N.C. Romano, Jr.	4
2	N. Sukpanich.	2.50	1 ^a	H.R. Rao	6	1 ^a	A.F. Salam	4
3	J.M. Jones	2.33	1 ^a	A.B. Whinston	6	1 ^a	N. Sukpanich	4
3	L.R. Vijayasathy	2.33	3 ^a	L. Chen	5	1 ^a	L.R. Vijayasathy	4
5	L. Chen	2.25	3 ^a	J.M. Jones	5	3 ^a	R. Dewan	3
5	A. Muthitacharoen	2.25	3 ^a	A. Seidmann	5	3	V. Grover	3
7	J. Fjermestad	2.08	3 ^a	N. Sukpanich	5	3 ^a	J. Jahng	3
7	A.B. Whinston	2.08	3 ^a	L.R. Vijayasathy	5	3 ^a	S.L. Jarvenpaa	3
9	S.E. Sampson,	2.00	5 ^a	K.P. Arnett	4	3 ^a	C. Liu	3
9	A. Seidmann	2.00	5 ^a	H.G. Lee	4	3 ^a	D.H. McKnight	3
9	C. Sohn	2.00	5 ^a	C. Liu	4	3 ^a	A. Muthitacharoen	3
			5 ^a	G.L. Lohse	4	3 ^a	J.W. Palmer	3
			5 ^a	N.C. Romano, Jr.	4	3 ^a	C. Sohn	3
			5 ^a	A.F. Salam	4	3 ^a	T.J. Strader	3
			5 ^a	T.J. Strader	4	3 ^a	J.D. Wells	3

Table 5. Authors' Adjusted, Normal, and Straight Counts and Ranks.

^a Rank tied (listed alphabetically).

Adjusted rank	Author	Adjusted rank	Institution
1	N.C. Romano, Jr.	54, 50	Tulsa, Oklahoma State
2	N. Sukpanich	1	Memphis
3 ^a	J.M. Jones	16	North Dakota State
3 ^a	L.R. Vijayasathy	<i>Tied for Last, 16</i>	Colorado State, North Dakota State
5 ^a	L. Chen	1	Memphis
5 ^a	A. Muthitacharoen	1	Memphis
7 ^a	J. Fjermestad	9	NJIT
7 ^a	A.B. Whinston	3	Texas Austin
9 ^a	S.E. Sampson	43	Brigham Young
9 ^a	A. Seidmann	14	Rochester
9 ^a	C. Sohn	38, 4	St. Cloud State, Southern Illinois–Carbondale

Table 6. Top-Ranked Authors and Their Institutions (Adjusted Counts).

^a Rank tied (listed alphabetically).

which is similar to the one used by Pervan in his review of GSS articles [1, 32]. The table also presents the percentage by publication medium (conference or journal) and by total within each type and methodology.

Overall one less article was empirical (184, or 49.87 percent) than nonempirical (185, or 50.13 percent), demonstrating a balance between the two types, but it also shows that a large percentage of the papers deal with ideas, frameworks, and speculations rather than with direct observations,

Type/ subtype	Con- ference	Per- centage	Journal	Per- centage	Total	Percent total
Empirical	116	63.04	68	36.96	184	49.86
<i>Events/processes</i>	98	65.33	52	34.67	150	40.65
Lab experiment	16	64.00	9	36.00	25	6.78
Field experiment	2	33.33	4	66.67	6	1.63
Field study	0	0.00	0	0.00	0	0.00
Case study	15	57.69	11	42.31	26	7.05
Survey	41	62.12	25	37.88	66	17.89
Instrument development	6	85.71	1	14.29	7	1.90
Secondary data	6	75.00	2	25.00	8	2.17
Simulation	1	100.00	0	0.00	1	0.27
Action research	2	100.00	0	0.00	2	0.54
<i>Objects</i>	18	52.94	16	47.06	34	9.21
Descriptions of types/classes of products, techno- logies, systems	21	70.00	9	30.00	30	8.13
Descriptions of specific systems, applications, installation	6	46.15	7	53.85	13	3.52
Nonempirical	118	63.78	67	36.22	185	50.14
<i>Conceptual orientation</i>	109	63.37	63	36.63	172	46.61
Framework	19	44.19	24	55.81	43	11.65
Conceptual model	56	78.87	15	21.13	71	19.24
Conceptual overview	30	57.69	22	42.31	52	14.09
Theory	4	66.67	2	33.33	6	1.63
<i>Illustrative</i>	6	75.00	2	25.00	8	2.17
Opinion and example	0	0.00	0	0.00	0	0.00
Opinion and experience	0	0.00	0	0.00	0	0.00
Tools, techniques, methods, applications	0	0.00	1	100.00	1	0.27
Model applications	6		1	14.29	7	1.90
<i>Applied concepts</i>	3	50.00	3	50.00	6	1.63
Conceptual frameworks and their applications	3	50.00	3	50.00	6	1.63
Total	234	63.41	135	36.59	369	100.00

Table 7. Types of ECCRM Research Articles.

which could be problematic if such a trend were to continue as the subfield develops. This is slightly different from the results of Pervan's study of the more mature GSS subfield, in which 56 percent of the articles were empirical and 44 percent were nonempirical [32]. It is in fact even closer to the Alavi and Carlson review of MIS on the whole, wherein 48.8 percent of the articles were empirical and 51.2 percent were nonempirical [1]. However, the closer percentages for ECCRM compared to GSS could be a reflection of the immaturity of the ECCRM subfield. Alavi and Carlson did their review during an early

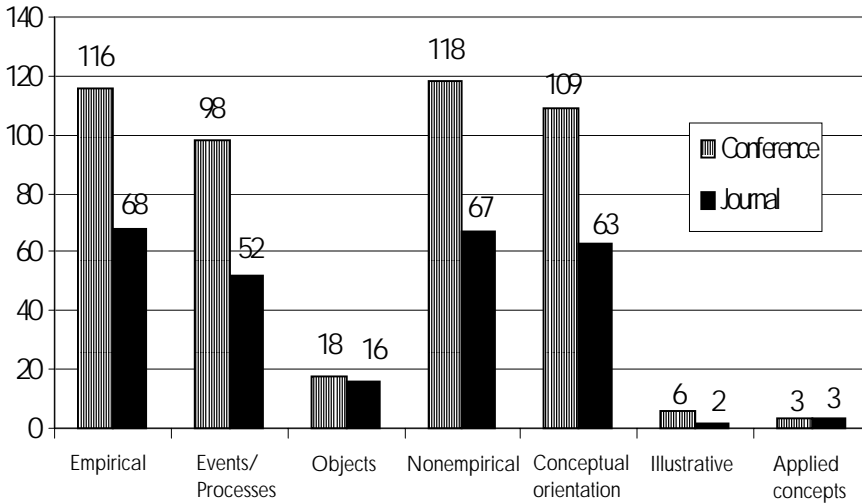


Figure 8. Number of Articles: Epistemology and Type by Medium

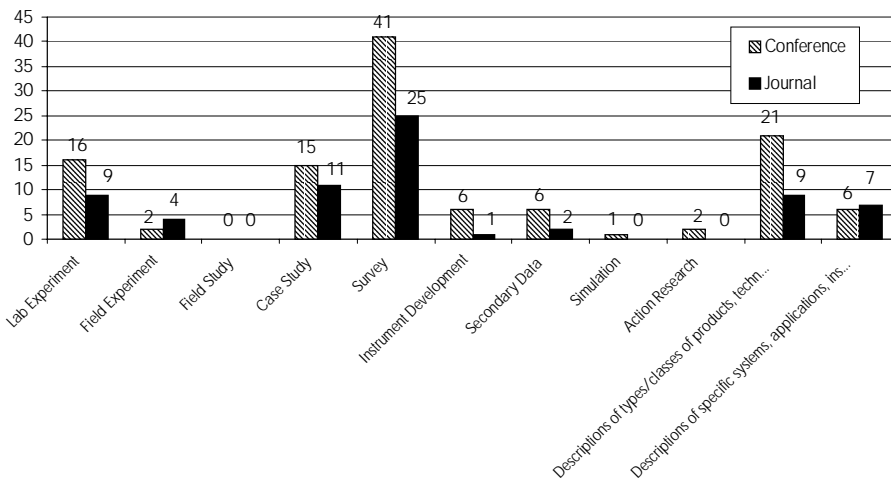


Figure 9. Empirical Studies by Research Methodology

period in the development of the MIS discipline, and the similarity between their findings and those of the present study seem congruent when the early developmental stage is considered.

Empirical Research Types and Methodologies

Following the lead of previous studies [1, 32], it seemed worthwhile to examine the frequency of research methodologies within each type. The top half of Table 7 presents frequencies of articles published for the types of empirical

research and of the methodologies employed within each type, and Figure 9 presents the same data in a graphical format.

Empirical articles rely on observation and thus capture the essence of research [42]. The most striking findings are that 66 of the 184 articles are surveys and 26 are case studies, together accounting for 50 percent of all the empirical articles published, while only 31 (17 percent) are lab or field experiments. The next most obvious result is that 30 (16.3 percent) of the articles are descriptions of objects in the form of types or classes of product technologies or systems. Web sites in the form of on-line stores are the most common object described. This may be due in part to the relative newness of this research area. Another interesting finding is that only seven (3.8 percent) papers are classified as instrument development and none as field studies. This is somewhat problematic, as the development and validation of many of the instruments used in the ECCRM studies published to date were not well described or were missing entirely from the articles. This is discussed further in the section below on surveys. Not quite so surprising, only three papers are classified in the newer methodologies of simulation and action research. It will also be interesting to see whether these methodologies are used more frequently in future ECCRM research.

Surveys Dominate the Empirical Literature

The dominance of the survey method in the empirical literature on ECCRM illustrates the relative immaturity of this subfield. Many of the 66 survey articles did not report any instrument validation. Only 27 (41 percent) of them discussed instrument validation, and many do not mention reliability testing. These results are troubling, especially in view of Straub's 1989 publication of a paper specifically addressing instrument validation in MIS [39]. Instrument validation is discussed in several high-quality papers in the MIS literature [5, 12, 27, 33]. The technology acceptance model (TAM) is a very good example of cumulative instrument validation in the MIS literature [12, 13]. It has been validated, empirically evaluated, applied, and extended by researchers in many different domains [7, 14, 16, 26, 37, 40, 41, 43]. MIS referent disciplines also have literature on instrument validation, especially marketing [31, 38], psychology [6, 9, 10], and educational psychology [2, 25], on which MIS researchers may draw for guidance.

Although it is uncertain why the authors of so many survey articles did not report validation procedures, one can guess at a few possible reasons. First, they may not have validated the instruments, which would be the worst-case scenario, since data gathered with nonvalidated instruments are questionable at best and most likely uninterpretable. Second, perhaps the authors did validate their instruments, but did not think it important or necessary to report the procedures employed or the results. This second case is also problematic, for readers are left to guess whether or not the results are valid, reliable, or interpretable. Finally, for some of the conference papers, the reason may be one of space limitations.

Few of the surveys used previously well-validated instruments to help to build a cumulative tradition. Instead they identified and created new con-

constructs, variables, and survey items for each new study. While this may increase the number of constructs and variables studied, it also tends to broaden the subfield at the expense of depth and cumulative tradition through replication and validation.

Perhaps the most troubling issue is the fact that all of these papers were peer reviewed, and then accepted for publication by editors of conference proceedings or journals, even though they failed to discuss instrument validation and reliability. One may hope that the MIS research community at large understands the importance of validating the reliability of research instruments, and that future studies will be required to report validation procedures and results.

Dearth of Experimental Research

Experimental research accounts for only 31 (8.4 percent) of the 369 articles. This is exceptionally low compared to the 74, or 55.6 percent, in Pervan's GSS study, and the 21.8 percent in the Alavi Carlson MIS Study [1, 32]. There are several potential reasons why laboratory experimentation may not be more frequently applied in ECCRM research. First, since it is difficult to recreate e-commerce markets and customers in a lab setting, the field may not yet be amenable to lab studies. Second, few ECCRM systems can be controlled for experimentation in lab or field settings. The small number of illustrative nonempirical articles found in the study supports the idea that few ECCRM systems for research have been developed in the lab. The dearth of experimental studies suggests that empirically testable ECCRM theories have not yet been developed, and this is supported by the small number of theoretical articles and the large number of conceptual models and frameworks that have been developed. There is clearly a need for more theory development that leads to testable hypotheses based on meaningful axioms and propositions.

Nonempirical Research Types and Methodologies

The bottom half of Table 7 and Figure 10 present the results for nonempirical ECCRM research articles. Nonempirical articles focus on ideas rather than data or observations. The number of conceptual articles (172, or 92.5 percent) is far greater than the number of Illustrative (8, or 4.3 percent) and applied concepts articles (3, or 3.2 percent) combined. The most striking results are that only six (3.5 percent) of the 172 conceptual articles are classified as theory articles.

Conceptual articles are intended to guide research by offering explanations and reasons through theories, models, or frameworks. The ECCRM research community has done a significant amount of conceptual work, but most of it involves the development of frameworks (43, or 25 percent), conceptual models (71, or 41.3 percent), or conceptual overviews (52, or 30.2 percent), and very little has been done to develop or extend testable theory.

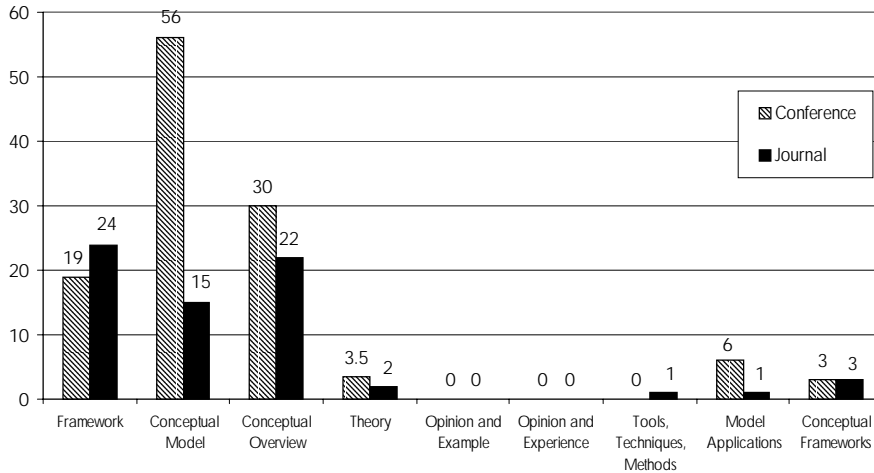


Figure 10. Non-Empirical Studies by Research Methodology

Publication Topics: Research Areas and Keywords

On the model of earlier studies [1], an exploration of the research topic areas studied by ECCRM researchers seemed worthwhile, but things have changed significantly since Barki-Rivard-Talbot developed a classification scheme in 1988 [4]. The arrival of new technologies and concepts, such as the Internet, the World Wide Web, and electronic commerce, has led to whole new MIS research areas. The Barki-Rivard-Talbot scheme does not cover the many new topics that have emerged in the ECCRM literature [4]. Thus there may be a need to develop a new classification scheme for e-commerce as a whole, and ECCRM in particular. Since there was no existing classification scheme, it was decided to examine both the macro and micro levels for research topics. The macrolevel was examined by looking for general trends in the research areas the literature covered, and the microlevel by looking at the keywords associated with the articles.

Research Areas

To examine research areas, each article was coded in terms of all five applicable major areas identified in an earlier study (see Figure 3) [34]. As can be seen in Table 8, the most popular topic was technology, with 301 of the 369 (82 percent) papers mentioning this topic. The second-most-popular topic was human factors, with 270 of the 369 (73 percent) papers mentioning this topic. Next in popularity were the topics of business models (193, 52 percent) and markets (190, 51 percent). The least-popular topic was knowledge management (103, 28 percent.)

Figures 11 and 12 show that the percentages of each topic for conference and journal articles. The percentages for article types are almost identical. This supports the view that the mentioning of these five topic areas is consistent across both mediums. Figures 13 and 14 show the research topics for conference

Research area medium	Markets	Business models	Knowledge management	Technology	Human factors
Conference	112	118	68	180	171
Journal	78	75	35	121	99
Total	190	193	103	301	270

Table 8. Research Areas by Medium.

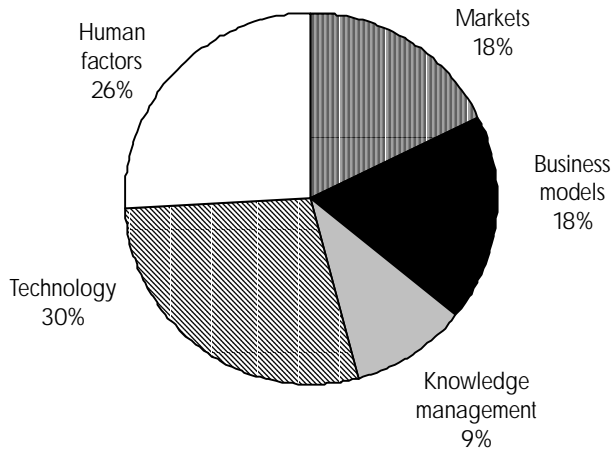


Figure 11. Conference Research Areas

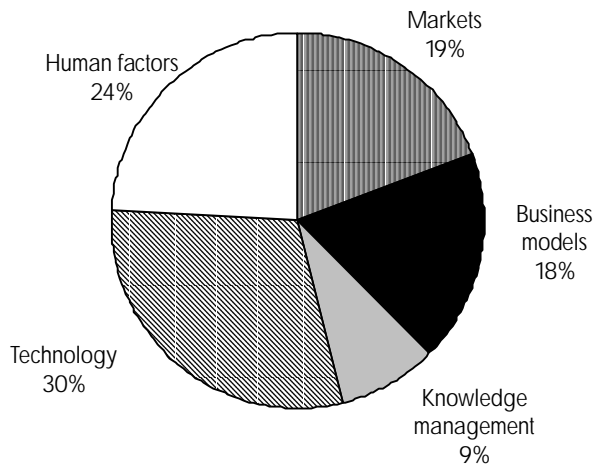


Figure 12. Journal Research Areas

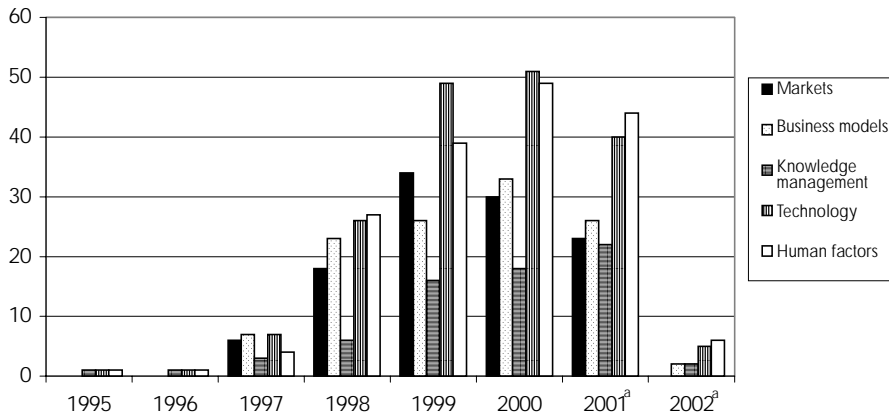


Figure 13. Conference Research Areas by year

^a Partial list

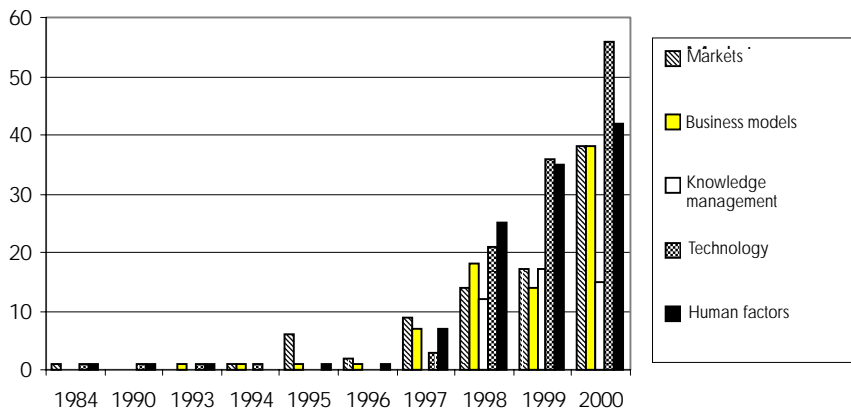


Figure 14. Journal Research Areas by Year

and journal articles respectively by year. The topics of technological and human issues have increased dramatically over the last few years in both journal and conference publications. The other three topics also appear to be increasing across both mediums.

Keyword Topics

To explore a more detailed level of research topics, the keywords associated with each article were examined using WORDs, a program developed by Eric Johnson (www.dsu.edu/~johnsone/sno.html, access date 9/1/2001) that counts the number of running words in a text file and the number of unique word forms, based on user set recognition parameters. WORDs allows the user to exclude a list of “stop words” from the counts. It produces a list of all unique words in the file and the frequency of their occurrence, sorted either alphabetically or by numeric frequency.

Count	Word	Rank
179	Electronic	1
138	Customer	2
116	Commerce	3
85	Internet	4
77	Consumer	5
71	Web	6
62	Information	7
61	Trust	8
49	Marketing	9
48	Business	10
47	Service	11
43	Quality	12

Table 9. Top Individual Keyword Counts.

First, the complete unedited set of keywords from all 369 papers was run through the program using the standard stop word list. WORDs found 984 unique word forms from among the 4,135 words Table 9 presents the most popular “individual” keywords.

When the list of individual keywords was examined, it was found that most of them were now out of context, for many article keywords were listed as multi-word phrases, such as “electronic commerce” and “service quality.” To preserve the context, hyphens were added between each word of the multi-word keyword phrases, and these modified data were run through the program. This time WORDs found 1,313 unique word forms from among the 1,853 words. Table 10 shows the most popular keywords when multi-word keyword phrases were included. These results are more meaningful, because they maintain the context from the articles.

Keyword analysis showed that electronic commerce was the most popular research topic, mentioned almost three times more often than the topic that came next. Following electronic commerce in popularity were trust, electronic markets, and Internet. This set of keywords illustrates the new topics being explored in the field. None of the top keywords fit into the Barki-Rivard-Talbot classification scheme [4]. This may signal a need for new classification schemes for emerging research subfields like ECCRM.

Discussion

Through collection and analysis of the literature on ECCRM published over the last five years, this study has illustrated the overall status and maturity level of this emerging subfield of MIS in terms of research types and epistemology. The results provide interesting insights into the methodologies employed for ECCRM research and offer directions for continued investigations in this area.

The study reveals that slightly more conference proceedings articles were published than journal articles, which can be considered a sign of relative immaturity. However, many conference proceedings articles are polished and later published in journals. Thus there may soon be an increase in the number

Count	Word	Rank
84	Electronic-Commerce	1
28	Trust	2
24	Electronic-Markets	3
23	Internet	4
13	Customer-Satisfaction	5
13	World-Wide-Web	6
11	Interorganizational-System-IOS	7
10	Consumer-Behavior	8
10	Customer-Relationship-Management	9
9	Electronic-Data-Interchange-EDI	10
9	Intermediaries	11

Table 10. Top Multi-Word Phrase Keyword Counts.

of journal articles on ECCRM. The study revealed that articles have been published in many different conference proceedings tracks, minitracks, and themes, as well as in numerous MIS and referent discipline journals. This implies that a broad range of the MIS research community considers the topic area important and worthy of publication.

The analysis reveals that the number of nonempirical and empirical articles on ECCRM is almost the same. This seems counter to Alavi and Carlson's finding that the number of empirical articles had exceeded the number of nonempirical articles in their assessment of MIS [1]. Perhaps it indicates that this new subfield of MIS is still somewhat immature, and thus that purely conceptual work may be appropriate at the present time. The study further revealed that most of the articles on ECCRM were *not* published in the core MIS journals (*Management Information Systems Quarterly*, *Journal of Management Information Systems*, *Information Systems Research*, and *Information and Management*), but in more recently established journals (*International Journal of Electronic Commerce*, *Electronic Markets*, and *Journal of Computer-Mediated Communication*), which may not yet have developed the same strict publishing standards and practices as the older journals. This is not to imply that the latter journals are any less important or relevant than the former, but rather to illustrate the relative immaturity of the subfield. With maturity the literature on ECCRM will undoubtedly begin to see more empirical articles and concomitantly fewer nonempirical articles. One may also expect to see more articles in the core MIS journals. Time, and taking an opportunity to pause and reflect, as this study has done, will tell.

The set of empirical ECCRM articles is dominated by exploratory surveys and characterized by a dearth of experimental studies. As was pointed out almost a decade ago, "increasing use of exploratory surveys should be a matter of concern for the MIS discipline" [8]. The analysis also revealed the alarming fact that only a small percentage of the ECCRM survey articles discussed instrument validation, and that not all of these discussed reliability testing. Few of the studies used previously validated instruments, and this raises a concern that a cumulative tradition of replication and extension in the area of instrument development may not be emerging.

The nonempirical articles are dominated by conceptual models, frameworks, and overviews, and characterized by very few theoretical articles. This makes sense in light of the few hypotheses testing empirical articles, and suggests that ECCRM researchers may not yet be developing empirically testable theories. There are also few illustrative and applied-concept articles. This supports Alavi and Carlson's finding of a trend toward a decrease in articles of this type in MIS as a whole [1].

The very small number of theoretically oriented articles (three out of 369) brings into question the rate of progress MIS researchers have made toward developing empirically based theories and evaluating them through hypothesis testing [1]. Alavi and Carlson, based on similar results in their 1992 review of MIS research, pointed out that theories not only guide research but guide selection of the appropriate research methodology [1]. They cite papers by Kling and Wieck as useful discussions of the role and impact of theories and of theoretical views on appropriate research methodology selection [29, 45]. The lack of ECCRM theory and development of systems to illustrate and apply concepts is a major deficiency that researchers should address.

Recommendations for Future Research

Research on ECCRM is still in its early stages, as this study demonstrates. There is, however, a strong interest in the subject, as evidenced by both the large number of articles published and the breadth across conference proceedings and journals. Following are a few recommendations for researchers that may help the subfield to evolve and reach a higher level of maturity than is reflected in the present literature.

First, there is clearly a need for empirically testable theories. While conceptual models, frameworks, and overviews all provide an excellent start, testable theories can lead to meaningful hypotheses that can be experimentally tested in the lab and the field to move research forward. Second, once theories have been developed, there is a need for lab and field experiments to test hypotheses in order to find support for them and rule out other possible explanations. Third, there is a strong need for researchers to validate the instruments they employ and to explain these procedures in their articles in order to evoke confidence that the results are meaningful, interpretable, and reliable. Instrument development and validation must be carefully undertaken prior to use. Researchers in this new subfield need to explore referent disciplines, such as psychology, and use methods that validate instruments from a number of perspectives, including convergent validity, discriminate validity, construct validity, and reliability. Fourth, there is a need for a cumulative tradition of research in which replication, extension of theories, models, and instruments, and development of standard constructs and metrics define the subfield and give each new study contextual meaning within a common body of knowledge. There is a need for depth as well as breadth of research. Finally, there is a need for researchers in the ECCRM subfield to submit their work to the core MIS journals (*Journal of Management Information System*, *Management Information Systems Quarterly*, *Information Systems Research*, *Information and Man-*

agement) in order to increase the perception of its maturity within the MIS research community at large and make it a true subdiscipline of MIS. Finally, since the new research topics that are being explored do not fit into previously defined classification schemes, there is a need to develop new schemes in order to analyze the topics addressed by this new research.

Limitations

This study may have been adversely affected to some extent by a number of limitations. First, it was based on only a few years of ECCRM research and might have been improved if a longer time horizon could have been reviewed. This makes it harder to look for trends or patterns in the literature and limits the number of papers included in the study.

Second, only a partial set of the articles for the years 2001 and 2002 was readily available to the authors at the time the study was undertaken. Moreover, some articles may have been missed or overlooked. From the standpoint of practicality, it was impossible to include every single article in the analysis. Some of the problems in obtaining articles include inability of interlibrary loan to obtain articles from journals to which they do not subscribe, electronic access barriers due to nonsubscription or other problems, and library rules governing the number of articles that can be obtained via interlibrary loan for a specific journal, volume, or issue.

Third, the study did not address additional classification schemes or analytic techniques. The theory articles were not classified as theory building, theory testing, or theory extension, as Pervan did for GSS [32]. The study did not categorize the articles based on research constructs or variables used to measure them, as done in some other analyses. This would be a useful extension of the present study and could be used to develop a theoretical framework based on ECCRM theories from MIS and referent disciplines. The study did not take a more in-depth look at the empirical set of research articles and classify them in more detail. Finally, the study did not address quantitative vs. qualitative data collection, as Pervan did in his study of GSS research [32]. All of these areas represent opportunities for future introspective research studies.

Finally, as Cheon et al. point out, studies of this nature suffer from the fact that most research is published several years after it is completed, due to long review times and backlogs for various journals [8]. This was one of the reasons why conference proceedings were included in the study, to help ensure that more recently completed research was analyzed.

Summary

This paper presents a first glimpse of the emerging MIS subfield of ECCRM in terms of journal and conference papers, research types and epistemology, authors and institutions, research areas, and keyword topics through an exhaustive analysis of all available journal and conference proceedings publications. A large amount of empirical and nonempirical ECCRM research has recently been

conducted. The results reveal that this new area of research is still somewhat immature but is gaining ground through significant numbers of publications and increasing professional activity in the MIS research community. Although the study has some limitations, it provides an interesting look at an emerging subfield within MIS. It also reveals a number of opportunities for additional introspective research on ECCRM and in other emerging MIS subfields.

REFERENCES

1. Alavi, M., and Carlson, P. A review of MIS research and disciplinary development. *Journal of Management Information Systems* 8, 4 (spring 1992), 45–62.
2. Anastasi, A. *Psychological Testing*, 6th ed. New York: Macmillan, 1988.
3. Banville, C., and Landry, M. Can the field of MIS be disciplined? *Communications of the ACM*, 32, 1 (January 1989), 48–60.
4. Barki, H.; Rivard, S.; and Talbot, J. An information systems keyword classification scheme. *Management Information Systems Quarterly*, 34, 4 (June 1988), 299–322.
5. Baroudi, J.J., and Orlikowski, W.J. A short-form measure of user information satisfaction: A psychometric evaluation and notes on use. *Journal of Management Information Systems*, 4, 4 (1988), 44–59.
6. Campbell, D.T., and Fiske, D.W. Convergent and discriminant validation by the multi-trait multimethod matrix. *Psychological Bulletin*, 56, 2 (1959), 81–105.
7. Chau, P.Y.K. An empirical assessment of a modified technology acceptance model. *Journal of Management Information Systems*, 13, 2 (fall 1998), 185–204.
8. Cheon, M.J.; Grover, V.; and Sabherwal, R. The evolution of empirical research in IS: A study in IS maturity. *Information and Management*, 24, 5 (February 1993), 107–119.
9. Cronbach, L.J. Coefficient alpha and the internal structure of tests. *Psychometrika*, 16 (September 1951), 297–334.
10. Cronbach, L.J. Test validation. In R.L. Thorndike (ed.), *Educational Measurement*. Washington, DC: American Council on Education, 1971, pp. 443–507.
11. Culnan, M. Mapping the intellectual structure of MIS, 1980–1985: A co-citation analysis. *Management Information Systems Quarterly*, 11, 3 (September 1987), 341–353.
12. Davis, F.D. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, 13, 3 (September 1989) 319–340.
13. Davis, F.D.; Bagozzi, R.P.; and Warshaw, P.R. User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35, 8 (August 1989), 982–1003.
14. Dishaw, M.T., and Strong, D.M. Extending the technology acceptance model with task–technology fit constructs. *Information & Management*, 36, 1 (July 1999), 9–21.

15. Farhoomand, A. Scientific progress of management information systems. *Database*, 18, 4 (summer 1987), 48–56.
16. Fenech, T. Using perceived ease of use and perceived usefulness to predict acceptance of the World Wide Web. *Computer Networks & ISDN Systems*, 30, 1–7 (April 1998), 629–630.
17. Firth, D.R. The organizing vision for customer relationship management. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 834–840.
18. Fjermestad, J., and Hiltz, S. R. Experimental studies of group decision support systems: An assessment of variables studied and methodology. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirtieth Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1997.
19. Fjermestad, J., and Hiltz, S.R. Group support systems: A descriptive evaluation of case and field studies. *Journal of Management Information Systems*, 17, 3 (Winter 2000–2001), 115–159.
20. Fjermestad, J., and Hiltz, S.R. An assessment of group support systems experimental research: methodology and results. *Journal of Management Information Systems*, 15, 3 (winter 1998–99), 7–150.
21. Fleiss, J.L. *Statistical methods for rates and proportions*, 2d ed. New York: John Wiley, 1981.
22. Galliers, R.D. Choosing appropriate information systems research methodologies. In H.E. Nissen, H.K. Klein, and R. Hirschheim (eds.), *Information Systems Research: Contemporary Approaches and Emergent Traditions*. Amsterdam: North-Holland, 1991, pp. 327–346.
23. Galliers, R.D., and Land, F.F. Choosing appropriate information systems methodologies. *Communications of the ACM*, 30, 11 (November 1987), 900–903.
24. Ives, B., and Learmouth, G. P. The information system as a competitive weapon. *Communications of the ACM*, 27, 12 (December 1984), 1193–1201.
25. Jones, P.B., and Sabers, D.L. Examining test data using multivariate procedures. In M. Zeidner and R. Most (eds.), *Psychological Testing: An Inside View*. Palo Alto, CA: Consulting Psychologists Press, 1992, pp. 297–342.
26. Karahanna, E., and Straub, D.W. The psychological origins of perceived usefulness and ease-of-use. *Information & Management*, 35, 4 (April 1999), 237–250.
27. Katerattanakul, P., and Siau, K. Measuring information quality of Web sites: Development of an instrument. In P. De and J. DeGross (eds.), *Proceedings of the Twentieth International Conference on Information Systems*. Charlotte, NC: Omnipress, 1999, pp. 279–285.
28. Keen, P.G.W. MIS research: Reference disciplines and cumulative traditions. In E.R. McLean (ed.), *First International Conference on Information Systems*. Philadelphia: ACM Press, 1980, pp. 9–18.
29. Kling, R. Social analysis of computing: Theoretical perspectives in recent empirical research. *ACM Computing Surveys*, 12, 1 (March 1980), 61–110.
30. Lindsey, D. Production and citation measures in the sociology of science: The problem of multiple authorship. *Social Studies of Science*, 10 (1980), 145–162.
31. Malhotra, N.K. Validity and structural reliability of multidimensional scaling. *Journal of Marketing Research*, 24, 2 (May 1987), 164–173.

32. Pervan, G.P. A review of research in group support systems: Leaders, approaches and directions. *Decision Support Systems*, 23, 2 (June 1998), 149–159.
33. Reinig, B.A.; Briggs, R.O.; Shepherd, M.; Yen, J.; and Nunamaker, J.F., Jr. Developing and validating an instrument to measure the impact of group support technology on affective reward. In R.H. Sprague, Jr. (ed.), *Proceedings of the Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1995, vol. 4, pp. 798–807.
34. Romano, N.C., Jr. Customer relations management in information systems research. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 811–819.
35. Romano, N.C., Jr. Customer relations management research: An assessment of subfield development and maturity. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 2001.
36. Romano, N.C., Jr., and Fjermestad, J. An agenda for electronic commerce customer relationship management research. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 831–833.
37. Rose, G., and Straub, D.W. Predicting general IT use: Applying TAM to the Arabic world. *Journal of Global Information Management*, 6, 3 (summer 1998), 39–46.
38. Steenkamp, J.E.M., and van Trijp, H.C.M. The use of LISREL in validating marketing constructs. *International Journal of Research in Marketing*, 8, 4 (November 1991), 283–299.
39. Straub, D.W. Validating instruments in MIS research. *Management Information Systems Quarterly*, 13, 2 (1989), 147–169.
40. Straub, D.W.; Keil, M.; and Brenner, W.H., Testing the technology acceptance model across cultures: A three country study. *Information & Management*, 33, 1 (November 1997), 1–11.
41. Szajna, B. Empirical evaluation of the revised technology acceptance model. *Management Science*, 42, 1 (January 1996), 85–92.
42. Van Horn, R.L. Empirical studies of management information systems. *Database*, 5, 2–4 (winter 1973), 172–183.
43. Venkatesh, V., and Davis, F.D. A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46, 2 (February 2000), 186–204.
44. Vogel, D.R., and Wetherbe, J.C. MIS research: A profile of leading journal and universities. *Database*, 15, 3 (fall 1984), 3–14.
45. Weick, D.E. Theoretical assumptions and research methodology selection. In W. McFarlan (ed.), *Information Systems Research Challenge*. Boston: Harvard Business School Press, 1984, pp. 110–132.

For biographical statements, see the Guest Editors' Introduction.

Appendix. ECCRM References Included in the Study

1. Åberg, J., and Shahmerhri, N. The role of human Web assistants in e-commerce: An analysis and a usability study. *Internet Research*, 10, 2 (2000), 114–125.
2. Ahn, J., and Ezawa, K.J. Decision support for real-time telemarketing operations through Bayesian network learning. *Decision Support Systems*, 21, 1 (September 1997), 17–27.
3. Ahola, H.; Oinas-Kukkonen, H.; and Koivumäki, T. Customer delivered value in a Web-based supermarket. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-third Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 2000.
4. Aigbedo, H. On customer-based aggregate evaluation measures for service operations. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 3, p. 1255.
5. Alajoutsijärvi, K.; Mannermaa, K.; and Tikkanen, H. Customer relationships and the small software firm: A framework for understanding challenges faced in marketing. *Information and Management*, 37, 3 (April 2000), 153–159.
6. Allen, D.K.; Colligan, D.K.; Finnie, A.; and Kern, T. Trust, power and interorganizational information systems: The case of the electronic trading community TransLease. *Information Systems Journal*, 10, 1 (January 2000), 21–40.
7. Allen, E., and Fjermestad, J. E-commerce strategies: The manufacturer retailer consumer relationship. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 872–877.
8. Allen, F., and Gale, D. Innovations in financial services, relationships, and risk sharing. *Management Science*, 45, 9 (September 1999), 1239–1254.
9. Alt, R., and Fleish, E. Business networking systems: Characteristics and lessons learned. *International Journal of Electronic Commerce*, 5, 2 (winter 2000–2001), 7–28.
10. Alwitt, L.F., and Hammer, L.O. The effect of Internet experience on consumer expectations of responsiveness and control in offline services marketing interactions. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-third Hawai'i International Conference on System Sciences*, January 4–7, 2000. Maui, HI: IEEE Computer Society Press, 2000.
11. Ambrose, P.J., and Johnson, G. J. A trust based model of buying behavior in electronic retailing. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 2000, pp. 263–265.
12. Anckar, B., and Walden, P. Becoming your own travel agent: A web of potentials and pitfalls. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-third Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 2000.
13. Andrade, E.B. Identifying discriminating variables of online and offline buyers: A perceived-risk approach. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 1386–1392.
14. Andrews, D.C. Considerations in the development of commercially based online communities. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 1535–1540.
15. Angeles, R., and Nath, R. An empirical study of EDI trading partner selection criteria in customer-supplier relationships. *Information and Management*, 3, 5 (August 2000), 241–255.
16. Archer, N., and Yuan, Y. Managing business-to-business relationships throughout the e-commerce procurement life cycle. *Internet Research*, 10, 5 (2000), 385–395.
17. Arunkundram, R., and Kambil, A. The impact of interactive behavior

- modification on equilibrium price and seller location in electronic markets. in E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 266–268.
18. Ba, S.W.; Whinston, A.B.; and Zhang, H. The design of a trusted third party for electronic commerce transactions. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 269–271.
19. Ba, S.W.; Whinston, A.B.; and Zhang, H. Building trust in the electronic market through an economic incentive mechanism. In P. De and J. DeGross (eds.), *Proceedings of the Twentieth International Conference on Information Systems*. Charlotte, NC, 1999, pp. 208–213.
20. Badii, A. Challenging the assumptions of unconstrained electronic trade across the internet space. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 118–120.
21. Bailey, J., and Bakos, Y. An exploratory study of the emerging role of electronic intermediaries. *International Journal of Electronic Commerce*, 1, 3 (spring 1997), 35–42.
22. Bakos, Y. The emerging role of electronic marketplaces on the Internet. *Communications of the ACM*, 41, 8 (August 1998), 35–42.
23. Barnes, S., and Vidgen, R. Assessing the quality of auction Web sites. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Hawai'i International Conference on Systems Sciences*. Maui, HI: IEEE Computer Society Press, 2001.
24. Baty, B.J., and Lee, R.M. InterShop: Enhancing the vendor/customer dialectic in electronic shopping. *Journal of Management Information Systems*, 11, 4 (winter 1994–95), 9–31.
25. Bauer, C., and Scharl, A. Acquisition and symbolic visualization of aggregated customer information for analyzing Web information systems. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.
26. Becker, J.D.; Farris, T.; and Osborn, P. Electronic commerce and rapid delivery: The missing “logistical” link. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 272–274.
27. Belanger, F., and Van Slyke, C. Trust in consumer-oriented electronic commerce. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 2, pp. 552–554.
28. Bellman, S.; Lohse, G.L.; and Johnson, E.J. Predictors of online buying behavior. *Communications of the ACM*, 42, 12 (December 1999), 32–38.
29. Berndt, D.J. Consumer decision support systems: A health care case study. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Hawai'i International Conference on Systems Sciences*. Maui, HI: IEEE Computer Society Press, 2001.
30. Bharati, P., and Chaudhury, A. Service quality of a choiceboard system: An experimental investigation. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 895–899.
31. Bhargava, H.K.; Krishnan, R.; and Müller, R. Decision support on demand: Emerging electronic markets for decision technologies. *Decision Support Systems*, 19, 3 (March 1997), 193–214.
32. Bhatnagar, A.M.; Misra, S.; and Rao, H.R. On risk, convenience, and Internet shopping behavior. *Communications of the ACM*, 43, 11 (November 2000), 98–107.
33. Bhatt, G.D. Building a customer-focused Internet site. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 908–912.
34. Bhattacharjee, A. Consumer-centric reengineering at the Colorado Department

of Revenue. *Communications of the AIS*, 3 (June 2000) (www.cais.aisnet.org).

35. Bloch, M., and Segev, A. The impact of electronic commerce on the travel industry: An analysis methodology and case study. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirtieth Annual Hawai'i International Conference on Systems Science*. Maui, HI: IEEE Computer Society Press, 1997.

36. Bons, R.W.; Lee, R.M.; and Wagenaar, R.W. Designing trustworthy interorganizational trade procedures for open electronic commerce. *International Journal of Electronic Commerce*, 2, 3 (spring 1998), 61–83.

37. Borchers, A.S. Trust in Internet shopping: A test of a measurement instrument. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 799–803.

38. Brandtweiner, R. Risks and challenges for retailers: The value chain transformation—a European perspective. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 277–280.

39. Buhl, H.U., and Will, A. Economic aspects of electronic commerce in financial services and advantageous steps to extended offers in Internet banking. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-first Annual Hawai'i International Conference on System Sciences*. Kona, HI: IEEE Computer Society Press, 1998, vol. 4, pp. 282–289.

40. Burn, J., and Robbins, G. Strategic planning for e-government: A customer value based model. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 1578–1583.

41. Burn, J., and Barnett, M. Emerging virtual models for global e-commerce: World Wide retailing in the e-grocery business. *Journal of Global Information Technology Management*, 3, 1 (January 2000), 18–32.

42. Burns, A.T., and Madey, G. R. Development of a Web-based intelligent agent for the fashion selection and purchasing process via electronic commerce. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 140–142.

43. Buxmann, P., and Gebauer, J. Evaluating the use of information technology in inter-organizational relationships. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.

44. Case, T.; Burns, O.M.; and Dick, G.N. Drivers of on-line purchasing among U.S. university students. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 873–878.

45. Cassell, J., and Bickmore, T. External manifestations of trustworthiness in the interface. *Communications of the ACM*, 43, 12 (December 2000), 50–56.

46. Chang, A.; Kannan, P.K.; and Whinston, A.B. The economics of freebies in exchange for consumer information on the Internet: An exploratory study. *International Journal of Electronic Commerce*, 4, 1 (fall 1999), 85–102.

47. Chaturvedi, A., and Bandyopadhyay, S., Establishing a framework for analyzing market power in e-retailing: An empirical study. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 2001.

48. Chau, P.Y.K.; Au, G.; and Tam, K.Y. Impact of information presentation modes on online shopping: An empirical evaluation of a broadband interactive shopping service. *Journal of Organizational Computing and Electronic Commerce*, 10, 1 (March 2000), 1–22.

49. Chen, E.T. Reengineering a call center using a performance measurement system. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas*

Conference on Information Systems. Milwaukee: Omnipress, 1999, pp. 668–670.

50. Chen, K., and Chen, J.C. Enhancing commercial Web deliverables: An Internet dependency perspective. *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, pp. 546–548.

51. Chen, L., and Sukpanich, N. Assessing consumers' involvement in Internet purchasing. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 281–283.

52. Chen, P.-Y.S., and Hitt, L. M. Switching cost and brand loyalty in electronic markets: Evidence from online retail brokers. In *Proceedings of the Twenty-first International Conference on Information Systems*. Brisbane, Australia, 2000, pp. 134–145.

53. Chen, Y.-C., and Gant, J. Transforming e-government services: The use of application service providers in U.S. local governments. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 1605–1610.

54. Chen, Y.T., and Jeng, B.A. A customer segmentation mining system on the Web platform. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 36–40.

55. Chiravuri, A., and D.L. Nazareth Consumer trust in electronic commerce: An alternative framework using technology acceptance. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 781–783.

56. Cho, Y.; Im, I.; Hiltz, R.S.; and Fjermestad, J. An analysis of online customer complaints: Implications for Web complaint management. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fifth Hawai'i International Conference on System Sciences*. Kona, HI: IEEE Computer Society Press, 2002.

57. Cho, Y.; Im, I.; Hiltz, R.S.; and Fjermestad, J. Causes and outcomes of online customer complaining behavior: Implications for customer relationship management (CRM). In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 900–907.

58. Chou, D.C.; Chou, A.Y.; and Yen, D.C. Technological development in electronic financial services. *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2001, vol. 2, p. 560.

59. Choudhury, V.; Dumm, R.; and Karahanna, E. Consumer channel choices: The role of knowledge and choice uncertainty. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 514–516.

60. Choudhury, V.; Hartzel, K.S.; and Konsynski, B.R. Uses and consequences of electronic markets: An empirical investigation in the aircraft parts industry. *Management Information Systems Quarterly*, 22, 4 (December 1998), 471–507.

61. Chrusciel, D., and Zahedi, F. M. Seller-based vs. buyer-based Internet intermediaries: A research design. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 241–243.

62. Chun, S.-G. Usage of multimedia interfaces for e-retailers. *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 2, p. 467.

63. Clapper, D.L., and Massey, A.P. Electronic focus groups: A framework for exploration. *Information and Management*, 30, 1 (January 1996), 43–50.

64. Clark, T.H., and Lee, H. G., Electronic intermediaries: trust building and market differentiation. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.

65. Clarke, R. The willingness of net-consumers to pay: A lack-of-progress report. In *Proceedings of the Twelfth International Bled Electronic Commerce Conference*. Bled, Slovenia, 1999 (www.anu.edu.au/people/Roger.Clarke/EC/WillPay.html).
66. Clemons, E.K., and Row, M. C. Electronic consumer interaction technology-enabled encroachment, and channel power the changing balance between manufacturers' electronic distribution and established retailers. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-first Annual Hawai'i International Conference on System Sciences*. Kona, HI: IEEE Computer Society, 1998, pp. 321-328.
67. Cole, M., and O'Keefe, R.M. Conceptualizing the dynamics of globalisation and culture in electronic commerce. *Journal of Global Information Technology Management*, 3, 1 (January 2000), 4-17.
68. Corea, S. Technological capacitation in customer service work: A sociotechnical approach. In *Proceedings of the Twenty-first International Conference on Information Systems*. Brisbane, Australia, 2000, pp. 45-57.
69. Costello, G.I., and Tuchen, J.H. A comparative study of business to consumer electronic commerce within the Australian insurance sector. *Journal of Information Technology*, 13, 3 (1999), 153-167.
70. Craighead, C.W.; Karwan, K.R.; and Miller, J.L. Empirically-derived profiles of service failure encounters: Implications for service recovery. In *Proceedings of the Thirtieth Annual Meeting of the Decision Sciences Institute*. New Orleans: Decision Sciences Institute, 1999, pp. 1343-1345.
71. Culnan, M.J., and Armstrong, P.K. Information privacy concerns, procedural fairness, and impersonal trust: An empirical investigation. *Organization Science*, 10, 1 (January-February 1999), 104-115.
72. Danis, C.; Jones, L.; Thompson, R.; and Levy, S. Issues and concerns in Internet based financial applications: An example from an auto finance system. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.
73. Davis, R.; Buchanan-Oliver, M.; and Brodie, R. Relationship marketing in electronic commerce environments. *Journal of Information Technology*, 14, 4 (December 1999), 319-331.
74. DeLong, D.; Williams, J.C.; Clark, W.J.; and Clark, C.P. Consumer confidence in electronic commerce: Using third party seals. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 2, p. 563.
75. Devaraj, S.; Matta, K. F.; and Conlon, E. Product and service quality: The antecedents of customer loyalty in the automotive industry. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 3, pp. 1268-1270.
76. Dewan, R.; Jing, B.; and Seidmann, A. Adoption of Internet-based product customization and pricing strategies. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-third Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 2000.
77. Dewan, R.; Jing, B.; and Seidmann, A. One-to-one marketing on the Internet. In P. De and J. DeGross (eds.), *Proceedings of the Twentieth International Conference on Information Systems*. Charlotte, NC, 1999, pp. 93-102.
78. Dewan, R.; Jing, B.; and Seidmann, A. Achieving first-mover advantage through product customization on the Net. In *Proceedings of the Twenty-first International Conference on Information Systems*. Brisbane, Australia, 2000, pp. 272-285.
79. Duffy, J.M.; Bexley, J. E.; and Miller, J. Customer reactions to banking service recovery efforts. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 3, pp. 1293-1295.

80. Dutta, A. managing customer turnover in online services: A systems thinking approach. In *Proceedings of the Twenty-first International Conference on Information Systems*. Brisbane, Australia, 2000, pp. 681–687.
81. Dutta, S., and Segev, A. Transforming business in the marketspace. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.
82. Eisentraut, R.; Koch, M.; and Möslein, K. Building trust and reputation in communities and virtual enterprises. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 1506–1509.
83. El Sawy, A., and Bowles, G. Redesigning the customer support process for the electronic economy: Insights from storage dimensions. *MIS Quarterly*, 21, 4 (December 1997), 457–484.
84. Elofson, G., and Robinson, W. N. Creating a custom mass-production channel on the Internet. *Communications of the ACM*, 41, 3 (March 1998), 56–62.
85. Esichaikul, V., and Sukaramula, P. Data mining for customer relations management: A case study of an Internet service provider company. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 820–826.
86. Fernandes, D.; Gorr, W.; and Krishnan, R. ServiceNet: An agent-based framework for one-stop e-government services. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 1590–1594.
87. Finch, B.J. Internet discussions as a source for consumer product customer involvement and quality information: An exploratory study. *Journal of Operations Management*, 17, 5 (1999), 535–557.
88. Finch, B.J., and Luebbe, R. L. Using Internet conversations to improve product quality: An exploratory study. *International Journal of Quality and Reliability Management*, 14, 8–9 (July 1997), 849–865.
89. Firth, D.R. The organizing vision for customer relationship management. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*, August 3–5, 2001. Boston: Omnipress, 2001, 834–840.
90. Fisher, L.M., Takayanagi, S., and Birren, J.E. Fuzzy analysis of older adult consumer attitudes and decision-making styles: Socioeconomic differences in fuzziness. *Proceedings of the Fourth IEEE International Conference on Fuzzy Systems*. Yokohama, Japan: IEEE Computer Society, 1995, pp. 805–812.
91. Flor, N.V., and Maglio, P.P. A case study of representational activity at a customer centered business. In *Proceedings of the Eighteenth International Conference on Information Systems*. Atlanta: ACM Press, 1997, pp. 383–398.
92. Forbes, M.W., and Rothschild, M.L. Toward an understanding of consumer experience on the Internet: Implications for Website design. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-third Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 2000.
93. Foroughi, A.; Iyer, L.S.; and Gupta, B. Measuring the effectiveness of Internet advertising. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 927–929.
94. Fulkerson, B. A response to dynamic change in the market place. *Decision Support Systems*, 21, 3 (November 1997), 199–214.
95. Fung, R.K.K., and Lee, M.K.O. EC-trust (trust in electronic commerce): Exploring the antecedent factors. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*, August 13–15, 1999, Milwaukee: Omnipress, pp. 517–519.
96. Gallagher, K., and Parsons, J. A framework for targeting banner advertising on

- the Internet. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirtieth Annual Hawai'i International Conference on Systems Science*. Maui, HI: IEEE Computer Society, 1997.
97. Gallagher, J. Challenging the new conventional wisdom of Net commerce strategies. *Communications of the ACM*, 42, 7 (July 1999), 27-29.
98. Gattiker, U.E.; Perlusz, S.; and Bohmann, K. Using the Internet for B2B activities: A review and future directions for research. *Internet Research*, 10, 2 (2000), 126-140.
99. Gebauer, J., and Scharl, A. Between flexibility and automation: An evaluation of Web technology from a business process perspective. *Journal of Computer-Mediated Communication*, 5, 2 (1999) (www.ascusc.org/jcmc).
100. Gill, M.A., and Wu, Z. E-markets: Failed business model or barriers to diffusion of innovation? In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 851-853.
101. Gillenson, M.L.; Sherrell, D.L.; and Zeltmann, S.M. The use of an expert system to dynamically alter Web pages for one-to-one marketing. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 821-822.
102. Gogan, J.L. The Web's impact on selling techniques: Historical perspective and early observations. *International Journal of Electronic Commerce*, 1, 2 (winter 1996-97), 89-108.
103. Goh, K.Y.; Teo, H.H.; and Wei, K.W. Electronic markets and intelligent agents: An experimental study of the economics of electronic commerce. In P. De and J. DeGross (eds.), *Proceedings of the Twentieth International Conference on Information Systems*. Charlotte, NC: Omnipress, 1999, pp. 293-295.
104. Goh, K.Y.; Teo, H.H.; Wu, H.; and Wei, K.K. Computer-supported negotiations: An experimental study of bargaining in electronic commerce. In *Proceedings of the Twenty-first International Conference on Information Systems*. Brisbane, Australia, 2000, pp. 104-116.
105. Gonsalves, G.C.; Lederer, A.L.; Mahaney, R.C.; and Newkirk, H.E. A customer resource life cycle interpretation of the impact of the World Wide Web on competitiveness: Expectations and achievements. *International Journal of Electronic Commerce*, 4, 1 (fall 1999), 103-120.
106. Grandon, E.E., and Ranganathan, C., The impact of content and design of Web sites on online sales. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 920-926.
107. Grigoroudis, E.; Siskos, Y.; and Saurais, O. TELOS: A customer satisfaction evaluation software. *Computers and Operations Research*, 27, 7-8 (June 2000), 799-817.
108. Grover, V., and Ramanlal, P. Six myths of information and markets: Information technology networks, electronic commerce, and the battle for consumer surplus. *Management Information Systems Quarterly*, 23, 4 (December 1999), 455-485.
109. Grover, V., and Teng, J. Facilitating the implementation of customer-based inter-organizational systems: An empirical analysis of innovation and support factors. *Information Systems Journal*, 4, 2 (April 1994), 61-89.
110. Grover, V.; Ramanlal, P.; and Segars, A.H. Information exchange in electronic markets: Implications for market structures. *International Journal of Electronic Commerce*, 3, 4 (summer 1999), 89-102.
111. Gunaratne, K.A. Virtual business and advertising growth on the Web in the new millennium. *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 2, pp. 337-339.
112. Gupta, A.; Jukic, B.; Stahl, D.O.; and Whinston, A.B. Extracting consumer's private information for implementing incentive-compatible internet traffic pricing. *Journal of Management Information Systems*, 17, 1 (summer 2000), 9-29.

113. Hackney, R., and Burn, J. SPECS: Strategic planning for e-commerce systems—towards an e-customer focus. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 845–850.
114. Haggerty, N., and Compeau, D., Help! I need somebody: New directions in IT support. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 1693–1700.
115. Han, H.J.; Ocker, R.; and Fjermestad, J. An investigation of university students' on-line shopping behavior. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 930–933.
116. Han, K.S., and Noh, M.H. Critical failure factors that discourage the growth of electronic commerce. *International Journal of Electronic Commerce*, 4, 2 (winter 1999–2000), 25–44.
117. Hart, P.J., and Saunders, C.S. Emerging electronic partnerships: Antecedents and dimensions of EDI: The supplier's perspective. *Journal of Management Information Systems*, 14, 4 (spring 1998), 87–111.
118. Ho, C.F., and Wu, W.S. Antecedents of customer satisfaction on the Internet: An empirical study of online shopping. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.
119. Hodkinson, C.; Kiel, G.; and Mccoll-Kennedy, J.R. Consumer Web search behaviour: Diagrammatic illustration of wayfinding on the Web. *International Journal of Human-Computer Studies*, 52, 5 (May 2000), 805–830.
120. Hoffman, D.L., and Novak, T. P. A new marketing paradigm for electronic commerce. *Information Society*, 13, 1 (January–March 1997), 43–54.
121. Hoffman, D.L.; Novak, T.P.; and Chatterjee, P. Commercial scenarios for the Web: Opportunities and challenges. *Journal of Computer-Mediated Communication*, 1, 3 (1995) (www.ascusc.org/jcmc).
122. Hu, J.; Huang, K.; Kuse, K.; Su, G.H.; and Wang, K. Customer information quality and knowledge management: A case study using knowledge cockpit. *Journal of Knowledge Management*, 1, 3 (1997), 225–236.
123. Hui, S.C., and Jha, G. Data mining for customer service support. *Information and Management*, 38, 1 (October 2000), 1–13.
124. Ip, E.H.; Yada, K.; Hamuro, Y.; and Katoh, N. A data mining system for managing customer relationship. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 101–105.
125. Ives, B., and Learmouth, G. P. The information system as a competitive weapon. *Communications of the ACM*, 27, 12 (December 1984), 1193–1201.
126. Ives, B., and Mason, R.O. Can information technology revitalize your customer service? *Academy of Management Executive*, 4, 4 (1990), 52–69.
127. Jahng, J.; Jain, H.K.; and Ramamurthy, K. Personality and product information presentation in e-commerce environments. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 1367–1370.
128. Jahng, J.; Jain, H.; and Ramamurthy, K. Empirical investigation into impact of electronic commerce systems richness on user behavior: The case of a complex product. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 1393–1397.
129. Jahng, J.; Jain, H.; and Ramamurthy, K. Product complexity, richness of Web-based electronic commerce systems, and system success: A proposed research framework. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 520–522.

130. Jamil, A., and Paul, S. Collective memory support for buyer-supplier negotiation on multiple issues: Design of a Web-based system. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems* Boston: Omnipress, 2001, pp. 1174–1177.
131. Janssen, M., and Sol., H. G. Evaluating the role of intermediaries in the electronic value chain. *Internet Research*, 10, 5 (2000), 406–417.
132. Jarvenpaa, S.; Tractinsky, N.; and Vitale, M. Consumer trust in an internet store. *Information Technology and Management Journal*, 1, 1–2 (2000), 45–71.
133. Jarvenpaa, S.; Tractinsky, N.; and Vitale, M. Consumer trust in an internet store: A cross-cultural validation. *Journal of Computer-Mediated Communication*, 5, 2 (1999), Part 1 (www.ascusc.org/jcmc).
134. Jarvenpaa, S.L., and Todd, P. A. Consumer reactions to electronic shopping on the World Wide Web. *International Journal of Electronic Commerce*, 1, 2 (Winter 1996–97), 59–88.
135. Jayawardhena, C., and Foley, P. Changes in the banking sector: The case of Internet banking in the UK. *Internet Research*, 10, 1 (2000), 19–31.
136. Jeffery, B. Getting to know the customer through a customer information system. *Information Strategy: The Executive's Journal*, 13, 1 (1996) 26–36.
137. Jiang, J.J.; Klein, G.; and Pick, R.A. A marketing category management system: A decision support system using scanner data. *Decision Support Systems*, 23, 3 (July 1998), 259–271.
138. Jiang, P. Segment-based mass customization: An exploration of a new conceptual marketing framework. *Internet Research*, 10, 3 (2000), 215–226.
139. Jin, L., and Robey, D. Explaining cybermediation: An organizational analysis of electronic retailing. *International Journal of Electronic Commerce*, 3, 4 (summer 1999), 47–66.
140. Johansson, W.C.; Ba, S.W.; and Chase, R.B. Virtual customer satisfaction: A service management perspective. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 857–866.
141. Jokela, S.; Turpeinen, M.; Kurki, T.; Savia, E.; and Sulonen, R. The role of structured content in a personalized news service. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Hawaii'i International Conference on Systems Sciences*. Maui, HI: IEEE Computer Society Press, 2001.
142. Jones, J.M., and Vijayasarathy, L. R., Preliminary results from an experiment on perceptions of Internet catalog shopping and traditional catalog shopping. In K. Bartkus (proceedings coordinator), *Proceedings of the Twenty-ninth Annual Meeting of the Decision Sciences Institute*. Las Vegas, 1998, pp. 418–419.
143. Jones, S.; Wilikens, M.; Morris, P.; and Masera, M. Trust requirements in e-business: A conceptual framework for understanding the needs and concerns of different stakeholders. *Communications of the ACM*, 43, 12 (December 2000), 81–87.
144. Jukic, N.; Jukic, B.; Meamber, L.; and Nezelek, G. Improving e-business customer relationship management systems with multilevel secure data models. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fifth Hawaii'i International Conference on System Sciences*. Kona, HI: IEEE Computer Society Press, 2002.
145. Jutla, D.; Craig, J.; and Bodorik, P. Enabling and measuring electronic customer relationship management readiness. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Annual Hawaii'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society, 2001.
146. Kaarst-Brown, M.L., Physical retailing takes on Internet retailing: A preliminary model of threats and opportunities for the book industry. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Annual Hawaii'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society, 2001.

147. Kamis, A. The impact of task complexity–decision aid fit on decision quality in business-to-consumer electronic commerce. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 2083–2085.
148. Kannan, P.K.; Chang, A.; and Whinston, A.B. Marketing information on the I-way: Data junkyard or information gold mine? *Communications of the ACM*, 41, 3 (March 1998), 35–43.
149. Kannan, V.R.; Tan, K.C.; Handfield, R.B.; and Ghosh, S. Managing competition, quality, customer relations, and the supply base, and its impact on firm performance. In K. Bartkus (proceedings coordinator), *Proceedings of the Twenty-ninth Annual Meeting of the Decision Sciences Institute*. Las Vegas, 1998, pp. 1259–1261.
150. Kardaras, D., and Papathanassiou, E. The development of B2C e-commerce in Greece: Current situation and future potential. *Internet Research*, 10, 4 (2000), 284–294.
151. Katerattanakul, P., and Siau, K. Measuring information quality of Web sites: Development of an instrument. In P. De and J. DeGross (eds.), *Proceedings of the Twentieth International Conference on Information Systems*. Charlotte, NC: Omnipress, 1999, pp. 279–285.
152. Katerattanakul, P. Framework for effective Web site design for Internet commerce. *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 2, pp. 716–718.
153. Kauffman, R.J., and Wang, B. New buyers' arrival under dynamic pricing microstructure: The case of group-buying discounts on the Internet. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society, 2001.
154. Kaynama, S.A., and Keesling, G. A pilot study comparing the service quality of traditional and hybrid travel agencies using a qualitative research design. *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 2, p. 336.
155. Keeney, R.L. The value of Internet commerce to the customer. *Management Science*, 45, 4 (April 1999), 533–542.
156. Kettinger, W.J., and Hackbarth, G. Selling in the era of the "Net": Integration of electronic commerce in small firms. In E.R. McLean and R.J. Welke (eds.), *Proceedings of the Eighteenth International Conference on Information Systems*. Atlanta: ACM Press, 1997, pp. 249–262.
157. Khalifa, M., and Liu, V. Satisfaction with Internet-based services. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fifth Hawai'i International Conference on System Sciences*. Kona, HI: IEEE Computer Society Press, 2002.
158. Kiang, M.Y.; Raghu, T.S.; and Shang, K.H. Marketing on the Internet: Who can benefit from an online marketing approach? *Decision Support Systems*, 27, 4 (January 2000), 383–393.
159. Kim, D.J.; Cho, B.; and Rao, H.R. The effects of consumer lifestyles on purchasing behavior on the Internet: A conceptual framework and empirical validation. In *Proceedings of the Twenty-first International Conference on Information Systems*. Brisbane, Australia, 2000, pp. 688–695.
160. Kim, D.J.; Song Y.I.; Braynov, S.B.; and Rao, H.R. A B-to-C trust model for on-line exchange. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 784–787.
161. Kim, E. A model of sustainable trust in B2C e-markets. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 804–809.
162. Kim, E.B.; Eom, S.B.; and Uoo, S. Effective user interface design for online stores

- in the Asia Pacific region: A survey study. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 867–872.
163. Kim, J. Toward the construction of customer interfaces for cyber shopping malls. *International Journal for Electronic Markets*, 7, 2 (1997), 12–15.
164. Kim, J., and Yoo, B. Toward the optimal link structure of the cyber shopping mall. *International Journal of Human Computer Studies*, 52, 3 (March 2000), 531–551.
165. Kim, K., and Prabhakar, B. Initial trust, perceived risk, and the adoption of Internet banking. In *Proceedings of the Twenty-first International Conference on Information Systems*. Brisbane, Australia, 2000, pp. 537–543.
166. Kim, K.K., and Umanath, N. S. An empirical investigation of electronic integration in a supply chain relationship. In P. De and J. DeGross (eds.), *Proceedings of the Twentieth International Conference on Information Systems*. Charlotte, NC: Omnipress, 1999, pp. 546–551.
167. Kimery, K., and McCord, M. Third-party assurances: The road to trust in online retailing. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fifth Hawai'i International Conference on System Sciences*. Kona, HI: IEEE Computer Society Press, 2002.
168. Kini, A., and Choobineh, J. Trust in electronic commerce: Definition and theoretical considerations. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-first Annual Hawai'i International Conference on System Sciences*. Kona, HI: IEEE Computer Society Press, 1998, vol. 4, pp. 51–61.
169. Klose, M., and Lechner, U. Design of business media: An integrated model of electronic commerce. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 559–561.
170. Kolesar, M.B., and Galbraith, R. W. A services-marketing perspective on e-retailing: Implications for e-retailers and directions for further research. *Internet Research*, 10, 5 (2000), 424–438.
171. Koppius, O. Dimensions of intangible goods. In R.H. Sprague, Jr.(ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.
172. Körner, V., and Zimmermann, H.D. Management of customer relationship in business media: The case of the financial industry. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-third Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 2000.
173. Krauss, F.; Loiacono, E.T.; and Kasouf, C. Web site quality: Cross-cultural comparison of U.S. and German business customers. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 879–872.
174. Krishna, V., and Ramesh, V.C. From Wall Street to Main Street: Reaching out to small investors. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.
175. Krishnan, M.S.; Ramaswamy, V.; Meyer, M.C.; and Damien, P. Customer satisfaction for financial services: The role of products, services, and information technology. *Management Science*, 45, 9 (1999), 1194–1209.
176. Krishnan, M.S., and Venkatram, R. An empirical analysis of customer satisfaction for Intranet marketing systems. *Decision Support Systems*, 24, 1 (November 1998), 45–54.
177. Kumar, A.; Munro, D.; Sargent, G.; Leitheiser, R.; and Horton, R. Global e-commerce: Issues and challenges. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 304–306.

178. Kundisch, D.; Klöpfer, E.; Calaminus, D.; and Wolfersberger, P. Enabling eCCRM: Content model and management for financial services. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society, 2001.
179. Lam, J.C.Y., and Lee, M.K.O. A model of Internet consumer satisfaction: Focusing on the Web-site design. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 526–528.
180. Lang, K.R., and Whinston, A.B. A design of a DSS intermediary for electronic markets. *Decision Support Systems*, 25, 3 (April 1999), 181–197.
181. Lee, C.S., and Shu, W.S. An integrative and complementarity-based model for the design and adoption of customer relationship management technologies. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 854–856.
182. Lee, H.G. Electronic market intermediary: Transforming technical feasibility into institutional reality. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirtieth Annual Hawai'i International Conference on Systems Science*. Maui, HI: IEEE Computer Society Press, 1997.
183. Lee, H.G.; Westland, J.C.; and Hong, S. The impact of electronic marketplaces on product prices: An empirical study of AUCNET. *International Journal of Electronic Commerce*, 4, 2 (winter 1999–2000), 45–60.
184. Lee, J.K., and Hwangbo, Y. Cyberconsumption taxes and electronic collection systems: A canonical consumer-delivered sales tax. *International Journal of Electronic Commerce*, 4, 2 (winter 1999–2000), 61–82.
185. Lee, Z., and Gosain, S. Price comparison for music CDs in electronic and brick-and-mortar markets: Implications for emergent electronic commerce. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-third Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 2000.
186. Lee, Z.; Im, I.; and Lee, S.J. The effect of negative buyer feedback on prices in Internet auction markets. In *Proceedings of the Twenty-first International Conference on Information Systems*. Brisbane, Australia, 2000, pp. 286–287.
187. Leidner, D.E., and Galliers, R.D. Post-sales support for on-line product sales: The challenge facing small global firms. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 435–437.
188. Li, E.Y.; McLeod, R., Jr.; and Rogers, J.C. Marketing information systems in the Fortune 500 companies: Past, present, and future. *Journal of Management Information Systems*, 10, 1 (summer 1993), 165–192.
189. Li, H.; Kuo, C.; and Russell, M. The impact of perceived channel utilities, shopping orientations, and demographics on the consumer's online buying behavior. *Journal of Computer-Mediated Communication*, 5, 2 (1995) (www.ascusc.org/jcmc).
190. Liang, T.P., and Huang, J.S. An empirical study on consumer acceptance of products in electronic markets: A transaction cost model. *Decision Support Systems*, 24, 1 (November 1998), 29–43.
191. Liang, T.P., and Lai, H. J. Electronic store design and consumer choice: An empirical study. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Hawai'i International Conference on Systems Sciences*. Maui, HI: IEEE Computer Society Press, 2001.
192. Liao, Z., and Cheung, M.T. Cyber-banking in Hong Kong: Development and challenges. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 740–745.

193. Lin, C.K.Y.; Lai, K.F.; and Hung, S.L. Development of a workforce management system for a customer hotline service. *Computers and Operations Research*, 27, 10 (September 2000), 987–1004.
194. Lincke, D.M., Business models for the implementation of mediating electronic product catalogs. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 306–308.
195. Liu, C., and Arnett, K.P. Exploring the factors associated with Web site success in the context of electronic commerce, *Information and Management*, 38, 1 (2000), 23–33.
196. Liu, C., and Arnett, K. WWW privacy policies in large and small business enterprises: Do they ease privacy concerns? In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 889–891.
197. Liu, C., and Arnett, K. Assessing the customer behavior intentions on the Web: A research model. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 307–309.
198. Liu, C.; Arnett, K.P.; Capella, L.M.; and Beatty, R.C. Web sites of the Fortune 500 companies: Facing customers through home pages. *Information and Management*, 31, 6 (January 1997), 335–345.
199. Liu, D.-R.; Lin, Y.-J.; Chen, C.-M.; and Huang, Y.-W. A framework for personalized e-catalogs: An integration of xml-based metadata, user models and agents. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Hawai'i International Conference on Systems Sciences*. Maui, HI: IEEE Computer Society Press, 2001.
200. Lloyd, G.O.; Scullin, S.; Allora, J.; and Fjermestad, J. Electronic customer relationship management: Benefits and pre-implementation considerations. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 841–844.
201. Lockett, A.; Blackman, I. D.; Holland, C.; and Naudé, P. Using the WWW as a medium for marketing research in financial services: The case of Xenon Laboratories. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.
202. Loebbecke, C. Electronic trading in on-line delivered content. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.
203. Lohse, G., and Spiller, P. Electronic shopping: How do customer inter-faces produce sales on the Internet? *Communications of the ACM*, 41, 7 (July 1998), 81–87.
204. Lohse, G., and Spiller, P. Internet retail store design: How the user interface influences traffic and sales. *Journal of Computer-Mediated Communication*, 5, 2 (1999) (www.ascusc.org/jcmc).
205. Luo, W.; Cook, D.; and Ganapathy, B. Understanding electronic bill presentment and payment: A customer perspective. In *Proceedings of the Thirtieth Annual Meeting of the Decision Sciences Institute*. New Orleans: Decision Sciences Institute, 1999, p. 761.
206. Macredie, R.D. Mediating Buyer-seller interactions: The role of agents in Web commerce. *Electronic Markets*, 8, 3 (1998), 40–43.
207. Massey, B.L. Market-based predictors of interactivity at Southeast Asian online newspapers. *Internet Research*, 10, 3 (2000), 227–237.
208. Mathieson, K.; Bhargava, ; and Tanniru, M. Web-based consumer decision tools: Motivations and constraints. *Electronic Markets*, 9, 4 (1999) (www.electronicmarkets.org/netacademy/publications.nsf/all_pk/1530).
209. Matsuda, T.; Clark, T.H.; and Lee, H.G. Electronic commerce for agricultural transactions: Role of intermediaries for accurate pricing. In R.H. Sprague, Jr. (ed.),

- Proceedings of the Thirtieth Annual Hawai'i International Conference on Systems Science*. Maui, HI: IEEE Computer Society, 1997.
210. McCarthy, R.V.; Aronson, J.E.; and Petrausch, R. Enhancing the consumer design Web site model through integrated public relations strategy. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 704–708.
211. McKnight, D.H., and Chervany, N. L. While trust is cool and collected, distrust is fiery and frenzied: A model of distrust concepts. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 883–888.
212. McKnight, D.H., and Chervany, N. L. Conceptualizing trust: A typology and e-commerce customer relationships model. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society, 2001.
213. McKnight, D.H.; Choudhury, V.; and Kacmar, C. Trust in e-commerce vendors: A two-stage model. In *Proceedings of the Twenty-first International Conference on Information Systems*. Brisbane, Australia, 2000, pp. 532–537.
214. Menon, N.; Konana, P.; Browne, G. J.; and Balasubramanian, S. Understanding trustworthiness beliefs in electronic brokerage. In P. De and J. DeGross (eds.), *Proceedings of the Twentieth International Conference on Information Systems*. Charlotte, NC: Omnipress, 1999, pp. 552–555.
215. Merelo, J.J.; Prieto, A.; Rivas, V.; and Valderrabano, J.L. A neural net-based model for decision making in marketing. *Accounting Management and Information Technologies*, 8, 4 (1998), 237–253.
216. Miles, G.E.; Howes, A.; and Davies, A. A framework for understanding human factors in Web-based electronic commerce. *International Journal of Human-Computer Studies*, 52, 1 (January 2000), 131–163.
217. Miree, C.E.; Simon, M.; and Tanniru, M. Understanding the role of e-commerce in sales strategy. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 1358–1361.
218. Mols, N.P. The Internet and services marketing: The case of Danish retail banking. *Internet Research*, 10, 1 (2000), 7–18.
219. Montgomery, A.L. Applying quantitative marketing techniques to the Internet. *Interfaces*, 30, 2 (March–April 2000), 1–32.
220. Muthitacharoen, A. Consumer's preference between the Internet and conventional stores (an exploratory study). In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 1373–1379.
221. Muthitacharoen, A. Investigating the consumer's attitude toward Internet shopping. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 532–534.
222. Muthitacharoen, A.; Suwan, N.; Chen, L.; and Sakaguchi, T. Determination of the virtual-store role vis-à-vis conventional stores: A consumer's perspective. *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 2, p. 561.
223. Nakayama, M. Use of EDI and firm bargaining power shift in grocery marketing channels: An exploratory study. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 312–314.
224. Naudé, P.; Blackman, I.; and Dengler, S. Real-time new product development in financial services: Some managerial implications. In R.H. Sprague, Jr. (ed.),

- Proceedings of the Thirty-first Annual Hawai'i International Conference on System Sciences*. Kona, HI: IEEE Computer Society Press, 1998, vol. 4, pp. 272–281.
225. Nault, B.R., Dexter, A.S. Added value and pricing with information technology. *MIS Quarterly*, 19, 4 (December 1995), 449–464.
226. Nöteberg, A., Christaanse, E., and Wallage, P. The role of trust and assurance services in electronic channels: An exploratory study. In P. De and J. DeGross (eds.), *Proceedings of the Twentieth International Conference on Information Systems*. Charlotte, NC: Omnipress, 1999, pp. 472–478.
227. Nyshadham, E.A. Consumer perceptions of online transaction security: A cognitive explanation of the origins of perception. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 837–842.
228. O'Connor, G.C., and O'Keefe, B. Viewing the Web as a marketplace: The case of small companies. *Decision Support Systems*, 21, 3 (November 1997), 171–183.
229. O'Keefe, R.M., and McEachern, T. Web-based customer decision support systems. *Communications of the ACM*, 41, 3 (March 1998), 71–78.
230. O'Keefe, R.M.; Cole M.; Chau, P.Y.K.; Massey A.; Montoya-Weiss, M.; and Perry M. From the user interface to the consumer interface: Results from a global experiment. *International Journal of Human Computer Studies*, 52, 4 (October 2000), 611–628.
231. Oliver, R.W. Corporate policies for electronic commerce. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirtieth Annual Hawai'i International Conference on Systems Science*. Maui, HI: IEEE Computer Society, 1997.
232. Olson, J.S., and Olson, G. M. i2i trust in e-commerce. *Communications of the ACM*, 43, 12 (December 2000), 41–44.
233. Palmer, J.; Kallio, J.; Saarinen, T.; Tinnila, M.; Tuunainen, V.K.; and van Heck, E. Online grocery shopping around the world: Examples of key business models. *Communications of the AIS*, 4 (September 2000) (www.cais.aisnet.org).
234. Palmer, J.W. Electronic commerce in retailing: differences across retail formats. *Information Society*, 13, 1 (January–March 1997), 75–91.
235. Palmer, J.W., and Griffith, D. A. An emerging model of Web site design for marketing. *Communications of the ACM*, 41, 3, (March 1998), 44–51.
236. Palvia, S.C.J., and Vemuri, V. Advertising globally on the Internet: New paradigm or old wine in new bottle? In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 319–321.
237. Pant, S., and Sethi, R. A model for using the Internet and the Web technologies for new product development. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 597–599.
238. Papadopouou, P.; Kanellis, P.; and Martakos, D. Investigating trust in e-commerce: A literature review and a model for its formation in customer relationships. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 791–798.
239. Pardue, H., and Landry, J. P. Evaluation of alternative interface designs for e-tail shopping: An empirical study of three generalized hierarchical navigation schemes. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 1335–1337.
240. Parent, M.; Gallupe, R.B.; Salisbury, W.D.; and Handelman, J.M. Knowledge creation in focus groups: Can group technologies help? *Information and Management*, 38, 1 (October 2000), 47–58.
241. Parsons, J.; Gallagher, K.; and Foster, K.D. Messages in the medium: An

- experimental investigation of Web advertising effectiveness and attitudes toward Web content. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-third Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 2000.
242. Pavlou, P.A. Integrating trust in electronic commerce with the technology acceptance model: Model development and validation. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 816–822.
243. Payton, F.C., and Lucas, H. Health care B2B electronic commerce: What do patients/consumers want? In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Hawai'i International Conference on Systems Sciences*. Maui, HI: IEEE Computer Society Press, 2001.
244. Pedersen, S., and Thomas, L. The Internet as a conduit for marketing to consumers. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 322–325.
245. Pereira, R.E. Factors influencing consumer purchasing behavior in electronic commerce. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 450–452.
246. Phau, I., and Poon, S.M. Factors influencing the types of products and services purchased over the Internet. *Internet Research*, 10, 2 (2000), 102–113.
247. Poon, S. The nature of goods and Internet commerce benefit: A preliminary study. In R.H. Sprague, Jr.(ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.
248. Primo, M., and Amundson, S. D., An exploratory study of the effects of customer-supplier relationship on quality and performance outcomes in new product development. *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 3, p. 1019.
249. Puschmann, T., and Alt, R. Customer relationship management In the pharmaceutical industry. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society, 2001.
250. Ramaswami, R.N.; Strader, T.J.; and Brett, K. Determinants of on-line channel use for purchasing financial products. *International Journal of Electronic Commerce*, 5, 2 (winter 2000–2001), 95–118.
251. Ratnasingham, P. The influence of power on trading partner trust in electronic commerce. *Internet Research*, 10, 1 (2000), 56–63.
252. Ratnasingham, P., and Kumar, K. Trading partner trust in electronic commerce participation. In *Proceedings of the Twenty-first International Conference on Information Systems*. Brisbane, Australia, 2000, pp. 544–553.
253. Remington, W.S.; Moores, T.; Swanson, Z.; and Foltz, B. Electronic commerce and the challenge for is planning: Who will be the ec-winners? In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 127–129.
254. Resnick, P.; Zeckhauser, R.; Friedman, E.; and Kuwabara, K. Reputation systems. *Communications of the ACM*, 43, 12 (December 2000), 45–48.
255. Riggins, F.J., and Rhee, H. S. Toward a unified view of electronic commerce. *Communications of the ACM*, 41, 10 (October 1998), 88–95.
256. Romano, N.C., Jr.; Bauer, C.; Chen, H.; and Nunamaker, J.F., Jr., The mindmine comment analysis tool for collaborative attitude solicitation, analysis, sense-making and visualization. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-third Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 2000.

257. Romano, N.C., Jr. Customer relations management research: An assessment of sub-field development and maturity. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society, 2001.
258. Romano, N.C., Jr. Customer relationship management for the Web-access challenged: inaccessibility of the Fortune 100 business Web sites. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fifth Hawai'i International Conference on System Sciences*. Kona, HI: IEEE Computer Society Press, 2002.
259. Romano, N.C., Jr., and Fjermestad, J. An agenda for electronic commerce customer relationship management research. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 831–833.
260. Rong, G.; Wang, M.; and Liao, S. Building an eCRM analytical system with neural network. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 917–919.
261. Rose, G.M.; Straub, D.; and Khoo, H. Current technological impediments to business-to-consumer electronic commerce. *Communications of the AIS*, 1, 16 (1999), 1–74.
262. Rowley, J. Product searching with shopping bots. *Internet Research*, 10, 3 (2000), 203–214.
263. Sakaguchi, T.; Palvia, P.; Nath, R.; Janz, B.; and Boller, G. Consumer-oriented electronic commerce on the World Wide Web: A comparison of the U.S. and Japanese practices. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 328–330.
264. Salam, A.F.; Iyer, L.S.; and Srikantan, R. Relationship marketing and B2B e-commerce: Redefining the traditional buyer-seller relationship in the dynamic B2B E-marketplace environment. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 892–894.
265. Salam, A.F.; Rao, H. R.; and Pegels, C.C. Content of corporate Web Pages as advertising media. *Communications of the ACM*, 41, 3 (March 1998), 76–77.
266. Salam, A.F.; Rao, H.R.; and Bhattacharjee, S. Internet-based technologies: Value creation for the customer and the value chain across industries. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 538–540.
267. Salam, A.F.; Rao, H. R.; and Pegels, C.C. An Investigation of consumer-perceived risk in electronic commerce transactions: The role of institutional trust and economic incentive in a social exchange framework. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 335–337.
268. Salisbury, W.D.; Pearson, R.A.; and Harrison, A.W. Who's afraid of the World Wide Web? An initial investigation into the relative impact of two salient beliefs on Web shopping intent. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 338–341.
269. Sampson, S.E. Ramifications of monitoring service quality through passively solicited customer feedback. *Decision Sciences Journal*, 27, 4 (fall 1996), 601–622.
270. Sampson, S.E. Consumer EDI in bidirectional service supply chains. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 3, pp. 1240–1242.
271. Sarkar, M.; Butler, B.; and Steinfield, C. Intermediaries and cybermediaries: A continuing role for mediating players in the electronic marketplace. *Journal of*

- Computer-Mediated Communication*, 1, 3 (1995) (www.ascusc.org/jcmc).
272. Satterfield, R.K. Differences in manager and customer perceptions of service. In K. Bartkus (proceedings coordinator), *Proceedings of the Twenty-Ninth Annual Meeting of the Decision Sciences Institute*. Las Vegas, 1998, pp. 1602–1604.
273. Scharl, A., and Brandtweiner, R. Maximizing the customer delivered value with Web-based mass information systems. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 453–455.
274. Schmid, B.F., and Lindemann, M. A., Elements of a reference model for electronic markets. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-first Annual Hawai'i International Conference on System Sciences*. Kona, HI: IEEE Computer Society, 1998, vol. 4, pp. 193–201.
275. Schoder, D., and Yin, P-L. Building firm trust online. *Communications of the ACM*, 43, 12 (December 2000), 73–79.
276. Schubert, P., and Dettling, W. Extended Web assessment method (EWAM): Evaluation of e-commerce applications from the customer's viewpoint. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fifth Hawai'i International Conference on System Sciences*. Kona, HI: IEEE Computer Society Press, 2002.
277. Schumann, P. EASY Shopping: A value-added service for electronic malls. *International Journal of Electronic Commerce*, 4, 2 (winter 1999–2000), 99–119.
278. Schwaiger, M., and Locarek-Junge, H. Realizing customer retention potentials by electronic banking. *Electronic Markets*, 8, 4 (1998), 23–26.
279. Seidmann, A., and Sundararajan, A. Building and sustaining interorganizational information sharing relationships. In *Proceedings of the Eighteenth International Conference on Information Systems*. Atlanta: ACM Press, 1997, pp. 205–222.
280. Selz, D., and Schubert, P. Web assessment: A model for the evaluation and assessment of successful electronic commerce applications. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-first Annual Hawai'i International Conference on System Sciences*. Kona, HI: IEEE Computer Society Press, 1998.
281. Sénécal, S. Stopping variables in online buying processes: An innovation diffusion approach. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 1380–1385.
282. Senn, J.A. Business-to-consumer practices in electronic commerce. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 256–258.
283. Sha, W. Some factors influencing electronic commerce consumer purchasing behavior: An empirical study. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 2, pp. 349–551.
284. Shabana, A.; El-Shinnawy, M.; and Ward, S.G. Tenancy relationships: The case of anchor tenants in “real” and virtual malls and communities. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 345–347.
285. Shaw, M.; Gardner, D.; and Thomas, H. Research opportunities in electronic commerce. *Decision support Systems*, 21, 3 (November 1997), 149–156.
286. Shim, J.P.; Shin, Y. B.; and Shim, C. S. Internet shopping: Exploratory study on key factors in post-purchase services. In *Proceedings of the Thirtieth Annual Meeting of the Decision Sciences Institute*. New Orleans: Decision Sciences Institute, 1999, p. 760.
287. Shin, M. Habermas' communicative theory of action and the Internet marketing communication effectiveness: The case of direct e-mail vs. banner advertisement. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference*

- on *Information Systems*. Milwaukee: Omnipress, 1999, pp. 175–177.
288. Shneiderman, B. Designing trust into online experiences. *Communications of the ACM*, 43, 12 (December 2000), 57–59.
289. Skalnik, P., and Krishnamoorthy, M.S. Airlines, the Internet, and the customer: An industry in transition. In K. Bartkus (proceedings coordinator), *Proceedings of the Twenty-ninth Annual Meeting of the Decision Sciences Institute*. Las Vegas, 1998.
290. Smith, W.L., Strategies for uncertainty reduction in the service encounter. In K. Bartkus (proceedings coordinator), *Proceedings of the Twenty-ninth Annual Meeting of the Decision Sciences Institute*. Las Vegas, 1998, pp. 353–355.
291. Sohn, C., and Tadisina, S. K. Need for an alternative to SERVQUAL for Internet markets. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 3, p. 1249.
292. Sohn, C., and Tadisina, S. K. A new service quality measure for Internet markets. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 3, p. 1250.
293. Sohn, C. The properties of Internet-based markets and customers' behavior. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 541–543.
294. Son, J-Y.; Narasimhan, S.; and Riggins, F.J. Factors affecting the electronic cooperation between firms: Economic and sociological perspectives. In P. De and J. DeGross (eds.), *Proceedings of the Twentieth International Conference on Information Systems*. Charlotte, NC: Omnipress, 1999, pp. 556–560.
295. Song, J., and Zahedi, F. Determinants of market strategies in electronic markets. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 354–356.
296. So, R. Linking quality management to manufacturing strategy: An empirical investigation of customer focus practices. *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, vol. 3, pp. 1348–1350.
297. Spiller, P., and Lohse, G.L. A classification of Internet retail stores. *International Journal of Electronic Commerce*, 2, 2 (winter 1997–98), 29–56.
298. Sproule, S., and Archer, N. A buyer behaviour framework for the development and design of software agents in e-commerce. *Internet Research*, 10, 5 (2000), 396–405.
299. Srivastava, R.P., and Mock, T. J. Evidential reasoning for Webtrust assurance services. *Journal of Management Information Systems*, 16, 3 (winter 1999–2000), 11–32.
300. Standing, C.;Borbely, S.; and Vasudavan. T. A study of Web diffusion in travel agencies. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.
301. Steinfield, C.; Kraut, R.; and Plummer, A. The impact of interorganizational networks on buyer-seller relationships. *Journal of Computer-Mediated Communication*, 1, 3 (1995) (www.ascusc.org/jcmc).
302. Steinfield, C., and Whitten, P. Community level socio-economic impacts of electronic commerce. *Journal of Computer-Mediated Communication*, 5, 2 (1999) (www.ascusc.org/jcmc).
303. Stewart, K.J. Transference as a means of building trust in World Wide Web sites. In P. De and J. DeGross (eds.), *Proceedings of the Twentieth International Conference on Information Systems*. Charlotte, NC: Omnipress, 1999, pp. 459–464.
304. Stohr, E.A., and Viswanathan, S. Emergent structures in the information economy. In *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 357–359.

305. Strader, T.J., and Hackbart, G., Introduction to marketing and consumer behavior in electronic markets. In H. M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 1349–1351.
306. Strader, T., and Hendrickson, A. R. Consumer opportunity, ability and motivation as a framework for electronic market research. *Electronic Markets*, 9, 1–2 (1999), 5–8.
307. Strader, T.J., and Shaw, M.J. Consumer cost differences for traditional and Internet markets. *Internet Research*, 9, 2 (1999), 82–92.
308. Strauss, E.E.; Schoder, D.; and Gebauer, J., The relevance of brands for electronic commerce. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Hawai'i International Conference on Systems Sciences*. Maui, HI: IEEE Computer Society Press, 2001.
309. Sugumaran, V., and Tanniru, M. Designing support for customers on the Web: A methodology and a case study. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 365–367.
310. Sukpanich, N., and Chen, L. Antecedents of desirable consumer behaviors in electronic commerce. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 550–552.
311. Sukpanich, N., and Chen, L., Exploring the major issues of conducting business on the Internet. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 363–365.
312. Sukpanich, N., and Chen, L., Interactivity as the driving force behind e-commerce. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 834–836.
313. Sukpanich, N., and Chen, L. Measuring consumers' attitudes to Web advertising. *Electronic Markets*, 9, 1 (1999) (www.electronicmarkets.org/netacademy/publications.nsf/all_pk/1328).
314. Sulek, J.M., and Hensley, R. L. Customer disengagement: It's not how you start, it's how you finish. In *Proceedings of the Thirtieth Annual Meeting of the Decision Sciences Institute*. New Orleans: Decision Sciences Institute, 1999, p. 1303.
315. Swaminathan, V.; Lepkowska-White, E.; and Rao, B. Browsers or buyers in cyberspace? An investigation of factors influencing electronic exchange. *Journal of Computer-Mediated Communication*, 5, 2 (December 1999) (www.ascusc.org/jcmc).
316. Tabor, S.W. The Customer talks back: An analysis of customer expectations and feedback mechanisms in electronic commerce transactions. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 553–555.
317. Tan, Y.-H., and Thoen, W. Toward a generic model of trust for electronic commerce. *International Journal of Electronic Commerce*, 5, 2 (winter 2000–2001), 61–74.
318. Tang, M.T.W., and Wang, Y. S. An electronic marketing paradigm for the information service industry. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 465–467.
319. Tanpong, C., and Kim, E., The emergence of e-commerce in consumer markets: New niche formation or creative destruction? In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 663–669.
320. Tarasewich, P., and Cobo-Lewis, C. An investigation into the aesthetics of Web

- site design. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 2, pp. 722–724.
321. Thelwall, M. Commercial Web sites: Lost in cyberspace? *Internet Research*, 10, 2 (2000), 150–159.
322. Timmers, P. Business models for electronic markets. *Electronic Markets*, 8, 2 (1998), 3–8.
323. Tiwana, A., and Ramesh, B. E-services: Problems, opportunities, and digital platforms. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Hawai'i International Conference on Systems Sciences*. Maui, HI: IEEE Computer Society Press, 2001.
324. Tomiuk, D.B., and Pinsonneault, A. Electronic banking and customer loyalty: A conceptual assessment. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 703–709.
325. Toppen, R.; Smits, R.; and Ribbers, P. Improving process performance through market network redesign: A study of the impact of electronic markets in the financial securities sector. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.
326. Torkzadeh, G., and Dhillon, G. Value of e-commerce to the customer. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 2, pp. 555–556.
327. Tracey, M., and Tan, C.L. An empirical analysis of the impact of supplier selection and involvement on customer satisfaction and firm performance. *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 3, pp. 1185–1187.
328. Tracey, M. Purchasing: Critical to customer satisfaction and organization performance? In *Proceedings of the Thirtieth Annual Meeting of the Decision Sciences Institute*. New Orleans: Decision Sciences Institute, 1999, pp. 1039–1041.
329. Tu, Q.; Vonderembse, M.A.; and Ragu-Nathan, T.S. The impact of time-based manufacturing practices on mass customization and value to customer. In *Proceedings of the Thirtieth Annual Meeting of the Decision Sciences Institute*. New Orleans: Decision Sciences Institute, 1999, pp. 1024–1026.
330. Tu, Q.; Vonderembse, M.A.; and Ragu-Nathan, T.S. The impact of modularity-based manufacturing practices on manufacturing performance: A customer-driven perspective. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 3, pp. 1077–1079.
331. Uslaner, E.M. Social capital and the Net. *Communications of the ACM*, 43, 12 (December 2000), 60–64.
332. Vakrat, Y., and Seidmann, A. Can online auctions beat online catalogs. In P. De and J. DeGross (eds.), *Proceedings of the Twentieth International Conference on Information Systems*. Charlotte, NC: Omnipress, 1999, pp. 132–143.
333. van der Heijden, H.; Verhagen, T.; and Creemers, M. Predicting online purchase behavior: Replications and test of competing models. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Hawai'i International Conference on Systems Sciences*. Maui, HI: IEEE Computer Society Press, 2001.
334. Van Slyke, C.R.; Collins, R.W.; and Comunale, C.L. Trust in electronic commerce. In *Managing Information Technology Resources in Organizations in the Next Millennium: Proceedings of the 10th Information Resources Management Association International Conference*, Hershey, PA: Idea Group Publishing, 1999, pp. 1041–1043.
335. Van Slyke, C.R.; Trimmer, K.; and Kittner, M.L. A framework for planning customer-oriented electronic commerce. In K. Bartkus (proceedings coordinator), *Proceedings of the Twenty-ninth Annual Meeting of the Decision Sciences Institute*. Las Vegas, 1998 (oak.cats.ohiou.edu/~vanslyke/ECPlan_dist.html).

336. Vatcharaporn, E., and Sukaramula, P. Data mining for customer relations management: A case study of an Internet service provider company. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 820–826.
337. Vijayarathy, L.; Jones, J.M.; and Gochenouer, J. Consumer attitudes and intentions towards Internet catalog shopping: The impact of product characteristics and shopping orientations. In *Proceedings of the Thirtieth Annual Meeting of the Decision Sciences Institute*. New Orleans: Decision Sciences Institute, 1999, pp. 335–337.
338. Vijayarathy, L.R., and Jones, J.M. Print and Internet catalog shopping: Assessing attitudes and intentions. *Internet Research*, 10, 3 (2000), 191–202.
339. Vijayarathy, L.R., and Jones, J.M. Internet shopping: Consumer perceptions and behavioral intentions. In K. Bartkus (proceedings coordinator), *Proceedings of the Twenty-ninth Annual Meeting of the Decision Sciences Institute*. Las Vegas: Decision Sciences Institute, 1998, pp. 415–417.
340. Vijayarathy, L.R., and Jones, J.M. The impact of shopping aids on online shopping perceptions. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 2, pp. 340–342.
341. von Dran, G.M., and Zhang, P. A Proto-theory of Website design quality: An interdisciplinary approach. In *Proceedings of the Thirty-first Annual Meeting of the Decision Sciences International*. Orlando, FL: Decision Sciences Institute, 2000, vol. 2, pp. 719–721.
342. Wan, H.A. Opportunities to enhance a commercial Website. *Information and Management*, 38, 1 (October 2000), 15–21.
343. Wang, F.; Head, M.; and Archer, N. A relationship-building model for the Web retail marketplace. *Internet Research*, 10, 5 (2000), 374–384.
344. Wang, H.; Lee, M. K.O.; and Wang, C. Consumer privacy concerns about Internet Marketing. *Communications of the ACM*, 41, 3 (March 1998), 63–70.
345. Wang, J.-C., and Day, R.-F. Feedback mechanisms as Intermediaries for Web information market: An exploratory study. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Hawai'i International Conference on Systems Sciences*. Maui, HI: IEEE Computer Society Press, 2001.
346. Watson, R.T., and McKeown, P.G. Manheim auctions: Transforming interorganizational relationships with an extranet. *International Journal of Electronic Commerce*, 3, 4 (summer 1999), 29–46.
347. Webb, L.A. Information requirements determination for electronic retailing: A consumer-based perspective. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 216–219.
348. Wells, J., and Croadsell, D. Redefining the fundamental dimensions of intangible service encounters through electronic commerce. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 372–374.
349. Wells, J.D., and Fuerst, W.L. Domain-oriented interface metaphors: Designing Web interfaces for effective customer interaction. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-third Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 2000.
350. Wells, J.D.; Fuerst, W.L.; and Choobineh, J. Managing information technology (IT) for one-to-one customer interaction. *Information and Management*, 35, 1 (January 1999), 53–62.
351. Westland, J.C., and Au, G. A Comparison of shopping experiences across three competing digital retailing interfaces. *International Journal of Electronic Commerce*, 2, 2 (winter 1997–98), 57–69.

352. Westland, J.C.; Kwok, M.; Shu, J.; Kwok, T.; and Ho, H. Customer and merchant acceptance of electronic cash: Evidence from Mondex in Hong Kong. *International Journal of Electronic Commerce*, 2, 4 (summer 1998), 5–26.
353. Wigand, R., and Benjamin, R. Electronic commerce: Effects on electronic markets. *Journal of Computer-Mediated Communication*, 1, 3 (1995) (www.ascusc.org/jcmc).
354. Wilson, D.; Bridge, T.; Deasy, P.; and Whelan, A. That's the ticket! Redesigning an online customer support system in an Internet company. In J. DeGross (ed.), *Proceedings of the Seventh Americas Conference on Information Systems*. Boston: Omnipress, 2001, pp. 913–916.
355. Wolfenbarger, M., and Gilly, M. Consumer motivations for online shopping. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 1362–1366.
356. Yan, G., and Paradi, J. C. Success criteria for financial institutions in electronic commerce. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-second Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 1999.
357. Yan, G.; Paradi, J.C.; and Bhargava, S. Banking on the Internet and its applications. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirtieth Annual Hawai'i International Conference on Systems Science*. Maui, HI: IEEE Computer Society. 1997..
358. Yang, Y.; Brown, L.; Newmarch, J.; and Lewis, E. A trusted W3 model: Transitivity of trust in a heterogeneous Web environment. In *Proceedings of the Fifth Australian World Wide Web Conference (AusWeb99)* (ausWeb.scu.edu.au/aw99/papers/index.html, Access Date June 2001.)
359. Yen, J.; Hu, J.; and Bui, T. X. Intelligent clearinghouse: Electronic marketplace with computer-mediated negotiation supports. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-third Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society Press, 2000.
360. You, X.; O'Leary, J.T. ;and Nah, F.H. Knowledge sharing with customers on the WWW: Approaches by national tourism organizations. In W.D. Haseman and D.L. Nazareth (eds.), *Proceedings of the Fifth Americas Conference on Information Systems*. Milwaukee: Omnipress, 1999, pp. 492–494.
361. Youngdahl, W.E., and Kellogg, D. L. The relationship between service customers' quality assurance behaviors, satisfaction, and effort: A cost of quality perspective. *Journal of Operations Management*, 15, 1 (February 1997), 19–32.
362. Youssef , M.A., and Sawyer, Jr., G. The impact of TQM and DFM on the ability of small to medium size firms to respond to their customer needs. In K. Bartkus (proceedings coordinator), *Proceedings of the Twenty-ninth Annual Meeting of the Decision Sciences Institute*. Las Vegas: Decision Sciences Institute, 1998, pp. 1418–1420.
363. Zellweger, P. Web-based sales: Defining the cognitive buyer. *Electronic Markets*, 7, 3 (1997), 10–16.
364. Zhang, P., and von Dran. G. M. Expectations and rankings of Website quality features: Results of two studies on user perceptions. In R.H. Sprague, Jr. (ed.), *Proceedings of the Thirty-fourth Annual Hawai'i International Conference on System Sciences*. Maui, HI: IEEE Computer Society, 2001.
365. Zhang, P.; von Dran, G.; Blake, P.; and Pipithsuksunt, V. A comparison of the most important Website features in different domains: An empirical study of user perceptions. In H.M. Chung (ed.), *Proceedings of the Sixth Americas Conference on Information Systems*. Long Beach, CA: Omnipress, 2000, pp. 1367–1372.
366. Zhang, Y.J.; Chen, J.; and Williams, K., Consumers' responses to Web-based data collection efforts and factors influencing the responses. In *Proceedings of the*

- Thirty-first Annual Meeting of the Decision Sciences International. Orlando, FL: Decision Sciences Institute, 2000, vol. 2, pp. 649–651.*
367. Zhu, F.X., and Wymer, W.W., Jr. Linking IT-based services to customer perceptions of service quality. In *Proceedings of the Thirtieth Annual Meeting of the Decision Sciences Institute*. New Orleans: Decision Sciences Institute, 1999, pp. 1286–1288.
368. Zimmermann, H.D. Business media: A new approach to overcome current problems of electronic commerce. In E.D. Hoadley and I. Benbasat (eds.), *Proceedings of the Fourth Americas Conference on Information Systems*. Baltimore: Omnipress, 1998, pp. 378–380.
369. Zwass, V. Electronic commerce: Structures and issues. *International Journal of Electronic Commerce*, 1, 1 (fall 1996), 3–23.