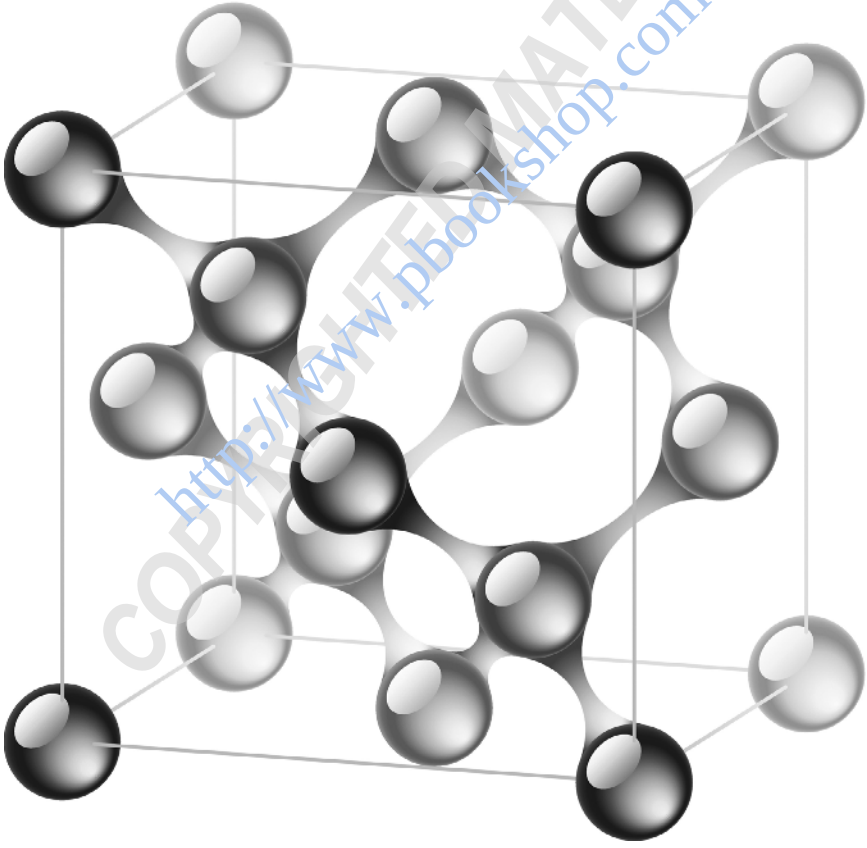
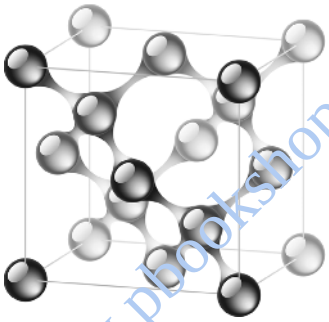
part one

teaming



chapter one

a new way of working



Say the word *team* and the first image that comes to mind is probably a sports team: football players huddled in the mud, basketball players swarming in a full-court press, or baseball players turning a game-saving double play. In sports, great teams consist of individuals who have learned to trust one another. Over time, they have discovered each other's strengths and weaknesses, enabling them to play as a coordinated whole. Similarly, musicians form bands, chamber groups, and orchestras that rely on interdependent talents. A symphony falls apart unless the string section coordinates with the woodwinds, brass, and percussionists. Even when a soloist is featured on stage, the orchestral score has a part for every musician. A successful performance is one in which the musicians complement one another and play in harmony. Like all good teams, they display synergy. The whole is greater than the

sum of its parts. The players understand that they succeed or fail together—they win or lose as a team.

In today's complex and volatile business environment, corporations and organizations also win or lose by creating wholes that are greater than the sum of their parts. Intense competition, rampant unpredictability, and a constant need for innovation are giving rise to even greater interdependence and thus demand even greater levels of collaboration and communication than ever before. Teaming is essential to an organization's ability to respond to opportunities and to improve internal processes. This chapter aims to deepen your understanding of why teaming and the behaviors it requires are so crucial for organizational success in today's environment. To help illuminate the teaming process and its benefits, this chapter defines teaming, places it within a historical context, and presents a new framework for understanding organizational learning and process knowledge, and explains why these are important concepts for today's leaders.

Teaming Is a Verb

Sports teams and musical groups are both bounded, static collections of individuals. Like most work teams in the past, they are physically located in the same place while practicing or performing together. Members of these teams learn how to interact. They've developed trust and know each other's roles. Advocating stable boundaries, well-designed tasks, and thoughtfully composed membership, many seminal theories of organizational effectiveness explained how to design and manage just these types of static performance teams.[1]

Harvard psychologist Richard Hackman, a preeminent scholar of team effectiveness, established the power of team structures in enabling team performance. According to this influential perspective, well-designed teams are those with clear goals, well-thought-out tasks that are conducive to teamwork, team members

with the right skills and experiences for the task, adequate resources, and access to coaching and support. Get the design right, the theory says, and the performance will take care of itself. This model focused on the team as an entity, looking largely within the well-defined bounds of a team to explain its performance. Other research, notably conducted by MIT professor Deborah Ancona, showed that how much a team's members interact with people outside the team boundaries was also an important factor in team performance.[2] Both perspectives worked well in guiding the design and management of effective teams, at least in contexts where managers had the lead time and the run time to invest in composing stable, well-designed teams.

In these prior treatments, team is a noun. A team is an established, fixed group of people cooperating in pursuit of a common goal. But what if a team disbands almost as quickly as it was assembled? For example, what if you work in an emergency services facility where the staffing changes every shift, and the team changes completely for every case or client? What if you're a member of a temporary project team formed to solve a unique production problem? Or you're part of a group of managers with a mix of individual and shared responsibilities? How do you create synergy when you lack the advantages offered by the frequent drilling and practice sessions of static performance teams like those in sports and music?

The answer lies in **teaming.**

Teaming is a verb. It is a dynamic activity, not a bounded, static entity. It is largely determined by the mindset and practices of teamwork, not by the design and structures of effective teams. Teaming is teamwork on the fly. It involves coordinating and collaborating without the benefit of stable team structures, because many operations, such as hospitals, power plants, and military installations, require a level of staffing flexibility that makes stable team composition rare.[3] In a growing number of organizations, the constantly shifting nature of work means that many teams disband

almost as soon as they've formed. You could be working on one team right now, but in a few days, or even a few minutes, you may be on another team.

Fast-moving work environments need people who know *how to team*, people who have the skills and the flexibility to act in moments of potential collaboration when and where they appear. They must have the ability to move on, ready for the next such moments. Teaming still relies on old-fashioned teamwork skills such as recognizing and clarifying interdependence, establishing trust, and figuring out how to coordinate. But there usually isn't time to build a foundation of familiarity through the careful sharing of personal history and prior experience, nor is there time for developing shared experiences through practice working together. Instead, people need to develop and use new capabilities for sharing crucial knowledge quickly. They must learn to ask questions clearly and frequently. They must make the small adjustments through which different skills and knowledge are woven together into timely products and services.

Why should managers care about teaming? The answer is simple. Teaming is the engine of organizational learning.[4] By now, everyone knows that organizations need to learn—to thrive in a world of continuous change. But *how* organizations learn is not as well understood. As discussed later in this chapter, organizations are complex entities; many are globally distributed, most encompass multiple areas of expertise, and nearly all engage in a variety of activities. What does it mean for such a complex entity to "learn"? An organization cannot engage in a learning process in any meaningful sense—not in the way an individual can. Yet, when individuals learn, this does not always create change in the ways the organization delivers products and services to customers. This is a conundrum that has long fascinated academics.

This book offers a practical answer to the question of how organizational learning really happens: through teaming. Products and services are provided to customers by interdependent people

and processes. Crucial learning activities must take place, within those smaller, focused units of action, for organizations to improve and innovate. In spite of the obvious need for change, most large enterprises are still managed according to a powerful mindset I call "organizing to execute."[5]

Organizing to Execute

If you stood on a main street in Detroit around 1900, you would have seen electric trolleys sharing the streets with horse-drawn carriages. A mere decade later, cars had arrived in force. Though inefficient and unreliable, these increasingly popular cars brought with them the promise of a new, exciting world. For a short time, however, both literal horse and mechanical horsepower tried to share the streets, sometimes with devastating consequences. Many people found the collision of old and new worlds difficult, especially when those streets became even more crowded with young men from the countryside drawn to the city by the promise of manufacturing jobs.

In this transitional period, it was not obvious to the average worker how much the new industrial era would disrupt the social order by calling for new forms of obedience, unprecedented conformity to routine, and a new mindset that revered systems of control. Self-sufficient farmers and shopkeepers, who had for generations confronted vicissitudes of weather and illness and found ways to survive, would subtly but inexorably be transformed into order-followers collecting paychecks from impersonal enterprises.

Organizing to execute found its seminal momentum in Henry Ford's invention of the assembly line: workers focused on fitting cog to component and component to cog. Emphasizing routine procedures, Ford's approach made the working life of employees menial and tedious. Reliable and predictable, Ford's assembly-line process was as much a novelty as its product. With the new century, age-old structures for self-reliance were being replaced

with the small, repetitive steps that made mass production possible and brought about the modern world of products and services we know today. Ford's success was contingent upon a high level of managerial control over employee practices known today as command-and-control management, or top-down management. The practice of top-down management is one component of a broader organizational methodology known as scientific management.

Scientific Management

Ford's intellectual partner as a pioneer in mass production was management expert Frederick Winslow Taylor, who complemented Ford's assembly line with his efficiency methods and scientific measurement. Taylor and his followers devised ways to transform unpredictable and expensive customized work into efficient, economical systems of mass production. Long product life cycles allowed ample payback for the time invested in designing near-foolproof execution systems like the machine-paced assembly line. Periods of stability could be counted on. Products, processes, and even customers were mercifully uniform, minimizing the need for real-time improvisation to respond to unexpected problems, technological changes, or customer needs. Promoting the use of empirical methods, Taylor advocated his model of management and production in two influential monographs, *Shop Management* and *The Principles of Scientific Management*.[6]

As managers today well know, an advantage of these new small, repetitive tasks was their transparency. Small, repetitive tasks are easy to monitor. They make the performance of the individual worker easy to measure. The assumption that firm performance was the cumulative result of thousands and thousands of well-designed and well-executed individual tasks dominated managerial theory and matched the economic reality. Even today, when it comes to issues like efficiency and productivity, most managers and corporate leaders are driven by taken-for-granted beliefs that were first promulgated by Ford and Taylor. For example, many consider the

ability to measure and reward the specific, differentiated performance of individuals crucial to good management—a belief that is inaccurate and unhelpful in certain settings.

Ford and Taylor's Legacy

Devotion to efficiency and productivity resulted in two major workplace changes. First, it spurred a demand for professional managers who could oversee a vast complex of work activity. Second, it instilled a basic distrust of the worker. To ensure that workers did their jobs according to specified procedures, objective measurements of individual performance were relatively easy for managers to develop and implement. And, for the most part, workers who tried harder performed better. In mass-production settings like the one designed by Ford, opportunities for worker decision making or creativity were nonexistent. With this transparency, fear worked reasonably well to motivate employees. Whether through a fear of supervisor sanction or loss of material rewards, managers were able to coerce and intimidate workers to ensure high productivity. If there were costs to this approach for the enterprise or corporation, they were not in plain view.

The primary problem this legacy creates for managers today is that these systems produced an overreliance on fear in management practice. As Taylorism gained a foothold in factories across the country, the corporate mood became dour. Taylorism was ruthless. The individual's worth was measured by his or her contribution to enterprise gains. A history of the United Auto Workers union described factory life in these early days as follows: "Every Ford worker is perfectly aware that he is under constant observation—that he will be admonished if he falls below the fast pace of the department."[7] Even in 1940, decades after the early days of the Ford miracle, a worker could be fired for smiling.[8]

For managers and owners, there were reasons to smile. The record time for assembling a car in 1908 was 12 hours and 28 minutes. After the process was Taylorized, the first moving

assembly line in 1913 cut the time to 93 minutes. While it is true that workers felt fear during the day and resentment at night, it is equally true that Taylorism prepared the industrial world for new efficiencies and wealth creation that had never been experienced before.

Fear in the Modern Workplace

Unfortunately, draconian management practice is not relegated to the distant past. Consider the rash of employee suicides that brought Foxconn's factory conditions to the public eye in May 2010. Said one employee interviewed: "Every day, I repeat the same thing I did yesterday. We get yelled at all the time. It's very tough around here." Reports surfaced of twelve-hour standing shifts, having to ask permission to go to the bathroom, and relentless pressure to meet daily manufacturing quotas.

Source: http://www.bloomberg.com/news/2010-06-02/foxconn-workers-in-china-say-meaningless-life-monotony-spark-suicides.html.

Fear and routine have never been limited to blue-collar work. Ford's factory worker can be seen as the precursor to the 1950s "organization man," a term coined by sociologist William Whyte. Deindividuating labor was not all that different from deindividuating white-collar work. Much like the assembly-line worker, the office-bound "organization man" was bound by rules, processes, hierarchical structures, and fear. Moreover, the image of the organization man wasn't just promulgated by sociologists. Novelists and writers have portrayed work in large organizations as replete with both monotony and anxiety. American literature has long presented bankers and other managers as organization men, experiencing the same cog-in-the-machine dehumanization as their blue-collar counterparts. Notably, the works of John P. Marquand, Sinclair Lewis, and John Cheever depict men for whom the daily grind results in alienation from family and friends and requires

release through fantasy or self-medication. The "man in the gray flannel suit" (the title of a 1955 novel by Sloan Wilson) was as bound by rules, processes, hierarchical structures, and fear as was his counterpart on the assembly line. The organization man is alive and well in contemporary culture—as the butt of satire, for example, in the hit TV series *The Office*, and in the somber portrait of skewed priorities in the 1950s business world, personified in *Madmen* advertising wunderkind Don Draper.

As a society, we are still largely inured to a fear-based work environment. We believe (most of the time, erroneously) that fear increases control. Control reinforces certainty and predictability. We don't immediately see the costs of fear, as explored in detail in Chapter Four. In fact, many managers believe that without fear people will not work hard enough.

Traditional models of organizing emphasize plans, details, roles, budgets, and schedules—tools of certainty and predictability. When we know a lot about what it will take to achieve the results we seek, these traditional models are superbly useful. And though this environment worked well for the assembly-line worker and the organization man, it is no longer a competitive advantage in today's knowledge-based economy. Just as people one hundred years ago underwent a profound change in how they thought about the way work gets done, today's turbulent work environment once again requires a new mindset—not just new slogans. It requires a new way of thinking and being.

The Learning Imperative

By nearly every measurement, General Motors (GM) has been one of the world's most successful enterprises. Founded in Flint, Michigan, in 1908, GM acquired more than twenty other fledgling automobile companies in its first decade of operation. During its remarkable ascension in the 1920s, GM passed Ford as the largest automaker in the United States. By 1931, GM had become the largest producer and seller of automobiles in the world. The

company held this position for seventy-six consecutive years, throughout an era of remarkable economic growth and one in which both predictability and control dominated management thinking. GM's growth continued throughout the 1940s, as the practice of sharing components across different brands created incredible economies of scale. By the 1950s, GM had captured nearly 60 percent of the automotive market in the United States and produced the number-one selling brand in the world, Chevrolet. In 1955, GM topped the first of twenty consecutive Fortune 500 lists as the largest, most profitable company in the world. In 1970, GM was nearly twice the size of the next largest company, Exxon Mobil, and nearly three times the size of General Electric. By the 1980s, GM had 350,000 employees, operated 150 automobile assembly plants, and sold over 9.5 million cars per year.[9]

GM succeeded and grew to its dominant position in the automotive industry through successful execution. Along the way, it became a much-heralded model of how to organize and a venerated example of professional management. Confident of the wisdom of its approach, GM remained wedded to a well-developed competency in centralized control and high-volume execution for years. But as the world around the GM empire changed in dramatic ways, despite the firm's well-honed systems of execution, GM steadily lost ground at the turn of the twenty-first century. Sales deteriorated throughout the early 2000s, with GM finally losing its crown as "King of the Carmakers" to Toyota Motor Company in 2008. After years of decline, a stunned nation looked on in 2009 when the company filed for bankruptcy.

Uncertain and Unpredictable

Like many dominant companies in the industrial era, GM was slow to shift its routines and practices in ways that reflected the changing market. In any industry, success can be difficult to sustain. This difficulty is not due to the fact that people get tired of working hard. It is because the managerial mindset that enables efficient

execution actually inhibits an organization's ability to learn and innovate. The narrow focus on getting things done inhibits the experimentation and reflection that are vital to sustainable success in an unpredictable and evolving business environment. A similar fate befell other industrial giants like U.S. Steel, Polaroid, RCA, Uniroyal, and Union Carbide.

Despite this history of failed giants, most executives still believe that consistent execution is a surefire path to customer satisfaction and financial results. Managers who let up on execution even briefly, the assumption goes, do so at their peril. Productivity must be maintained at all costs! This belief remains oddly alive in the popular management literature, as well as in business schools and MBA programs across the country. The penchant for execution manifests itself in the almost reverent focus on metrics and bottom lines inside and outside organizations. A belief that performance is a simple function of native ability plus effort expended—and can be easily measured as output—is often drilled into senior management, whose careers have spanned decades.

This mindset trickles down from the top into the ranks of most large organizations and works adequately when knowledge about how to produce the products and services customers want is well developed and unambiguous. But even the most exquisite plans and disciplined execution cannot guarantee success when knowledge about how to produce a desired result is either still developing or is in a state of dramatic flux. Under these circumstances, traditional models of organizing that stress execution falter. This has prompted a need to find new ways to organize that take into account dramatic changes in technology, globalization, expert knowledge of all kinds, and customer expectations.

Thriving in the Face of Uncertainty

As customer expectations continue to shift and competition becomes increasingly global, many companies struggle to succeed in a drastically changing landscape. Rapid developments in

technology and changes in the legal environment greatly reduce the barriers to entry in a variety of industries, thus introducing new, nimble competitors. Now you see supermarkets, department stores, and funeral homes offering financial services formerly the exclusive purview of banks and banking institutions. Likewise, telephone companies offer television service, while television companies offer phone service. Heightened competitive pressure means that even in previously stable industries unexpected changes are occurring in a compressed period of time and creating new, unprecedented challenges.

Consequently, as management and system dynamics expert Peter Senge put it, "The organizations that will truly excel in the future will be the organizations that discover how to tap people's commitment and capacity to learn at all levels in an organization."[10] Learning new skills in an uncertain environment where knowledge is a moving target is now a competitive imperative in most industries. Consider the astonishing expansion of medical knowledge. If you were practicing medicine in 1960, you could subscribe to a few leading professional journals and most likely keep up with the literature in your field. In 1960, there were just a hundred articles published on randomized control trials, the gold standard for best practices in medicine. Today more than 10,000 articles reporting on randomized control trials are published annually.[11] An average engineer today sports a wristwatch with more computing power and memory than was available to the team of engineers working in the Apollo program at NASA in the 1960s.

Good-bye Taylor and Ford . . . Hello Complex Adaptive Systems

The point is that knowledge in fields related to health care, technology, science, and engineering, as well as a host of others, is growing at such a pace that today's workplace is significantly different from that of the industrialized manufacturing era of Ford and Taylor. By now, most leaders and managers recognize that

organizations that don't learn are left behind their more innovate and adaptive competitors. In this dynamic environment, successful organizations need to be managed as complex adaptive systems rather than as intricate controlled machines.

Academic interest in complexity science has grown over the past few decades. The term *complex adaptive system* describes systems that are dynamic and adaptable, much like those found in nature. A system is complex when it has many interacting parts. Feedback loops are a hallmark of complex systems. Feedback loops mean that part A has an impact on part B, which may then affect part C, which feeds back in turn to have an impact on part A. Taken together, these interactions create unpredictable dynamics. Trying to understand, much less predict, what happens in such systems when one is expecting linear, unidirectional relationships—where A influences B, which may influence C, and that is the end of the chain—will produce flawed results.

Complex adaptive systems self-regulate. Not always in preferred ways, mind you, but they change in response to both external and internal triggers. Examples of such systems range from an embryo to an ant colony to a hospital. What these systems have in common is that they encompass a number of similar elements (cells, ants, people) and they self-organize in reaction to external and internal disruptions (often called perturbations).[12]

Like their counterparts in nature, businesses and other organizations are complex adaptive systems. They may self-regulate, but they require thoughtful leadership to optimize their potential. As this book describes throughout, the spontaneous reactions of managers in organizations often ambush the requirements of the new, interconnected, knowledge-intensive world of work. Classic management theories, as we have seen, tended to overvalue control and treat organizations as mechanical systems.

The learning imperative requires relinquishing control as the ultimate goal. It requires embracing the creation of adaptive capabilities as a fundamental organizational competence. It requires

flexibility and judgment. It requires a managerial approach that works when organizations face uncertainty created by new technologies, shifting customer preferences, or complex systems. Success requires a shift from *organizing to execute* to a new way of working that supports collaboration, innovation, and organizational learning.

Learning to Team, Teaming to Learn

Simply put, teaming is a way of working that brings people together to generate new ideas, find answers, and solve problems. But people have to learn to team; it doesn't come naturally in most organizations. Teaming is worth learning, because it is essential for improvement, problem solving, and innovation in a functioning enterprise. The complex interdependencies involved in learning and innovating require the interpersonal skills necessary to negotiate disagreements, overcome technical jargon, and revisit ideas or problems until solutions emerge—all activities supported by teaming. Learning in today's organizations involves what's called reciprocal interdependence, where back-and-forth communication and coordination are essential to getting the work done.

Although teaming can help any enterprise improve, it is absolutely critical to success when any of the following conditions are present:

- When the work requires people to juggle multiple objectives with minimal oversight.
- When people must be able to shift from one situation to another while maintaining high levels of communication and tight coordination. This situation literally defines the practice of teaming.
- When it is helpful to integrate perspectives from different disciplines.

- When collaborating across dispersed locations.
- When pre-planned coordination is impossible or unrealistic due to the changing nature of the work.
- When complex information must be processed, synthesized, and put to good use quickly.

Though teaming refers to a dynamic activity rather than to a traditional, bounded group structure, many of its purposes and benefits are grounded in basic principles of teams and teamwork. Among the benefits of teams is their ability to integrate diverse expertise as needed to accomplish many important tasks. Historically, the focus of team research and project implementation was on reorganizing production processes. Increasingly, however, teamwork extends beyond the factory floor. Management teams develop corporate strategies. Sales teams sell sophisticated services to complex, multinational customers. Product development teams create pathbreaking new technologies. Each of these examples involves people, often with very different backgrounds and expertise, working interdependently to accomplish a challenging goal. Their tasks may vary in terms of the degree of interdependence and the amount of collaboration required, but they all need to coordinate and cooperate.

Using teams to solve problems or shape new strategic directions has been popular in organizations for well over a decade. In 2003, the Manufacturing Performance Institute's (MPI) Census of Manufacturers reported that 70 percent of respondents used teams to accomplish their business goals. As Glenn Parker, consultant and author of several books on teams, noted that same year, generalism has replaced specialization, collaboration has replaced autonomy, empowerment has replaced power, and teamwork has replaced individualism.[13]

Yet all is not perfect with teams and teaming. Despite the fact that team use is steadily increasing, team effectiveness is not keeping

up at the same pace. In the previously cited MPI report, only about 14 percent of organizations surveyed rated their teaming efforts as "highly effective," while just over half (50.4 percent) rated their teams as "somewhat effective." Thus, over a third of teams were rated as ineffective. This, in addition to scores of other reports and studies, indicates that although utilizing teams to get interdependent work done can be valuable, achieving the tremendous potential of teams is far more challenging than many expect—and successful teamwork is thus still elusive in many organizations. In the absence of a particular type of leadership, the right kinds of learning behaviors to deal with uncertainty and ambiguity tend not to occur. Teaming, it seems, requires a new type of leadership that supports speaking up, asking questions, and sharing ideas. In short, teaming requires a leadership mindset that cultivates an environment conducive to learning. I use the term "organizing to learn" to describe this leadership mindset and its accompanying practices.

Organizing to Learn

Staying competitive, as we have seen, requires learning. Organizing to learn is a way of leading that encourages critical teaming behaviors to promote collective learning. It supports the collaboration needed to solicit employees' knowledge, apply it to new situations or challenges, and to analyze outcomes. Organizing to learn is a way of moving forward in spite of uncertainty. Taking action without certainty can be a daunting prospect in organizations where stability and success are valued over variance and experimentation.

Learning, for individuals or groups, is an active process of gaining information, understanding, or capabilities. Learning is a process of action and reflection, in which action is taken, assessed, and modified to produce desired outcomes. Research in various settings has demonstrated significant performance benefits of individuals engaging in learning behaviors. Most work in organizations, however, requires coordinated action among multiple

individuals. The knowledge required to conduct work successfully takes many forms and resides in many locations. To be successful, groups must access knowledge, develop a shared understanding of how best to apply it, and act in a coordinated manner that is reflective of new insights. This means work in groups frequently requires collective learning.

Collective learning includes such activities as collecting, sharing, or analyzing information; obtaining and reflecting on feedback from customers or others; and active experimentation. Individual learning behaviors within a collective learning experience include the following:

- Asking questions
- Sharing information
- Seeking help
- Experimenting with unproven actions
- Talking about mistakes
- Seeking feedback

These learning behaviors enable groups to obtain and process the data needed to adapt and improve. Through collective learning, organizations can detect changes in the environment, learn about customers' requirements, improve members' collective understanding of a situation, or discover the consequences of their previous actions. They require a willingness to take interpersonal risks such as discussing mistakes. This requires leaders who work to create environments that support and encourage sharing, experimenting, and learning.

The old mindset, organizing to execute, has been a century in the making, so it's no wonder that many leaders adopt it by force of habit and training. Organizing to execute has many strengths,

especially in its emphasis on discipline and efficiency. However, it also has many risks, particularly when used in highly uncertain or complex contexts. In these settings, organizing to learn is critical to success. Table 1.1 highlights key differences between the approaches and identifies two distinct mindsets, and the corresponding management practices, that leaders can adopt when they are responsible for guiding people and organizations.

Organizing to execute makes sense when production processes are well understood and can be reliably used. In this case, managers

Table 1.1: Organizing to Execute Versus Organizing to Learn

Management Approach	Organizing to Execute	Organizing to Learn
Hiring	Conformers, rule followers.	Problem solvers, experimenters.
Training	Learning before doing	Learning from doing.
Measuring performance	Did YOU do it right?	Did WE learn?
Structuring work	Separate expertise.	Integrate expertise.
Employee discretion allowed	Choose among options.	Experiment through trial and error.
Empowerment means	Employees can deviate from the script if special circumstances make it necessary.	There is no script. Improvise!
Process goal	Drive out variance.	Use variance to analyze and improve.
Watercooler conversation	About the weather	About the work
Business goal	Make money now.	Make money later.
Works when	Path forward is clear.	Path forward is not clear.

can hire people based on assessments of whether a candidate would be both willing and able to follow prescribed procedures. New hires typically go through a period of training to get them up to speed, and performance is then measured based on how well employees do what they've been asked to do. To make such measurement feasible, work is subdivided so it's easy to see who did what, and how well. In this type of context, jobs may require employees to successfully execute one of several options (such as giving the customer the right meal from a fast-food restaurant menu, or giving the right response to a particular billing query in a call center). Sometimes it is necessary to deviate a little further, if special circumstances require a customized response to a customer situation (for example, the call-center operator might gently ask a customer, "Is that a baby I hear crying in the background? Do you want me to call back later?"). At the watercooler, employees with routine tasks are likely to talk about their personal lives or the weather, not about their work. Organizing to execute is all about driving out unnecessary variance, so that the process is as efficient as possible—wasting as little employee time, material, and other valuable resources as possible. Efficiency is a crucial source of profitability. When organizing to execute is done well, processes hum along.

In contrast, when production processes are not yet developed, managers must organize to learn. As shown on the right in Table 1.1, they need to hire people willing to experiment, rather than to conform—that is, employees who will keep solving the many problems that inevitably surface when doing something new. Rather than receiving extensive training in existing processes to prepare for a new role, new employees instead are invited to get right to work helping to discover new processes. Performance is measured based on how well they do that—this includes making mistakes and learning from them. When facing an uncertain path forward, trying something that fails, then figuring out what works instead, is the very essence of good performance. Great performance, however, is trying something that fails, figuring out what works

instead, *and* telling your colleagues all about it—about both the success and the failure. This discovery process usually requires people to integrate different areas of expertise to figure out new approaches to the work. A script simply isn't possible. People must improvise by trying out a variety of things, and they must use this variety as a source of learning. When this kind of collaborative learning is under way, employees at the watercooler are likely to talk about the work—problems they've encountered and solved, and, more important, those they still need help with. A colleague at the cooler is a resource!

In some respects, organizing to learn is not all that different from organizing to execute. There's the same discipline, respect for systems, and attention to detail. Look more closely, however, and it's a radically different organizational mindset that focuses less on ensuring a process is followed than on helping it evolve. When leaders adopt an organizing-to-learn approach, instead of focusing on making products more efficiently than the competition, they focus on learning faster than the competition. The goal is to find out what works and what doesn't. Most important, when an organizing-to-learn mindset is combined with teaming, the result is a manner of operating I call execution-as-learning.

Execution-as-Learning

Execution-as-learning is a way of operating as an organization that combines continuous learning with high performance. Simply stated, execution-as-learning means getting the work done while simultaneously working on how to do it better.[14] In a way, it folds the mindset and behaviors of learning into the discipline of execution, allowing workers, managers, and leaders to get as much done as possible. This partly depends on the state of process knowledge related to the work being done, as described next—while also driving improvement. Execution-as-learning usually requires teaming (as a way of working) and is enabled by the leadership practices of organizing to learn.

The defining attribute of execution-as-learning is its integration of constant, unremarkable, small-scale learning into day-to-day work. Execution-as-learning is akin to reflection-in-action, rather than reflection-after-action, a thinking habit embraced by skilled individual practitioners in fields ranging from architecture to medicine.[15] But execution-as-learning describes groups or organizations, not individual people. Instead of following long periods of action with weighty, time-consuming, after-action reviews or burdensome extra assignments in the form of lessons learned, some organizations have mastered the art of building learning processes into how work is executed. Figure 1.1 illustrates the relationship between teaming, organizing to learn, and execution-as-learning.

In Figure 1.1, teaming is the base. It includes the interpersonal actions and behaviors required to rapidly collaborate, adjust, and

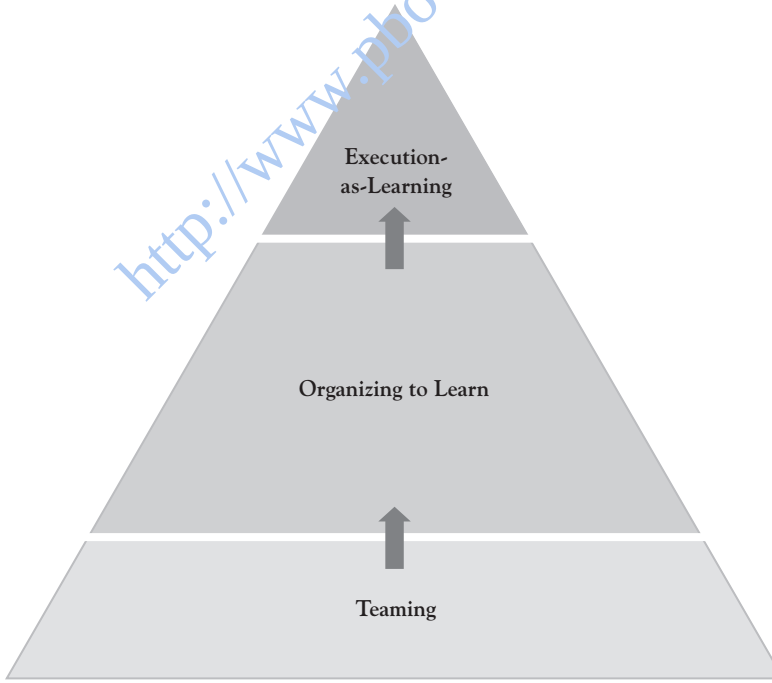


Figure 1.1. Teaming as a Foundation for Learning

learn. But promoting learning requires a type of leadership that encourages the interpersonal behaviors needed for teaming and collective learning. The next level of the pyramid presents this leadership framework. Organizing to learn helps leaders enable, focus, and apply organizational learning. At the peak of the pyramid, execution-as-learning represents a way of operating—as an organization—in which continuous, systematic learning occurs in tandem with product or service delivery. Execution-as-learning is thus a system of operating that builds learning into day-to-day work to meet ever-shifting needs and promote success over the long term.

As outlined in the introduction, this book has three parts that mirror the levels of the pyramid: Part One presents a way of working (teaming), Part Two explains a way of leading (organizing to learn), and Part Three describes a way of operating (execution-as-learning). Much like building a real pyramid, successfully implementing teaming starts with establishing the foundation. In this case, that foundation includes an understanding of what to expect from teaming efforts in various work contexts. Using such factors as knowledge maturity, work type, and uncertainty, the Process Knowledge Spectrum is an important tool for identifying work contexts and operational settings.

The Process Knowledge Spectrum

The obvious need for organizational learning in today's knowledge-driven workplace raises critical questions. What should be the focus of learning? What kind of learning—for example, continuous improvement of an essentially well-developed process, problem solving to fix a broken process, or innovation to create a new process—is most needed? The answers to these questions vary across companies, and divisions within companies, in accordance with where they are situated on the Process Knowledge Spectrum.

By process knowledge, I mean knowledge about how to produce a desired result, regardless of whether that result is an automobile, a hamburger, or a successful surgery. The more knowledge we have about how to achieve a desired result—for instance, how to manufacture an automobile or how to cure strep throat—the more mature the knowledge. The less knowledge we have about how something is done—for example, how to create an affordable car with no carbon footprint or how to cure amyotrophic lateral sclerosis (ALS)—the less mature the knowledge. When process knowledge is well developed or mature, as in a manufacturing setting, uncertainty is low. When employees follow a prescribed set of directions, they get a certain result. At the other end of the spectrum is innovation operations, where much of the sought-after knowledge is yet to be discovered. The Process Knowledge Spectrum, depicted in Figure 1.2, characterizes work according to the maturity of cause-effect relationships that translate goals into results.

At one end of the Process Knowledge Spectrum is high-volume repetitive work, such as one might see in fast-food restaurants, call centers, or assembly plants. At the other end is pioneering research and discovery, where little is known about how to obtain a particular desired result. This includes ambitious goals like curing a rare form of cancer or designing the next generation of green vehicles, along with smaller-scale ambitions like designing a new kitchen gadget, or implementing a new IT system. Because prior

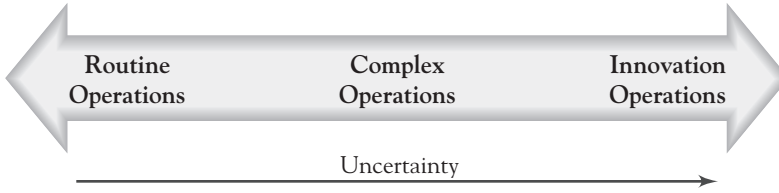


Figure 1.2. The Process Knowledge Spectrum

experience achieving the goal is limited, making progress requires risk taking and experimentation. In the middle are complex operations—exemplified by complex service organizations like a tertiary care hospital, where some knowledge is mature, such as the procedure for drawing blood, but much knowledge, such as how to treat a rare disease or the mix of patients to expect on any given day, is unknown or in flux. In these settings, teaming is not just challenging; it is invaluable.

How Process Knowledge Varies

Most of the workplaces I've studied can be characterized as complex or innovation operations. They sit in the middle or toward the right side of the Process Knowledge Spectrum. But I've also spent considerable time in factories that make products like cars and laptops, as well as those that mass-produce services of various kinds—fast food, billing services, and so forth. The contrasts between these different settings inspired the distinctions and categories depicted in Figure 1.2.

Routine operations. Laptops, toasters, or cars—every assembly plant relies on and applies well-developed and precisely codified process knowledge. There is no room for uncertainty. Learning, still valuable, is largely focused on improvement and making the existing process more accurate, less expensive, and less time-consuming. In short, success equals improved efficiency.

But even routine operations don't hum along forever. New machinery and new products often require temporary problem solving to develop new processes that will soon become standardized. Once the problems are solved and the bumps and hiccups removed, new standards and scripts can be devised. New products or services then become routine. The transition period is limited. Teaming and organizing to learn are thus integral to the process of organizing to execute.

Complex operations. Uncertainty about arrival times, customers' specific needs, and unpredictable interactions make complex operations challenging. Although knowledge of how to produce most of the specific results exists in a reasonably mature state for some situations, many can be difficult to predict. The combination of tasks is thus constantly shifting. Often, old and new tasks interact to produce novel, unexpected, or problematic results.

The most prominent form of learning in this context is problem solving. Most problems are what my Harvard colleague Anita Tucker and I call work process problems: disruptions that impede task completion, often due to shortages of material, skill, time, or to other sources of interference. But complex organizations also confront larger problems and more compelling challenges, such as safely operating a nuclear power plant or managing a space exploration program. Learning may involve collecting data to better understand patterns of customer arrival and need, increasing predictability, and designing less chaotic operations. Nonetheless, it is impossible to remove all uncertainty from complex operations. Perpetual problem solving is a way of life in these settings!

Innovation operations. In innovation operations, the primary purpose is to experiment and generate new possibilities. Success is found in novelty. The development of new, groundbreaking products is increasingly dependent upon collaborative teaming and presents a complex set of challenges. By definition, new product development means working without a blueprint. The challenge to develop a new product that is profitable in shorter and shorter time periods adds its own inherent stress on teaming.

Innovation operations often have vague, if ambitious, goals that require experimentation, trial and error, and collective brainstorming. Designers, engineers, marketers, and researchers actively and continually learn in order to come up with new products and services to help their companies remain competitive. The team boundaries may be porous. Individuals may join and leave the

project at different points during the process, and roles for individual team members may shift as the project progresses. Many tasks must be defined, assigned, and improvised on-the-go. This is learning to create new possibilities, not to gain deep expertise in a narrow domain. Failure along the way is frequent and expected. Acceptable failure rates for research-based enterprises like biotechnology corporations may be well over 90 percent.

Matching Learning Activities to Process Knowledge

Where one's work, department, or entire organization sits along the spectrum has implications for achieving a match between the nature of the work and how learning can be optimized. When process knowledge is mature and uncertainty low, as in a routine production setting like an assembly plant, learning should focus on improvement, on the search for more efficient execution of known processes. When knowledge is very limited and uncertainty high, as in a pharmaceutical research lab seeking groundbreaking molecular compounds, teaming should focus on innovation and discovery.

But it's not that simple. Nearly every organization, and certainly every company of significant size, contains different departments or divisions that sit on different points along the spectrum. As a quick example, a company's mailroom may be a routine operation, while its IT department is a complex operation, and its research and development department is an innovation operation.

The Operational Diversity of Large Organizations

In fact, most organizations—certainly most large organizations—encompass all three types of operations within their boundaries. Consider Toyota. Its famously efficient assembly plants epitomize the activity most people associate with a car company—routine operations. Does that mean Toyota only plays in the routine operations space? Not even close. A large and successful global company like Toyota necessarily encompasses complex and innovation oper-

ations as well. Toyota has a large and vibrant R&D organization, one that developed the first widely available hybrid (electric and gasoline powered) vehicle, the Prius, giving Toyota an innovative, desirable "green" vehicle several years before competitors. Toyota's new product development process, like that of numerous other manufacturing companies, starts with cross-functional teaming to figure out what the product ultimately ought to be and to develop detailed specifications. Next, an interconnected set of smaller teams starts solving the problems these detailed specifications create. Ultimately, the proposed new design is handed off to manufacturing. To take a cutting-edge car from concept to market requires understanding customer preferences, designing new features to satisfy these, figuring out which existing components to keep, and teaming with parts suppliers to develop brand-new components, while also ensuring that both in-house and supplier components are integrated and tested. Add to this complexity a diversity of locations, cultures, and regulatory policies, and the magnitude of the innovation challenge is clear. It should also be clear that anyone working on a new car design is doing something he or she has not done exactly the same way before. Novelty dominates the process, requiring extensive brainstorming, communication, and many difficult decisions along the way, through a series of teaming encounters.

Managing innovation at an automotive company is clearly complex, but this is not what I mean by the term complex operations. As noted, complex operations comprise a mix of well-understood processes, novel situations, and unexpected events. At a company like Toyota, supply chain management perhaps best exemplifies a complex operation. Activities such as sourcing of parts and delivery of vehicles to dealers are well designed in advance, and assiduously monitored for adherence to expectations. Still, they are subject to numerous unplanned events and disruptions, related to weather, natural disasters, supplier problems, unexpected dealer requests, and so forth. An automotive supply

chain is extraordinarily complex, with about 20,000 parts making up an average car, any one of which can prevent a car from being completed if unavailable. With several levels of suppliers, an automotive supply chain comprises thousands of suppliers in all.[16] As Japan's 2011 earthquake and tsunami illustrated all too vividly, a supply chain operation is highly vulnerable to disruption. Constant vigilance is needed to anticipate, detect, and respond to unexpected events, not unlike (on a very different scale) managing care delivery in an urban hospital emergency room.

Toyota is not unique in its diversity. Table 1.2 presents examples of how companies across industries comprise diverse operations that represent a range of working and learning contexts.

The approach a leader takes toward helping her organization learn must match the state of process knowledge. Management techniques and messages that work brilliantly in the factory would cripple the discovery process in the laboratory just as managing a factory like a lab might have disastrous results for productivity. Let's explore how leaders must shift their mindsets to help organizations learn, no matter where they sit on the Process Knowledge Spectrum.

A New Way of Leading

We've come a long way from the independent companies and isolated nations that dominated the twentieth-century landscape, a landscape itself the result of profound change. It's worth recalling the magnitude of the earlier transformation that took place over a century ago—shifting from craft-based, localized agricultural communities to industrialized multinational production systems. Former farmers and craftsmen took years to adjust cognitively and emotionally to mass production and hierarchical control. Today, letting go of taken-for-granted expectations that bosses should have answers, reward adherence to prescribed process, and forbid failure is equally challenging. In the industrial era, a mindset

Table 1.2: How Organizations Encompass Routine, Complex, and Innovation Operations

	Routine Operations	Complex Operations	Innovation Operations
Automotive Company	Assembly Plant	Supply Chain Management	Design and development of future cars
Computer Chip Maker	Fabrication Plant	Supply Chain Management	Design and development of next-generation chips
Personal Computer Company	Assembly Plant	Support and service for large business customers	Design and development of future computing devices
Fast Food Company	Restaurants	Supply Chain Management	Research and development of future products and services
University	Dormitory Management	Building Construction Project	Research labs Curriculum redesign group
Space Exploration Agency	Payroll Operations	Space Missions	Developing future programs
Airport	Security Food Services	Air Traffic Control	Future planning
Hospital	Phlebotomy	Emergency Room	EMR implementation

geared for maximizing the efficiency of production worked well. But a smaller and smaller portion of work in the knowledge-based economy is well served by that mindset. Does this mean it will simply fade away and cease to dominate managerial thinking? No. It's just not that easy.

What makes this transformation particularly difficult is that most of us carry elements of this outmoded mindset toward work,

without thinking much about it. This frames how we interpret our own and others' actions, shapes our expectations for busyness, and often determines our response to failure. Despite rhetoric to the contrary, many of us still expect ourselves and others to get things right the first time. We view failures as unacceptable. We issue directives to those below, and look for direction from supervisors above. We prefer going along with the majority opinion rather than risk conflict or job loss if we truly speak out.

In many ways, the old mindset is comfortable and reassuring. Job duties are fixed. Goals are clearly stated. Targets are objective and immutable. Career progress can be mapped up a distinct, hierarchical ladder. Iconic industrialists such as Henry Ford amassed fortunes because they understood how to harness the power of the man at the top issuing direct orders to workers below. This made sense when work was primarily individually accomplished, and the knowledge base was stable. The best workers performed their tasks quickly and accurately, and individual performance could be accurately tied to individual workers—a rarity today. A manager's job was to supervise repetitive steps in a known process, and then reward and punish in accordance with performance.

Today's effective leaders differ from even the most successful managers in yesterday's routine-intensive organizations. The difference starts with a basic mindset about human beings. Whereas industrialization essentially infantilized workers, the knowledge-based economy only works well when it restores workers on all levels to self-respecting, self-determining adulthood. The classic industrial factory system took adults who raised children, voted public officials in and out of office, and owned their own homes—people who occupied positions of responsibility and were frequent decision makers—and then treated them as children inside the factory walls. At work, they were required to ask permission to go to the bathroom, punch in and out on a clock to verify hours worked, eat only when permitted, and do as they were told without asking questions.

Today, people engaging in teaming at work need to be responsible, accountable individuals who respect each other, understand the inevitability of conflict, and accept the responsibility to sort through such difficulties. To promote teaming, leaders must trust those they lead. A store manager who commands her employees to scan the parking lot every half hour for trash still holds the old mindset about work. In contrast, a store manager who understands the new way of working lets her employees know that they are responsible for keeping the parking lot trash-free, but trusts them to figure out how to best meet that goal. The latter approach, which may involve mistakes and missteps, also builds an environment of mutual respect. Trust and respect together make a workplace amenable to teaming and continuous learning.

Facing the many technological and geopolitical transformations reshaping the workplace, many leaders struggle to grasp the realities of teaming and continuous learning as a way of life. Letting go of outmoded, but taken-for-granted, concepts of authority and hierarchy takes effort. What are the mandates when workers work in factories on one continent while their corporate headquarters exist on another? With knowledge distributed at the speed of electrons, it cannot be handed down in a tidy, easily controlled manner. Instead, it's created and shared in disorderly ways. This calls for workers who know how to experiment, how to think on their feet, how to work in the absence of rules, and how to adapt quickly. Knowledge, changing quickly within disciplines, becomes even messier and more uncertain when integrated across disciplines, as it often must be, to get things done in the new workplace. Creating an appropriate environment for teaming and learning requires different management skills and expectations from those required in a repetitive task environment. Top-down management may have worked for Ford and Taylor. But today's managers need employees to be problem solvers and experimenters, not mere conformers.

Leadership Summary

The ability to learn is critical for organizations operating in today's fast-paced business environment. Relying on existing knowledge and skills succeeds only if you know exactly what should be done in a job and you expect the process to remain relatively fixed for a significant amount of time. In today's environment, that's the exception, not the rule.

Instead, what is needed are dynamic, flexible teams that combine employees' strengths, experience, and knowledge to achieve organizational goals. On-the-job teaming and learning is vital when the answers are still being discovered and when processes are still evolving. This type of teaming and learning requires leaders who have the imagination and courage to figure out how to proceed without answers—leaders who offer a clear direction, a tolerance for risk and failure, and an explicit invitation to work closely with others.

Leaders who work to create hospitable conditions for teaming and learning can build organizations that are better able to achieve and sustain success through continuous improvement, problem solving, and innovation. Throughout this book, you'll read stories about organizations and companies that have succeeded in teaming to create a productive and profitable learning environment. The next chapter focuses on the social, cognitive, and organizational barriers to teaming and describes the practices necessary to overcoming those barriers.

LESSONS AND ACTIONS

- Success in today's complex and volatile business environment requires flexibility, coordination, and collaboration.
- Teaming is a dynamic way of working that provides the necessary coordination and collaboration without the luxury (or rigidity) of stable team structures.

- Teaming and its associated interpersonal behaviors support organizational learning, and require the right leadership mindset to optimize outcomes. This way of working allows employees to grow personally and professionally, whereas traditional top-down and assembly-line models treated workers like children who must be told what to do.
- Organizing to learn represents this leadership mindset. Organizing to learn is a way of leading that encourages speaking up, asking questions, and sharing ideas so as to promote collective learning.
- Execution-as-learning is a way of operating that folds continuous learning into the day-by-day work process. Execution-as-learning usually happens in teams and is supported by the leadership practices of organizing to learn.
- The Process Knowledge Spectrum (Figure 1.2) is a useful tool for categorizing operational settings. Where one's work, department, or entire organization sits along the spectrum has implications for matching the work context to appropriate teaming and learning goals.