Research@Smith

SPRING 2013 | VOL 14 | NO 1

UNIVERSITY OF MARYLAND
ROBERT H. SMITH SCHOOL OF BUSINESS

Spring
2013
VOL 14 | NO 1

Research@Smith summarizes research conducted by the faculty of the Robert H. Smith School of Business at the University of Maryland.

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Research@Smith is published two times a year by the
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University of Maryland
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College Park, MD 20742
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We'd like to put ***Research@Smith*** directly into the hands of academics, executives, policymakers and others who are interested in learning about the latest research conducted by Smith School faculty. To request a copy of this publication or make an address correction, contact Rebecca Winner at editor@rhsmith.umd.edu or 301.405.9465.

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DEAN'S COLUMN

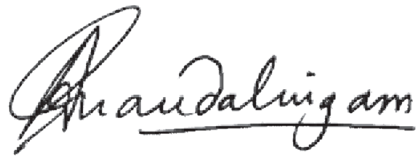
I remember a time when researchers who wanted to study human behavior had to use one-way mirrors and paper-and-pencil surveys. These days, my faculty don't want to just ask people what they think of a product. They want to watch people use a product, and evaluate how they react to it.

That's exactly what happens in the Smith School's Behavioral Laboratory, which will turn 10 this year. During its years in operation, the lab has enabled hundreds of cross-disciplinary research projects that resulted in 59 research papers, all published in top journals.

Tools like our eye trackers show researchers what people are actually looking at when they view a print advertisement, a TV commercial, a product package or a website — valuable information for marketers. Computer simulations help researchers understand how team members react to each other and their leaders during decision-making tasks.

In one study, participants sat at the lab's computers to use two virtual DVD players. Before the experiment, most people said they would prefer to purchase the version with more features. But when they actually used the virtual DVD players, the majority found the feature-loaded version to be frustrating and hard to use. What people said they wanted turned out to be quite different from what they actually preferred when they had a chance to use the product.

This kind of practical research is a hallmark of the Behavioral Lab. Visit www.umd.edu/behavioralab to learn more.



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SPRING 2013

INTERNATIONAL BUSINESS

IT FLEXIBILITY DRIVES EFFECTIVE B2B PARTNERSHIPS IN ERA OF CLOUD COMPUTING AND BIG DATA

Research by Sunil Mithas

FLEXIBLE IT SYSTEMS ARE INCREASINGLY VITAL TO STRATEGIC ALLIANCES BETWEEN COMPANIES.

THINK IT BEFORE ENGAGING IN STRATEGIC ALLIANCES

Major deals can fall apart when IT systems are inflexible, and the implications are significant for firms' strategies and competitive performance.

IT-incompatibility contributed to Santander Bank of Spain canceling a deal in 2012 to buy 316 retail-banking branches from the Royal Bank of Scotland. Years earlier, Amtrak's mainframe system proved inadequate to integrate with, and tap into, third-party booking websites.

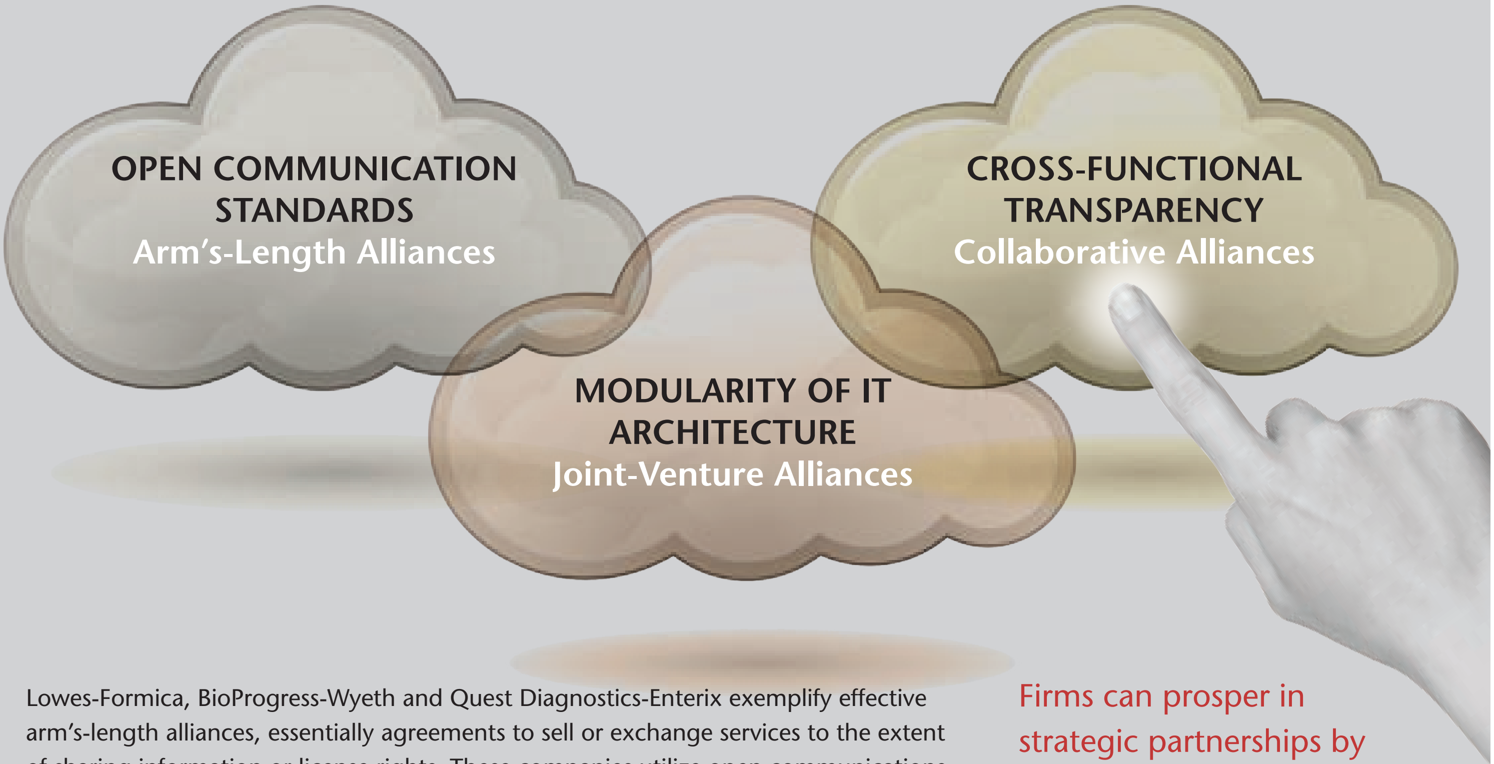
Such lessons now are magnified by the emergence of service oriented (software) architecture (SOA), and subsequently, cloud computing with its fast track to lucrative, strategic alliances. "In this highly digital age, organizations rely increasingly on Internet-based or computerized products and services that require the simultaneous cooperation of multiple organizations," says Sunil Mithas, associate professor of Information Systems, whose new research confirms flexible IT systems are increasingly vital to strategic alliances between companies.

"Broadly speaking, flexibility in IT architecture matters for a firm's corporate and competitive strategies," he says. "Amtrak learned this lesson the hard way, and Mohawk Fine Papers Inc., leveraged it to quickly form hundreds of digital business-to-business partnerships. Lufthansa, for its part, created a common platform with Star Alliance partners, something that would have been impossible with Lufthansa's old legacy systems."

Moreover, an organization can flourish in any type of partnership if the firm is functional in three distinct dimensions of IT flexibility, as identified in Mithas' findings.

Mithas and co-authors Ali Tafti (University of Illinois) and M.S. Krishnan (University of Michigan) studied the structures and market-to-book ratio values of firms in 3,129 strategic alliances over seven years (2000-2006). These partnerships involved 169 U.S. manufacturing and servicing firms in the Fortune 500 and Fortune 1,000. The results demonstrate IT-enabled flexibility in the context of three optimal system-partnership combinations:

- "Open communication standards" with "arm's-length" alliances
- "Cross-functional transparency" with "collaborative" alliances
- "Modularity of IT architecture" with "joint-venture" alliances



Firms can prosper in strategic partnerships by adapting their IT system structure to one of three types of alliances.

Lowes-Formica, BioProgress-Wyeth and Quest Diagnostics-Enterix exemplify effective arm's-length alliances, essentially agreements to sell or exchange services to the extent of sharing information or license rights. These companies utilize open communications standards — typically XML language — and take advantage of minimal need to invest in their information systems. This allows for greater freedom to quickly form and disband partnerships as the market dictates.

Such freedom doesn't apply in the more complex "collaborative alliance" between Sprint and Sun Microsystems to capitalize on the smartphone-Internet evolution. Through this partnership — characterized by cross-functional transparency of joint design-development and-or recombining products and services — Sun has sought to function as a preferred technology provider within the Sprint E. Solutions Internet Center infrastructure to help drive sales.

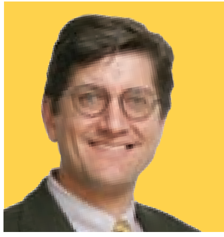
The third combination, "modularity in joint-venture alliances," encompasses "arms-length" and "collaborative" elements while hinging on substantial integration and reconfiguration to meld both firms into a single, new entity. Therefore, "operating your information system with modularity — in other words, independently functional components — is a cost-saver to the process," says Mithas.

The 2002 Hewlett Packard-Compaq merger was pioneering for the IT world, but also flawed and a lesson for using IT flexibility to explore strategic synergies before closing a merger. "The HP and Compaq managers struggled to integrate their operations mostly due to their complex and disparate IT environments," Mithas says. "Ultimately, they were unable to generate synergies on a strategic level." The merger, he adds, "could have been more effective had they first explored and tested their strategic synergies as alliance partners."

Summarizing his findings, Mithas says service-oriented view of IT services and cloud computing are revolutionizing the traditional approach to strategic alliances between businesses. "Partner-seeking companies traditionally have prioritized the cultural and management structure compatibility of a prospective counterpart ahead of explicitly weighing whether they can integrate their IT systems — a factor now more critical than ever as customer-facing applications often and simultaneously draw real-time information from several companies."

"The Effect of Information Technology-Enabled Flexibility on Formation and Market Value of Alliances" is published in the January 2013 issue of *Management Science.*
For more information, contact smithas@rhsmith.umd.edu . ■

CUSTOMER SERVICE



HEDGE FUND MONITORING LAG SOLVED—BREAKTHROUGH FORMULA OFFERS A NEW SHIELD FOR INSTITUTIONAL INVESTMENTS

Research by Russ Wermers

IT'S 4 P.M. DO YOU KNOW WHERE YOUR HEDGE FUND IS?

In August 2007, large hedge funds began suffering significant losses mid-month. Investors were left guessing about both the performance of their managers and the impact of losses on their overall portfolios.

Such volatility, compounded by extreme market movements and uncertainty heading into 2008, fueled a recently published, award-winning study by Associate Professor of Finance Russ Wermers and co-authors Michael Marcov and Daniel Li.

Hedge funds provide minimal, if any, transparency in terms of day-to-day and week-to-week performance and comprise roughly two trillion investment dollars rippling through the global economy — from wealthy investor holdings to pension funds, and nonprofit foundations and endowments.

"It's important for these entities to know their funds' rate of return between report dates, which typically are monthly, or quarterly in some cases," Wermers says. "This time lag generally has been OK. But in the wake of our global financial crisis — or even when market volatility is abnormally high — you want to know what's going on with your fund on a daily or at least weekly basis. Right now, it's unacceptable to not know whether you're too deep into a risky pool of assets."

Wermers' answer is grounded in synthetic replication portfolios based on a monthly factor model using common investable indices. The formula "uses monthly returns on more than 100 indexes (e.g., broad stock, bond, currency and commodity) to fit the monthly returns of a particular hedge fund, then forecasts the daily returns of that hedge fund during the following month using the publicly observed daily returns on the indexes that best fit the hedge fund," explains Wermers. "This can both control for daily hedge fund risk and estimate and control value-at-risk."

Spurring the breakthrough is dynamic style analysis (DSA), a technique developed by Markov. This time-varying linear regression method improves upon traditional moving window models by using flexible least squares methodology, which allows risk exposures to change over time.

"DSA provides an approach to select best-fit factors through a pool of more than 100 market indices and factors," says Wermers. "Once a high quality in-sample replication is achieved, we use daily returns of replicating assets reported in the financial press to create a daily proxy of the hedge fund."

"The trick here lies in mirroring the real individual hedge funds with combinations of the hedge fund indexes," he adds. "For example, take 20 percent of market index one, 40 percent of market index two, and 40 percent of market index three, then it's easy to look up those three indexes each day, apply those three weights to come up with a daily simulated return for your fund."

The application is designed to be user-friendly for investment managers, advisors, consultants — with at least basic skills in running regressions — "and even family offices that have a bit of horsepower," he says.

The new model can leverage insight to mitigate negative externalities caused by other investors, such as those who are first to exit a fund during a liquidity crisis.

"By the time an investor is told 'you've lost 20 percent at the end of the month,' it's too late to do anything," Wermers says. "In such cases, it's best to know when the loss is at 5 percent, so you can get out or at least get the process rolling before the fund loses, let's say, 50 percent of its value."

Published by the *Journal of Investment Consulting,* "Monitoring Daily Hedge Fund Performance When Only Monthly Data is Available" earned first place in the Investment Management Consultants Association's 2012 Academic Paper Competition and coincided with Wermers' selection to help rewrite the criteria for the examinations for asset management professionals wishing to achieve the prestigious CIPM Program designation of the CFA Institute. For more information, contact rwermers@rhsmith.umd.edu. ■

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MANAGEMENT

LARGE ORGANIZATIONS NEED MANAGEMENT LAYERS FOR COORDINATION AND KNOWLEDGE SHARING.

Research by Yue Maggie Zhou

HIGHER TASK COMPLEXITY

=

GREATER NEED FOR MIDDLE MANAGERS

THE CASE FOR MIDDLE MANAGERS

Flat organizational structures are popular in management literature. Leaders are urged to reduce the layers of management, on the theory that employees are more productive when they have more say in the decision-making process.

But certain organizations may really need all of those middle managers, according to a study by Yue Maggie Zhou, assistant professor of logistics, business and public policy. Zhou became interested in the organizational structure of large organizations while working in corporate restructuring at the World Bank. "I was always amazed at how big some of these multi-national corporations are," says Zhou, citing companies such as IBM and Citigroup. "Looking at their structure and their org charts, I was also stunned to see how big their hierarchy is."

Such large organizations also deal with highly complex task systems. The most productive way to deal with complexity is to divide and conquer: organizations divide tasks and allocate them among different divisions. This specialization allows firms to be both faster and more responsive to the external environment. The more interdependent tasks are, the more potential communication channels exist between workers carrying out the tasks, which increases the need to coordinate between differing divisions and workers. Are flat organizational structures or hierarchical organizational structures more effective for managing that kind of environment?

To figure out how large organizations structured themselves to successfully balance the tradeoffs between specialization and coordination, Zhou wanted to observe what actually happens in the real world. Most prior studies of the hierarchy of large firms relied on theoretical modeling or computer simulations, but Zhou conducted an empirical study. She gathered data about organizational structures and business activities from more than 1,029 publicly traded U.S. equipment manufacturers through the Bureau of Economic Analysis. Equipment manufacturing entails multiple stages and requires frequent intermediate inputs, making it an excellent environment to measure two key dimensions of task systems: complexity and decomposability.

Complexity refers to the interdependence among tasks — how many links were in the system. Some task systems had hundreds of links, each representing an interaction between divisions and employees required to complete an action or process. Zhou found that the more links that existed in the task system, and the more clustered those links were, the more coordination was required by middle managers. Middle management served as an information bridge between divisions and individual workers, providing coordination between groups to allow for effective decision making. So organizations with high levels of task complexity exhibit more specialization in the form of divisions with the accompanying steeper hierarchy.

The extent to which a task system was decomposable also affected organizational structure. Tasks that are decomposable can be broken down into less complex sub-problems that are independent enough to allow further work to proceed separately on each of them. As tasks become more decomposable, less coordination is needed between divisions in order to facilitate decision making—because work can effectively be carried out independently. As the decomposability of the task systems decreased, so did the need for middle managers to serve as information bridges. These organizations had flatter structures.

As firms consider how to structure their management roles, Zhou recommends considering the complexity and decomposability of tasks before deciding to reduce management layers. While removing layers of management can help make a firm more agile and responsive, firms still need enough intermediate layers to coordinate their divisions.

Popular management theory deplores the creation of "silos" on the theory that specialization within divisions can keep knowledge from flowing freely between different parts of the organization. But Zhou sees benefits to modularization, particularly for very large firms. "It provides focus and lets units specialize," says Zhou. "The role of middle managers is to pull things together—to synthesize information and make joint decisions."

"Designing for Complexity: Using Divisions and Hierarchy to Manage Complex Tasks" was published in *Organization Science,* March 2013. For more information about this research, contact ymzhou@rhsmith.umd.edu. ■

As firms consider how to structure their management roles, Zhou recommends considering the complexity and decomposability of tasks before deciding to reduce management layers.

MANAGEMENT

CO-RESEARCHER

SUPPLIERS AND RETAILERS ARE LEAVING MONEY ON THE TABLE BY CHOOSING SIMPLY-STRUCTURED CONTRACTS

Research by Rebecca Hamilton and Wedad Elmaghraby

UNDERSTANDING THE APPEAL OF SUB-OPTIMAL CONTRACTS

SHARED RISK CONTRACTS VS WHOLESALE CONTRACTS

The goal of business is to maximize profits, so it just didn't make sense to researchers at the University of Maryland's Robert H. Smith School of Business why many retailers and suppliers sign deals that leave money on the table.

Rebecca Hamilton, associate professor of marketing, Wedad Elmaghraby, associate professor of management science and operations management, and Smith PhD candidate Anna Devlin wanted to figure out why the retail industry usually favors wholesale contracts, where retailers buy bulk orders from suppliers, and rarely employ shared-risk contracts, where retailers and suppliers work in partnership to increase sales.

They took a look at the highly "perishable" fashion industry, where trends can change seemingly overnight. In a standard wholesale agreement, retailers have to be very good at forecasting what they will be able to sell for top dollar to avoid losing money on excess inventory when fashions change. With shared-risk contracts, a supplier agrees to buy back items that don't sell or offers money to help market or discount items. On paper, the researchers say shared-risk contracts make more sense for retailers — who won't have to shoulder all of the risk — and suppliers, who can often get retailers to order more inventory with this type of structure. So why are these contracts so rarely used?

Working with an NSF grant, Hamilton, Elmaghraby and Devlin first interviewed fashion retailers and suppliers to see if they were even aware of the contracts (they are), and how they typically structure contracts. Then the researchers designed a series of experiments, using the Smith School's Behavioral Laboratory, in which participants acted as a women's shoe supplier interacting with a computerized retailer. Previous research has looked at whether parties use shared-risk contracts correctly, but the Smith researchers are the first to look at why parties choose particular contracts.

What they found was shared-risk contracts might not be as good as they thought because of the symbiotic relationship required between the parties for the arrangement to really work well. Suppliers see a "moral hazard" with retailers when they don't know their business practices.

"With shared-risk contracts, the supplier is 'in bed' with the retailer for a longer period of time because now they are at the whim of the retailer's decision as to how they are going to run their business to stimulate demand, and that is actually scary," Elmaghraby says.

The experiments revealed that suppliers only preferred shared-risk contracts if they felt confident that the retailer would exert a lot of effort to sell goods, such as investing in

marketing activities or in-store displays. The results also show suppliers are more likely to choose shared-risk contracts when the deal with the retailer includes a variable salvage value, meaning retail discounts on items left over at the end of the season were based on remaining quantities rather than a predetermined discount amount. Fewer items left mean retailers only have to offer a small discount to clear excess inventory, so suppliers see a deal with variable salvage value as extra incentive for retailers to put forth effort to sell more.

So which type of contract is ultimately better for suppliers? "It depends on the retailer and the retailer's business structure and how costly it is for them to stimulate demand," says Elmaghraby. "If it's cheap, then we should expect retailers to exert effort even in shared-risk contracts and both parties will do quite well. But if the retailer is operating in an environment where it is really costly to drum up sales and get the customer through the door, then shared-risk contracts can be a fallback where retailers are less motivated to go after sales. In that case, these contracts are worse for suppliers."

Hamilton and Elmaghraby say their research revealed the complexity of retail relationships and that multiple factors should be considered when ironing out contracts. And not just in the fashion retail industry—any industry where retailers have to decide how many units of an item to stock should be ripe for these types of shared-risk contracts, says Hamilton. She and her co-authors hope this study sheds light on the opportunity these contracts can offer.

"There is money on the table that both retailers and suppliers can get to if they think about these more sophisticated kinds of contracts," Hamilton says. "If they learn about them and figure out how to use them appropriately, they can increase their profits."

"Understanding the Appeal of Suboptimal Contracts" is forthcoming in *Management Science.* ■

Shared-risk contracts require a symbiotic relationship between parties, and suppliers see a "moral hazard" with retailers when they don't know the retailers' business practices.

BEHAVIORAL LAB TURNS 10

On any given day, you might find a group of undergraduates in Van Munching Hall playing video games, eating snack foods or staring at computer screens. Don't worry; these students aren't slacking on their studies — they are helping Smith faculty with theirs.

These types of experiments and many others are conducted almost daily in the Smith School's Behavioral Laboratory. It's the place to be for researchers wanting to find out how human behaviors influence decisions — everything from what people purchase, to the business deals they make, to how they use information technology.

This year, the lab celebrates its 10th anniversary. In just a decade, the lab has been instrumental in a long list of research projects, resulting in 59 academic papers published in top journals. And it has seen the field of behavioral research evolve.

"It's not enough anymore to just ask people 'If you were planning to buy a car, would you choose a red car or a black car?' You actually want to test their reactions to various products," says Rebecca Hamilton, associate professor of marketing and faculty director of the lab. She says scenario-based studies in which participants imagine their reactions to products and events are "out" and studies in which participants engage in real experiences are "in."

Behavioral research is becoming a hot area for information systems and operations researchers as well as management and marketing researchers. One reason, says Hamilton, is that these fields are being influenced by the growing popularity of behavioral economics, a field that studies the social, cognitive and emotional factors that influence people's economic decisions. The lab has been a key resource for building a cross-functional behavioral research community called the Field Committee for Decision Sciences that integrates faculty and PhD students across the campus. This committee is chaired by Rebecca Ratner, professor of marketing at the Smith School, and Michael Doherty, associate professor of psychology.

The Smith Behavioral Lab includes a room with 18 computer workstations, group study spaces for conducting studies with teams, eye-tracking devices to test how participants look at information on a computer screen, and the Smith eLab, a panel of participants who take part in experiments online.

Hamilton and lab manager Kathleen Haines work with faculty, PhD students and several undergraduate interns to make sure research runs smoothly in the lab. Keeping the studies interesting makes student participants willing and excited to help.

RESEARCH BRIEFS

When Big Signatures Mean Small Profits

It turns out, size does matter. Nick Seybert, assistant professor of accounting, studied CEO signatures and found the size reveals a lot about the leader and the long-term performance of a company. The largest John Hancocks signal an egomaniac at the helm and indicate lagging returns for a firm.

Seybert and Smith School graduate student Charles Ham and Sean Wang, of the University of North Carolina, used customized software to download and measure about 600 CEO signatures from annual SEC filings of companies in the S&P 500. They analyzed the measurements against the collective profitability and returns on investment levels of the CEO's companies.

The researchers found a striking correlation between declining firm performance and large signature size. Drawing on previous psychology research, they used signature size as a reflection of a CEO's ego size.

Characteristically, these narcissistic CEOs are risk takers, unilateral decision-makers and prone to dismissing feedback and blaming other factors for their personal failures. They hold strong influence over those they lead and report to – they are good at convincing others that all of their ideas and decisions are the right ones, even when they are not. According to Seybert's results, all of that narcissistic behavior leads to declining company performance over the long term. The effect is particularly pronounced in firms that are young, small, or primarily focused on research and development.

Dangerous Spin-offs

When an entrepreneurial employee leaves your firm to start her own, the greatest danger is that other employees might follow.

Rajshree Agarwal, professor and Rudy Lamone, Chair for Entrepreneurship and Strategy, studied the effect super-star employees have on their peers at a firm and what happens when those top performers leave to start their own spin-outs. She says the employees the entrepreneur convinces to join him can "make" a startup — and their departure can "break" the parent firm.

This scenario has played out through history for some iconic institutions, such as Intel. In 1968, co- founders

Gordon Moore and Robert Noyce scooped up colleague Andrew Grove when they left Fairchild Semiconductor. Grove has been credited for much of Intel's growth from a small startup to the world's most valuable chip-maker. And this was merely history repeating itself— Fairchild, too, was a spin out formed by a group dubbed the "traitorous eight" who left Shockley Semiconductor Laboratory.

Decades earlier, 14 Seabury & Johnson employees followed brothers Edward M. Johnson and James W. Johnson in their spectacularly successful spin-out, Johnson & Johnson. A third Johnson brother, Robert, joined the migration, resulting in the ultimate demise of the company he had co-founded.

Performance Rewards, the Right Way

Managers, you might want to think twice about giving an employee that gold star for a job well done at your next staff meeting if the reward is based on your subjective judgment. You could end up with a disgruntled team on your hands.

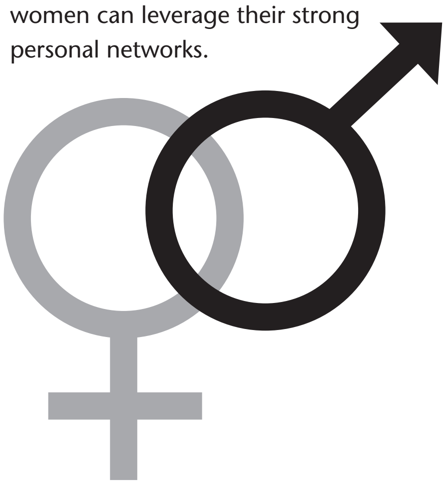
Employees tend to react negatively when performance rewards such as salary increases, promotions or special project assignments aren't based on defined criteria, according to a recent study conducted by Rellie Derfler-Rozin, assistant professor of management.

Derfler-Rozin says that people want to feel like they belong in a group and maintain their status among their peers. In the workplace, employees fear they will get the short end of the stick in a discretionary promotion/bonus allocation process and that this will effect how others perceive them, says Derfler-Rozin. Her research confirms that employees prefer transparent, rule-based performance evaluations when it comes to bonuses or career advancement decisions.

The resistance to discretionary reward is even stronger when employees perceive having a strong working relationship with their managers. "Though this seems counterintuitive, the mere possibility of a negative evaluation poses a powerful threat to the worker's sense of needing 'to belong'—in this case to a positive affiliation with his or her supervisor," she says.

Gender Inequality

Science and academia still haven't cracked the glass ceiling. According to a recent study by Waverly Ding, assistant professor of management and organization, female professors are 45 percent less likely than their male counterparts to be invited to serve on a corporate scientific advisory board. Chalk it up to gender-based stereotyping, says Ding. "Women are available. The numbers are there," she says. "They just are not being selected." The bias, she adds, appears to be based on the cultural stereotypes that women tend to lack leadership and business savvy, and that women are not capable of helping new ventures attract investment. The findings reveal two potential equalizers: The gender gap decreases for schools with formal technology-transfer offices, and when women can leverage their strong personal networks.



FEATURED RESEARCHERS

Wedad Elmaghraby, associate professor of management science, received her PhD from the University of California at Berkeley. Her current research interests are the design of competitive procurement auctions in business-to-business markets and pricing in markets where buyers behave strategically.

Rebecca Hamilton, associate professor of marketing, received her PhD from the MIT Sloan School of Management. Her research focuses on consumer decision making and the effects of consumers' information processing strategies on their attitudes and choices.

Sunil Mithas, associate professor of decision, operations and information technology, received his PhD from the Ross School of Business at the University of Michigan. His research focuses on strategic management and impact of information technology (IT) resources such as IT spending, IT applications and IT human capital.

Russ Wermers, associate professor of finance, received his PhD from the University of California, Los Angeles. His main research interests include studies of the efficiency of securities markets, as well as the role of institutional investors in setting stock prices.

Yue Maggie Zhou, assistant professor of logistics, business and public policy, received her PhD from the University of Michigan. Her research focuses on theory of the firm, organization structure and multinational corporations.

"My team worked on how to improve things for our car management department. That project was outside my current role and area of expertise, so I learned a lot about our company and got to network with people I don't usually see in my day-to-day role."

EXECUTIVE PROFILE

LARRY BIESS

When Larry Biess was recruited to CSX, he was only vaguely aware of the many facets of CSX's day-to-day operations. Nearly two decades later, Biess is Director of Operations Support Systems at the $11.8 billion transportation company, which provides traditional rail service as well as the transport of intermodal containers and trailers. Biess' team oversees all of the IT applications for the company's mechanical and engineering departments, which service and maintain the company's 69,000 rail cars running on 21,000 miles of track in 23 states, from Montreal in the north to Chicago in the west down to New Orleans and Miami.

Biess graduated from the Merchant Marine Academy. His first job out of school was at Charleston Naval Shipyard as a nuclear shift test engineer working on nuclear submarines. "It's kind of neat for a guy in his 20s to get to start up a reactor for the first time," says Biess. He spent a few years there and at Atlantic Drydock as a repair coordinator before being recruited to CSX, where he has been rising through the ranks for the past 17 years.

Last fall, Biess gained some new business management and analytical tools through CSX's Business Leadership Program at Smith. CSX leaders travel to the University of Maryland campus in College Park and stay one week each month for three months. The program includes classes, site visits, a trip to Gettysburg to learn about battlefield leadership and Action Learning Projects (ALPs). These ALPs are real life CSX business challenges in which project teams research and provide recommendations to senior leaders for project implementation to return value back to the company.

"You're put in a room with 30 other CSX folks; some you know, some you don't. The ALP was outside my current role and area of expertise, so I learned a lot about our company and got to network with people I don't usually see in my day-to-day role," says Biess.

Smith faculty worked directly with CSX leadership to create the curriculum for the custom program and identify a few of the organization's business opportunities to use in the program's Action Learning Projects. "Smith provided us with concepts and ideas and asked us to apply them to the project, to our teams and then to our regular jobs, so we could impactthe status quo," says Biess.

Even sitting in a Smith classroom turned out to be helpful. Biess realized one day that the design of the classroom chairs were perfectly suited for a new track geometry inspection car — a kind of mobile conference room — that CSX was in the process of building. It was, Biess says, "emblematic" of the many ways his Smith education from the Business Leadership Program allowed him to bring immediate value to CSX.

Learn more about the Smith School's custom and open executive education programs online, www.rhsmith.umd.edu/execed.

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RESEARCH AT SMITH

The Smith School is consistently ranked in the top 10 for research worldwide by publications such as the *Financial Times* and *Bloomberg Business Week.* Smith faculty research explores topics that matter to business leaders, policy makers and academics. Their work is highly regarded and widely cited, and their expertise is sought after by major media outlets and top corporations alike. Keep up-to-date with the latest research topics on our website, www.rhsmith.umd.edu.

UNIVERSITY OF MARYLAND

The University of Maryland, College Park, is one of the nation's top 20 public research universities. In 2007, the University of Maryland received approximately $407 million in sponsored research and outreach activities. The university is located on a 1,250-acre suburban campus, eight miles outside Washington, D.C., and 35 miles from Baltimore.

ROBERT H. SMITH SCHOOL OF BUSINESS

The Robert H. Smith School of Business is an internationally recognized leader in management education and research. One of 12 colleges and schools at the University of Maryland, College Park, the Smith School offers undergraduate, full-time and part-time MBA, executive MBA, MS, PhD, and executive education programs, as well as outreach services to the corporate community. The school offers its degree, custom and certification programs in learning locations in North America and Asia. More information about the Robert H. Smith School of Business can be found at www.rhsmith.umd.edu.

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