Chapter 10

Organizations and Leadership

10.1 ORGANIZATIONS AND LEADERSHIP MATTER

It is important to cultivate the individual and team skills necessary to be an entrepreneurial engineer, whether those skills are exercised in a startup, as a freelance, or as a member of a larger organization. And those who do start companies or rise to high levels within existing organizations have the special opportunity to design organizations and lead them. But more frequently what one needs to know about organizations and leadership has less to do with designing or running an organization and more to do with identifying (1) the kinds of organizations we wish to work for and (2) the kind of leader we want to follow and become.

These two items require that we understand good organizations and leaders, and we start by asking what principles of human behavior or motivation can help us analyze alternative organizational structures and leadership strategies. This leads us to Maslow's famous hierarchy of needs and McGregor's classic study of theory X and theory Y organizations. These classic works lead us to two current empirical studies—one on organizations and one on leadership—that examine common attributes of success in each domain. The two studies are united by their quest for understanding attributes of excellence, but we also consider a more sociological approach that surveys organizational *culture,* looking for stable regular patterns of organizational life and reasons why those cultural patterns persist. We conclude by asking what appears to be a naïve question about why we join organizations in the first place. To answer the question on economic grounds is surprisingly difficult, and the answer leads us to a fuller understanding of why organizational life in an Internet age is so fluid. This leads to a discussion of the increased tendency toward work as a *free agent* and the need to organize one's work output in a *portfolio,* much as artists have always prepared portfolios of their most important pieces.

The Entrepreneurial Engineer, by David E. Goldberg

10.2 UNDERSTANDING HUMAN BEHAVIOR AND MOTIVATION

At the level of pairs of human beings, a key to good human relations is the golden rule. One on one, this seems sensible, but it is difficult to know how to generalize these lessons to groups or organizations. We start by asking if there are bounds on human behavior that help us delimit what people might do in particular situations. The answer turns out to be negative, and we turn to *human motivation,* Maslow's hierarchy and McGregor's theory X and theory Y for more effective guidance.

10.2.1 Bounds on Human Nature

Looking on the brighter side of human nature, we know that, among other things, people can be

- Gentle
- Contemplative
- Insightful
- Punctual
- Neat
- Polite
- Trustworthy
- Creative
- Energetic
- Consistent

Looking on the darker side, we also know that people can be

- Brutal
- Oblivious
- Uninspired
- Tardy
- Sloppy
- Rude
- Untrustworthy
- Dull
- Lazy
- Inconsistent

Apparently, there are few bounds on human behavior, and, to make matters worse, we can find the best and the worst of these behaviors exhibited by a single individual.

Looking at behavior alone is of little help in our attempt to model groups of humans, but this should come as no surprise because behavior is merely an effect, not a cause. To get at underlying causes we must better understand human motivation.

10.2.2 Unifying Model: Maslow's Hierarchy of Needs

There is a straightforward model of human motivation—Maslow's (1987) hierarchy of needs—that is a favorite of management theorists and practitioners. The model is popular because it is relatively simple to convey and fairly easy to apply in practical situations.

Maslow's model begins with the premise that human beings are needs-driven animals and goes on to say that human needs are organized more or less hierarchically, from basic to more complex (as depicted in Table 10.1). Thus, as a person fulfills basic bodily needs (such as food and oxygen), he or she begins to focus on higher needs (such as safety). As these are increasingly satisfied, needs for social interaction become more important, and so on down the list (which is up the hierarchy).

Models are useful to engineers for their real-world predictive power, which this one seems to possess. Applied to the bewildering array of behaviors surveyed in the last section, it makes it possible, perhaps, to understand what motivates a behavior that we might otherwise be tempted to label "good" or "bad." For example, when an employee is evasive and defensive in the face of repeated questioning by a negative, distrustful boss, it is easy to understand the employee's fear of losing a job and to see how basic needs such as food and security are at stake in the conflict. Likewise, it becomes easier to understand the extra effort exerted by an employee who has been repeatedly praised by a positive manager if we understand the ego gratification such praise provides.

Of course, organizations and their leaders interact strongly with the needs hierarchy of all their individuals, and it is interesting that as we move from more basic concerns (body, safety) to higher needs (social, ego, development) we find fear yielding to happiness as the primary emotion behind the motivation. As long as there have been sticks and carrots, managers have intuitively recognized the fear–happiness dichotomy in their dealings with their people. The dichotomy

Table 10.1 Maslow's Hierarchy of Needs

Needs	Examples
Body	Oxygen, food, procreation
Safety	Industry safety, home security
Social	Sense of belonging, friendship
Ego	Recognition, praise
Development	Aspirations, striving for excellence

has also been explicitly recognized in the management literature, and in the next section we'll consider two theories of McGregor and their implications for modern organizations and their leaders.

10.2.3 Theory X and Theory Y

McGregor's (1985) seminal book, *The Human Side of Enterprise*, considers the management of organizations from the standpoint of human motivation, using Maslow's hierarchy as an important base model. He concludes that there are two fundamentally different types of managers who operate from two different sets of assumptions about human behavior.

The first type of manager operates from a set of assumptions that McGregor labels *theory X*. These managers believe that people:

1. Dislike work.
2. Are not trustworthy and need to be watched constantly.
3. Cannot make good decisions without close supervision.
4. Need prodding to complete even the simplest of tasks.

A manager believing these things is naturally led to a suspicious, coercive management style, where careful monitoring and punishment are the rule. By contrast, what McGregor calls the *theory Y* manager believes that people:

1. Find work enjoyable.
2. Can be trusted to work even in the absence of supervision.
3. Can make good decisions autonomously.
4. Can finish tasks without constant prodding.

Because of these beliefs, the theory Y manager is led to a more supportive, praise-oriented style of management.

It seems odd that two such disparate viewpoints can coexist. After all, managers aren't generally stupid, and they are likely to adapt over time in trying to improve. How could such different views coexist in the long run? One answer is that both strategies are *locally optimal*. A solution is "locally optimal" if small changes in decision variables about the current operating condition result in a degradation in performance; thus both theory X and theory Y managers find that there is almost no way to improve their performance in the neighborhood of the chosen solution.

For example, as theory X managers flog their people—as they exert their suspicious, manipulative, often punishing brand of management—organizational output improves to a point; the people under their control tend to react defensively, reluctantly, and sometimes suspiciously, thereby confirming the theory X viewpoint. On the other hand, theory Y managers, by trusting their people and delegating authority and responsibility, find increased output; thus their worldview is also confirmed. This seems strange, that both types of manager are locally correct, but the nonlinearity of human behavior—the nonlinearity that is implicit in Maslow's hierarchy—is enough to permit multiple optima to exist.

At this point, we might be tempted to say that we simply have two different solutions, each with its own merits. But, as McGregor goes on to argue, theory Y is the better approach in the long run because it appeals to higher motives by emphasizing ego gratification. This is significant, as once employees take responsibility for their lives and seek goals autonomously that enrich individuals and the organization together, the theory Y manager has an easier time keeping the enterprise running smoothly.

Contrast this to the situation faced by theory X managers. The need to keep things running requires increasing threats to maintain the same, if not diminished, levels of performance. Monitoring efforts are effective as long as theory X managers are standing there; as soon as they turn their backs, the troops look for ways to slow things down, gum up the works, or otherwise obstruct progress. Over time, the theory X coercive style requires an escalation of threats that are decreasingly effective.

Almost any organization of any size is filled with its own tales of theory X and theory Y. The next section considers one true story in which an employee's behavior transformed dramatically with a change in management.

10.2.4 The Case of the Sluggish Secretary

Consider the case of the sluggish secretary. There was once a secretary in a government agency who was reluctant to do any work not part of her normal routine of phone reception, filing, and light typing. Department co-workers who tried to approach her with out-of-the-ordinary jobs were met with evasion and avoidance, and many shared the view that she was not helpful and less than competent.

At the time, the secretary worked for a boss who was quick to find fault and slow to forgive. One day, job assignments were switched, and she was assigned to work with an up-and-coming young manager. He, too, had had his share of bad experiences with her, but he was too busy to dwell on the past and immediately gave her responsibility to organize a seminar series. The job required that she perform many new tasks, including letter writing, mass mailing, phone calls, sales calls, and follow-up, as well as on-site registration and client contact. To everyone's surprise, this once-sluggish secretary attacked her new responsibilities with a vengeance, the seminar series was a success, and the woman's confidence and helpfulness spilled over into her other duties. When asked to do new things, she no longer avoided or evaded them. She simply tried to dig in and do the job.

In looking back over this description, we can easily see what accounts for the change. She went from a theory X situation, with suspicion, punishment, and blame lurking at every turn, to a theory Y situation, with responsibility, trust, reward, and responsibility the watchwords of the day. The transformation that occurred can be cited repeatedly in stories of rapid change in outlook, attitude, and performance. The magic that theory Y worked in this case is not unusual, and the exercise below asks you to consider whether these lessons apply in an organization with which you are familiar. For the reader interested in other war stories of theory Y in practice, see Robert Townsend's delightful book, *Further up the Organization* (Townsend, 1984).

Exploration Exercise

Consider an organization with which you are familiar. In a paragraph or two, explore whether it is a theory X or theory Y organization and explain your reasoning.

10.3 HUMAN ORGANIZATIONS AND THEIR LEADERS

Organizational theorists have contemplated the tie between human motivation and organizational design since the time of Maslow and McGregor, but modern organizational theory and empirical research are confirming the tie between sustainable organizational excellence and those organizations and leaders that bring out the best in their people. These studies give important clues as to the kinds of organizations and leaders to work for. The studies also provide role models for the engineer to emulate when he or she is charged with leading a team, department, or organization.

Here we briefly consider two studies, one that examines companies with a track record of sustained high performance in an attempt to understand the common attributes of their success and a second that examines top leaders.

10.3.1 From Good to Great

What separates merely good companies from great companies? That was the question asked by author Jim Collins in his book *Good to Great* (Collins, 2001). The book reports the results of a 5-year study seeking common features of companies that transitioned from average performance or worse to sustained excellent performance over at least 15 years that was three times that of the market. This was a difficult filter once we recognize that General Electric only (only?!) beat the market by a factor of 2.8 from 1985 to 2000.

After running the numbers, 11 companies from the Fortune 500 made the cut, and they are presented in Table 10.2. Perhaps somewhat surprisingly, the company list is nowhere near as glamorous as conventional wisdom might expect. Banks, retailers, steel, and cigarette companies are not the high-tech poster children that some might have expected. After selecting the companies, Collins and his research team analyzed each of the selected companies against a corresponding comparison company in the same industry. They also considered six companies (Burroughs, Chrysler, Harris, Hasbro, Rubbermaid, and Teledyne) that made the shift from good to great but did not sustain greatness for the requisite 15 years.

Table 10.2 Good-to-Great Companies (Collins, 2001)

Company	Market Factor
Abbott	3.98
Circuit City	18.50
Fannie Mae	7.56
Gillette	7.39
Kimberly-Clark	3.42
Kroger	4.17
Nucor	5.16
Philip Morris	7.06
Pitney Bowes	7.16
Walgreens	7.34
Wells Fargo	3.99

The data collection effort for the study was elaborate. The project systematically coded 6000 articles on the subject companies and consumed 10.5 person-years of effort. Interestingly, the project did not start with explicit theoretical assumptions. It sought to mine a model from the financial, company, and business press data they analyzed. Out of this 5-year effort, Collins presents eight common threads among the good-to-great companies. Here we consider four of the key items as follows (Collins, 2001):

1. Humility + will = leadership.
2. First who . . . then what.
3. Confront the brutal facts (yet never lose faith).
4. Simplicity within the three circles.

Each of these features of good-to-great (GTG) companies is briefly examined. For a more detailed discussion, consult the original text.

Humility + Will = Leadership

Americans love the charismatic leader who charms his way to success. No one around at the time will forget Lee Iacocca leading Chrysler with television commercials that intoned, "lead, follow, or get out of the way." But sustained good-to-greatness was not achieved by that kind of leader. Instead, Collins observes that sustained turnaround is led by those who combine *humility* and *will.* Humility counters our usual notions of leadership, but the study found numerous instances of egotistical leaders getting in the way of finding and executing steps necessary for success. Will is not often associated naturally with humility, but the good-to-great leaders were humble at the same time they knew exactly where to focus the energies of themselves and their people.

First Who . . . Then What

Many modern books on organizations start with two "ions"—miss***ion*** and vis***ion***—but good-to-great leaders built great companies by selecting the right people and helping them find a way to greatness. The right kind of people do not need to be motivated. They are self-motivated, and they need very little management.

Confront the Brutal Facts (Yet Never Lose Faith)

When faced with bad news, many organizations resort to excuse making and refuse to look bad news in the eye. Good-to-great companies refuse to lie to themselves. They seek solutions to tough problems through questioning, dialog, and investigations without blame. In this way, GTG companies rapidly find and fix problems and move on to opportunities.

Simplicity within the Three Circles

Sticking to your competencies is a modern management mantra, but good-to-great companies deeply understand the business they are in and have figured out how to reduce sustained profitability to simple strategic and financial formulas. In doing so, they understand (1) what they can be the best at, (2) what is their economic "denominator," and (3) what is their passion.

The first of these is the usual notion of business strategy—to understand one's niche—but GTG companies were able to identify, simplify, and focus on a single item relentlessly.

Second, all organizations have metrics they watch, but GTG companies try very hard to maximize their profit per unit "something," where "something" is chosen with great care. For example, Walgreen's shifted from a focus on profit per store to profit per customer visit, thereby tying repeat customer satisfaction and location profitability together in a single number.

Finally, GTG companies understand that managers and workers aren't interchangeable cogs in corporate machines. Human organizations run on passion for creating great products and services, but for much of the 20th century, business schools have emphasized improvement within functional specialties such as finance, marketing, accounting, and strategy as the way to excellence. Understanding best practices in these different disciplines is important, but such understanding is no substitute for being fundamentally committed and passionate about the products and services one helps to provide. In the old days, it was easier for graduating engineering students. Car guys went to car companies, gizmos went to electrical engineering firms, and mud-in-the-boots civil engineers tromped around some construction site for a living, and the managers these people worked for also came up from the trenches covered with grease, solder, or mud. Today's engineers need to think about their passions and the passions of the people they work with. Understanding and following your passion, and recognizing the passion (or lack) of the people you work with and for can be critical clues in assessing your affiliation with an organization.

Exploration Exercise

Consider an organization with which you are familiar. In a brief essay, identify the ways in which the organization does or does not follow the principles of a good-to-great organization as discussed above.

10.3.2 The Leadership Challenge

Understanding great organizations and organizational culture are helpful in evaluating whether you might want to join a particular organization and how to improve the organization you belong to. Knowing which leaders to work for and how to improve your own leadership skills are equally important. Much has been written about leadership, and the subject is vast and complex, but a contemporary empirical study identifies important dimensions of leadership that are quite helpful in evaluating leadership in yourself and others. In particular, Kouzes and Posner originally published *The Leadership Challenge* in 1987 (Kouzes & Posner, 2003) based on work begun in 1983. Ordinary middle- and senior-level managers in many public- and private-sector organizations were asked to describe extraordinary experiences of leadership. Specifically, surveys were conducted with 38 open-ended questions asking the subjects to reflect on their experience, its context, their preparation, special techniques involved, and so forth. The original book was based on 550 long surveys and another 780 short-form (2-page) surveys together with 42 in-depth interviews. The research yielded a model of leadership as well as a quantitative instrument, the Leadership Practices Inventory—and the model and the instrument have been validated by subsequent testing on over 10,000 leaders and 50,000 other constituents. Interestingly, the work refutes many of the common stereotypes of leadership, but it does suggest that leaders exhibit certain common practices at their best.

In particular, Kouzes and Posner (2003) suggest that there are five fundamental practices of exemplary leadership:

1. Challenge the process.
2. Inspire a shared vision.
3. Enable others to act.
4. Model the way.
5. Encourage the heart.

Each of these is briefly discussed in what follows.

Challenge the Process Many of the leaders in the Kouzes and Posner study (2003) attributed their successes to "luck," but most of them were activists in setting up the favorable circumstances that led to their good fortune. All cases of personal-best leadership involve some kind of challenge, and all cases involved a change to the status quo. Thus, leaders must (1) seek new opportunities and (2) foster an environment conducive to risk taking and experimentation. Many organizations pay lip service to these values, but putting them to practice requires a special attitude toward innovation, a healthy skepticism toward comfortable routine, and a rare tolerance of learning from mistakes.

Inspire a Shared Vision Upon challenging the process, many effective leaders understand that they need to communicate a *vision* of the future to inspire others to change. This requires (1) understanding the past, and (2) imagining the ideal, (3) outlining a viable future with unique business opportunities, and (4) enlisting others to the cause.

Enable Others to Act Once a new direction is set, it is important to encourage action by others, and this requires collaboration and information. Sustainable collaboration requires a win–win exchange between the parties involved. In turn this requires an analysis of what you want others to do and what they wish of you. Posner and Kouzes (2003) suggest an analysis of the "currencies" or media of exchange between parties to encourage the needed collaboration.

They also recommend the sharing of important information. Many managers reflexively hoard information like squirrels hoard acorns. Informed action by others requires sharing of key pieces of strategic information. An extreme version of this sort of sharing is found in Stack's style of *open-book management* (Stack, 1992), in which the financial books of a company are opened to its employees. Not every business may be comfortable with this level of sharing, but the spirit of such openness was an element in best leadership practices as reported by Kouzes and Posner (2003).

Model the Way "Do as I say, not as I do," could be the watchword of management in the scandal-plagued early years of the 21st century, but personal-best leadership required that leaders "walked the talk." This observation is consistent with the good-to-great study (Collins, 2001) discussed elsewhere. Chicanery and boosterism can work in the short term, but long-term achievement requires a steady state of kept promises up and down an organization. The positive attitudes of a theory Y organization and manager are entirely consistent with the empirical results of the Kouzes and Posner (2003) study.

Encourage the Heart Organizations that try to buy employees can always lose out to a higher bidder, but organizations that evoke strong positive emotions are much harder to leave. This is not to say that pay and perquisites are unimportant, and the evidence does suggest that personal-best leadership requires a match between those variables and performance. But many instances cited by Kouzes and Posner (2003) involved organization members going above and beyond the call of duty. In many of those cases, the only reward for doing well was acknowledgment, an attaboy, a thank-you note, or public recognition of accomplishment. As has been discussed elsewhere, praise is a powerful force, but too often it is handed out sparingly, if at all.

Exploration Exercise

Consider a leader you admire. First, write briefly on what you admire about that person's leadership. Then, consider the ways his or her behavior measures up against the five features of exemplary leadership.

10.4 ORGANIZATIONAL CULTURE: THE GODS OF MANAGEMENT

The *Good to Great* (Collins, 2001) and *Leadership Challenge* (Kouzes & Posner, 2003) studies examine organizations from the standpoint of *best practice*. This is an effective methodology for mining data for common attributes of success, but it is less helpful in understanding ordinary practice and the typical organizational patterns we might observe in a larger population of leaders and organizations. Here, we take a more sociological viewpoint and try to identify different organizational and leadership through an understanding of *organizational cultures.* We try to understand how culture evolves in response to the type of activity the organization pursues.

A useful guide to understanding organizational culture was written by Handy in his book *Gods of Management* (Handy, 1995). Handy identifies four primary types of culture and uses Greek gods to symbolize each culture as shown in Table 10.3.

Club Culture

Startups, small family businesses, and other organizations that take their lead from a single talented leader often evolve toward a *club* or *Zeus culture.* In the Greek pantheon, Zeus was loved, feared, and obeyed, and the Zeus culture loves, fears, and obeys its leader. Modern management practice sometimes sneers at such a setup, but there is a clarity and lack of ambiguity in such an organization. My first job out of school was in a small, engineering software firm run by a talented entrepreneur I will call Mack. Whenever I had any question of what I should do, I simply asked myself what Mack would do, and I did it. In this way, club cultures communicate through a mechanism of *subordinate empathy*, and in so doing, the culture is able to move rapidly in business climates where speed of decision is

Table 10.3 Four Gods of Management

Culture	Greek God
Club	Zeus
Role	Apollo
Task	Athena
Existential	Dionysus

critically important. Clubs can be stifling for those of independent mind, and in my own experience, after about 4 years of thinking like Mack, I was ready to think for myself, and returned to graduate school. Yet, the experience was deeply satisfying at the time, and joining a club culture run by a talented individual early in your career is a useful way to model successful business behavior.

Role Culture

Apollo was a god of order and rules, and Apollo is the god of the *role* or *bureaucratic* organization. Bureaucracies arise in response to *stable, predictable* environments, and different individuals within the organization take on different roles that are competently (hopefully) executed repeatedly into the future. Government agencies and large corporations in regulated or monopolistic industries often evolve toward Apollo. Although we don't usually think of bureaucracies as efficient, in a stable environment, Apollo effectively and consistently gets the job done. On the other hand, Apollo dislikes and reacts badly to change, regardless of how much it is needed. During times of competitive pressure or an otherwise unstable business picture, the role culture can be inappropriate to meeting the challenge.

Task Culture

The warrior goddess Athena is the symbolic god of the *project* or *task* culture because of her problem-solving talent. In many engineering activities (e.g., design, construction, and consulting), organization success is closely identified with the effective solution of a sequence of discrete problems. Successful project or task cultures allocate time, personnel, and money to the solution of problems, but projects by their nature tend to require customized solutions; they resist solution by routine or rote. Thus, Athena requires innovative and creative individuals who can get a project done well and within time constraints. Because of the customized nature of the solution, and because innovation and creativity tend to be open-ended activities, Athena cultures are expensive. Nonetheless, engineering professionals oftentimes find themselves inhabiting task or project cultures, and the creativity required of the engineering professional is generally a good long-term match to such a culture.

Existential Culture

Because Dionysus is the god of wine, song, and living life to the fullest, Handy chooses him as the symbol of the fourth and final culture. The *existential* culture takes its name from the branch of philosophy called *existentialism.* Existentialism explores the consequences of life as a set of co-existing individuals, largely unconnected from others or without some higher purpose. In many organizations, the individual is subordinate to the larger needs of the organization, but in an existential culture, the organization exists largely to serve the needs of the individuals in it. Individuals with unique expertise such as medical doctors, lawyers, and university professors inhabit such cultures, and they have a large degree of control over the terms of their employment, their bosses, and their customers. In universities, the job of being a department head is likened to herding cats, and the description is apt. It is very difficult to get doctors, lawyers, or college professors to do things they don't want to do. Interestingly, universities, hospitals, and large law firms have parallel universes containing other employees with talents that are more fungible than those of the principals. Those portions of the organization tend toward task or role structures, depending upon their function, but the primary actors tend to go their own way. Existential cultures place a premium on unique expertise, and they do what they need to do to cater to the needs of their special inhabitants.

Cultural Impedance

One might be tempted to ask which culture is best, but the question would be misplaced. As was discussed, different cultures are more or less effective depending on the nature of the work to be done. When speed is of the essence, the club culture can move quickly with one mind. When environments are stable, role cultures can push the paper and get routine jobs done routinely. When problems need to be solved, task cultures solve them, albeit at considerable expense. When unique expertise must be nurtured and cultivated, existential cultures coddle the experts. Which type of organization you might join depends on the level of autonomy you seek, the kind of work you want to do, and the type of expertise you possess. Moreover, it is important to recognize that most large organizations are rarely of one pure type. Different departments within a larger organization or even different teams within the same department will naturally adopt cultures appropriate to their mission.

In thinking about culture, one thing to consider is whether the culture of the organization is appropriate to its mission or whether there is a *cultural impedance* mismatch between mission and culture that is preventing the organization from reaching higher levels of performance. Impedance mismatches will most often be noticed around times of transition. A role culture facing deregulation, for example, will have difficulty adapting to the changing times, or a project culture facing cost pressure may have difficulty standardizing enough to be cost competitive. Such transitional times can be unnerving and difficult, but the greatest opportunities for having a large impact on an organization can exist at exactly such times. Whether one chooses to be a part of an organization in transition or not, recognizing mismatches of cultural impedance is an important skill if one is to evaluate and react to such situations.

Exploration Exercise

Identify four organizations or companies, one for each of the four types of organizational culture: club, role, task, and existential. In four short paragraphs, consider the ways in which the culture aids and hinders each organization in achieving its mission.

10.5 WHY FORM OR JOIN ORGANIZATIONS?

Much of this chapter has assumed that it is quite natural for us to form and join organizations as a regular feature of modern work life, but some strange things are taking place in the age of the Internet. Organizations appear to be getting smaller; functions that were once a regular part of an organization are being outsourced, and more and more people are working as temps and freelancers. To better understand why this is happening and whether there is a connection between the Internet and these workplace tendencies toward leaner, more fluid organizational structures, we start with a naïve, yet fundamental question. Why, from an economic perspective, do we form, and join, organizations? The answer is not obvious, but it is important and helps explain the tendency toward leaner organizations with specialized functions than in times past.

At first, the question sounds almost silly. After all, forming organizations is what you do when you want to get organized, right? Yet the questions of appropriate leadership and organization only matter if we *choose* to join, and behind the question is a serious matter. Since the fall of the Soviet Union, it seems that much of the developed world now agrees that free markets are a sensible way to organize economies (and democratic rule is a sensible way to organize political systems, but that is a question for another book). One scholar has gone so far as to suggest that the widespread acceptance of free markets and democracy signals an end to socioeconomic evolution, the end of history (Fukuyama, 1992). Whether this is so is beyond the scope of this argument, but this end of history leaves us with a puzzle that is germane to our investigation of organizations and leadership. If free markets are such a great thing, why do most of us as individuals choose to *suspend* the free market in our choice of employment? The question sounds strange, but think about it. Every morning we arise and we face a choice. We could choose to get up and sell our services to the highest bidder, but instead most of us get up and simply go to work under an arrangement that was negotiated at the outset, but no longer is directly subject to market exchange.

Questioning the common sense of getting up and going to work is odd, but we must do so if we are to get at the economic forces that cause us to do this. After all, much of what happens in business is shaped by economics, and we must understand the fundamental economic forces that result in the formation of organizations if we are to put our query onto solid ground. To help make what might be an abstract discussion more concrete, imagine two structures with identical numbers of workers, one normal, fairly stable, and one where the free market is consulted on a regular (monthly, weekly, daily, or even hourly) basis.

Consider a small manufacturing *organization* with a boss-entrepreneur and a single employee (Figure 10.1). Early in the company's history, the entrepreneur designed the widget, started the company, lined up clients, set up the initial manufacturing process, and performed the initial production runs. After a time, the boss gets tired of being a one-man band and hires an employee. The boss still

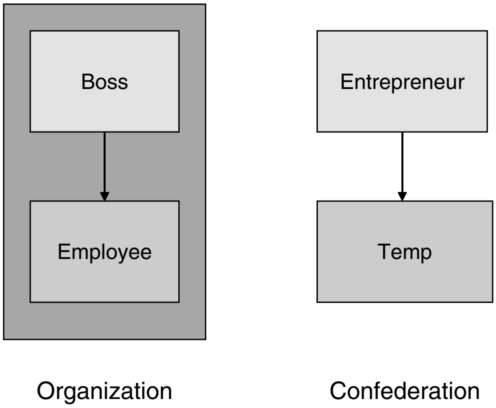

Figure 10.1 Schematic illustrates how subtle the difference is between an organization and the looser confederation.

gets the contracts, designs the widgets and manufacturing equipment, and does the accounting. The employee now works the widget assembly equipment, packages the widgets, and ships them to the customers. All this sounds fairly normal, but the simple example is enough to help make our point.

Consider an analogous situation that starts with the same boss-entrepreneur, except this time when the boss gets tired of working alone, he is aided by a sequence of *temporary employees* (temps) who are hired by appealing to the market with high frequency. To give this combination a convenient name, we will call the combination of the entrepreneur and the temp a *confederation* because the temp agrees to work for the entrepreneur for a brief and predetermined period of time. (See Figure 10.1.)

Although temporary employment has become more common, it is still rare that any of us will take a job on a daily or an hourly basis. Why are we so willing to suspend the free market and join organizations? Without the careful setup, we might have been tempted to answer with Adam Smith's famous conception of *division of labor* (Smith, 1776/1937). Indeed, in going from a one-person organization to a two-person organization, the entrepreneur understands the value of *specialization* to economic productivity, but note one crucial thing. The division of labor is identical in both the organization and the confederation. Therefore, division of labor cannot help us explain why we are so promiscuous in forming and joining organizations.

This is something of a puzzle that grows worse as we continue to ponder the two structures. There just don't appear to be many significant differences between them at first. Both structures make the same widgets; both structures have the same number of people in the same roles. The *only* difference between them is that the organization chooses not to turn to the free market as frequently as does the confederation to hire its help (nor does the employee choose to turn to the free market to look for work as often as does the temp). In other words, employers and employees in organizations agree, somewhat implicitly, to form a longer-term union. Recognition of this mutual commitment is very important and should be kept in mind in the study of organizations and leadership of organizations, but to better understand where the basic economic impulse for this comes from, we need to ask what economic advantages organizations have over confederations. Such advantages must exist, or otherwise entrepreneurs would prefer to turn to the free market to engage helpers for their enterprises.

It is tempting to explain the advantages of an organization directly. For example, perhaps the entrepreneur is motivated to hire a permanent employee—instead of turning to the marketplace to hire a subcontractor—by (1) cheaper wages, (2) better control, or (3) clearer brand identity. However, none of these reasons withstands much scrutiny. If the wages paid to a subcontractor are greater than those paid to an employee, they are greater because of the greater risk taken by a subcontractor facing uncertain duration of employment; in the long run the free market can be expected to evaluate this trade-off between risk and payment accurately. Control is no better an explanation of why organizations exist because the entrepreneur exercises equally clear management authority in both an organization and in our hypothetical confederation. Moreover, because the identity of an organization—or a confederation—is based on the cost, reputation, and quality of what is produced, and because neither entity has an inherent advantage along these dimensions, identity cannot be used to explain why organizations are formed and joined.

If such direct effects fail to explain an organization's advantage, what does? Turning to the essential difference between the confederation and the organization—the confederation's more frequent use of the free market to engage services of individuals—helps shed some light on the organization's advantage. If an entrepreneur turns to the free market to hire subcontractors, chances are that different bidders will be engaged on different days. As a result, the confederation will be subject to a number of costs that a corresponding organization with its more-or-less permanent workforce need not pay:

1. Cost of hiring, paperwork, and contracting
2. Cost of training
3. Cost of incompetent hires

Frequent turnover of subcontractors in the confederation will require that whatever paperwork, legal fees, and other sign-up costs are necessary will be incurred each time a different subcontractor is engaged. Worse than this, each time a new subcontractor is hired, he or she must be made familiar with the local particulars of making widgets, and in most manufacturing processes training costs can be significant. Finally, when one turns to the marketplace, one can never be certain that a hire is going to work out. There are plenty of smooth talkers with good-looking vitas who turn out not to be very good widget makers. This analysis is presented from the entrepreneur's point of view, but similar conclusions can be reached if it is approached from the employee's or subcontractor's perspective.

Taken together, these seemingly secondary factors, what economists call *transaction costs*, are the primary economic reason why we form and join organizations (Coase, 1990). Although some of these costs are mundane things like paperwork and legal fees, many of them are costs of *knowledge* (Sowell, 1996). Confidence in the competence of an employee (or an employer) does not come free of charge; it is knowledge that is gained over a period of time. As a result, when employers find employees they are happy with, and when employees find work situations they are happy with, they tend to stick with each other. In other words, they form an organization, and in so doing they make an implied commitment to one another. It is not a commitment for life necessarily, but it is a commitment not to consult the free market as often as might happen if agreements and knowledge came more cheaply than they do.

Note that this temporal commitment of the individual to the organization and vice versa is not necessarily some warm and fuzzy joining of hands. The search costs for better jobs or employees are simply too high to recommend more frequent attempts to find better ones. In other words, the initial time commitment comes at the behest of economics, pure and simple. There the matter can stand without going a step further, but in many situations the time breeds trust and mutual reliance, and it is this opportunity that is exploited by high-performance organizations.

10.5.1 Optimizing Transactions: A Quantitative Model

Transaction costs in employment are apparently balanced against the difficulty of finding a sufficiently good match between employer and employed. Here we build a simple quantitative model using straightforward engineering reasoning.

Imagine that every time the widget entrepreneur hires a new employee, a transaction cost C is incurred. The hiring of a successful employee results in the employer realizing a marginal value V per time unit, but the probability of success in hiring is assumed to be probability p on each hire. Thus the expected profit P per time period to the employer may be written as follows:

$$P = V[1 - (1 - p)^n] - Cn \tag{10.1}$$

where n is the number of different employees tried. The optimal number of hires n^* may be found by taking the derivative of profit with respect to n and setting the result to zero:

$$n^* = \frac{\ln C - \ln V - \ln(-\ln q)}{\ln q} \tag{10.2}$$

where n^* is the optimal hiring frequency (number of employees per period), and $q = 1 - p$. Figure 10.2 shows a particular example of the transaction cost model in which $V = 10$, $C = 0.1$, and $p = 0.1$. According to the formula, the maximum of the curve occurs at $n = 22.4$, and good agreement between formula and curve is obtained. Relating the formula to realistic situations, costs, and probabilities

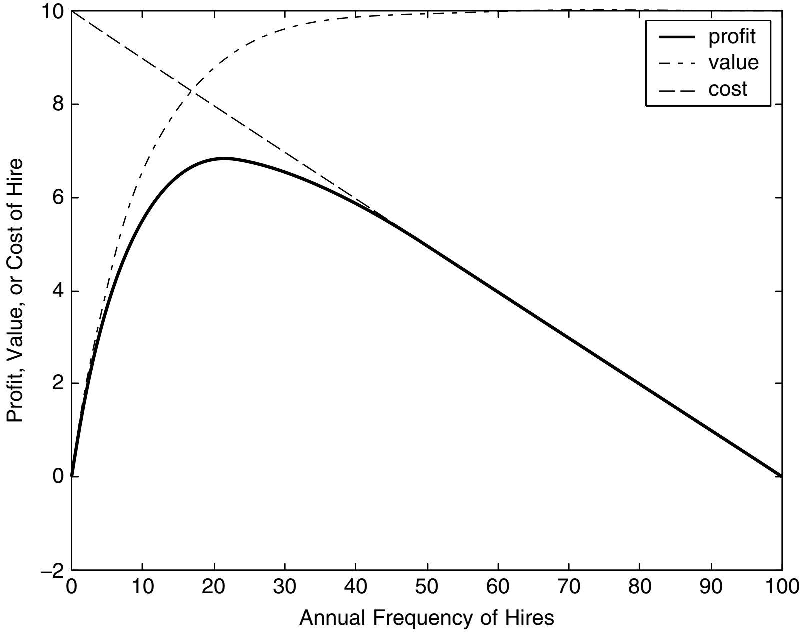

Figure 10.2 Graph of the simple transaction cost model shows a maximum at a particular frequency of hires.

is left as an exercise to the reader; however, the main points at this juncture are to understand that using the free market is not free and that transaction costs act as a kind of organizational glue that bring employers and employees together on economic grounds. Whether or not the economics is a good match to trust or other emotional variables is another question that we must consider.

Exploration Exercise

Calculate the optimal hiring frequency for the situation of Figure 10.1 when $(V, C, p) = (20, 0.1, 0.1)$, (10, 0.2, 0.1), and (10, 0.1, 0.2.). In each case, consider whether n^* increases or decreases. Do these quantitative results match the qualitative discussion of the section regarding transaction costs and the formation of organizations versus confederations? In other words, is organization stability increased or decreased as the value, transaction cost, and success probability increase and decrease?

10.5.2 An Aside on Free Agency

In a globally connected world where résumés, letters of reference, and samples of work can be sent to a potential employer at the click of a mouse, it is clear that transaction costs of employment have reduced significantly. This economic reality has already changed the face of work life as a number of observers have noted (Handy, 1998; Pink, 2001). Handy suggests that the modern global economy is one where the *core* of more or less permanently employed persons is permanently reduced, better paid, and more productive. He captures this idea in the shorthand equation $\frac{1}{2} \times 2 \times 3$—one-half as many people being paid twice as much money doing three times as much work. Pink similarly sees the reduction in permanent work and argues that it is leading—has led—to a kind of free agency in the workforce, where what services you can provide, your network of professional and marketing contacts, and your *portfolio* (Handy's term) of past successes is more important than a job. How far these trends will go before stabilizing is unclear, but there is little doubt that the workplace of today is substantially different than it was even a few short years ago.

Engineering students leaving school decades ago had the expectation of a long career with one or a small number of employers. Today's engineering graduate faces a very different scenario. Unfortunately, government regulations, benefits, and hiring practices remain largely geared to the situation that used to exist. As a result, today's graduating engineer must plan for the world as it is today and make decisions appropriate to employment in such age. To thrive in today's environment, it is particularly important to consider:

1. Portability
2. Loyalty
3. Personal brand and portfolio

Each of these is briefly discussed.

Portability In a world with shorter terms in the core, longer periods of temporary work or free agency, and ever-changing work relations, benefits tied to a particular employer with long vesting periods and promises in a distant future make much less sense than they once did. Although many company benefit plans still try to secure employees for the long haul, these same companies are less willing or able to follow through on the implied commitment. As a result, other things being equal, insurance benefits that can transfer, retirement and stock plans with short vesting periods, and compensation now versus promises of future increases are to be preferred over traditional schemes that assume a lifetime of work with a single employer. Benefits packages and terms of employment are changing, but the young engineer would do well to seek insurance plans, stock options, retirement benefits, and compensation that can move when the employee chooses or is forced to do so.

Loyalty Loyalty is dead or so some modern observers would have us believe, but careful examination shows that this is not the case. Yes, given that employment for a single or small number of employers has become less frequent, loyalty of organization to employee and employee to organization has lessened. Yet, loyalty is a natural part of the human condition, and Pink (2001) has suggested that the locus of loyalty is shifting from the organization to one's *network* of support. In other words, the relatively invariant locus of loyalty is not within any particular organization, but instead it is among those co-workers, clients, contacts, or other members of the supply chain of a continuing series of jobs, assignments, or consulting engagements. Interestingly, in the old-style organization, loyalty was also a web of human relationships, but workers tended to identify that web of human relationships with the company itself. From this point of view, rapidly changing times have simply helped us understand that loyalty has always been based in a web of human relationships, not some legal structure, brand name, or organizational entity.

Personal Brand and Portfolio In times past, keeping an eye open for future job opportunity largely meant keeping you're résumé updated, and back then, when opportunity knocked, it came in the form of a promotion with your current employer or a job offer from a large company in a similar line of work. In a world of limited work at the core and increased free agency, the wise entrepreneurial engineer needs to take more proactive steps to develop his or her *personal brand,* and a key tool toward doing this is the maintenance of a professional *portfolio.*

Modern marketing thinks largely in terms of developing *brand names* for related lines of products and services, and doing so requires a balance of competitive product features, aggressive promotion and advertising, and making consumers aware of the brand, its features, benefits, and consequences. In the same way, work life in more dynamic times demands that professionals think of *themselves* as a product or service; career management transforms to a kind of personal brand management. Free agents understand this because a continued stream of engagements depends on selling themselves to clients, delivering on promises made, and seeking continued or other engagements. The Web and e-mail can be useful tools in promoting your services to others. In addition, maintaining a *portfolio* of successful work product (designs, reports, computer code, etc.) can also be persuasive to potential employers or clients. Engineering students sometimes complain that they don't have practical work experience and thus lack a portfolio. This argues in favor of getting such experience during the summer or in a coop program, but it also argues for looking at one's schoolwork as a source of portfolio items. Excellent class projects, lab write-ups, or capstone design project reports can all be used to start your portfolio to demonstrate your "brand" of engineering service excellence.

Exploration Exercise

Consider yourself as a product. Make a list of your product features, feature benefits, and customer consequences for those benefits. If you were to create a company around your talents, what would you call it? Describe or draw your company's logo. What steps would you take to promote your company to others?

SUMMARY

It makes sense to seek association with the best organizations and to work for the best leaders, but what makes a good organization good and a fine leader fine? To answer the question, "What makes organizations tick?" requires an answer to the question, "What makes people tick?" The chapter briefly surveyed Maslow's model of human motivation—his hierarchy of needs—and continued with a short discussion of McGregor's theory X and theory Y. Essentially, Maslow argued that humans have a complex of needs, and, depending upon their environmental circumstances, they may be motivated by base needs such as survival or by higher order needs such as aspirations toward a more fulfilling life. McGregor took Maslow's theory and applied it to organizational settings by suggesting that some organizations assume that humans are driven by base needs and must therefore be encouraged with carrots (and beaten with sticks) to achieve the desired results. These organizations and managers he called theory X. He also suggested that organizations that believe that high-performing humans are more driven by higher order needs such as personal or societal fulfillment are more likely to respond to a management philosophy built on trust and empowerment (theory Y). Since these early theories, many management theorists have argued that effective management is about getting larger numbers of members of an organization to strive for higher order motivational states.

The chapter continued by considering two empirical studies, one of high-performance organizations and one of high-performance leaders Collins's (2001) *Good to Great* identified attributes of successful organizations by contrasting them to more ordinary ones. Kouzes and Posner's (2003) study presented in their book, *The Leadership Challenge,* identified a number of shared characteristics of high-performance leaders. Although the methodologies of *Good to Great* and *The Leadership Challenge* differ, they fundamentally ratify the Maslow–McGregor view of organization and leadership. Empirically, the best, sustainable organizations and leaders think about their people and how to get them to live fulfilling work lives through growth on the job.

Although focusing on excellence is helpful to understanding improvement, it is also important to understand the more ordinary, everyday organization. To that end, the chapter briefly reviewed Charles Handy's (1995) text, *Gods of Management,* for a useful taxonomy of corporate culture. Handy's four cultures, the club, role, task, and existential culture are all around us, but none of them is inherently good or bad. Handy's point is that culture is *appropriate* (or not) to the business climate faced by an organization. For the engineer, a more important point is whether the culture of an organization is appropriate to the individual's goals and aspirations. Either way, understanding organizational culture and being able to match culture to task and to people is an important skill.

The chapter concluded with an unusual query: Why do we join organizations? Our opening attempt to answer this question suggested that there are economic reasons why we temporarily suspend the free market and take a job. Essentially, using the free market is not free—there are *transaction costs*—and the costs associated with moving from one engagement to another are substantial and cause us to stay put for a time.

The discussion of transaction costs naturally led to the current workplace and the increase in free agency and reduction in lifetime work. As transaction costs of seeking employment and employees have reduced, work has become a more transient affair. These realities help emphasize the importance of portable benefits, loyalty to one's network of contacts, and thinking of one's brand through the maintenance of a portfolio of work output and tangible accomplishments.

EXERCISES

1. Consider an organization in which you have worked. Make a list of the ways in which the organization helped or hindered you in the performance of your job.
2. Consider a manager you have worked for. Make a list of things he or she did that you would classify as theory X behavior, and make another list of things he or she did that you would classify as theory Y behavior.
3. Consider a leader of historical renown. Write a brief essay regarding his or her accomplishments in the light of theory X and theory Y.
4. Scan a newspaper for evidence of corporate or organizational difficulty. Write a short essay analyzing the situation in the light of theories X and Y. Read between the lines when necessary to make your analysis, but be sure to separate fact from speculation in your writing.
5. Consider a corporate leader in the news and evaluate it in the light of Kouzes and Posner's (2003) dimensions of leadership excellence. Write an essay and determine those elements that appear consonant with the dimensions of Kouzes and Posner and those that do not. Speculate on the future sustainable leadership ability of your subject.
6. Consider a corporation in the news and evaluate it in the light of the Jim Collins's (2001) dimensions of organizational greatness. Write an essay and determine those elements that appear consonant with the dimensions of Kouzes and Posner and those that do not. Speculate on the future sustainable leadership ability of your subject.
7. Go to the current business press and find an article on a company touted as an up-and-coming star. Analyze the company in terms of the good-to-great criteria discussed in the chapter and predict whether you believe the company's rise is sustainable or unsustainable. Write a short essay explaining your answer.
8. Go to the current business press and find an article on a leader touted as a up-and-coming star. Analyze the company in terms of the Kouzes and Posner criteria discussed in the chapter and predict whether you believe the leader's rise is sustainable or unsustainable. Write a short essay explaining your answer.
9. Consider the four gods of management. Which god best fits your personality. Write a short essay explaining why you believe this is so. Assuming your analysis is correct, write a paragraph explaining the implications of your observations for your career choice.
10. Consider *Good to Great* (Collins, 2001) and *The Leadership Challenge* (Kouzes & Posner, 2003). Write an essay highlighting similarities and differences between the principles mined by these empirical studies. Are the differences significant, and do the differences suggest the need for additional research or can the differences be reconciled by a change in perspective or emphasis?