Excerpt from Teaming: Teaming Across Boundaries

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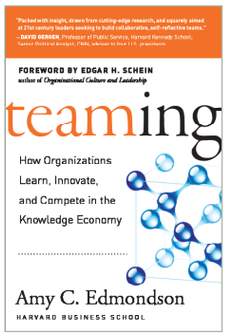
On August 5, 2010, more than half a million tons of rock suddenly caved in, completely blocking the entrance to the San Jose copper mine in Chile. Mining accidents are unfortunately common. But this one was unprecedented for several reasons: the distance of the miners from the Earth's surface, the sheer number of miners trapped, and the hardness of the rock, to name a few. Thirty-three men were buried alive 2,000 feet under rock harder than granite. By way of comparison, an earlier rescue at the Quecreek Mine in Pennsylvania, with nine miners trapped 240 feet below ground, had been considered a remarkable feat. In Chile, initial estimates of the possibility of finding anyone alive were put at 10 percent — odds that diminished sharply two days later when rescue workers narrowly escaped a secondary collapse and forever shut down the option of extracting miners through the ventilation shaft.



Most readers will already know that within 70 days all 33 miners would be rescued. What happened during those 70 days was an extraordinary teaming effort involving hundreds of individuals spanning physical (those 2,000 feet of rock), organizational, cultural, geographic, and professional boundaries.

Teaming took place in three main arenas. First, and most painful to consider, were the miners facing the challenge of physical and psychological survival. In the second arena, engineers and geologists came together from multiple organizations and nations to work on the technical problem of locating, reaching, and extracting the trapped miners. The political and managerial sphere comprised the third arena, where senior leaders in the Chilean government and elsewhere made decisions and provided resources to support the actions of those above and below ground at the San Jose site. At the outset, these three arenas contained independent teaming activities; by the end, their successes brought them together in a dramatic, magnificently choreographed rescue.

Below ground, amid shock and fear, leadership and teaming took shape after a tumultuous beginning. Immediately after the collapse, the miners scrambled to safety in the mine's small "refuge." Luis Urzúa, who had formal leadership over the group as the shift supervisor, started by checking provisions in the refuge. Calmly and quickly, he began to focus on crucial survival needs, especially in terms of the limited food available (roughly the amount of food two miners would eat over two days). Calm did not prevail, however. Mario Sepulveda, a charismatic 39-year-old, outraged at the state of the mine and the company ' s long - standing lack of attention to safety, reacted angrily to the collapse. His energy attracted followers; factions and conflict soon emerged. Some wanted to take action of any kind to reach the outside rather than sitting helplessly to await rescue. Others wanted to follow Urzúa's guidance. By the end of their first twenty-four hours, the miners were exhausted by failed attempts to communicate with the outside world and disoriented by the lack of natural light. With scant attention to sanitation or order and subdued by hunger and fatigue, they attempted to sleep.

On the second day, miner Jose Henriquez stepped in to urge the group to start each day with a collective prayer. Soon this became a sustaining routine and helped unite the group around a shared goal of survival. With no blueprint for how to survive in these conditions, conversation and experimentation were essential to discovering a way forward. In the days that followed, facing darkness, hunger, depression, filth, and illness, the miners cooperated intensely to maintain order, health, sanitation, and sanity. They used the lighting system to simulate day and night, each lasting twelve hours. Sepulveda, determined now to pull people together, assigned specific tasks to people based on skills, experience, and mental stability. No responsibilities were imposed on miners who were hallucinating or were otherwise incapable of focused action. When some miners began to develop skin mold and canker sores from the heat and humidity, miner Yonni Barrios, well read on various illnesses, volunteered as a medic. A grim but functional routine took hold, dampening the cycles of despair and hope. Seventeen days later, when rescuers finally bored a narrow hole into the chamber, the miners received additional food and supplies

and the lifeline of communication by special telephone.

Above ground, the Chilean Carabineros Special Operations Group — an elite police unit for rescue operations — arrived a few hours after the first collapse. Their initial attempt at rescue led to the ventilation shaft collapse that was the rescue effort's dismal first failure. As news of a mine cave-in spread, family members, emergency response teams, rescue workers, and reporters also flooded to the site. Meanwhile, others in the Chilean mining community dispatched experts, drilling machines, and bulldozers. Codelco, the state-owned company overseeing the San Jose mine, sent Andre Sougarret, an engineer and manager with over twenty years of experience in mining who was known for his calm, composure, and ease with people, to lead the operation.

Working with numerous other technical experts, Sougarret formed three teams to oversee different aspects of the operation. One searched for the men, poking drill holes deep into the earth in the hopes of hearing sounds to indicate that the men were alive. Another worked on how to keep them alive if found, and a third worked on how to extract them safely from the refuge. The teams originally came up with four possible rescue strategies: the first, through the ventilation shaft, was quickly rendered impossible, as noted earlier. The second, drilling a new mine ramp, also proved impossible once the rock's instability was discovered. The third, tunneling from an adjacent mine a mile away, would have taken eight months and was also excluded. The only hope was to drill a series of holes at various angles in an attempt to locate the men.

But the extreme depth and small size of the refuge made the problem of location staggeringly difficult. With the drills' limited precision, the odds of hitting the refuge with each painstaking drill attempt were about one in eighty. Even that was optimistic, because the location of the refuge was not precisely known. Available maps of the tunnels were inaccurate, having not been updated in years. Worse, the drillers couldn't take the most direct route, mounting equipment in such a way as to drill straight down on top of the mine because it would increase the danger of collapse. Instead, they would have to set up off to the side and drill at an angle, further complicating the accuracy problem.

To maximize the chances of success, teams worked separately at first to come up with different strategies for drilling the holes. Several early attempts failed to reach the miners, but at least revealed crucial features of the mine and the rock. Unfortunately, much of this learning brought bad news. For instance, the drillers and geologists discovered that fallen rock trapped water and sedimentary rocks, increasing drill deviations and further reducing the chances of reaching the refuge in time. They also learned that drilling at an inclined angle shifted the drill to the right, while the weight of the drill bars pushed the drill upright, giving rise to an overall drift downward and to the right. This was the kind of technical detail that engineers had to quickly incorporate into their plans, which were changing rapidly and radically with each passing day.

One dramatic change to procedure was the discovery and use of frequent, short action-assessment cycles. In normal drilling operations, precision was measured after a hole was completely drilled. Here, in contrast, drillers realized that to hit the refuge, they would have to make measurements every few hours and promptly discard holes that deviated too much, starting again —discouraging as that might be. As they learned more about the search challenge, the odds of success diminished further, with one driller putting it at less than 1 percent.

Fortunately, the different teams came up with remarkably complementary pieces of an ultimately viable solution. For example, in one piece of good luck, a Chilean geologist named Felipe Matthews, who had developed a unique technology for measuring drilling trajectories with high precision, showed up at the site with his innovation. He discovered quickly that his measurements were inconsistent with those of other on-site groups. Based on a rapidly improvised series of tests, Matthews's equipment was found to be most accurate, and he was put in charge of measuring the accuracy of all drilling in progress.

The various subgroup leaders met for a half hour every morning and also called for quick meetings on an as-needed basis. They developed a protocol for transitioning between day and night drill shifts and for routine maintenance of machinery. "We structured, structured, structured all aspects of execution." As drill attempts continued to fail, one after another, Sougarret communicated gracefully with the families. Despite these failures, Sougarret and his new colleagues persevered.

Meanwhile, in Santiago, the newly elected Chilean president, Sebastian Piñera, had met with Mining Minister Laurence Golborne on the morning of August 6, 2010. The president sent

Golborne to the mine with clear in-

structions: Get the miners back alive and spare no expense. Further, this intention was to be made entirely public. This was a critical decision by a man with prior experience in business rather than government; someone with political savvy might have avoided staking his reputation on a promise so unlikely to be realized. Golborne and Pi ñ era quickly reached out to their network, which comprised colleagues around the world. As the president put it, "We were humble enough to ask for help." Michael Duncan, a deputy chief medical officer with the U.S. National Aeronautics and Space Administration (NASA) who was contacted by the government, concurred, reporting that the Chilean officials basically said, "Let's try to identify who the experts are in the field — let's get some consultants in here that can give us the best information possible." Duncan, for example, brought experience with long space flights to bear on the question of the miners' physical and psychological survival in small quarters. NASA engineers played a crucial role in the design of the escape capsule, leading us to the final teaming endeavor in the technical realm, thousands of miles from the site.

Clint Cragg, a top NASA engineer, went to Chile in late August with a few NASA health care experts to volunteer to help. Cragg later teamed with engineers in the Chilean navy to design the rescue capsule, after first going back to the United States to pull together a group of 20 NASA engineers. For inspiration, the NASA team looked to a precedent dubbed the "Dahlbusch Bomb," built in 1955 to rescue three men trapped in the Dahlbusch coal mine in western Germany. The engineers developed a twelve - page list of requirements, used by the Chilean navy in the final design for the capsule, which was called the Fenix. The Fenix interior, just barely large enough to hold a person, was equipped with a microphone, oxygen, and spring-loaded retractable wheels to roll smoothly against the rock walls. The engineers designed three nearly identical capsules. The first was used during tests — experiments and dry runs — and the second was used during the rescue operation. The third, presumably, was a backup. On October 13, the Fenix started its life-saving runs to bring miners one by one through the fifteen-minute journey to the surface of the Earth. Over the next two days, miners were hauled up one by one in the twenty-eight-inch-wide escape capsule painted with the red, white, and blue of the Chilean flag. After a few minutes to hug relatives, each was taken for medical evaluation.

Teaming Despite Boundaries

Reflecting on the Chilean rescue, it is clear that a top-down, command-and-control approach would have failed utterly. No one person, or even one leadership team, could have figured out how to solve this problem. It's also clear that simply encouraging everyone to try anything they wanted would have produced only chaos and harm. Family members, miners, and others with good intentions had to be held back numerous times from rushing headlong at the rock with pickaxes. Instead, what was required, facing the unprecedented scale of the disaster, was coordinated teaming—multiple temporary groups of people working separately on different types of problems, and coordinating across groups, as needed. It also required progressive experimentation. This section considers key factors to the operation's success, and what we can learn from the case about teaming across boundaries more generally.

First, the most senior leadership committed publicly to a successful outcome, risking both resources and reputation on an unlikely outcome. In his decision to do this, President Piñera resembles other leaders facing nearly impossible challenges who have been willing to declare an early and total commitment to success. Take, for example, the explosion that occurred in an oxygen tank during the *Apollo 13* mission on its journey to the moon. Despite limited resources, unclear options and a high probability of failure, NASA flight director Gene Krantz insisted, "Failure is not an option." He authorized problem-solving efforts in previously trained teams that tirelessly worked out scenarios for recovery using only materials available to the astronauts. Ultimately, Kranz and his teams safely returned the crew to Earth. Piñera and Golborne were also willing to ask for help and to seek out expertise in any organization or nation willing to provide it.

Second, the teaming utilized rapid-cycle learning. Technical experts worked collaboratively to design, test, modify, and abandon options,

> Frames are interpretations that individuals rely on to sense and understand their environment. Most of the time framing occurs automatically. Reframing is a powerful leadership tool for shifting behaviors and enrolling people to change.
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> In framing their role, leaders must explicitly communicate their interdependence and express both their own fallibility and the need for collaboration.
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> –Amy Edmondson

over and over again, until they got it right. They organized quickly to design and try out various solutions, and just as quickly admitted when these had failed. They willingly changed course based on feedback — some obvious (the collapse of the ventilation shaft), some subtle (being told that their measurements were inaccurate by an engineer intruding mid-process with a new technology). Perhaps most important, the engineers did not take repeated failure as evidence that a successful rescue was impossible. Similarly, the miners successfully teamed to solve the most pressing problems of survival, despite the desperate odds.

Third, the structure of the teaming is interesting to consider. The separate efforts — managerial, technical, and survival — were intensely focused. In each arena, problem solving was intelligent and persistent, and the combined efforts equaled more than the sum of the parts. The intermittent coordination between the arenas was as important as the intense improvisation and learning within them.

As this example demonstrates, when teaming across boundaries works, the results can be awe-inspiring. Managing a complex rescue operation, launching a space shuttle, producing a big-budget movie, or delivering a large engineering and construction project are all examples of complex uncertain work that requires multiple areas of expertise, and even multiple organizations, for its completion. The problem is that all too often teaming is thwarted by communication failures that take place at the boundaries between professions, organizations, and other groups. People think they're communicating, they participate in endless meetings, and they work hard, only to have their projects fail. Why? As individuals bring diverse expertise, skills, perspectives, and goals together in unique team configurations to accomplish challenging goals, they must overcome the hidden challenge of communicating across multiple types of boundaries. Some boundaries are obvious — 2,000 feet of rock, or being in different countries with different time zones. Others are subtle, such as when two engineers working for the same company in different facilities unknowingly bring different taken-for-granted assumptions about how to carry out a particular technical procedure to a collaboration.

This chapter describes the boundaries that team members frequently must cross while working together on complex problems. After examining why boundaries matter, I describe three types of boundaries that confront teaming in today's global organizations. I then provide guidelines for successfully teaming across boundaries to create possibilities for organizational learning.

Visible and Invisible Boundaries

Boundaries refer to the divisions between identity groups. An identity group exists around any meaningful category in which a person belongs, such as gender, occupation, or nationality. Some identity groups, and their corresponding boundaries, are more visible than others. Gender, for example, is visible. Occupation is less visible — except where clothing gives it away. What is invisible, however, are the taken-for-granted assumptions and mindsets that people hold in different groups. For teaming to be successful, managers and team members must be aware that they come together with different perspectives, often taking for granted the "rightness" of their own beliefs and values. This means it's not enough to simply say, let's band together, and it will all work out. No matter how much goodwill may be involved, boundaries limit collaboration in ways that are often invisible but nonetheless powerful.

Taken-for-Granted Assumptions

Processes of education, licensing, hiring, and socializing contribute to beliefs that lead people to favor their own group or location, and to unconsciously view the knowledge of their own group as especially important. It's as if there's a wall that separates engineers from marketers; nurses from doctors; and designers in Beijing from designers in Boston. Most people take knowledge that lies on their side of a boundary for granted, making it hard to communicate with those on the other side. Paraphrasing an observation once made by communications theorist Marshall McLuhan, we don't know who discovered water, but it wasn't the fish. In other words, the context in which we work, day in and day out, is often invisible to us. Presumably, fish don't think much about water; they take it for granted. Research on cross-functional new product development teams conducted by Professor Deborah Dougherty of Rutgers found that team members from different areas of expertise occupied different "thought worlds" — taken-for-granted assumptions that each expert was unaware of holding. Similarly, each of us takes for granted many of the values and norms of identity groups (profession, organization, country, and so on) of which we're members. At its core, teaming is about reaching across or spanning these kinds of boundaries. To do this, we must first be keenly aware of what

they are. Many boundaries were created and strengthened by the very people — experts, department heads, authorities — who now must play a role in helping to break them down.

Communication with anyone from a different group, whether the difference is demographic or organizational, is fraught with small hurdles. Teams within organizations often must coordinate objectives, schedules, or resources with other teams, departments, or locations. This requires discovering and revealing taken-for-granted assumptions to avoid misunderstanding and error. But by their very nature, taken-for-granted assumptions are notoriously hard to recognize, so it helps to be aware that they exist and to be on the lookout for them. Consider the real-life example of two aeronautical organizations that joined forces to collaborate on a new aircraft. At the first planning meeting, everyone agreed on ambitious goals and a rigorous schedule. However, the conversation kept getting mired in misunderstanding and miscommunication. Finally, it was discovered that the two groups meant something different when they used the simple phrase "the plane has been delivered." One organization understood it to mean the plane has been physically delivered to a control station. But the other organization understood the exact same phrase to mean the plane has been delivered to the physical site and the machinery has passed all technical inspection. In addition to the head-scratching in the room, this semantic difference was crucial to the project because it affected how data was to be collected and categorized. This subtle difference in semantic use between two aeronautical groups is just a single example of the kind of misunderstanding that can be multiplied many times over when teaming spans boundaries.

To further add to the challenge, research by Miami University professor Gerald Stasser and his colleagues shows that unique information held by any one team member, as opposed to information shared by most team members, is often ignored in team decisions, much to the detriment of team performance. It is natural for people from different groups to come together and spend precious time discussing the subset of knowledge with which everyone is already familiar. Unique information rarely surfaces, even when that information is critical to making the decision. Groups don't mean to do this. In fact, people in groups often believe they are leveraging group member expertise to make an informed decision. These well-documented findings describe groups that are left to their own devices, without leadership or tools to guide their process. Fortunately, as we will see later in this chapter, it is possible to avoid these traps.

Specialization and Globalization

Two related trends have increased the need for teaming across boundaries. First, knowledge and expertise evolve ever more rapidly. In most fields, the rate of new knowledge development requires people to invest considerable time just to stay current in their own area of expertise. Especially in technical fields, the explosion of new knowledge leads inexorably to greater specialization. Fields spawn new subfields, and new subfields spawn even more specialized subfields. For example, electrical engineering, once a subfield of physics, became its own discipline by 1900, and today splits into the several distinct subfields of power systems, signal processing, and computer architecture. More generally, technical knowledge and specialized jargon proliferate, making it difficult to keep up with other, even closely related, fields of inquiry. Highly specialized professionals thus find themselves needing to collaborate to carry out the important work of the organization, whether developing a new cell phone or caring for a cancer patient.

Second, global competition has led to ever more compressed time frames: product life cycles are shrinking; lead times for getting new products to market are shorter; and scientific researchers face more threats of being scooped in their work by a lab halfway around the world. Time pressures mean that a structured approach, in which managers plan each aspect of a large development project with specialized tasks to be accomplished separately in carefully structured phases, are unrealistic. This planning becomes even less realistic when completed tasks are "thrown over the wall" to other functions or disciplines. Instead, the walls between disciplines have come down, and simultaneous work on related tasks must be coordinated and negotiated in a dynamic teaming journey.

Individuals or departments cannot accomplish meaningful results in isolation. The chances of individual components, developed separately, coming together into meaningful, functional wholes — new product, feature film, or rescue operation — without intense communication across the boundaries are exceedingly low. Considering these two factors — increasing specialization and global competition — there are numerous benefits to learning how to transcend boundaries that exist between people, departments, or specialties. Understanding how to break

down these walls includes developing a deeper understanding of the varieties of diversity and how they relate to the boundaries that exist both within and between work groups.

Three Types of Boundaries

Diversity is an important topic in research on teams and teaming, yet researchers lack consensus on a single clear definition of diversity. Katherine Klein and Dave Harrison, professors at Wharton and Penn State, respectively, defined diversity as "the distribution of differences among the members of a unit with respect to a common attribute X." Common attributes include gender, ethnicity, professional status, and educational degree. A team is considered diverse if its members differ in respect to at least one attribute. Conceptually, Klein and Harrison grouped diversity into three basic groups, *separation, disparity,* and *variety,* which provides a helpful starting point. Exhibit 6.1 uses these distinctions to suggest three common boundaries that often confront teaming in complex organizations.

The following sections look at examples of each of these types of boundaries and consider their impact on collaboration. Of course, sometimes people must cross multiple boundaries at once, such as when two team members have differences in terms of nationality, profession, gender, and time zone. Fortunately, leadership that helps establish process discipline and good communication can help overcome the challenges described in this section.

Physical Distance

An increasingly common teaming challenge is created by the need to span geographic distance. In many global companies, work teams in geographically dispersed locations all over the world, so-called *virtual teams,* are relied on to integrate expertise. A virtual team is a group of individuals who work across physical and organizational boundaries through the use of technology. (Later in this chapter, I describe one such project in a global company.) Geographic regions in some organizations present nearly impermeable boundaries, even within the same country. At the Internal Revenue Service, for example, before Commissioner Charles Rossotti led the agency in an ambitious organizational transformation during his five-year tenure under President Bill Clinton, regional centers had acted like fiefdoms for decades, sharing neither information nor resources, despite the need to do both. Service representatives were unable to respond to the volume and variety of complex tax questions that would come into the regional center. The result was poor service and frustrated customers. Rossotti took down the regional barriers by combining all service representatives into one centralized national call center. Employees did not physically move. They still lived and worked in the old geographic locations, but they became part of one large virtual service team that was able to spread the workload in sensible and equitable ways. This organizational change allowed taxpayers' technical queries to be routed to those individuals with expertise in a particular aspect of the tax code — no matter where they were located.

Status Boundaries

Disparity diversity may be the most challenging boundary to cross in teaming. When those at the top have the most power and those at the bottom have the least, lower - power individuals usually find it hard to speak up. Perhaps the most common power differences within work teams are professional status and ethnicity. Professional status can significantly affect beliefs about taking interpersonal risks and speaking up. In health care, for example, physicians have more status and power than nurses, who in turn have more status than technicians. Yet members of these professions often must team to take care of patients. Even people from the same profession can have status differences. Consider resident-level and senior ("attending") physicians working together to care for patients. Fears about taking interpersonal risk can prohibit candid discussion and hinder collaboration. Yale professor Ingrid Nembhard and I conducted a study of intensive care units (ICUs) in which we found that the status differences that exist between physicians, nurses, and respiratory therapists led to significant differences in psychological safety across these groups, which affected their willingness to speak up, ask questions, and participate in improvement efforts. When we looked at the data more closely, we discovered that some unusual ICUs didn't show any status-based difference in psychological safety. Instead, these units were workplaces where everyone, no matter what role, felt equally engaged and able to participate in the collaborative work of caring for patients. These units also showed significantly more clinical improvement in outcomes over the two years of the study.

My recent research with Professor James Detert of Cornell (described in Chapter Two) uncovered taken-for-granted beliefs about speaking up in hierarchies that pose a real challenge to cross-status teaming. Each of us, without consciously realizing it, has well-learned taken-for-granted rules for when to openly share our ideas,

concerns, or questions with people above us in an organizational hierarchy. For example, many tacitly assume that ideas for change will be seen by senior managers as a criticism (whether or not that's accurate). And most people are naturally reluctant to avoid criticizing people in positions of power.

Note that demographic differences (differences based on gender, race, religion, and other social categories), which may readily be seen as variety diversity, sometimes also enforce a power hierarchy due to the nature of social power in various cultures and countries. For example, power and status differences in organizations have been documented for both gender and race. In addition, individuals aware of negative stereotypes associated with cultural identity may become hindered by self-fulfilling prophecies or a perceived need to overcome negative stereotypes. Similarly, unconscious negative stereotypes significantly hinder group performance because individuals tend to skirt or avoid the issue, allowing negative stereotypes to arise in other, more subtle ways.

Knowledge Boundaries

Work teams often confront differences in expertise. In product and process development teams, for example, it is increasingly common to bring together people from different organizational functions for a limited period of intense teaming. The value of teaming is that different experts bring different knowledge and skills to the collaborative task. In product development, engineering offers insight into design and technology; manufacturing into feasible production processes, accurate cost estimates, pilot and full - scale production; and marketing into customer receptivity, customer segments, product positioning, and product plans. Teaming is the process of integrating these diverse skill sets and perspectives, as well as coordinating timelines and transferring resources across groups, when appropriate. However, diverse groups often have difficulty accessing and managing disparate knowledge, for two reasons. Misunderstandings arise due to different meanings embedded in different disciplines, and mistrust arises between groups.

Teaming Across Common Boundaries

Sharing knowledge across boundaries may not be natural in large organizations, but it's certainly worth the effort. Successfully overcoming the obstacles of teaming across boundaries offers valuable learning for individuals and provides a vital competitive advantage for organizations. Working across the three types of boundaries described in the previous section requires attention to their unique challenges and to techniques for overcoming them. For reference, Table 6.1 summarizes these common boundaries and their accompanying tactics. As shown in Table 6.1, physical and status differences arise from distance and hierarchy, respectively, whereas knowledge boundaries arise from two distinct origins — membership in different organizations and membership in different occupations. The following sections explore the implications of teaming across each boundary and present strategies for successful teaming and learning within diverse groups.

Teaming Across Distance Boundaries

"Sharing is not a natural thing," said Benedikt Benenati, the organizational development director at the multinational food company, Groupe Danone. With subsidiaries in 120 countries, Groupe Danone is a multinational corporation that sought to promote teaming across the geographical boundaries of its many divisions. In addition to sharing common problems, such as getting retailers to stock the right amounts of Danone products at the right time, managers in different countries were focused on their own regions, and rarely considered the opportunity to seek ideas from their counterparts in other regions. As Benenati pointed out, the company's senior managers may be part of the problem: "Managers may be reluctant to let their teams discuss among themselves. If members of their team find solutions, then perhaps managers are of no further use." Such reactions and fears are very human, of course, but they also leave opportunities for small process improvements around the globe to go untapped.

Benenati put the need for knowledge sharing in blunt, practical terms: "In a company with 90,000 employees, solutions to the problems of one team are likely to exist elsewhere." To facilitate knowledge sharing and immediate collaborations among people in different locations, but with similar responsibilities, Benenati and his colleague, Franck Mougin, executive vice president of human resources, created what they called Knowledge Marketplaces. These marketplaces were like small improvisational performances punctuating the usual business routine. Nested within regular company conferences, Knowledge Marketplaces took place when managers from across the globe were gathered in one location. Participants in the marketplace wore costumes to mask hierarchical levels and encourage sharing of business and operations ideas. Interacting with a senior vice president in a Yoda mask was less intimidating than approaching that

same executive dressed in a suit and tie. Likewise, a new associate dressed as Darth Vader might feel empowered to speak up in ways she might not feel in regular office attire. The atmosphere was clearly playful, and many remarked that the costumes made it easy to trade ideas and practices.

Although spontaneous exchanges of ideas and practical suggestions abounded in the Danone Knowledge Marketplaces, some knowledge exchanges were orchestrated in advance. For these, selected managers were instructed to prepare books with stories of best practices that facilitated successful knowledge sharing. One such book described how the marketing team at Danone Brazil helped the marketing team in Danone France launch a new fat-free dessert. By adapting an existing product from Brazil, Danone France was able to bring a new product to the French market in less than three months. Not only was time saved, but a €20-million business was created with sales superior to the closest competitor. This occurred, however, as a result of Danone's leadership designing a kind of social engineering to overcome the natural tendencies for practical knowledge not to flow across geographic boundaries. When teams or groups do not have the ability to physically meet and exchange ideas, they must rely on technology to span distances, and communicating through information technology brings its own problems.

The information technology that allows us to shrink global distances by sending e-mails hurtling through cyberspace and to fax documents to machines across continents gives us a false sense of security, lulling us into believing that teamwork among geographically dispersed employees requires nothing more than a fast Internet connection or new videoconferencing equipment. In fact, there are substantial barriers to sharing and integrating knowledge that virtual teams must overcome. In some organizations, however, it's the different mindsets across geographic regions, rather than the actual physical distance between them, that present nearly impermeable boundaries. In addition to the obvious challenges brought on by language and time zone differences, some types of knowledge just do not travel well. This is because certain, often very valuable, information is taken for granted by those who are closest to it. This tacit knowledge can be situated in ways that make it invisible to distant team members.

Collaboration across distance boundaries is greatly enabled by coming together physically, if possible, for a rare but valuable face-to-face meeting. This helps build trust and awareness of differences that might have to be taken into consideration during collaborative work. The Knowledge Marketplaces at Danone were an example of this technique. It's also helpful to emphasize a shared goal, to motivate the effort of communicating across distances. A shared goal clearly helped motivate teaming across distance boundaries in the Chilean rescue, for example. And, despite the various challenges of using IT systems effectively, computer-based knowledge management (KM) systems in large companies remain a crucial tool for helping people team across distance boundaries. Recent research shows that globally dispersed software project teams that used knowledge repositories more frequently than their counterparts performed better in both quality and efficiency. The use of stored knowledge, developed by engineers around the world, provided these complex temporary teams with valuable information and techniques that accelerated and improved their collaborative work.

Teaming Across Status Boundaries

Most organizations contain vestiges of hierarchical boundaries. Although a command-and-control model of authority may have been productive in the past, the knowledge economy increasingly requires interactive communication and collaboration. The many problems that hierarchy creates for collaboration have been mentioned in previous chapters. I have also offered practical solutions to the corrosive and stifling effect of hierarchy. (See especially Chapter Four, Making It Safe to Team.) The principal strategy for developing the necessary level of collaboration, however, is leadership inclusiveness, in which higher-status individuals in a group actively invite and express appreciation for the views of others. ■

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