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Customer Relations Management in Information Systems Research

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Abstract Customer Relations Management (CRM) involves attracting and keeping “*Economically Valuable*” customers while repelling and eliminating “*Economically Invaluable*” ones. CRM involves changing relationships and improving return-on-investment from customer relationships (ROI-CR.) We are experiencing a shift from a transaction-based economy to a relationship-based one (Keen 1999.) Two important business relationship types exist: those between enterprises and customers; and those between and among enterprises (Kalakota 1996.) This paper addresses the former. However, a there is a significant amount of research into traditional “*Market Channels*” (See (Bowersox 1990; Ganesan 1994; Syed Saad 1996; Cannon 1999; Geyskens 1999) for examples) as well as into eCommerce (EC) Market Channels (See (Kim 1999; Menon 1999; Son 1999)) Recent and upcoming scholarship and professional activities illustrate the importance the IS Research Community places on CRM. This paper presents a framework for IS CRM Research Topics, a discussion of IS CRM scholarly and professional research directions and activities.

1. A Framework for IS CRM Research

I propose an IS CRM framework consisting of five non-mutually-exclusive research areas: CRM within Markets; CRM Business Models; CRM Knowledge Management; CRM Technological Issues and CRM Human Issues. Each topic is comprised of several sub-topics, due to the complexity and richness of CRM.

1.1 CRM within Markets

Commerce, whether traditional or electronic, involves markets serving to “*allocate resources among participants* (Williamson 1983.)” the Internet and other Information Technology (IT) are not merely media forms and communication methods, but are in themselves “*marketplace instruments* (Forbes 2000.)” Currently resource allocation is via transactions. Traditional transactions have three phases: Information; Agreement and Settlement (Selz 1998.) A fourth phase, communication, extends this model connecting multiple transactions across time and establishing relationships among customers and between customers and business enterprises (Selz 1998.) All four phases involve IS CRM issues that have yet to be thoroughly researched.

1.2 CRM Business Models

1.2.1 Historical Background

Ives and Learmonth (Ives, 1984) proposed one of the earliest business models for IS CRM, the Customer Resource Life Cycle CRLC, which considers a firm’s relationships with its customers and how those relationships can be bespoke through application of Information Technology (IT.) Table 1 shows the thirteen stage CRLC, which expands on both the IBM four stage model and the eleven step resource life cycle proposed by Burnstine (Burnstine, 1980.)

1.2.2 Electronic Commerce CRM Business Models

Recently it has been asked whether the “e” or the “c” in ‘e’lectronic ‘c’ommerce should be emphasized (Keen 1999.)

Table 1. IBM Four stage Model and CRLC

IBM’s Four Stage Model	Ives and Learmonth’s CRLC
1. Requirements	1. Establish Requirements 2. Specify
2. Acquisition	3. Select Source 4. Order 5. Authorize and Pay for 6. Acquire 7. Test and Accept
3. Stewardship	8. Integrate 9. Monitor 10. Upgrade 11. Maintain
4. Retirement	12. Transfer or Dispose 13. Account for

The “C” is taking center stage as what lies behind DOT COM interfaces, such as order fulfillment, organizational business processes, and incentives, are exploited by enterprises to remain competitive (Keen 1999.) Much more is needed beyond the “*Right*” Web site to be competitive, but it is not very clear just what that something else is or how to design and develop it (Keen 1999; Körner 2000.) The result has been a shift the term “*Strategy*” to talk about how to do business in the digital economy to the term “*Business Model*” (Keen 1999; Körner 2000.)

Keen stresses six “*value imperatives*” vital for success (Keen 1999): 1. Perfect Logistics; 2. Perfect Long-term Customer Relations; 3. Harmonize Channels; 4. Build a powerful portal/hub brand; 5. Transform capital and cost structures; and 6. Build value-adding intermediation. These imperatives involve a CRM focused business model, however little research has been offered in the literature as to “*how*” to accomplish these goals. Research into alternative EC business models and their CRM components is needed to develop descriptive and prescriptive frameworks and theories.

One recent IS CRM perspective, ‘Management of Customer Relationship in Business Media’ (MCR-BM) – concept, has been offered (Körner 2000.) The concept is defined as ‘*The Management of Customer Relationship in Business Media comprises the design, development and application of holistic concepts in order to manage relationships to economically valuable current or future customers* (Körner 2000.)’

The MCR-BM concept (Körner 2000) considers electronic markets through open platforms, based on the media concept (Klose 1999), as typical business media that provide independent agents environments within which to create and exchange value as goods and services. The MCR-BM concept offers a basic framework for the design of business models to meet the challenges posed by the Digital Economy. MCR-BR consists of seven interrelated building blocks: 1. Customer Interaction; 2. Customer Added Value; 3. Customer Profiling; 4. Trust; 5. Virtual Communities; 6. Processing; and 7. Controlling.

This makes customers ‘*Equal Members*’ in business communities, rather than value-chain end-nodes. Customer focus places CRM at the core of business models. MCR-BM

is designed to measure CRM within enterprises, and offer guidance for researchers to explore several CRM dimensions.

These two recent EC frameworks both suggest CRM as the central theme and offer a number of areas yet to be thoroughly explored through IS research. It is interesting to note that both of them have similarities to the earlier CRLC proposed by Ives and Learmonth almost twenty years ago.

1.3 CRM Knowledge Management

Information Systems, especially Internet EC, enable new customer data gathering strategies; such as intranets, extranets, customer knowledge discovery algorithms, web-spiders, cookies, online registration and purchasing, and avatar-populated virtual trade shows to name a few. These generate huge amounts of data, however much of it is useless without scalable methods to collect, analyze, process, and understand it (Upton 1989.) CRM knowledge management (KM) methods need to be explored and refined so enterprises can take full advantage of data collected and transform it into useful information and value-added knowledge for themselves and their customers. Customer data must be analyzed to gain an understanding of not only purchasing patterns and trends, but also attitudes and preferences. Online Focus Groups using Group Support Systems have been suggested as a method to enhance and create knowledge about customers (Soutar 1996; Sweeney 1997; Kannan 1998; Parent 2000.) What is needed are both prescriptive and predictive models for strategic decision making.

'People Management', rather than IT development, poses central KM constraints (Swan 2000.) There may be an over-emphasis on IT management in KM research (Swan 2000.) KM requires a skillful blend of people, business processes and IT (Swan 2000.) A central role for people management issues within KM has been implied by recent research findings (Swan 2000.) Some of the issues relevant to CRM KM include: commitment, trust, culture, and the social embeddedness of knowledge. The latter has important implications for CRM, because unlike information, knowledge is embedded in the meanings and understandings of people and knowledge creation occurs in the process of social interactions (Swan 2000.) This illustrates the importance of relationships, shared understandings, and attitudes and behavior related to knowledge formation and sharing within groups. Managing customer relationships within social interactions for knowledge creation may emerge as a critical area within IS CRM research.

Customers are becoming more concerned with receiving value in exchange for personal information, which enterprises then use to develop value through knowledge (Hagle 1997; Kannan 1998; Hann 1999; Keen 1999; Anonymous 2000.) This is not a new phenomenon and does not only concern privacy (Hagle 1997; Kannan 1998; Keen 1999), but also involves the perception by customers that the returns they receive for information they divulge are unsatisfactory.

Companies have a much greater ability to collect information than to provide meaningful value in return. In Europe, where privacy laws are stricter than in the US, there is a strong desire by consumers to receive value in return for divulging information. Research into KM for CRM will be critical in resolving the developing conflict between consumers and businesses.

1.4 CRM Technological Issues

Technology is important in commerce and the preferred medium is voice (Keen 1999.) New technologies like JINI, D3 and Simi will soon change the way customers interact with business enterprises and other customers (Keen 1999.) Virtual environments (Chappell 1992; Milgram 1994; Steuer 1995; Burke 1996; Stuart 1996; Nunamaker 1997; Romano 1997; Nunamaker 1998; Romano 1998; Romano 1998; Romano 1999; Romano 1999; McQuaid 2000) are being developed to support interaction and information exchange through integrated communications channels that simulate real world interactions and relationships. Researchers in Finland and Hong Kong are working with Nokia on small palm top devices for EC. Which new interface and device technologies will emerge as winners may depend heavily on issues related to CRM. Several studies have looked into how interfaces affect online consumer behavior and the results are mixed (Baty 1995; Burke 1996; Jarvenpaa 1996; Kim 1997; Lohse 1998; Westland 1998; Chin-Fu Ho 1999; Ho 1999.) As new technologies emerge it will be important to assess their efficacy in relation to CRM. Further research into the technological issues associated with CRM will reveal new knowledge that will help both customers and businesses engaging in EC.

1.5 CRM Human Issues

Behavioral, affective, preference, and attitudinal issues play a major role in CRM. Studies have looked at many different human issues related to CRM (Jarvenpaa 1996; Westland 1998; Chin-Fu Ho 1999; Ho 1999; Romano 2000.) Collaborative research, variously termed Group Support Systems (GSS), Computer Supported Cooperative work (CSCW), Computer Mediated Communication (CMC), has shown that computer-mediation changes how humans interact. From the customers point of view EC changes how humans interact to spend money and acquire value. This area requires new and different research methods and questions.

Behavioral CRM issues deal with virtual communities and interactions among customers and between customers and enterprises. Scale economies may be less important on the Net and advertisers have suggested that there is no difference between a little kid and a major corporation if they both have a web site (Dyson 1997.) Interaction may be a critical issue in CRM for EC. Consumers join the largest communities to benefit from interaction and information exchange. Perhaps the conventional wisdom that size doesn't matter on the Internet is not so clear-cut (Gallaughier 1999 (July).) The issues of customer behavior in EC are becoming more complex as applications increase in functionality and more markets go online. Typical marketing demographics may not be good indicators of online buying behavior (Bellman 1999.) There are a large number of CRM behavioral issues yet to be explored.

The affective component of CRM relates to emotional customer experiences (Selz 1998.) The emotional experience affects customers in terms of satisfaction, trust and confidence, commitment, willingness to interact and share information, willingness to purchase, and attitudes and opinions. The customers' affective experience plays a major role in CRM.

Attitudes and opinions are extremely important in CRM. The Web offers opportunities to market products through multimedia presentation capabilities such as animation, audio, and video. Cyber Shopping Stores (CSS) present and sell to customers "virtual products," by displaying only images (Ho 1999.) Such complex multimedia stimuli are perceived through the senses differently than verbal and

written communication stimuli. Interpretation of evaluations as responses to most stimuli in the environment necessitate presentation of stimuli similar in form to objects perceived through the senses (Giner-Sorolla 1999.) New techniques can enable marketers to gather customer information anonymously through free form comments (Romano 2000.) Understanding how consumers think and feel about products, companies, and brands at a very detailed level may provide competitive advantage in EC Markets. Measuring attitudes and opinions requires new techniques and instruments.

2. CRM Scholarly and Professional Research Directions and Activities

the increasing importance of CRM as an IS research stream is illustrated through recent scholarly publications and professional activities

2.1 CRM Literature Review

CRM is receiving considerable attention from practitioners, consultants, and researchers (See (Grönroos 1994; Andersen

1999; CRM 1999.)) Within this paper there is not enough space to mention all the coverage received in the past few years. CRM is being researched very heavily in IS and in related fields such as marketing, management, organizational behavior, sociology, psychology, communications and others. This section presents recent CRM publications within IS.

2.1.1 Conference Coverage Of CRM

CRM conference publications are too numerous to mention them all. The focus here is based on the last few years for four major IS conferences, AIS 1998 & 1999, DSI 1998 & 1999, ICIS 1998 & 1999, and HICSS 1997, 1998, 1999 & 2000. This sample illustrates the volume of CRM research taking place and the breadth of research methods, constructs and industry sectors under investigation.

At **HICSS 1997** at least six (6) papers dealt with CRM (See Table 2.)

Table 2 – Papers from HICSS 1997 dealing with EC Customer Relations Management

Authors	Paper Title
Gallagher and Parsons	A Framework For Targeting Banner Advertising On The Internet.
Yan, Paradi and Bhargava	Banking On The Internet And Its Applications
Oliver	Corporate Policies For Electronic Commerce
Matsuda, Clark and Lee	Electronic Commerce For Agricultural Transactions
Lee	Electronic Market Intermediary
Bloch and Segev	The Impact Of Electronic Commerce On The Travel Industry

At **AIS 1998** at least twenty-three (24) papers dealt with Customer Relations Management (See Table 3.)

Table 3 – Papers from AIS – 1998 dealing with EC Customer Relations Management

Authors	Paper Title
Burns and Madey.	Development of a Web-Based Intelligent Agent for the Fashion Selection and Purchasing Process via Electronic Commerce
Ambrose, and Johnson	A Trust Based Model of Buying Behavior in Electronic Retailing
Arunkundram and Kambil	The Impact of Interactive Behavior Modification on Equilibrium Price and Seller Location in Electronic Markets
Ba, Whinston and Zhang	The Design of a Trusted Third Party for Electronic Commerce Transactions
Becker, Farris and Osborn	Electronic Commerce and Rapid Delivery: The Missing “Logistical” Link
Brandtweiner	Risks and Challenges for Retailers: The Value Chain Transformation—A European Perspective
Chen and Sukpanich	Assessing Consumers’ Involvement in Internet Purchasing
Lincke	Business Models for the Implementation of Mediating Electronic Product Catalogs,
Nakayama	Use of EDI and Firm Bargaining Power Shift in Grocery Marketing Channels: An Exploratory Study
Ramaswami, Strader, & Brett	Electronic Channel Customers for Financial Products: Test of Ability-Motivation-Opportunity Model
Salam, Rao and Pegels	An Investigation of Consumer-perceived Risk on Electronic Commerce Transactions: The Role of Institutional Trust and Economic Incentive in a Social Exchange Framework
Salisbury, Pearson, and Harrison	Who’s Afraid of the World Wide Web? An Initial Investigation into the Relative Impact of Two Salient Beliefs on Web Shopping Intent
Shabana, El-Shinnawy, and Ward	Tenancy Relationships: The Case of Anchor Tenants in “Real” and Virtual Malls and Communities
Strader, and Hendrickson	A Framework for the Analysis of Electronic Market Success
Stohr and Viswanathan	Emergent Structures in the Information Economy
Sukpanich and Chen	Exploring the Major Issues of Conducting Business on the Internet
Zimmermann	Business Media: A New Approach to Overcome Current Problems of Electronic Commerce
Wells and Croadsell	Redefining the Fundamental Dimensions of Intangible Service Encounters Through Electronic Commerce
Song and Zahedi	Determinants of Market Strategies in Electronic Markets
Leidner and Galliers	Post-Sales Support for On-line Product Sales: The Challenge Facing Small Global Firms
Pereira	Factors Influencing Consumer Purchasing Behavior in Electronic Commerce
Scharl, and Brandtweiner	Maximizing the Customer Delivered Value with Web-based Mass Information Systems
Tang and Wang	An Electronic Marketing Paradigm for the Information Service Industry

At **DSI 1998** Eleven (11) papers dealt with Customer Relations Management (See Table 4.)

Table 4 – Papers from DSI – 1998 dealing with EC Customer Relations Management

Authors	Paper Title
Smith	Strategies for Uncertainty Reduction in the Service Encounter
Cann and Sebastianelli	Service Quality Dimensions and Customer Satisfaction: The Case of a National Historic Site
Vijayasarathy and Jones	Internet Shopping: Consumer Perceptions and Behavioral Intentions
Jones and Vijayasarathy	Preliminary Results from an Experiment on Perceptions of Internet Catalog Shopping and Traditional Catalog Shopping
Skalnik and Krishnamoorthy	Airlines, The Internet, and The Customer: An Industry in Transition
Fatehi, Derakhshan, and Smith	An Investigation of the Pharmaceutical Industry's R&D and Sales Relationship, 1977-1991
Hensley, and Sulek	Evaluating Service Performance: The Role of the Customer
Van Slyke, Trimmer, and Kittner	A Framework for Planning Customer-oriented Electronic Commerce
Kannan, Tan, Handfield, and Ghosh	Managing Competition, Quality, Customer Relations, and the Supply Base, and Its Impact on Firm Performance
Youssef and Sawyer	The Impact of TQM and DFM on the Ability of Small to Medium Size Firms to Respond to Their Customer Needs
Satterfield	Differences in Manager and Customer Perceptions of Service

At **HICSS 1998** at least eleven (11) papers dealt with Customer Relations Management (See Table 5.)

Table 5 – Papers from HICSS 1998 dealing with EC Customer Relations Management

Authors	Paper Title
Kini and Choobineh	Trust in Electronic Commerce: Definition and Theoretical Considerations
Chang, Kannan, and Whinston	"Goodies" in Exchange for Consumer Information on the Internet: The Economics and Issues
Clemons and Row	Electronic Consumer Interaction, Technology-Enabled Encroachment, and Channel Power: The Changing Balance Between Manufacturers' Electronic Distribution And Established Retailers
Buhl and Will	Economic Aspects of Electronic Commerce in Financial Services and Advantageous Steps to Extended Offers in Internet Banking
Schmid and Lindemann	Elements of a Reference Model for Electronic Markets
Scharl	Reference modeling of commercial web information systems using the extended world wide web design technique (eW3DT))
Selz and Schubert	Web Assessment: A Model for the Evaluation and the Assessment of successful Electronic Commerce Applications
Naudé, Blackman, and Dengler	Real-Time New Product Development in Financial Services: Some Managerial Implications
Kini and Choobineh	Trust in Electronic Commerce: Definition and Theoretical Considerations

At **ICIS 1998** at least three (3) papers dealt with Customer Relations Management (See Table 6.)

Table 6 – Papers from ICIS – 1998 dealing with EC Customer Relations Management

Authors	Paper Title
Goh, Teo, and Wei	Electronic Markets and Intelligent Agents: An Experimental Study of the Economics of Electronic Commerce
Setzekorn, Melcherand, and Rai	IT Value Contingencies: Moderating Effects of Market Responsiveness and Business Strategy
Shaw, T.	Exploring the Role of Identification in the Privacy Decisions of Webmasters

At **AMCIS 1999** at least twenty-seven (27) papers dealt with Customer Relations Management (See Table 7.)

Table 7 – Papers from AIS – 1999 dealing with EC Customer Relations Management

Authors	Paper Title
Gillenson, Sherrell, and Zeltmann	The Use of an Expert System to Dynamically Alter Web Pages for One-to-One Marketing
Pant and Sethi	A Model for Using the Internet and the Web Technologies for New Product Development
Badii	Challenging the Assumptions of Unconstrained Electronic Trade Across the Internet Space
Remington, Moores, , Swanson, and Foltz	Electronic Commerce And The Challenge For IS Planning: Who Will Be The EC-Winners?
Shin	Habermas' Communicative Theory of Action and the Internet Marketing Communication Effectiveness: The Case of Direct E-mail vs. Banner Advertisement
Chrusciel and Zahedi	Seller-based vs. Buyer-based Internet Intermediaries: A Research Design
Senn	Business-to-Consumer Practices in Electronic Commerce
Sohn and Wang	Diffusion Factors and Adoption Levels of the Internet Market: Empirical Analysis for the Computer Retailing Companies
Pedersen and Thomas	The Internet as a Conduit for Marketing to Consumers
Jain Palvia and Vemuri	Advertising Globally on the Internet: New Paradigm or Old Wine in New Bottle
Sakaguchi, Palvia, Nath, Janz and Boller	Consumer-Oriented Electronic Commerce on the World Wide Web: A Comparison of the U.S. and Japanese Practices
Kumar, Munro, Sargent, Leitheiser, and Horton	Global E-Commerce: Issues and Challenges
Liu and Arnett	Assessing the Customer Behavior Intentions on the Web: A Research Model
Lam and Lee	A Model of Internet Consumer Satisfaction: Focussing on the Web-site design
Choudhury, Dumm, and Karahanna	Consumer Channel Choices: The Role of Knowledge and Choice Uncertainty
Jahng, Jain, and Ramamurthy	Product Complexity, Richness of Web-based Electronic Commerce Systems, and System Success: A Proposed Research Framework
Sohn	The Properties of Internet-based Markets and Customers' Behavior
Muthitacharoen	Investigating the Consumer's Attitude toward Internet Shopping
Stafford	Antecedents to Electronic Commerce
Salam, Rao, and Bhattacharjee	Internet-based Technologies: Value Creation for the Customer and the Value Chain Across Industries
Sukpanich, and Chen	Antecedents of Desirable Consumer Behaviors in Electronic Commerce
Tabor	The Customer Talks Back: An Analysis of Customer Expectations & Feedback Mechanisms in Electronic Commerce Transactions
Fung and Lee	EC-Trust (Trust in Electronic Commerce): Exploring the Antecedent Factors
Klose and Lechner	Design of Business Media - An Integrated Model of Electronic Commerce
You, O'Leary, and Nah	Knowledge Sharing with Customers on the WWW: Approaches by National Tourism Organizations
Chen	Reengineering a Call Center Using a Performance Measurement System
Gonsalves, Lederer, Mahaney, and Newkirk	The Customer Resource Life Cycle: An Empirical Validation

At **DSI 1999** at least fourteen (14) papers dealt with Customer Relations Management (See Table 8.)

Table 8 – Papers from DSI – 1999 dealing with EC Customer Relations Management

Authors	Paper Title
O'Malley, Cook, Lankford, Matheson	Electronic Commerce: From Myths And Realities To Organization And Implementation
Vijayasathy, Jones and Gochenouer	Consumer Attitudes and Intentions Towards Internet Catalog Shopping: The Impact of Product Characteristics and Shopping Orientations
Gonsalves, Lederer, Mahaney, and Newkirk	A Validation of the Customer Resource Life Cycle
Shim, Shin, and Shim	Internet Shopping: Exploratory Study on Key Factors in Post-Purchase Services
Luo, Cook, and Ganapathy	Understanding Electronic Bill Presentment and Payment: A Customer Perspective
Verma, Oppewal, and Koelemeijer	Managing Product Variety at Retail Establishments: A Customer-based Approach
Tu, Vonderembse, and Ragu-Nathan	The Impact of Time-Based Manufacturing Practices on Mass Customization and Value to Customer
Verma, and Louviere	A Customer-Based Approach to Designing Capacity Constrained Outdoor Recreation Services at National Forests
Zhu and Wymer	Linking IT-Based Services to Customer Perceptions of Service Quality
Zsidisin and Jun	Dual Direction Customer Service: Case Study Findings From a Language School Intermediary Service
Sulek and Hensley	Customer Disengagement: It's Not How You Start, It's How You Finish
Tracey	Purchasing: Critical to Customer Satisfaction and Organization Performance?
Simons and Russell	A Taxonomy and Cost-Based Model for Customer Batching in Mass Service Operations
Craighead, Karwan and Miller	Empirically-Derived Profiles of Service Failure Encounters: Implications for Service Recovery

At **HICSS 1999** at least nineteen (19) papers dealt with Customer Relations Management, (See Table 9.)

Table 9 – Papers from HICSS 1999 dealing with EC Customer Relations Management

Authors	Paper Title
Danis, Jones, Thompson and Levy	Issues and Concerns in Internet Based Financial Applications: An Example from an Auto Finance System
Lockett, Blackman, Holland and Naudé	Using the WWW as a Medium for Marketing Research in Financial Services: The Case of Xenon Laboratories
Krishna and Ramesh	From Wall Street to Main Street: Reaching out to Small Investors
Standing, Borbely and Vasudavan	A Study of Web Diffusion in Travel Agencies
Yan and Paradi	Success Criteria for Financial Institutions in Electronic Commerce
Panko, Silverstein and Lincoln	Technologies for Extracting Full Value from the Electronic Patient Record
Clark and Lee	Electronic Intermediaries: Trust Building and Market Differentiation
Buxmann and Gebauer	Evaluating the Use of Information Technology in Inter-Organizational Relationships
Dewan, Freimer and Seidmann	Portal Combat: The Battle between Web Pages to become the Point of Entry to the World Wide Web
Poon	The Nature of Goods and Internet Commerce Benefit: A Preliminary Study
Loebbecke	Electronic Trading in On- Line Delivered Content
Lang and Pigneur	Digital Trade of Human Competencies
Koppius	Dimensions of Intangible Goods
Srivastava and Mock	Evidential Reasoning for Web Trust Assurance Services
Toppen, Smits and Ribbers	Improving Process Performance through Market Network ReDesign: A Study of the Impact of Electronic Markets in the Financial Securities Sector
Dutta and Segev	Transforming Business in the Marketplace
Ho and Wu	Antecedents of Customer Satisfaction on the Internet: An Empirical Study of Online Shopping
Dardelet	Breaking the Wall: The Rise of Telemedecine as the New Collaborative Interface
Bauer and Scharl	Acquisition and Symbolic Visualization of Aggregated Customer Information for Analyzing Web Information Systems

At **ICIS 1999** at least ten (10) papers dealt with Customer Relations Management (See Table 10.)

Table 10 – Papers from ICIS – 1999 dealing with EC Customer Relations Management

Authors	Paper Title
Ba, Whinston, & Zhang	Building trust in the electronic market through an economic incentive mechanism.
Dewan, Jing, & Seidmann	One-to-one marketing on the Internet.
Vakrat, & Seidmann	Can online Auctions Beat Online Catalogs
Stewart	Transference As A Means Of Building Trust In World Wide Web Sites.
Noteberg, Christaanse, & Wallage	The Role Of Trust And Assurance Services In Electronic Channels: An Exploratory Study
Katerattanakul, and Siau	Measuring Information Quality Of Web Sites: Development Of An Instrument
Kim and Umanath	An Empirical Investigation Of Electronic Integration In A Supply Chain Relationship.
Menon, Konana, Browne, & Balasubramanian	Understanding Trustworthiness Beliefs In Electronic Brokerage Usage
Son, Narasimhan, & Riggins	Factors Affecting The Electronic Cooperation Between Firms: Economic And Sociological Perspectives.
Kim	Information Sharing and regulation effect in experimental insurance markets

At **HICSS 2000** at least eighteen (18) papers dealt with Customer Relations Management (See Table 11.)

Table 11 – Papers from HICSS 2000 dealing with EC Customer Relations Management

Authors	Paper Title
Dewan, Jing, Seidman	Adoption of Internet-based Product Customization and Pricing Strategies
Vakrat & Seidman	Implications of the Bidders' Arrival Process on the Design of Online Auctions
Bichler	A Roadmap to Auction-based Negotiation protocols for electronic commerce
Raupp & Schoder	Why Buyer-Supplier Chains Differ: A Strategic Framework for Electronic Network Organizations
Anckar & Walden	Becoming Your Own Travel Agent: A Web of Potentials and Pitfalls
Swan, Newell, Robertson	Knowledge Management - When will People Management Enter the Debate?
Liang & Lai	Electronic Store Design and Consumer Choice: an Empirical Study
Wells & Fuerst	Domain-Oriented Interface Metaphors: Designing Web Interfaces for Effective Customer Interaction
Forbes & Rothchild	Toward an Understanding of Consumer Experience on the Internet: Implications for Website Design
Alwitt & Hammer	The Effect of Internet Experience on Consumer Expectations of Responsiveness and Control in Offline Services Marketing Interactions
Parsons, Gallagher, & Foster	Messages in the Medium: An Experimental Investigation of Web Advertising Effectiveness and Attitudes toward Web Content
Korner & Zimmerman	Management of Customer Relationship in Business Media - The Case of the Financial Industry
Ahola, et. al	Customer Delivered Value in a Web-based Supermarket
Lee & Gosain	Price Comparison for Music CDs in Electronic and Brick-and-mortar Markets: Implications for Emergent Electronic Commerce
Yen, Hu, & Bui	Intelligent Clearinghouse: Electronic Marketplace with Computer-Mediated Negotiation Supports
Coste	Fighting Speech with Speech: David Duke, the Anti-Defamation League, Online Bookstores, and Hate Filters
Domazet et. al.	An Infrastructure for Inter-Organizational Collaborative Product Development
Romano et. al	The MindMine Comment Analysis Tool for Collaborative Attitude Solicitation, Analysis, Sense-Making and Visualization

2.1.2 Journal Coverage Of CRM

CRM topics are increasingly published in academic journals. The journals in which the topic is discussed are too numerous to mention within this paper, therefore a list of some of the more important IS journals is given and then sample references from the past five years are briefly discussed (See Table 12) and following sections.

Table 12. Journals in which IS related CRM articles have appeared over the last five years include but are not limited to:

Journal	URL Address
Communications of the ACM (& other ACM Journals)	http://www.acm.org/catalog/journals/homepage.html
Decision Support Systems	http://www.elsevier.com:80/locate/dss
Electronic Commerce Research Journal	http://www.baltzer.nl/ecr/
Electronic Markets	http://www.electronicmarkets.org/
Harvard Business Review	http://www.hbsp.harvard.edu/products/hbr/
IBM Systems Journal	http://www-1.almaden.ibm.com/journal/sjimg.html
IEEE Computer (& other IEEE Journals)	http://www.ieee.org/pubs/pubs.html
Information and Management	http://www.elsevier.nl/homepage/sae/orms/infman/menu.sht
The Information Society	http://www.slis.indiana.edu/TIS
Information Systems Research	http://www.isr.commerce.ubc.ca/
Information Technology & Management Journal	http://www.baltzer.nl/itm/itm.asp
International Journal of Electronic Commerce	http://www.cba.bgsu.edu/ijec/
International Journal for Electronic Markets	http://www.cni.org/Hforums/arl-ejournal/1997/0138.html
Journal of the Association for Information Systems	http://jais.aisnet.org/
Journal of Computer-Mediated Communication	http://www.ascusc.org/jcmc/ – See Vol. 1, No. 3 Dec. 1995
Journal of Management Information Systems (JMIS)	http://www.mesharpe.com/mis_main.htm
Journal of Organizational Computing and Electronic Commerce	http://www.erlbaum.com/html/2746.htm
MIS Quarterly	http://www.misq.org/
Sloan Management Review	http://mitsloan.mit.edu/smr/

Following is a year-by-year representative sample of CRM literature from 1995 to 1999 to introduce topics researched, methods employed, researchers involved, and journals in which papers are published. It is not intended to focus on any specific research question or objective, but rather to make readers aware of published CRM literature. (*At the time of this writing First quarter 2000 Journal issues were just becoming available.*)

2.1.2.1 1995: Vendor/customer dialect and how to improve product differentiation and comparability was discussed in one study (Baty 1995.) Another paper discussed electronic markets and virtual value chains (Benjamin 1995.) Commercial challenges and opportunities on the web were considered and it was predicted that EC would suffer setbacks due to lack of consumer interest (Hoffman 1995.) One unique study used fuzzy set theory to measure purchasing attitudes and decision-making style preferences in older consumers (Fisher 1995.)

2.1.2.2 1996: One study discussed how value is derived from online communities (Arnstrong 1996.) Another discussed how virtual shopping offers new opportunities for marketing research (Burke 1996.) Consumer reactions to electronic

shopping were studied and product perceptions, shopping experience, and customer services were identified as major factors for consumers (Jarvenpaa 1996.) Cyberspace market research is considered a virtual reality and researchers are seriously exploring new research techniques to access online customers (Pring 1996.) Initiatives aimed at quantifying cyberspace (particularly on websites) visits by online customers were discussed and there is a growing interest to conduct primary market research through interactive online interviews (Pring 1996.) GSS is specifically suggested as an alternative to focus groups (Soutar 1996.) Internet-based questionnaires linked off of web pages are described but the technology was not quite ready to do interactive interviewing over the net (Gjestland 1996.)

2.1.2.3 1997: Knowledge-creating customer support processes for the electronic economy are described (El Sawy 1997.) Designing better interfaces for EC in electronic shopping malls was studied (Kim 1997.) Internet GSS focus groups are suggested for groups with geographically dispersed members (Sweeney 1997.)

2.1.2.4 1998: It is argued that Institutional rules, regulations, and monitoring functions may play a significant role in the

promotion of efficiency and transparency along the value chain in electronic markets (Bakos 1998.) One study found that transaction costs play a key role in consumer selection of electronic channels in an empirical study (Liang 1998.) Another study explored how customer interfaces can lead to Internet sales (Lohse 1998.) Current models were found to inadequately capture the complexity of electronic markets when considering when buyers use an electronic market and how electronic markets affect prices, inventory levels, and the role of brokers (Choudhury 1998.) Characteristics of three commonly implemented digital retailing approaches, catalog search, bundling, and virtual reality storefront, and the suitability of each approach for EC were investigated (Westland 1998.) The only significant difference found was time spent shopping, which tends to be longer for virtual reality storefronts (Westland 1998.) Customers are not likely to spend more on merchandise just because it is presented via a virtual reality storefront interface (Westland 1998.) Four new and innovative primary Internet marketing research methods were identified: Online focus groups; Chat rooms/bulletin boards, Survey panels, and Observation studies through virtual reality and simulated environments (Kannan 1998.) Additionally it is suggested that online methods, such as simulated products and environments and "storytelling," could provide real-time feedback from diverse respondents if implemented online (Kannan 1998.)

2.1.2.5 1999: The past thirty years have seen dramatic changes in "how" researchers conduct marketing research due to prevailing best practices developments and the availability of new technology (Lockett 1999.) It is asserted that the most effective way for commercial Web providers to develop profitable exchange relationships with online customers is to earn their trust (Hoffman 1999.) It is also argued that trust is best achieved by allowing the balance of power to shift toward a more cooperative interaction between an online business and its customers (Hoffman 1999.) A study of predictors of online buying behavior found that looking for products on the Internet is the most important predictor of online buying behavior (Bellman 1999.) Demographics are not considered to be good predictors, but a "wired" lifestyle and time starvation are better indicators of buying behavior (Bellman 1999.) Methods recommended to improve sales are to make it more convenient to buy standard or repeat-purchase items, customization to provide information needed to make a purchase decision, and for checkout processes to be very easy for customers (Bellman 1999.) One study found that suppliers, for strategic reasons, may impede or selectively channel the flow of information in "free" market space, and that depending on the markets and consumers involved, this may lead to either fragmentation or to integration (Grover 1999.) One paper claims that "Internet research marketing firms already know that email is currently the Internet's true "killer application" (Dysart 1999.) It is argued that an artfully leveraged and ethical email-marketing strategy can be far superior to the most well designed web sites (Dysart 1999.)

The present challenge for Internet survey research is identified as how to efficiently and effectively conduct 'valid' studies (Zhang 1999.) Even though the Internet offers many new survey research opportunities and it has been employed for many survey studies, little research has explored the Internet survey research approach itself (Zhang 1999.) It is unclear how to improve the quality of survey data through specific techniques (Zhang 1999.) Several potential problems and concerns unique to internet based surveys were identified: Biased samples and biased returns; Limited access to the internet and a specific survey; comfort

with Internet survey format; selection effects; respondent validity; potential for multiple responses from the same person, potential for participants to drop-out before completing the survey; and unusable responses (Zhang 1999.) Perhaps the greatest challenge is due to a lack of research guidelines in this area (Zhang 1999.) To date the Web has not been used as often as email, news groups, and mailing lists for formal survey research (Zhang 1999.)

2.1.2.1 2000: Knowledge management, the creation, sharing, and managing of knowledge that can provide competitive advantage, is an imperative for information-intensive organizations (Parent 2000.) New collaborative technologies have revitalized interest in focus groups to create knowledge about new products, processes, and procedures (Parent 2000.) Two experiments found that face-to-face GSS made it possible to enhance knowledge creation in focus groups (Parent 2000.) In the first, GSS focus groups created more knowledge in terms of the number of relevant ideas than non-GSS groups (Parent 2000.) GSS focus groups in the second experiment generated more ideas of higher quality than non-GSS focus groups (Parent 2000.) These findings suggest that GSS can enhance the knowledge captured about new products by improving both productivity, in terms of the quantity of ideas generated, and effectiveness, in terms of the quality of ideas generated (Parent 2000.) One study developed a framework for customer relationships in small software firms (Alajoutsijarvi, 2000.) Another study examined how to balance the tension between differing requirements of consumers and vendors in electronic commerce systems and described a conceptual IT framework for enhancing Web-based shopping systems (Oinas-Kukkonen, 2000.) One study examined the impact of EC retailing across four retail formats and found that that cost variability decreased and that Web delivery time was faster from 1995 to 1997 (Palmer, 2000). Results of one study illustrated that consumers can recognize differences in internet store size and reputation, and that those differences influence assessments of store trustworthiness and perception of risk, as well as willingness to patronize the store, and therefore questions the conventional wisdom of a "level playing field" for large and small internet retailers and for retailers with and without established reputations (Jarvenpaa, 2000.)

2.2 CRM Publications and Professional Activities

Several special journal issues and conference minitracks devoted to EC and CRM have or are soon to take place.

2.2.1 Journal Special Issues

Prominent journals are planning near future special issues for CRM and EC. Although some deadlines will have passed by the AMCIS conference, these are excellent future sources of CRM literature.

Electronic Markets will publish a special issue on "Electronic Commerce and Marketing" in 2000. Guest Editors are Professor Torsten Tomczak (Torsten.Tomczak@UNISG.CH) & Dr. Marcus Schögel (Marcus.Schoegel@UNISG.CH) See the call for papers at http://www.electronicmarkets.org/electronicmarkets/electronicmarkets.nsf/pages/em00_3.html

Decision Support Systems will publish a special issue on "Decision Support Issues in Customer Relationship Management and Interactive Marketing for e-Commerce" to be Co-Edited by Professors P. K. Kannan (PKannan@rhsmith.umd.edu) and H. Raghav Rao (mgmtrao@buffalo.edu.) Details can be found at <http://cism.bus.utexas.edu/CISM/DSS/Dss.html>. The deadline for submissions is May 31st, 2000.

Information Systems Research will publish a special issue on "Electronic Commerce Metrics for Information Systems Research" to be edited by Detmar Straub (dstraub@gsu.edu.) The deadline for submissions is December 31st, 2000. <http://www.isr.commerce.ubc.ca/>

IEEE Computer Magazine will Publish a Special Issue on Electronic Commerce in October 2000. Guest editors are Andrew B. Whinston (abw@uts.cc.utexas.edu), Ronald J. Vetter (vetter@uncwil.edu), and Kathleen Swigger (kathy@cs.unt.edu.) See the Call for Papers at <http://cism.bus.utexas.edu/news/computer00.html>. The deadline for submissions is April 1st, 2000.

Industrial Marketing Management will Publish a Special Issue on "Internet-based Business-to-Business Marketing" sometime in 2000. Guest Editor is George T. Haley (ghaley@asia-pacific.com.) Deadline for Submissions is May 1st, 2000. See the Call for papers at <http://www.asia-pacific.com/imm.htm>.

Electronic Commerce Research Journal will Publish a Special Issue on "Theory and Application of Electronic Market Design" in Early 2001. Guest Editors are Martin Bichler (martin.bichler@wu-wien.ac.at), University of Economics and BA, Vienna, Austria; Simon Field (), IBM Zurich Research Lab, Switzerland; and Hannes Werthner (Hannes.Werthner@wu-wien.ac.at), University of Economics and BA, Vienna, Austria. The deadline for submissions is June 1st, 2000.) See the call for papers at <http://www.baltzer.nl/ecr/calls/emdesign.asp>

Decision Support Systems Journal will Publish a Special Issue on "Web Data Mining", Sometime in 2000. Guest Editors are Sid Bhattacharyya (sidb@uic.edu) and Gary J. Koehler (koehler@ufl.edu.) The deadline for Submissions is July 31st, 2000. See the call for papers at http://128.227.36.67/DIS/WebKDD_CFP.htm

Interfaces will publish a Special Issues on "OR/MS in the digital economy". Guest Editors are Arthur Geoffrion (ageoffri@anderson.ucla.edu) and Ramayya Krishnan (rk2x@andrew.cmu.edu.) A companion Website will carry supplementary materials. As a follow-on to the special issue, the editors will host a new e-Business Forum in Interfaces that will publish full-length papers and shorter notes. Nov.-Dec. 2000.

Management Science will publish a Special Issue on "OR/MS in the digital economy". Guest Editors are Arthur Geoffrion (ageoffri@anderson.ucla.edu) and Ramayya Krishnan (rk2x@andrew.cmu.edu.) No specific deadline nor publication information is available.

2.2.2 Special Interest Groups

There are several Special Interest Groups within IS related Professional Organizations associated with CRM.

ACM Special Interest Group on Electronic Commerce
(AKA ACM SIGEcom at <http://www.acm.org/sigecom/>)

Marketing Science Institute <http://www.msi.org/>

ECRM 29th February - 2nd March 2000 Central London
<http://www.business-intelligence.co.uk/conferences/ecrm/default.asp>

SIGCPR 2000 Conference: "Electronic Commerce and Internet Business: Roles, Relationships, Skills and Strategies for the New Millennium," Chicago, Illinois, USA, 6-8 April, 2000.
<http://www.acm.org/sigcpr/sigcpr00.htm>

COLLECTeR (USA) 2000, Fourth COLLECTeR - First COLLECTeR (USA) - Conference on Electronic Commerce, Breckenridge, Colorado, USA, 11 April, 2000.
<http://www.collector.org/collector2000.htm>
INFORMS College on Marketing
<http://www.bus.ualberta.ca/informs/>

INFORMS Information Systems Society
(ISS- <http://pc29112.utdallas.edu/iss/iss.htm>)

2.2.3 Recent and up Coming EC CRM Conferences

There are a number of annual conferences which have or will publish articles on CRM. These conferences are listed here in order based on the date of the event. Minitrack, Debates, and other special activities specifically related to CRM are highlighted.

1st International Conference on Electronic Commerce and Web Technologies (EC-Web 2000), London, Greenwich, U.K., 4-6 September, 2000. <http://www.dexa.org/>

EC'00: The 2nd ACM Conference on Electronic Commerce

MARKETING SCIENCE CONFERENCE 2000 "Marketing for the New Millennium"
INFORMS Marketing Science Conference, Los Angeles, June 22-25, 2000. <http://www.informs.org/Conf/Marketing/LA00.html>

1st International Conference on Electronic Commerce and Web Technologies EC-Web 2000
September 4-6, 2000 London-Greenwich, United Kingdom
<http://cherry.faw.uni-linz.ac.at/ecweb/>

Twenty First Annual International Conference on Information Systems (ICIS'00), Brisbane, Australia, 10-13 December, 2000.
<http://www.sims.monash.edu.au/icis2000/>

ICIS 2000 – Debates Debates on issues that are critical to the field. Debates are formalized discussions in which a provocative proposition is presented with clarity and eloquence and then disputed with equal effectiveness.
One Debate Topic could be "Electronic commerce requires a new business model."

INFORMS Fall 2000 Meeting, San Antonio, Texas, on November 5-8, 2000.
<http://ie.tamu.edu/informs2000/>

Seventh Research Symposium On Emerging Electronic Markets
"Electronic Markets ? From Business Strategies to Implementation"
St.Gallen, Switzerland, September 17th to 19th, 2000.
Submit of abstracts by June 10, 2000 to: Ulrike Lechner (Ulrike.Lechner@unisg.ch) and Katarina Stanoevska-Slabeva (Katarina.Stanoevska@unisg.ch)

Thirty-Fourth Annual Hawai'i International Conference on System Sciences HICSS-34 January 3-6, 2001
Outrigger Wailea Resort Maui, Hawai'i <http://www.hicss.hawaii.edu/>
Minitrack on eCommerce Customer Relations Management in the Internet and the Digital Economy Track – Chair Nicholas C. Romano, Jr. (Nicholas-Romano@Utulsa.edu)
http://www.hicss.hawaii.edu/HICSS_34/intmini.htm#EC_Customer_Magmt

3.0 Summary

This paper has presented a Framework for CRM Research Topics within IS, a discussion of scholarly and professional research directions and activities, and links to industry references which may be useful to IS CRM researchers. The plethora of research in this area illustrates how important the topic of CRM currently is to the IS research community, but further it underscores that the topic has become increasingly significant over the last five years. The author hopes that the paper informs and educates readers about CRM research and professional activities within the IS research community and stimulates continued scholarly work in this important area. Additionally it is hoped that curriculum development in this area will increase to match the momentum of the research already underway.

October 17 - 20 2000 Minneapolis, Minnesota, USA.
<http://www.ibm.com/iac/ec00/>

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