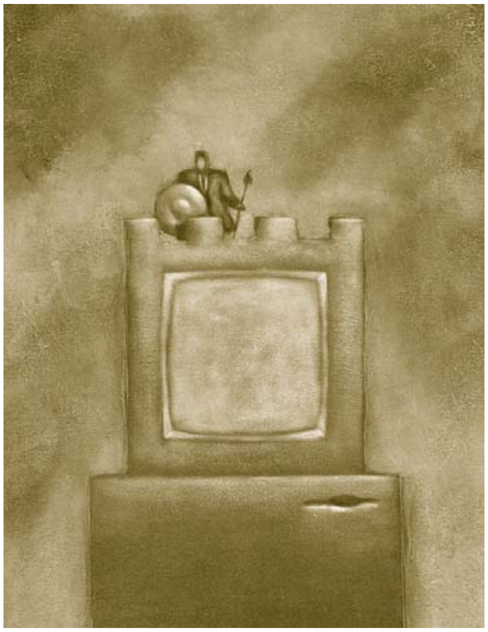

Fall 2002

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.

IN THIS ISSUE

NEWS

Faculty Appointments

The Robert H. Smith School of Business is pleased to welcome 16 new professors and two visiting faculty members this year.

Decision and Information Technologies
Cheryl Druehl, Anandasivam Gopal, Itir Karaesmen, Abhay Mishra, Galit Shmueli

Entrepreneurship
Brent Goldfarb, Saras Sarasvathy

Finance
Jeffrey Bevelander, Louis Gattis Jr., Steven Heston

Logistics, Business and Public Policy
Angelisa Gillyard, Walter Hutchens

Management and Organization
Jeffrey Kudisch, Timothy Pollock

Marketing
Sanjay Jain, Joydeep Srivastava

Visiting Faculty Members
Chrisoula Papadopoulou,
Dilip K. Patro

Department of Accounting and Information Assurance

The accounting department at the Smith School of Business has been renamed the accounting and information assurance department. This change recognizes the transformation of the research, teaching, and practice of the accounting discipline resulting from increased concern about information and information system security. Accounting faculty members at the Smith School are actively engaged in research projects related to the economic, behavioral, and risk management aspects of information security (assurance). Several faculty members are working with corporations on the implementation of information assurance policies. In addition, information assurance is now an integral part of most accounting courses at Smith.

WORKING PAPERS

Michael Ball, **Robert Hoffman**, and **Thomas Vossen**. "An Analysis of Resource Rationing Methods for Collaborative Decision Making"

Robert Baum. "Entrepreneurial Orientation and Strategic Decision Speed: The Role of Automatic Compressed Experience and Experimentation"

Philip T. Evers and **Elliot Rabinovich**, (Ph.D. '01). "Postponement Effects on Inventory Performance and the Impact of Information Systems"

Wolfgang Jank and **James Booth**. "Efficiency of Monte Carlo EM and Simulated Maximum Likelihood in Two-Stage Hierarchical Models"

James E. Post, **Lee E. Preston**, and Sybille Sachs. "Managing The Extended Enterprise: The New Stakeholder View"

Joydeep Srivastava and **Dipankar Chakravarti**. "Bargaining Under Asymmetric Information Channels: Influence of Explicit Communication and Trustworthiness Reputation"

Deepak Somaya. "The Impact of Firm Strategies and Litigation Tactics on the Length of Patent Suits"

Gilvan C. Souza. "Product Introduction Decisions in a Duopoly"

Ian O. Williamson, **David A. Lepak**, and James King. "The Effect of Company Recruitment Web Site Orientation on Job Seekers' Perceptions of Organizational Attractiveness"

Frédéric Delmar and **Scott Shane**. "Does Business Planning Facilitate the Development of New Ventures?"

UPCOMING ACADEMIC EVENTS

THE 13TH ANNUAL CONFERENCE ON FINANCIAL ECONOMICS AND ACCOUNTING

THE FIFTH MARYLAND FINANCE SYMPOSIUM

NOVEMBER 15 AND 16, 2002

University of Maryland, College Park

The Maryland Finance Symposium is a program offered biennially by the finance department of the Robert H. Smith School of Business at the University of Maryland to provide a forum for presentation and discussion of contemporary issues in finance by leading scholars. This year, the Maryland Finance Symposium will be held in conjunction with the annual conference of the Financial Economics and Accounting Association presented by Smith's finance and accounting and information assurance departments. The University of Maryland is a member of the association, a select group of institutions that includes the University of Texas, University of Michigan, Indiana University, and New York University. For further information, visit www.rhsmith.umd.edu/finance/jointconferencecfp.html

KUDOS

Kathryn Bartol, Robert H. Smith Professor of Management and Organization, has been elected dean of the Academy of Management Fellows group. Bartol assumed the post in August 2002.

Martin Loeb, Deloitte & Touche LLP Faculty Fellow, and **Lawrence Gordon**, Ernst & Young Alumni Professor of Managerial Accounting, received a Certificate of Merit from the Institute of Management Accountants (IMA). The award was for their article, "Distinguishing Between Direct and Indirect Costs is Crucial for Companies," published in the September 2001 issue of Management Accounting Quarterly. The IMA is the world's leading association of management accountants.

Gordon Phillips, associate professor of finance, has been appointed a faculty research associate for the National Bureau of Economic Research (NBER). Phillips has also recently joined the editorial board of the Journal of Corporate Finance.

Roland T. Rust, the David Bruce Smith Chair in Marketing, director of the Center for e-Service, and chair of the marketing department, received the Career Contributions to the Services Discipline Award from the American Marketing Association in 2002. Also, Rust, Christine Moorman (Duke University), and Peter Dickson (Florida International University) received the 2002 Marketing Science Institute Best Paper Award for their working paper, "Getting Returns from. Service Quality: Is the Conventional Wisdom Wrong?" (MSI Report No. 00-120). A revised version of the paper will appear in the October 2002 issue of the Journal of Marketing.

Lemma Senbet, holder of the William E. Mayer Chair of Finance and chair of the finance department, has been appointed co-editor of a new, UK-based journal, Emerging Markets Finance. An internationally known scholar, Senbet has served on more than a dozen editorial boards.

Venkatesh (Venky) Shankar, Ralph J. Tyser Fellow and associate professor of marketing and entrepreneurship, has been appointed co-editor of the Journal of Interactive Marketing.

Ian Williamson, assistant professor of human resource management, received the 2002 Ralph Alexander Dissertation Award of the Human Resources Division of the Academy of Management. This award is given to the top dissertation in the field of human resource management.

The finance department at Smith was well represented at the June 2002 Western Finance Association meeting. Six papers by Smith finance professors were on the program, placing the school in the top 10 in terms of representation at this prestigious academic gathering. The meeting took place in Park City, Utah.

Identifying the Sources of Skewness and Their Effect on Option Pricing

Research by
Gurdip Bakshi, Nikunj Kapadia, and Dilip Madan

SKEWNESS CHARACTERIZES THE THIRD (CENTRAL) MOMENT OF THE STOCK RETURN DISTRIBUTION. A NEGATIVE SKEW INDICATES A GREATER TENDENCY FOR THE STOCK PRICE TO GO DOWN; A POSITIVE SKEW IMPLIES THE OPPOSITE.

In the past three years, Smith School Professors Gurdip Bakshi, associate professor of finance, and Dilip Madan, professor of finance, and Nikunj Kapadia (University of Massachusetts-Amherst), have tackled the issue of how skewness affects individual and index option prices. Their paper on the subject will be published later this year in the Review of Financial Studies.

"We sought to identify the sources of skewness in the pricing distribution and to characterize the implications on individual and index equity options," Bakshi states. Their study supplies the answers from both theoretical and empirical perspectives. It identifies the influence of the "fear factor" and risk aversion on index options prices.

"What we call the fear factor is the expectation by investors that stock prices will crash," Bakshi says. "For instance, some situations fanning the fear factor in the current market are terrorism, negative earnings surprises, and accounting-related concerns."

The fear factor is reflected in option prices because investors use option markets to hedge risk. They do this by taking positions in put option contracts that provide a payoff when the stock price falls below a certain threshold strike price. The fear factor's impact on negative skews is greater with higher risk aversion.

The researchers developed an innovative theoretical framework that links skews to the differential pricing of individual equity options versus the market index. This relationship implies that individual put option prices of adjacent strikes are spaced closer rather than farther apart.

"Our constructs link skews in the pricing distribution to risk aversion and to the high-order moments of the physical return distribution," Bakshi states.
"We propose a market model in which individual stock returns can be decomposed into a systematic component and a non-systematic component, and derive the

relationships between the individual skews, index skews, and non-systematic skews." The researchers term these relationships, the skew laws.

"We propose a market model in which individual stock returns can be decomposed into a systematic component and a non-systematic component, and derive the relationships between the individual skews, index skews, and non-systematic skews."

Bakshi, Kapadia, and Madan tested their skewness paradigms on nearly 350,000 option quotes written on the S&P 100 Index and its 30 largest equity components over a five-year period. Through this study, they found:

- The pricing structure of individual equity options is flatter in the strike pricedimension compared with that of the market index as a result of risk aversion.
- Variations in the skews of the pricing distribution are instrumental in explaining the differential pricing of individual equity options versus the market index.
- Substantial differences in the magnitudes of pricing skews and physical skews are primarily a consequence of risk aversion and fat-tailed physical return distributions.

"We found that when markets are more volatile or when large symmetric moves in the tails are possible (i.e., kurtosis), the fear factor is amplified," Bakshi states. "As a result, negative skewness of the pricing distribution becomes much more pronounced."

For further information on this research and his other work in the areas of stock valuation, fixed income, derivatives, and international finance, e-mail gbakshi@rhsmith.umd.edu or visit his Web site, www.rhsmith.umd.edu/finance/gbakshi/ .

Entrepreneurship in the Independent Power Industry

Research by Wesley D. Sine

UP UNTIL 1978, MANY REGULATORS AND SOCIAL SCIENTISTS ARGUED THAT ELECTRICITY GENERATION WAS A “NATURAL MONOPOLY” WHERE COMPETITION WAS INEFFICIENT. HENCE, MOST ELECTRIC POWER IN THE U.S. WAS GENERATED BY PUBLIC UTILITIES THAT CONTROLLED REGIONAL MONOPOLIES. AS A RESULT OF THE 1973 ENERGY CRISIS AND SUBSEQUENT FEDERAL LEGISLATION, HOWEVER, THE INDEPEN-DENT POWER INDUSTRY WAS BORN. FOR THE PAST FIVE YEARS, WES SINE, ASSISTANT PROFESSOR OF ENTREPRENEURSHIP AT THE SMITH SCHOOL, HAS STUDIED ITS DEVELOPMENT.

“I’m interested in learning why and how ideas about natural monopoly changed and about the founding of new power firms and their prospects for growth,” Sine states. His research received initial funding from the National Science Foundation. One stream of Sine’s scholarship focuses on aspects of institutional change. A paper on his work in this area is forthcoming in Research Policy. Sine and Robert J. David of McGill University, Montreal, are co-authors of “Environmental Jolts, Institutional Change, and the Creation of Entrepreneurial Opportunity in the U.S. Electric Power Industry.” It is based on their study of institutional change in the industry from 1935 to 1973.

“We found that search processes in established industries seem to be very narrow,” Sine says. “People look for information in places where they can confirm their existing beliefs.” It was only after the energy crisis, he notes, that Congress and utility companies actively sought out scientists who were doing groundbreaking work on new technologies.

The researchers conclude, “Environments marked by scarcity and crisis …witnessed heavy scrutiny of existing institutional arrangements that eroded their taken-for-grantedness and symbolic value, resulting in opportunities for entrepreneurial action.”

The purpose of a second study was to identify factors that create or constrain the diversity of newly founded organizations in an industry, an area that has received little attention by organizational theorists. Co-researchers Sine, Heather A. Haveman of Columbia University, and Pamela S. Tolbert of Cornell University have authored a paper on the study, “Institutional Influences in Founding Variation in the Emerging Independent Power Industry.”

A significant finding was that many of the barriers to entry are not directly related to the efficiency or lack of efficiency of a technology," Sine states. More formidable were cognitive, normative, and regulatory barriers. Unfamiliarity with alternative technology is an example of a cognitive barrier. A normative barrier exists before associations and institutions that nurture and support new firms within a nascent industry are formed. And the lack of new-venture-friendly government regulations, policies, and licensing processes presents the regulatory challenge.

Key to the rise of the independent power industry in California and New York in the '80s, the researchers found, was the development of industry associations.Associations facilitate information sharing, support, and are instrumental in shaping public policy. They helped reduce the cognitive and regulatory barriers to entry. "We found that as these barriers decreased, not only did the number of entering companies increase, but the number of entrepreneurs using new technology also increased and the efficiency of the new technology improved," the Smith professor notes.

"What's interesting about this is that the rate of development of new technologies is not necessarily driven by competition among firms," Sine says.

In his most recent work, Sine and Hitoshi Mitsuhashi, a visiting scholar from Japan, studied "endorsement-seeking behavior" of new independent power firms. Endorsements may be business alliances, positive media, or some kind of certification that can compensate for industry- and organizational-related legitimacy constraints. Sine presented a paper on this study several times in summer 2002, including at the conference of the European Group of Organizational Science in Barcelona and the annual Academy of Management meeting in Denver.

"It is only when the barriers are reduced that firms with new technologies can surmount the hurdles."

For this study and the previous one, the researchers utilized "raw" entrepreneurship data: data collected during the early stages of a new venture, before the company has produced a product. "Because of the difficulty of gathering data on firms during this pre-operational period, we know very little about what differentiates firms that eventually produce a product and grow from the many firms that fail before they are able to produce a product," Sine notes. Using this unique data set, Sine and his co-researchers were able to find some answers. "What's interesting about this is that the rate of development of new technologies is not necessarily driven by competition among firms," Sine says. "It is only when the barriers are reduced that firms with new technologies can surmount the hurdles."

"Interviews and preliminary analyses suggest that first movers in the independent power industry in California and New York had a very high mortality rate, and that companies that entered two or three years later had a higher chance of survival," Sine states. His findings also indicate that endorsements increased the likelihood that a new independent power firm would be able to garner the necessary resources to build a generator and sell a product.

Endorsement-seeking behavior also has a collective effect. "The more firms gaining endorsements, the greater the chance that other ventures in the industry will succeed," Sine states. And in a new industry, the more companies the better.

"Although observers typically think that firm density is 'bad' (too much competition), in a new industry, initially the effect is opposite," Sine notes. "More companies increase industry legitimacy, investment, and the pool of prospective employees."

For further information, e-mail wsine@rhsmith.umd.edu.

Online Trust and e-Business Strategy: Real-time Web Experiments

Research by
Glen L. Urban, Venkatesh Shankar, Fareena Sultan, and Iakov Bart

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BUILDING STRONGER TRUST AMONG ONLINE CUSTOMERS HAS BECOME A CRITICAL ISSUE FOR ORGANIZATIONS, AS MORE AND MORE CONSUMERS AND BUSINESSES TURN TO THE WEB TO BUY PRODUCTS AND CONDUCT OTHER TRANSACTIONS. A RECENT CONSUMER SURVEY BY JUPITER MEDIA METRIX FOUND THAT LACK OF TRUST IS ONE OF THE GREATEST BARRIERS INHIBITING TRADE BETWEEN BUYERS AND SELLERS WHO ARE UNFAMILIAR WITH ONE ANOTHER. FOR SOME TIME, BUSINESSES HAVE BEEN WORKING HARD TO CONVINCE CUSTOMERS THAT WEB TRANSACTIONS CAN BE CONDUCTED IN A SECURE ENVIRONMENT. BUT ONLINE TRUST TODAY INVOLVES MUCH MORE THAN SECURITY ISSUES.

"The business focus of customer online trust has steadily evolved from merely security and privacy issues to a multidimensional, complex construct that also includes credibility, emotional comfort, quality, and navigation ability, among other variables," says Venkatesh Shankar, Ralph J. Tyser Fellow and associate professor of marketing and entrepreneurship at the Robert H. Smith School of Business. "Understanding how online trust is created and maintained can lead to improved Web sites, sales revenues, and profitability."

Shankar; Glen L. Urban, co-director of the Center for eBusiness at the Sloan School of Management, Massachusetts Institute of Technology; and Fareena Sultan, a professor at Northeastern University, have a paper on the subject nearing publication in the Journal of Strategic Information Systems, "Online Trust and e-Business Strategy: Concepts, Implications, and Future Directions."

Shankar; Glen L. Urban, co-director of the Center for eBusiness at the Sloan School of Management, Massachusetts Institute of Technology; and Fareena Sultan, a professor at Northeastern University, have a paper on the subject nearing publication in the Journal of Strategic Information Systems, "Online Trust and e-Business Strategy: Concepts, Implications, and Future Directions."

Shankar, Urban, Sultan, and graduate student Iakov Bart are conducting experiments for Intel Corporation with the company's customer support team, led by Brian Rhodes. Their goal is to find ways to help the world's largest computer chipmaker improve trust among its customers. Driving the need for this research is Intel's Web site download rate, the rate at which Intel's customers are willing to download drivers, utilities, firmware, patches, updates, plug-ins, and other support software, instead of receiving it in a shrink-wrapped version. Increasing the download rate can result in significant cost savings for Intel, about $25 for every online download compared to an offline download.

To learn more about what will improve online trust for Intel and in turn, to improve the firm's download rate, Shankar and Urban are conducting a variety of experiments on Intel's Web site. People who logon to the site (http://www.intel.com) are actually directed to one of four sites, all of which differ in some way. In one experiment, the researchers simply displayed the TRUSTe and the Better Business Bureau (BBB) privacy seals at the bottom of the page used for downloads. (TRUSTe is an independent, nonprofit initiative whose mission is to build users' trust and confidence in the Internet by promoting the principles of disclosure and informed consent.) Shankar and his research partners found that the addition of the TRUSTe and BBB privacy seals increased Intel's download success and satisfaction by six and four percent, respectively, saving the company an estimated $3 million over six months. Because of the significant cost savings realized by the addition of the trust seals, Intel has implemented the change on all of the download sites seen by its current customers and prospects for downloading.

It is highly unusual for a Fortune 50 company to allow researchers to experiment with a Web site in use by its customers, but Intel renewed a grant of $300,000 to continue their experiments. This time, the researchers are collecting data on visitor traffic, behavior, and attitude, using a combination of clickstream and survey data. The latest survey was conducted June through August 2002.

Site users were asked to participate in the study both during their initial visit and on subsequent visits. Those willing to participate were entered into a drawing to win one of five $100 gift certificates from Amazon.com. During the study period, the researchers and Intel engineers recorded visitors' anonymous actions and tasks, as well as their survey answers. The data will be used to determine whether site changes are needed and
to present information that is more pertinent to particular users.

"Our preliminary results show that the components of trust have statistically significant effects on customer satisfaction," Shankar states. "By knowing the impact of trust components on customer satisfaction, firms can better design and control their Web sites to increase satisfaction."

Because the topic of online trust has beena relatively under-explored topic, Shankar, Urban, and their research partnersare taking the lead in an area that is fertile ground for researchers. They havein progress three additional papers on the subject. New areas for explorationinclude the relationship of online trust with offline trust; cross-cultural andinternational differences in trust perception; the role of trust inalliances
between firms; and the impact of brand on online trust, among othertopics. As the experiments with Intel illustrate, such research can delivermeasurable and positive results.

"The consequences of online trust include intention to act, satisfaction, loyalty, traffic, price, revenues, and ultimately profitability," says Shankar. "Online trust is clearly becoming critical in a firm's e-business strategy."

For more information, e-mail vshankar@rhsmith.umd.edu or visit www.venkyshankar.com

DEAN
Howard Frank

DIRECTOR OF RESEARCH
Michael Ball

EDITOR
Rosemary Faya Prola

DESIGN
Raissa Macasleb-Ludwig

CONTRIBUTING WRITERS
Jeff Heebner
Daenla Peart

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