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The DNA of Competitive Advantage

One of my closest friends, a long-time partner in crime from our undergraduate days, is a now a professor in the very same Department of Biology where we once tormented instructors with our collegiate antics. Ethan's doctorate is in one of the most difficult, most fascinating, and now most contentious disciplines in the biological sciences: genetics.

James Watson and Francis Crick examined the x-ray studies of one of their contemporaries and first proposed the double helix orientation of the DNA molecule. Their 1953 paper, "Molecular Structure of Nucleic Acids: A Structure for Deoxyribose Nucleic Acid," identified the unusual orientation of the DNA strand and the base pairs of nucleotides that hold the two separated strands together.[1] Watson and Crick received the Nobel Prize for the discovery in 1962, and their names have been synonymous with genetics ever since.

So what could this possibly have to do competitive intelligence?

The purpose of DNA is storing and, over time, expressing information. By its own elegant structure, DNA is intended to be copied, moved, stored, altered, and improved for one purpose: to be passed on. To reproduce. To continue. To be as valuable tomorrow as it was today, or perhaps even more so. Businesses are just like biological organisms in that they wish to remain a going concern.

The areas of DNA with information for building an organism are called *genes.* Other DNA sequences have other sets of instructions, very similar in many respects to software codes (thus, malicious software is described as a virus), that are triggered by internal and external stimuli. This can be as basic as the passage of time or as complicated as a foreign chemical that is threatening the strand's existence and requires a defensive response.

By way of perspective, the largest human chromosome is over 220 million base pairs long. That's a single chromosome of the twenty-three pairs we pass on to our children. Overall there are 3 billion base pairs in each meter-long DNA strand. It's a lot of data packed into every one of our cells. The twisted orientation of DNA is the most efficient way to pack all of that information in as small a space as possible. So overall, the DNA strand is a pretty resilient little model for how business can approach the concept of actionable information.

Companies have similar internal and external triggers. They too pass information on to future generations. They have instructions for building, serving, delivering, and protecting something. Like the DNA strand, they are prepared to take defensive actions when a threat looms. A business also processes, stores, and manipulates important data to store its prior history, serve its current needs, and protect its future interests. Like the DNA strand, it has to accommodate environmental fluctuations that are not always favorable: it must adapt and evolve. As history has repeatedly shown, adaptation is not always an easy thing.

One uncontroversial aspect of Charles Darwin's seminal work on evolution is the criticality of adaptation to survival. All organisms—biological, national, corporate, or otherwise—wish to survive, preferably to thrive, so they store up needed energy and resources for periods when times are tougher. At one time or another, resources were available for all. Sunlight and water, shelter and food, or finance and talent were easily acquired without difficulty. In modern times, however, things have changed.

Resources are increasingly scarce, and this scarcity is now an accepted tenet of existence. As the supply of resources dwindles, the costs of the increasing demand rises. Soon everyone is no longer able to share the

limited resources equally. It becomes a zero-sum transaction. For one entity to acquire the resource another entity is left wanting. Competition picks up and creates conflict everywhere. We no longer live together in harmony.

Restaurants covet street corner locations because the ease of entry brings more traffic; as a result, competing restaurants cause the prices of the locations to escalate. Technology companies ratchet up starting salaries for promising graduates most likely to develop the next must-have technology application. Small businesses pitch angel investors and venture capitalists who have less money to spread around than a decade ago. Conflict is not just *a* way of life; it's *the* only way of life.

The purpose of intelligence is to reduce uncertainty in conflict. That's it. That's the whole complicated mess of it. From Cain and Abel to the War on Terrorism, minimizing the uncertainty faced in conflict, combat, or competition has always been the sole purpose of intelligence. While the Bourne trilogy and a resurgent James Bond franchise may alight our imaginations as well as movie screens, in the end, the entire intelligence enterprise of every country or company on earth can be reduced to these four simple words.

But uncertainty is a daunting taskmaster.

Everyone who has ever had to make an important decision has stared into the cold, dark face of uncertainty and trembled. If there were no uncertainty, there would be no reason to consciously have to choose. The correct choice (however we might characterize it) would be immediately obvious. We could simply wave our hand and the problem would vanish. Then we'd have lunch.

But that's not the world in which we live. Every person on the planet must make decisions every day, most of the time with incomplete information. I call them UFOs: useless, false, or outdated. This generally describes what we most often have available to help us with decisions. That's the problem with information: by itself, it's not anything we can make a decision by. It's not actionable.

If it's not actionable, then it's not useful. Quite the contrary, in fact. It's keeping us from making decisions needed to move on with the day. It's slowing us down, making us second-guess ourselves, encouraging

others to second-guess us as well, and generally making a mess out of everything. The delay causes other decisions, meetings, and phone calls to stack up. Our productivity drops and aggravation rises. We are less and less effective at our jobs. This is when the dinosaur reference shows up.

I'd love to claim credit for this biological comparison to business, but far smarter people than me began using this metaphor years ago. Comparing business paradigms to dinosaurs meant companies could not adapt to the changing pressures of business. The Internet was in its nascent stage, but the general pace of business, and of life itself, was picking up. Those who kept up with the increases in global communications and decreases in global trade barriers thrived. Those who didn't—dinosaurs who couldn't adapt to the Internet's devastatingly lethal Cretaceous period—fell by the wayside.

So how do organisms, companies, and nations survive such rapidly changing conditions? Is it random? Is it divine intervention? Or is there a plan hidden from outside view, a methodology to ensure, or at least prepare, for an enduring future? If so, what would such a plan look like? How would it work? And how can other organisms make their own similar plans?

These plans are called *strategies*. They've known a series of different definitions over the years depending on who is doing the explaining. From biology to business, from statesmanship to nuclear warfare, strategy is how leaders plan to achieve a specific goal that inevitably revolves around the assumptions of continued existence and growth.

This is an important point. It's not enough to simply survive. Poets and philosophers may beg to differ, but a benign strategy of live and let live, though popular over the centuries, has always failed. *Always*. The menace of conflict simply overwhelms the well-meaning altruistics, largely because it's almost never about only one thing. Conflict has the many heads of Homer's Hydra, the grip of Jules Verne's octopus, and the cunning of Cuba's Che Guevara.

This is what ultimately killed the dinosaurs. It wasn't just one thing, like a comet or a volcano. It was the complex interplay between a comet *and* a volcano. *And* the loss of food sources. *And* the increasing carbon dioxide in the atmosphere. The cooling of the planet. The rise in sea

levels. Declining reproduction rates. Each became a force multiplier on the other, compounding like interest on a bad loan until ultimately the outstanding balance was more than the population could maintain. The dinosaurs, creature and corporate, became fossilized records of failing to adjust to a changing environment.

Strategy is a collection of ideas about how to win a conflict. In the best of times, they are written out and tested against available evidence. When that evidence is vague or unclear (remember the UFOs), leaders ask questions to gain additional clarity. As those questions are answered, they have fewer unresolved conflicts and greater confidence with the world and their collective place in it. They start thinking about other questions that were not as pressing until this recent boost of confidence. Now that the primary problems have been assuaged, they can concentrate on secondary concerns.

This is what a good intelligence capability can do: help craft the right questions, because many times leaders don't know what questions to ask, much less when and where to ask them. If we were to design a procedure for exactly how things are now, with a happy customer and a competitor firmly off balance, we'd have our conflict strategy (where we ask questions) firmly aligned with our intelligence capability (for minimizing uncertainty). They must be synchronized, adjusting to the relentless ebb and flow of business activity and information. This is where the DNA metaphor comes into play.

Firms that have learned to make this adaptation have figured out their intelligence operation must be as integral to their business as the strategy it supports. Each must mirror the other. Leaders have questions regarding strategy, and intelligence finds new information to explain the conflict. In other circumstances, intelligence raises the questions themselves, providing insight and opportunities leaders were otherwise unaware of.

Strategy and intelligence must be as tightly interlinked as the two strands of DNA wrapped in that double helix. DNA strands are held together by base pairs of four nucleotides. These base pairs are always in a specific orientation that works only when they're in the correct order. These four nucleotide pairings appear many millions of times throughout a completed DNA strand.

To create a similar bind between intelligence and strategy, we would use the oft-cited four components of the intelligence cycle: tasking, collecting, analyzing, and disseminating. Like the nucleotides in the DNA strand, the four components work only in the correct order.

Decision makers task the intelligence operation with their needs—the decisions they wrestle with, the questions they ask. Intelligence professionals collect the necessary information through computer databases, contracted research, outreach programs, and a thousand other methods for collecting raw data. Qualified professionals analyze the collected data, providing the necessary context for decision makers. Finally, the subject-specific perspective is disseminated to the decision makers, and the entire process begins again.

Like the DNA strand, a business has a great deal of things going on at once across its entire length. Questions arising in one area—finance, for instance—will be completely different from questions in the product development group in another area of the organization. But whatever information is tasked, collected, analyzed, or reported becomes part of the firm's intellectual memory.

This is where the analogy to a DNA strand is more than cosmetic; it explains why strategy and intelligence must be inextricably linked. The magnitude of competitive information moving in, on, and around a company is simply staggering. It occurs at every level of the firm, not simply in the executive suites, meaning that every part of the organization must be capable of conducting and applying it. The purpose of this activity, the management of uncertainty, must permeate the enterprise.

Fire in the Belly

With firms of every conceivable type—in product and services, big and small, publicly traded and family owned—the conversation always starts the same way: "We always seem to be putting out fires." The reason this phrase is so common is that it accurately reflects where most business leaders spend the majority of their time: trying to control, minimize, and correct the latest crisis. Most don't realize this catchphrase isn't just superficial; it's endemic to the fundamental problem of how they deal with uncertainty.

This comparison toward corporate combustion evolved because business leaders choose to have the same circumstances as those forced on a firefighter. Despite a highly skilled workforce with state-of-the-art communication equipment, firefighters have little specific preparation for each conflict. As a result, nothing really begins until someone yells, "Fire"!

Firefighters have no idea what kind of problem they're facing until they arrive on scene. En route, they might learn the fire is residential versus industrial. But that's after the clock is already ticking and they're entering harm's way. They know nothing about this specific location. Are dangerous chemicals inside? Is natural gas piped in nearby? Is anyone trapped inside?

The uncertainty firefighters face is hard for outsiders to grasp. Often they know absolutely nothing about the situation until they're literally walking through flames. As soon as the truck rolls to a stop and they start pulling on gear and getting access to a water source, they're observing the blaze and analyzing what they see. What's burning? How intensely? Is it growing? If so, how? They face massive uncertainty, risking their lives as they try to answer the most basic of questions to support their leadership's nascent strategy.

Firefighters are quick thinkers and highly trained. They have to be because their base strategies are standardized, awaiting real-time intelligence to confirm that certain conditions exist before they adjust to the circumstances at the scene. Once the type of fire, the conditions of the structure, and a host of other questions are answered, specific changes are communicated to customize their assault.

The basics of the fire triangle are drilled into rookies early in their training: fuel, heat, and oxygen are all a fire requires, and it must have all three. Take away any one, and the fire collapses and dies out. When firefighters arrive and begin their reconnoiter, the information they gain is radioed to a commander, who decides which dimension of the fire to attack and how. Skills and strategies follow standard operating procedures until leadership decides what to do.

But this takes time. The destruction is continuing and possibly growing, increasing uncertainty because the information initially communicated may no longer be accurate. It's why the initial period of firefighting

is the most hectic and confused and when most accidents and injuries take place. This is when uncertainty is highest.

A four corners display (Figure 1.1) depicts the relative degree of uncertainty that firefighters face in four distinct dimensions. In each area, the shaded regions show uncertainty in the context of darkness and spread. There's little uncertainty in the areas of strategy or protagonists. They've relentlessly trained together, knowing each other's strengths and weaknesses. Leaders' basic strategic preferences are common knowledge to all. Firefighting skills are gained through repetitious training. Command strategies are developed through experience and classroom education. All of this has been worked out in the past. As a result, uncertainty is very low in both areas. It's the specifics of the *present* fire that are unknown.

The fire triangle still exists, of course, but how to attack it is impossible to determine until the firefighters arrive at the scene. The uncertainties caused by chaos, randomness, and pure chance are rampant in the antagonists quadrant. There is no preparation on the specifics of the fire

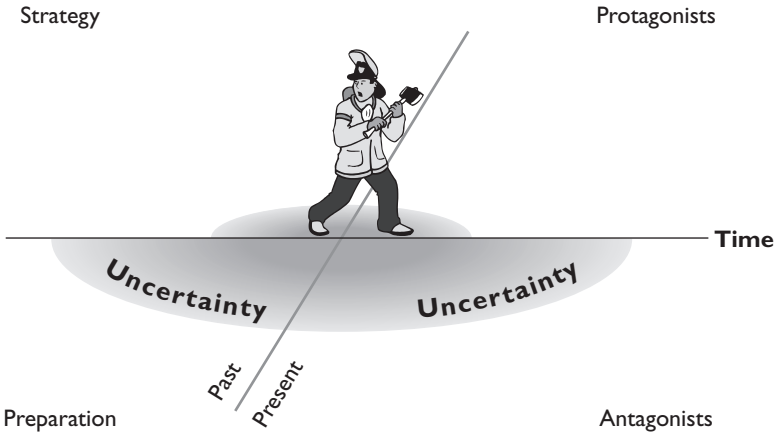

Figure 1.1 Firefighters have high uncertainty when it comes to preparation (they don't know where the next fire will be) and conflict (they don't know what random flammables might be present) when they arrive.

beforehand; the firefighters must gather all their own information as the conflict unfolds. Uncertainty is very high.

Once they've learned a bit about the site, leaders can formulate a strategy based on the skills of people available to combat the fire. They know firefighters have all the requisite skills; it's just a manner of communicating the specific scene circumstances based on the intelligence gathered at the scene. Leaders can choose to use retardants (reduce oxygen), back burns (consume fuel), or water deluge (reduce temperature) to bring a fire under control.

Unlike a fire, however, competition isn't always rational. Whereas fire is responsive to physics, people are highly unpredictable. Unconstrained by simple rules of physics, rivals can react in foolish ways. Fire has only three dimensions. Business has dozens, from industry type, to regional location, to financial structure, to many others. Uncertainty becomes exponential. Like the fire triangle, each dimension shapes the others (Figure 1.2). Devoid of preparation and forced to react to events as they occur is a good way to get burned.

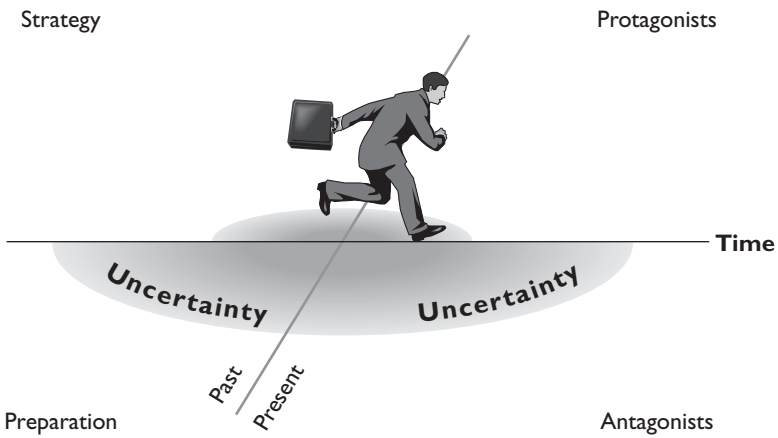

Figure 1.2 Businesses without a reliable intelligence function have a similar high uncertainty in preparation and antagonists. Hence, they are always "putting out fires."

Many leaders run their businesses the same way. Despite highly skilled employees and expensive communications infrastructure, there is virtually no preparation for the conflict they know is coming. Like firefighters, they walk in virtually blind, hastily designing reactive strategies with no specific preparation to minimize their uncertainty.

The Intelligence Cycle

The classic intelligence cycle is neat, easily displayed, and quickly understood. The problem is that it doesn't really work that way. It's too static, too rigid, with too much distance between leaders and intelligence professionals. It's too linear for the complex problems businesses face today. They no longer have the luxury of things simply being complicated.

There are myriad ways to explain complicated versus complex, but let's keep things simple and consider the nature of conflict in two popular sports. Baseball is a sport where (broadly speaking) a single player is sequentially active at a time. In football, twenty-two men are moving and altering each other's behavior in each play. Baseball is complicated. Football is complex. This distinction is often lost on people.

The pitcher winds up and throws the ball. And then the batter swings. And then if he misses, the catcher captures the ball. If he connects, a defending player tries to catch the ball and then throws it to the appropriate teammate. The batter, having successfully hit the ball, takes off for first base. The only concurrent activity is the base runner connecting the bases in a predictable order. His destination and direction are known, so the defending team simply has to throw the ball to the teammate closest to the runner in order to intercept him. There's little uncertainty here.

Contrast this with football. The eleven players on each team take the field together. When the ball snaps, all twenty-two players begin moving. Their actions are highly unpredictable. The routes taken vary widely from one play to the next, one quarter to the next, one game to the next. Each player's activity can have a compounding effect on the activity of the other twenty-one. It is dynamic and evolving, and it engages a number of stakeholders (players) simultaneously. It is, in a word, complex.

This is an unswerving contrast. Actions are often complicated—they can be formulated and standardized—while *inter*actions are always complex. *What* we do is complicated; *how* we do it is complex. This is due to the influence of chance. Random (chance) events are part of complex systems. Things we cannot anticipate, avoid, or control influence decision making in ways that cannot be predicted.

We adjust to random events not by stopping, as we would with a complicated problem, but rather by using these as feedback to adjust decisions on the fly based on prior planning. In other words, we adjust our strategy to work around these interruptive events and continue toward our intended goal. People continually incorporate feedback from everything they see and hear.

Every action we take creates a reaction, and that reaction is incorporated into our next action. This is a feedback loop. Feedback loops are how we control everything from reaching for a doorknob, to feeding ourselves, to waving at a friend we see on the street. Each action has a multitude of unexpected responses that we have to incorporate and adjust for. This is true in intelligence as well.

Managing Versus Leading

Decision makers, regardless of how smart or intuitive they may be, rarely make good decisions over long periods unless they have a support element to help them do it. Once leaders have outlined a strategy, they protect it as if it were their baby. Whatever can be created must be protected, and a competent intelligence function will follow the leader's strategy, filling in answers and making suggestions while abiding by the decision maker's lead.

But being a follower is not synonymous with being a doormat. Intelligence exists to answer questions, but it also exists to discretely challenge leadership when needed. Leaders should expect their intelligence staff to challenge them; certainly their external stakeholders will, and as my military clients like to say, "It is better to sweat the brief than bleed the battle."

Intelligence staff must (respectfully and professionally) challenge leaders' biases, assumptions, and the second-order effects of their decisions.

Senior leaders answer to someone: stockholders, customers, board members. There's never been a leader who was beyond reproach. If leaders are to survive the juggernaut of forces aligning figuratively and literally against them, they will need and should expect the complete support of a skilled intelligence staff.

To do that requires an uncharacteristic level of trust. Trust is the single most important factor between leaders and those who serve them. It's also the greatest metric followers use to evaluate their superiors. Having been given information not shared with others, how does the leader use it? Does she abuse her authority with it? It's happened many times before and likely always will, particularly if an honest initiative by the intelligence professional leads to a particularly tempting opportunity.

This level of commitment is not easy. It is not just acquiring and analyzing data. It is also managing the leader's expectations. Leaders outrank everyone else, but their staff has to manage them—their time, their priorities, and their access to information. Executive assistants set the schedule on a calendar, but the intelligence professional helps decide the priority of decisions. How much time to dedicate to each? Which decision must be made now and which can wait? It means understanding a leader maybe better than she understands herself. When you disagree, (and at times you certainly will), you must do so without being disagreeable. There will be days when the pressure seems overwhelming.

But knowing where the limits and comfort zones are can minimize these. A leader who prefers the big picture shouldn't be bogged down with details. If time is an issue, don't wait until the end of the meeting to bring up a problem; start with it to ensure it is addressed. Maximize the interaction between strategy and intelligence to ensure the leader is prepared for the next meeting with her superiors.

Leaders should expect intelligence professionals to ensure they are addressing the right problem. What may appear simple could actually be complex; what looks isolated may be endemic and growing. Leaders want all the facts required for a decision and want some options to work with. Even if intelligence professionals don't like the options (*especially* if they don't like them), they must ensure that leaders are aware of them. Challenge

what is actually known from what is simply expected. What assumptions are leaders making? Why do they think that? How valid is the information?

Being a leader is about making difficult decisions with incomplete information. That will not change (if anything, it will only get worse). Intelligence professionals must prepare some thoughts on the problem being addressed and offer options, but be prepared to say, "I don't know," when they don't. They'll gain respect as a result, particularly after they go out and find the answers in a timely fashion.

Stages of Conflict

This intelligence-strategy linkage, which is never restricted to the C-level executive team, should be applied in all three stages of conflict: strategic, operational, and tactical. Everywhere along the business DNA strand, the four stages of the intelligence cycle support different decision makers' needs. A board member is briefed on a new corporate debt restructuring, an engineering chief collects data on a competitor's patent filing, and a field sales group is e-mailed an evaluation of a competitor's new product. All of these efforts minimize uncertainty on decisions made throughout the firm.

This chapter opened by noting how the DNA strand stores, transfers, and expresses information over time. That's worth revisiting. Derisively characterized as the fourth dimension (after height, width, and depth), time rarely gets its due attention. More often than not, however, it is the most important dimension.

Time is what differentiates discrete stages of a conflict. Strategic stages are long, over-the-horizon decisions that make take years, or longer in some instances, to discern if they were correct. Operational stages are often characterized as campaigns (referring to the life span of political campaigns) and measured in months. Tactical stages are local maneuvering efforts over or around a competitor's activities.

Like many other aspects of conflict, time is contextual and rarely translates well from one industry to another. Development times and costs for fashionable clothing lines are completely different from those

for computer game software. The sunk capital costs and strategic risks of drug development can stretch into decades before a new medication is available at the drugstore. Alternatively, the latest movie tie-in toy for a child's fast food meal can be designed, produced, shipped, and delivered in a few weeks. Just as these strategic-level time lines vary wildly, their operational and tactical times are likewise dissimilar, with each industry operating with its own uniquely individual rhythm.

The size of competing firms, the depth and breadth of the market, and the expansion or contraction of that market also factor in for these time signatures. The size of the firm is generally a resource constraint: Microsoft can afford to spend big dollars sooner and faster than a small mom-and-pop business. But it is not automatic. Smaller companies often develop stronger ties to customers because they have fewer of them. Larger firms spread themselves around the market more, and sometimes too much. Customers may appreciate the smaller companies' perceived more attentive nature, especially if the customer is (or recently was) a small firm itself.

In either case, what the customer wants is *value.* Do you know your customer's values? As before, asking better questions results in better decisions. What are the dimensions of value for your customer's business? What are the dimensions of value for your competitor? Focus your time and attention on these critical values. Determining the dimensions of value identifies vulnerabilities to exploit. Design solutions for customers and complications for competitors. The common denominator between them is time.

What we see in all three dimensions is that decision makers have less time and less information in which to make decisions. This rush is largely driven by the speed of global communications, the hyperactive nature of competition, and the complexity of industry. Decision makers often must publicly respond to a crisis before they fully understand what has taken place, much less have time to rationally analyze it. Ironically, smaller firms may have an advantage in some respects. Their smaller geographical configuration means that information remains in a single time zone, a single language, and a single leadership culture, allowing faster deci-

sions and allowing the small business Davids to craft better strategy than the corporate Goliaths.

But it still comes down to supporting individual decision makers across a firm. And across any organization, everyone's appreciation for, comfort with, and reaction to uncertainty and decision making will be individually unique. At the Pittsburgh Mind-Body Center at the University of Pittsburgh, Amhad Hariri is unlocking the complexities of decision making and how we can work around any genetic predispositions we might have that might work against us.[2]

Hariri's lab models genetics and MRI-derived brain scans to determine how individuals respond to different types of risk and reward. Some genetic variations reduce the fear of uncertainty in the brain. Others make individuals more aggressive in unskilled gambling situations. How and why the brain's reward system works, certainly an important aspect of strategy and intelligence, is an emerging science with important implications for business, government, and military decision making. Hariri's research has found that only about 20 percent of the variation for an individual's tolerance for managing risk (read: uncertainty) is genetically bound. The rest is a result of education, experience, upbringing, and training. So modeling the behavior of a specific person requires an elegant analysis of all these factors. The company a leader keeps can also drive decision making, including a negative impact. The 24/7 news cycle requires leaders to make faster decisions with less information. Only an integrated intelligence-strategy link can analyze an opportunity (or problem) with enough advance notice to determine a course of action and maneuver around the issue accordingly.

But speed itself is no panacea. Speedy decisions are useless if they are flawed, based on inaccurate or nonexistent information, and ultimately negatively affect the outcome of the conflict. Even small companies can be stuck in bureaucratic or technical lethargy with the wrong leadership. Initiative is a superb advantage if leaders give teams the freedom to storm the market when the time is right. A well-timed initiative can trump the economies of scale, capital, or political connections. But

such time-centric advantages are fleeting. If successful, they'll be copied immediately and competitive advantage will be lost.

Rallying the Troops

Military planners spend an inordinate amount of time reading over intelligence assessments to decide how to engage an adversary. If the right skills and tools are not available, they don't execute the plan because they know it will fail. So they collect new information, develop new strategies, or use different skills and come up with a newer, better plan.

The four corners display for a soldier is radically different from that of a firefighter (Figure 1.3). With reliable intelligence about a target, planners can develop the best strategy for engaging it. They'll assemble whatever specific skills are needed for that specific target using a specific strategy as opposed to a standard off-the-shelf solution. Soldiers, with their skills and communication systems, respond to each other and with

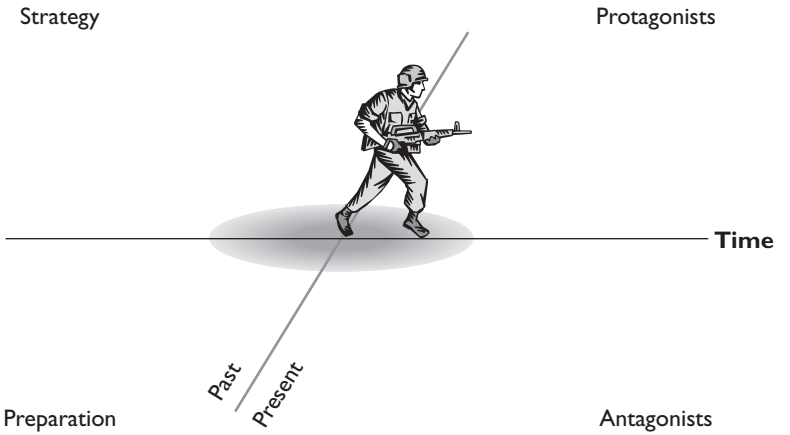

Figure 1.3 By comparison to firefighters and businesspeople, soldiers deal with much less uncertainty, using intelligence to plan their operations and applying a strategy to manipulate opponents to improve their likelihood of success.

How do I explain the successful insurgents in Iraq and Afghanistan? Quite simply: an insurgency is a radical change in conflict (Figure 1.4). It's not just a different battle but a completely different war. Insurgencies eliminate the line between protagonist and antagonist so soldiers cannot easily discern an enemy hiding among a civilian population. Uncertainty escalates rapidly and slows decision making because intelligence preparation focused on locations rather than populations. This creates operational delays through randomness and chaos, offsetting U.S. technological superiority, and turning the advantage to insurgent forces. Time becomes the insurgents' weapon as they outwill (outlast) the invading force. Companies facing the threat of disruptive technologies face equal uncertainties: they are unable to discern who their adversary is, what the adversary's technology is capable of, and how best to respond. Like an insurgency, the adversary does not fit into a nicely labeled category and therefore is a very dangerous opponent.

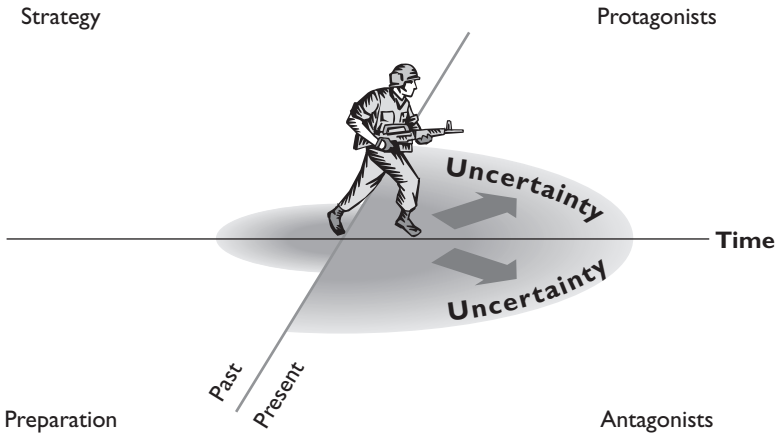

Figure 1.4 Insurgents change the conflict from territory to population, eliminating the line between protagonist and antagonist and increasing uncertainty by masking the identity of the enemy. Business leaders face a similar dilemma from so-called disruptive technologies, which radically change the environment.

the environment to carry out the strategy as quickly as possible. When planners have enough lead time, uncertainty is minimal.

The soldier's skills are as finely tuned as those of firefighters. Leaders are similarly experienced and have formally studied the combat arts. But unlike firefighters, they usually have advanced preparation before they enter a combat area. They're able to design strategies that allow them to affect their antagonists in the conflict dimension, shaping the battlefield as they fight on it in the present. Properly done, uncertainty is minimized.

This doesn't guarantee a positive outcome to the conflict. Far from it. By its very nature conflict is chaotic, the forces of random events affecting each other in unanticipated ways. But with proper preparation, leaders worry less about minimizing random events and focus more on how shaping the battlefield forces opponents to make mistakes, increasing the opponent's uncertainty.

Firefighters Copy the Suit-and-Tie Crowd

The success of alternative futures and forecasting in business has led the fire services to seek innovative ways to integrate intelligence methodologies for reducing uncertainties about the threats they face. The National Fire Academy and the U.S. Fire Administration are moving to incorporate intelligence training into their course curriculum. With over 1 million firefighters, paramedics, and emergency medical technicians nationwide, this is no small project.

But business leaders can also learn a lot from firefighters. Both must deal with a great deal of uncertainty. Business leaders are at a disadvantage because intelligence is rarely taught in U.S. business schools, though that is rapidly changing to catch up to a number of successful overseas programs that target American companies.

But there's a business unique to the United States that is the envy of the world for its worldwide brand recognition, maniacally dedicated customer base, and unparalleled financial success. A look into the team inside the team that makes the National Football League the most successful team sport on the planet is the focus of the next chapter.