Spring 2003

WELCOME to Research@Smith, an informative look at some of the leading-edge research going on at the Robert H. Smith School of Business.

The Smith School's faculty research interests encompass a broad, dynamic mix of functional and netcentric economy issues. The Smith School has numerous research projects ongoing, and Research@Smith is the medium to keep you informed about many of these projects.

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UPCOMING CONFERENCES AT THE SMITH SCHOOL OF BUSINESS

Using Teams to Leverage Organizational Knowledge and Create Competitive Advantage. April 25, 2003

Smith's Center for Human Capital, Innovation, and Technology launches The Knowledge Exchange, a series of briefings for researchers and managers, with a discussion of teams in 21st-century organizations. For details, visit www.rhsmith.umd.edu/hcit/conference.html.

Marketing Science Conference
June 12-15, 2003

The Marketing Science Conference features presentations on the latest quantitative research in the field of marketing. The annual event for academics and practitioners is sponsored by INFORMS, the Institute for Operations Research and the Management Sciences. Smith School marketing professors Brian C. Ratchford, Roland T. Rust, and Venkatesh "Venky" Shankar are co-chairs of the 2003 conference committee. For further information, visit www.rhsmith.umd.edu/marketing/ms/.

Frontiers in Services Conference
October 23-26, 2003

Join noted service experts from around the world for the 12th Annual AMA Frontiers in Services Conference, co-sponsored by the Center for e-Service at the Robert H. Smith School of Business and the American Marketing Association. Considered by many as the leading global conference on service research, the event draws scholars and business people to discuss a wide range of topics including e-service, customer relationship management, service marketing, service operations, and service human resources. For information, visit www.rhsmith.umd.edu/ces/

KUDOS

Dean Howard Frank and **Professor Emeritus Saul I. Gass** were inducted as Fellows of the Institute for Operations Research and the Management Sciences (INFORMS) at the organization's national meeting in November 2002. This is the inaugural group of INFORMS Fellows, and represents the most prominent members of INFORMS and leaders in the field of operations research.

Steven Heston, assistant professor of finance, was named to the Risk Hall of Fame, a list of "the 50 most important and influential" people from industry and academia in the field of risk management. Heston earned this distinction for his groundbreaking research in stochastic volatility option pricing. He joined the Smith School faculty in 2002 after serving on the faculties at Yale, Columbia, and other schools, and more recently, developing risk models for quantitative equity management at Goldman Sachs.

Soeren Hvidkjaer, assistant professor of finance, and co-authors David Easley and Maureen O'Hara, both from Cornell University, received the 2002 Smith Breeden Distinguished Paper Prize for their paper, "Is Information Risk a Determinant of Asset Returns?," published October 2002 in the Journal of Finance. The Smith Breeden awards annually recognize the top three papers published in the journal, one of the leading publications in the field of financial economics.

The book, Driving Customer Equity, co-authored by Smith School professor **Roland Rust**, Valarie Zeithaml (University of North Carolina), and Katherine Lemon (Boston College), was named the inaugural winner of the Berry-AMA Book Prize by the American Marketing Association. The award recognizes the most influential book in marketing published during a three-year period. Rust is holder of the David Bruce Smith Chair in Marketing, director of the Center for e-Service, and chair of the marketing department. Zeithaml received her doctorate from the University of Maryland in 1980.

Scott Shane, professor of entrepreneurship, received the 2002 Best Paper Award at the Babson Conference on Entrepreneurship. Members of the Smith School faculty have won the award in three of the last five years: Shane was the 1999 recipient and J. Robert Baum, assistant professor of entrepreneurship, was recognized in 2001.

Alexander Triantis, associate professor of finance, has been appointed to the advisory board of the Journal of Corporate Finance.

Viswanath Venkatesh, associate professor of information systems, has been asked to serve as an associate editor of Information Systems Research. Venkatesh already serves as an associate editor of MIS Quarterly.

Performance Monitoring for Wide-area Applications

Research by Louiqa Raschid

RAPID ADVANCES IN TECHNOLOGY HAVE LED MORE AND MORE ORGANIZATIONS TO RELY ON WIDE-AREA WEB-BASED APPLICA-TIONS TO CONDUCT BUSINESS. THESE WIDE-AREA APPLICATIONS TYPICALLY CONNECT HUNDREDS OF CONTENT SERVERS – WEB SITES THAT PUBLISH DYNAMIC AND UPDATED INFORMATION ON A CONSISTENT BASIS – WITH TENS OF THOUSANDS OF CLIENTS, OR USERS OF THE APPLICATIONS. DESPITE THE PROMISE THAT THESE ADVANCED APPLICATIONS HOLD, USERS FACE SIGNIFICANT CHALLENGES.

"For example, the unpredictable behavior of sources over the dynamic Internet often results in a wide variability in access latency, and that end-to-end delay may depend on both network and server workloads," says Louiqa Raschid, professor in the decision and information technologies department at the Robert H. Smith School of Business. Raschid holds a joint appointment with the University of Maryland's Institute for Advanced Computer Studies and Department of Computer Science and serves as co-director of the Laboratory for Computational Linguistics and Computer Processing.

Raschid believes the reliability and widespread use of wide-area applications will depend on the ability to monitor and predict end-to-end client-side performance. That's why she is heading a research project, "Digital Resource Profiling for Wide-area Applications." The project, funded through a $450,000 grant from the National Science Foundation, involves a comprehensive study of the changing behavior of digital resources over time, across different applications when they are accessed on the Internet.

Although there are currently commercial solutions for performance monitoring offered by such companies as Appliant and Keynote Systems, such solutions are built for specific platforms or services. The objective of Raschid's research is to explore open technology and tools for performance monitoring that would be scalable to large numbers of clients and servers. "Now, if you want performance guarantees, you need to commit to a particular proprietary technology or platform," says Raschid.

Raschid has collaborated with the Corporation for National Research Initiatives (CNRI) on the project because, as the developer of the "Handle" protocol, CNRI provides an ideal test-bed for the study. The "Handle" protocol is an advanced alternative to the more familiar “URL” system for storing and locating digital objects on the Internet. Applications using the Handle system are being implemented by a growing number of organizations. The publishing community is using the Handle protocol with a wide-area application that involves the Digital Object Identifier (DOI), a system for identifying and exchanging intellectual property on the Internet. It is expected that this application will need to support tens of millions of Handles, thousands of content servers, and large numbers of Handle clients.

“The challenges are efficiency and reliability of resources on the network,” says Larry Lannom, director of information management technology for CNRI.

Take, for example, CNRI’s D-Lib Magazine, which relies on the DOI technology to connect subscribers to digital files via the Internet. The magazine has mirror sites all over the world, but currently has no way to ensure that users are accessing the most appropriate sites.

“What we need are some real Internet distance measures, to show where users are in reference to the mirror sites,” says Lannom. “Just because you are in Argentina, it doesn’t mean Brazil is the best site for you.”

Raschid and her team of researchers are conducting an extensive performance-monitoring experiment, in which they passively monitor the performance of multiple clients while they are running an application using the Handle system. The application resolves a set of Handles, and then downloads digital content from servers associated with the DOI. The goal is to develop resource profiles that can be used to customize service and information delivery to clients, considering both the semantics of the application and the “noisy” Internet environment.

“We will combine passive performance monitoring with simple statistical techniques and more sophisticated machine-learning techniques to construct a ‘latency profile’ that reflects delays in resolving Handles and downloading content,” says Raschid.

Researchers hope that their findings will lead to a consistent framework for profiling and will determine to what extent profiling can be used to improve a client’s availability to resources. Formal results developed in the theoretical study will be evaluated on large-scale applications, including a study of rapid response electronic markets for time-sensitive goods currently under way in the Smith School’s Center for Electronic Markets and Enterprises.

Other collaborators on the three-year digital profiling study include Galit

Shmueli, assistant professor of management science and statistics at the Smith School; Avi Gal, a professor at the Faculty of Industrial Engineering & Management, Technion—Israel Institute of Technology; and Vladimir Zadorozhny, an assistant professor at the School for Information Sciences, University of Pittsburgh.

For more information, e-mail louiqa@umiacs.umd.edu or visit http://www.sis.pitt.edu/~vladimir/projects/Nebula.

Public Information May Not Level the Playing Field for Investors

Research by Oliver Kim

A NEW STUDY BY OLIVER KIM, ERNST & YOUNG PROFESSOR OF ACCOUNTING AT THE ROBERT H. SMITH SCHOOL OF BUSINESS, CHALLENGES THE TRADITIONAL VIEW THAT THE RELEASE OF EARNINGS INFORMATION CREATES A "LEVEL PLAYING FIELD" IN TERMS OF INFORMATION AVAILABLE TO INVESTORS.

The research by Kim, Orie E. Barron of Pennsylvania State University, and Donal Byard of Baruch College, City University of New York (a former student of Kim), examines changes in the precision and the commonality of information contained in individual analyst's earnings forecasts, focusing on changes around earnings announcements. The researchers conclude that the amount of analysts' idiosyncratic, or uniquely obtained, information increases immediately after earnings announcements. This casts doubt on the commonly accepted idea that earnings announcements level the informational playing field, and questions the effective-ness of the accounting rule that requires the release of information in order to increase the proportion of common information among investors.

Kim's study provides evidence that analysts generate significant idiosyncratic information around earnings announcements. This finding is consistent with his earlier study that suggests when companies make public financial disclosures, they trigger additional information gathering and processing by investment analysts. This results in the analysts obtaining new information in addition to that released publicly.

"This effect is very surprising," observes Kim. "It is also important, because it means we have to rethink the role of mandated accounting disclosure. The end result is not what was intended – that information becomes more common. This effect should be explicitly considered by the rule makers." Although common information also increases around earnings announcements, the study suggests that the relative increases in uniquely obtained information are larger, so that the percentage of total information that is common decreases. Further, the research documents that, after earnings announcements, there is an increase in the likelihood that the mean forecast of analysts is more accurate than the most recent individual forecast. This arises because the increase in the idiosyncrasy of analysts' information after earnings announcements increases the value of additional forecasts, and combining somewhat outdated multiple forecasts turns out to be better than depending upon the newest forecast alone.

Because analysts' common and idiosyncratic information is unobservable, the evidence is indirect, Kim notes. The findings are also limited to the sample used in the study: analysts who follow large firms and who actively update their earnings forecasts.

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The study lays a foundation for additional research on the topic. In the past, research in financial accounting has typically focused on the relationship between stock price and earnings.

"But the world is more complicated," Kim says. "There are other things you can look at in addition to, or instead of, price." In earlier studies, Kim examined the characteristics of the information used by analysts, measuring its precision and commonality by observing forecast dispersion and the accuracy of forecasts. He also studied trading volume and the bid-ask spread, and their association with earnings. Analysts' forecasts are interesting to study, he notes, because unlike price, volume, and spread, at a given point in time there are many numbers associated with earnings, rather than just one.

Kim has been exploring this area for five years. The results of the most recent study, "Changes in Analysts' Information Around Earnings Announcements," were published in the October 2002 issue of The Accounting Review.

Kim's current research topics include theory of earnings-per-share computation and financial statement analysis.

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Socially Responsible Management of the Supply Chain

Research by Craig Carter

PRACTICING SOCIALLY RESPONSIBLE SUPPLY CHAIN MANAGEMENT NOT ONLY BENEFITS SOCIETY, A SMITH SCHOOL PROFESSOR SAYS, IT CAN HAVE A POSITIVE IMPACT ON A FIRM'S PERFORMANCE.

Craig Carter's personal interest in the environment, and his recognition that there are many opportunities for businesses to cut costs by building environmentally responsible practices into their supply chain operations, led him to study environmental purchasing and supply management. His recent research suggests that creating a corporate culture that is responsive to social issues may enhance the firm's competitive position through improved stakeholder relationships.

After earlier research projects examining environmental, social, and ethical issues in supply chain management and logistics, Carter, assistant professor of international supply chain management, focused on a significant gap in the supply chain management field: no one had studied how these three dimensions interrelate. His recent work with Marianne M. Jennings of Arizona State University explores logistics social responsibility (LSR) within an integrative framework, examining several dimensions of socially responsible supply chain practices.

Carter and Jennings' work contributes to the logistics literature by creating a framework that ties together fields of inquiry that were previously unrelated, and by introducing a series of propositions intended to help guide further research. The approach considers LSR along five dimensions: environmental issues, diversity, human rights and quality of work life, philanthropy, and safety. The research also examines drivers and barriers of implementing LSR activities, and potential consequences of LSR.

While this study was restricted to three functional areas (purchasing, transportation, and warehousing) in manufacturing industries, the findings suggest that there are many positive outcomes from LSR practices. These include improved trust with stakeholders, increased performance by stakeholders, and, potentially, improved financial performance. Survey data on purchase decisions and financial performance show a significant relationship of LSR to cost of goods sold and net income.

An organizational culture that both facilitates and encourages the desire to be a good corporate citizen positively influences LSR, Carter notes. Individual managers also have an impact. “We found that while top management has no direct impact on socially responsible management of the supply chain, it does have a very important indirect impact by setting corporate culture,” says Carter. “There is a significant relationship between corporate culture and socially responsible purchasing."

“Employee initiatives are big drivers of corporate social responsibility,” Carter continues. “Often, it is an employee or middle manager who initiates a socially responsible logistics practice. When the right corporate culture is in place, these people can convert others to their cause.”

“On the environmental dimension, eliminating waste from the system can reduce costs,” notes Carter. On the safety dimension, the research supported the fact that companies lose money when there are safety problems. The researchers also found that LSR results in improved employee motivation, which was accompanied by an increase in job satisfaction.

The effect of supplier diversity is more anecdotal. Carter and Jennings report that managers view supplier diversity as more than just window-dressing. For example, consumer-products companies find that if their suppliers match their customers’ demographics, they can contribute ideas on how to better meet the needs and preferences of consumers.

The approach considers LSR along five dimensions: environmental issues, diversity, human rights and quality of work life, philanthropy, and safety.

LSR practices tend to increase satisfaction throughout the buyer-supplier relationship, including customer relationships. Analysis of qualitative data suggests that logistics social responsibility results in improved supply chain relationships, including improved performance by suppliers and motor carriers, improved performance in the firm’s customer service, and the establishment of trust with customers and suppliers. “Suppliers report a greater level of satisfaction and trust with companies that are more socially responsible, making them more willing to help,” Carter explains. “If companies don’t treat their suppliers well, it can hurt them in the long term."

“In the end, all you have is your reputation, as a company and as an individual. If you don’t have good relationships with your suppliers, your reputation will stay with you and it will affect all your buyer-supplier relationships."

Carter and Jennings published papers on their research in the Journal of Business Logistics and in Transportation Research. Carter's work on socially responsible management of the supply chain also appears in the Journal of Operations Management and Decision Sciences. His LSR scholarship has received funding from the Lincoln Center for Ethics Research, the Center for Advanced Purchasing Studies, and the Institute for Supply Management.

For further information on this research or Carter's work examining issues in international supply chain management, e-mail ccarter@rhsmith.umd.edu or visit his Web site: http://www.rhsmith.umd.edu/lbpp/ccarter/ccarter.htm.

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