Photograph by Bruce Weller

Recent Studies

Distributed leadership, shareholder value in family-owned firms, R&D strategy, and other topics of interest.

Research Notes
by Des Dearlove and Stuart Crainer

Distributed Leadership
Katherine J. Klein (KleinK@wharton.upenn.edu), Jonathan C. Ziegert (JZiegert@psyc.umd.edu), Andrew P. Knight (KnightA@wharton.upenn.edu), and Yan Xiao (YXiao@umaryland.edu), "A Leadership System for Emergency Action Teams: Rigid Hierarchy and Dynamic Flexibility." http://knowledge.wharton.upenn.edu/papers/1282.pdf

It's hard to imagine an environment more demanding of leaders than a trauma resuscitation unit at a top medical facility. A victim of a shooting, stabbing, or car crash arrives by helicopter or ambulance and is immediately surrounded by a team of doctors, nurses, and technicians. Their job is to stabilize, diagnose, and treat the patient as quickly as possible. Any mistake or delay can be fatal.

If that isn't tough enough, several members of the trauma resuscitation team probably have never worked together before. Furthermore, throughout the day and night, the team's composition will change as members finish their shifts and are replaced by newcomers.

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How should such teams be led? That is the question addressed by Katherine J. Klein, a management professor at the University of Pennsylvania's Wharton School of Business; Jonathan C. Ziegert, a visiting scholar at Wharton; Andrew P. Knight, a Wharton doctoral student; and Yan Xiao, a professor and lead researcher at the University of Maryland's School of Medicine.

These researchers spent more than 10 months observing trauma resuscitation teams in action at the University of Maryland Shock Trauma Center (STC) in Baltimore, a world-renowned urban medical facility treating 7,000 patients a year. Although they were studying a health-care center, the researchers' goal was to determine leadership models under different conditions. Their findings challenge conventional ideas.

Traditional theory views leaders as clearly identifiable individuals whose main responsibility is to enhance the motivation and commitment of followers. It is assumed leaders have a stable and long-term relationship with subordinates. But according to Professor Klein and her colleagues, such notions of leadership "appear increasingly inapt" for high-performing multidisciplinary teams. These include the trauma teams they studied and other emergency service providers, such as firefighters and the military. (The research was partly funded by the U.S. Army Research Institute.) Parallels exist as well with interdisciplinary teams in business, for example, groups developing software or cancer drugs, participating in complex engineering projects, or operating such time-sensitive businesses as airlines and restaurants.

An STC trauma resuscitation team typically has six members: an attending surgeon, who has the most trauma and surgery expertise and experience; a surgical fellow, a doctor who has recently completed residency and is doing an additional year's training in STC; one or more surgical or emergency medical residents, doctors who have completed medical school but not their residency; an anesthesiologist; a registered nurse; and a trauma technician.

When the researchers started the project, they assumed that each team had a single, specified leader. "We were wrong," they note. "Not only does leadership not reside in a single person, it does not reside in a single position."

Instead, the researchers identified a leadership system in which the "active leadership role" shifts between three different team members: the attending surgeon, the fellow, and the admitting resident. The surgeon has seniority and can step in at any point if he or she feels the patient is in jeopardy. At other times, however, the surgeon may be content to let the less-experienced doctors call the shots, allowing them to gain vital skills and to develop their own judgment without endangering patients. The aim, according to the authors, is to give junior colleagues "enough rope to hang themselves, but not enough to hang the patient."

This threefold leadership system provides several important benefits for the trauma unit. First, it accommodates frequent changes in team composition. Second, it creates redundancy, so that if one leader lacks the knowledge to direct patient care, another is available. This raises the quality of patient care. Finally, the system allows relatively inexperienced leaders to develop leadership skills in a supportive environment.

This research is of most direct relevance to public- or private-sector teams in which a high level of performance is vital, team composition changes frequently, and team members have a wide range of experience and capabilities. In highlighting the notion of a leadership system and the distribution of leadership capabilities within teams, the authors provide a model for understanding the leadership needs of complex contemporary organizations.

Secrets of Managing Hierarchy

Paul V. Martorana (p-martorana@kellogg.northwestern.edu), Adam D. Galinsky (agalinsky@kellogg.northwestern.edu), and Hayagreeva Rao (hayagreeva-rao@kellogg.northwestern.edu), "The Activist in All of Us: Varieties of Action and Low Power Attempts to Challenge Status Hierarchies," forthcoming in *Research on Managing Groups and Teams: Status* (Vol. 7), M.A. Neale, E.A. Mannix, and M. Thomas-Hunt (eds.), JAI Press.
http://ssrn.com/abstract=573566

Despite all the talk of empowerment, human capital maximization, and advocacy for "adhocracy," hierarchies are a part of life, particularly in the corporate world. Whether they are identified as relational, organizational, functional, sociological, or something else, each one of us belongs to a hierarchy.

In recent years, leadership studies researchers, who used to focus solely on management and supervision, have regularly explored the notion of "followership." More and more, they're looking into the dynamics of activists — people who try to disrupt rigid organizational hierarchy.

Paul V. Martorana, a doctoral student; Adam D. Galinsky, assistant professor of management and organizations; and Hayagreeva Rao, the Richard L. Thomas Distinguished Professor of Leadership and Organizational Change, all of the Kellogg School of Management at Northwestern University, examine why these activists challenge hierarchies.

In general, people accept the hierarchy they are a part of, partially because powerlessness makes people acquiescent. This explains why the most extreme power hierarchies — such as dictatorships — tend to endure for so long. In these situations, people accept what the authors call "hierarchy-legitimizing myths," conclusions that are deemed to be true, but may not be, and that promote discrimination and inequality. For example, poor people will accept the stereotypical logic that they are broke but happy, whereas the wealthy are rich but sad.

According to the authors, three elements motivate subordinates in a hierarchy to become activists. First, people must feel they have power despite their comparatively low position in the existing hierarchy. The authors specifically define such power as "the ability to control resources, [one's] own and others', without social interference."

Second, subordinates must experience emotions that are likely to lead to feelings of power. These may include pride and anger. When people low in a hierarchical structure are angry, they are more likely to identify injustice in the organization and that, in turn, may empower them.

Third, people must perceive that the system is illegitimate and unstable, and its boundaries are impermeable — that is, there is little opportunity for working one's way up.

When people in a hierarchy experience all three of these feelings at the same time, the consequences can be highly destabilizing for any type of institution. As an example, the authors point to the Los Angeles riots of 1991 triggered by the Rodney King trial, in which police officers were acquitted in spite of apparently incriminating video footage. The post-trial rioting, the researchers argue, was a case in which disdain for a system led to anger, empowerment, and overt activism.

If only some of the three elements exist, activism may be more covert. For instance, the Luddites rebelled against technological progress in the 19th century by sabotaging textile looms, because they didn't feel powerful enough to be more open about their protest.

The implications for modern business leaders are significant — more than these examples might suggest. If companies accept that granting some power to employees is a good thing, then they also have to accept greater employee activism. But to make sure that this activism does not torpedo the organization, managers must constantly monitor the legitimacy and stability of the corporate system, which includes being vigilant in ensuring that the organization's values and its actions, as perceived by employees, are considered fair.

All in the Family

Belén Villalonga (bvillalonga@hbs.edu) and Raphael Amit (amit@wharton.upenn.edu), "How Do Family Ownership, Control, and Management Affect Firm Value?" http://knowledge.wharton.upenn.edu/papers/1284.pdf

A surprisingly large proportion of public corporations are family controlled. One 1999 study examined the 20 largest publicly traded firms in the 27 richest economies and concluded that families or individuals controlled 30 percent of them. In the U.S., these included Wal-Mart, Hewlett-Packard, Ford Motor Company, and Kellogg. Obviously, many families want to maintain their grip on the businesses they founded, but is this beneficial to other shareholders?

To answer this, Belén Villalonga, an assistant professor at Harvard Business School, and Raphael Amit, the Robert B. Goergen Professor of Entrepreneurship at the University of Pennsylvania's Wharton School, compared the market and book value of family and nonfamily companies in the Fortune 500 between 1994 and 2000.

Initially, the authors defined family firms as those in which the founder or a member of his or her family is an officer, a director, or a blockholder (an owner of 5 percent or more of the firm's equity, either individually or as part of a group). Of the 508 companies in their sample, 37 percent were family firms by this definition.

But, as the authors learned, the definition is not so simple. When a founder or a family is a stakeholder in a Fortune 500 firm, their holdings tend to be minimal — on average, about 16 percent of the equity in the company. Yet, in 50 percent of the companies that the authors first defined as "family firms," additional "control-enhancing mechanisms" entitle the families to a greater proportion of the total votes than their share ownership stake. These mechanisms include dual share classes with different voting rights, cross-holdings, and voting agreements.

In 1994, Berkshire Hathaway (of which Warren Buffett and his wife owned approximately 43.8 percent) held 14.8 percent of the Class B shares in the Washington Post Company. (Class B shares carry fewer voting rights than Class A shares.) But Berkshire Hathaway and its subsidiaries granted Donald Graham a proxy to vote the shares at his discretion. (Mr. Graham is the newspaper's publisher and eldest son of Katharine Graham, the former chief executive of the Washington Post Company and daughter of the founder.)

The complex nature of family influence in corporate boardrooms led Professors Villalonga and Amit to make a distinction between ownership, control, and management.

Family ownership of a business creates value for shareholders only when the founder is still active in the firm.

As a result, their research ultimately addressed this question: Does family ownership, control, and/or management create or destroy value?

Their central finding was revealing: Family ownership creates value for shareholders — both family and nonfamily — only when the founder is still active in the firm, either as CEO or as chairman with a nonfamily CEO. But when a descendant of the founder serves as CEO, value is diminished — minority (nonfamily) shareholders fare worse than they would in nonfamily firms — even if the founder is chairman.

The effect of control-enhancing mechanisms also varies according to which generation of the family holds the commanding stake. In companies led by founder-CEOs, the presence of control-enhancing mechanisms reduces shareholder value below what it would be without such arrangements. The authors argue that markets penalize the share price because of the CEO's disproportionate level of influence. Despite this, however, minority shareholders are still likely to be better off investing in these companies: On average, firms with founder-CEOs that have control-enhancing mechanisms perform 25 percent better than nonfamily firms.

In firms with CEOs who are descendants of the founder, control-enhancing mechanisms actually have a small positive impact. This is either because descendant CEOs are not perceived by the markets to be as dominating as founder CEOs, or because markets are allocating a tiny premium for continuity. Overall, however, minority shareholders in descendant-CEO companies are still worse off than they would be investing in a nonfamily firm.

The broad explanation of these results lies with an intriguing question: Which of two types of conflicting relationships have the largest impact on a company's value? The first is the conflict between the interests of minority shareholders and managers (who appropriate value through their compensation packages). The second is the conflict between minority shareholders and large controlling shareholders (such as family members who appropriate value through dividends and other mechanisms). In firms with a CEO who is also the founder, the first conflict is reduced. The markets apparently are a lot less concerned about the second conflict, which remains in these cases, because the overall effect is to create more value for minority shareholders. But in companies with a descendant (but nonfounder) CEO, it is more likely that both conflicts exist, and minority shareholders could suffer a double impact.

The findings of this paper have implications for all firms making the transition from founder to next generation — and for their shareholders. According to one estimate, this could be as many as 40 percent of all America's family-owned businesses between 2003 and 2008.

Broad View of R&D

Sendil K. Ethiraj (sendil@umich.edu) and Phanish Puranam (ppuranam@london.edu), "The Distribution of R&D Effort in Systemic Industries: Implications for Competitive Advantage," *Advances in Strategic Management*, Vol. 21, 2004. http://ssrn.com/sol3/abstract_id=604124

If you make an essential component of airplanes, should your R&D effort focus solely on improving and developing that component? Or is that too narrow? For competitive purposes, should R&D also consider

Companies need to take a broader view of R&D to keep abreast of changes in technology systems.

other critical airplane parts, even those that you don't manufacture? Sendil K. Ethiraj, assistant professor of corporate strategy and international business at the University of Michigan Business School, and Phanish Puranam, assistant professor of strategy and international management at London Business School, examine this fundamental R&D issue.

They examine the PC component industry, which they call a "systemic industry; the way the components work together determines the value that consumers obtain from the product." The authors studied the R&D efforts of 111 companies in five PC component sectors — microprocessors, random access memories, display/graphics, rigid disk drives, and mainboards — over a 22-year period, from 1978 to 1999.

The PC component industry was of interest for two reasons. First, the functions of a PC rely on highly interdependent components. Second, most component makers in the PC industry specialize in manufacturing a single product type; more than 90 percent of the sample companies generated at least 75 percent of their revenue from a sole component.

The authors explain why such companies need to take a broader view of their R&D. In the PC industry, for example, faster hard disk drives have an impact on how much memory is required. Memory manufacturers must, therefore, think about R&D in terms of the system, not just their component. Of course, hard disk manufacturers should do the same, although they generally don't.

One problem, the authors contend, is that intense competition among hard disk makers encourages R&D to be focused solely on improving hard disks. As a result, manufacturers miss opportunities to take advantage of advances in the broader PC system, and it can lead to mismatches between the components being produced and what the PC actually requires.

Professors Ethiraj and Puranam found, however, that the average company in the sectors studied earmarked only 16 percent of its annual R&D efforts to its own component product market. The authors conclude that broadly focused R&D campaigns enable companies to keep abreast of changes to the overall technological system. Diversified research also improves R&D productivity in the core component technology. System-level R&D may also open more doors for licensing technology. This, the authors suggest, is an avenue worthy of further research.

Clearly, the significance of broad and narrow R&D varies from industry to industry and company to company. For example, Dell deliberately keeps its component suppliers at arm's length because efficiency, not innovation, is at the core of its business model. Toyota, on the other hand, is a known leader in working collaboratively with its suppliers to build an "advantaged supply chain." This is because Toyota feels that this improves the quality of its products and helps it achieve a stronger competitive position in the marketplace. (See "Building the Advantaged Supply Network," by Bill Jackson and Conrad Winkler, *s+b*, Fall 2004.) +