Chapter 1

Introduction

In today's technology-driven markets, most companies compete through ideas and relationships. Their most important assets are their intellectual property, knowledge, and people. Patents, as the most quantifiable of intellectual property assets, are the cornerstone of a new type of business strategy that, while practiced, has not been adequately described. This book intends to provide that description and to take the mystery out of patent strategy for business management.

When compared to marketing or financial strategy, patent strategy in business has barely been touched on as a professional discipline. Because of this, patent strategy presents a significant opportunity to gain a competitive advantage. Whereas an opportunity for financial arbitrage can have a lifespan of seconds before astute financial strategists notice and act, opportunities for arbitrage on the value of patentable ideas can remain open to discovery for years. An astute patent strategist can expect to find and create value far in excess of the investment required to capture that value, if for no other reason than that the patent field is less understood than other areas of business. In the patent field, all the treasures have not

already been discovered; they may yet be hidden in the patent files of a company or more likely, in the minds of brilliant researchers waiting for the right connection of ideas and support.

Treasures in the patent world are both buried and emergent. This book focuses on the emergent treasures: the creation and acquisition of valuable inventions from bright people. This is in keeping with the fact that the vast majority of wealth generated by patents is gained from the patents used in a company's core business. Much has been discussed in professional circles about licensing non-core assets buried in the patent portfolio, and tangential value here should not be overlooked, but the fact remains that the primary value is emergent and in the business core.

With that in mind, we bring a thought from classical strategy into the present. Marcus Aurelius, a Roman emperor who reigned from 161 to 180 A.D., stated that "The secret of all victory lies in the organization of the non-obvious." Many historians consider Marcus Aurelius to be the last of the "five good emperors of Rome," and his philosophy for success on the battlefield still holds true to this day.[1] His statement pertains to military conflict, but it carries with it a universal truth that pertains to patent strategy: If you can understand and organize important people, ideas, and tools that your competitors cannot, then you can reach levels of success your competitors cannot hope to achieve.

This book will show you ways to organize and use non-obvious advantages from the point of view of patent strategy. To do so, it will introduce three key learning points as follows:

1. *The definition of patent strategy*. The first key to strategy, patent and otherwise, is to understand what strategy is. Strategy is a solution that takes you from a current situation to a new situation. As a solution, strategy addresses the necessary existence of options, uncertainty, and obstacles. It provides a way to take action even in the face of absolute unknowns so that you can produce a positive result within the constraints of your operation, even if it is not exactly the result you had conceived when your action began. Patent strategy is a component of business strategy that deals with the options, uncertainty, and obstacles involved in the creation, use, and defense of technical ideas. It addresses how to cost-effectively build and manage patent portfolios from which to advance and defend the business

in a research and development environment that is inherently unpredictable. This book discusses patent strategy in context with business strategy, of which it is part and parcel, along with the components of classical strategy from which all strategies are derived.

2. *The decision cycle*. Patent strategy is composed of decision cycles that include three phases:

a. Assess—understand the situation
b. Decide—choose a course of action
c. Act—execute the decision

In the face of many unknowns, an organization that can proficiently move through these decision cycles more quickly than its competitors can develop significant strategic advantages over its competitors in its ability to shape the competitive environment, respond to unpredicted opportunities and threats, and otherwise outpace the competition.

Decision cycles are not one-pass-through events. They are continuous cycles of *assess*, *decide*, and *act*, whereupon each action leads to new assessments, new decisions, and new actions, the complexity of which increases proportionally to the ambiguity of the objective. In a research and development environment, where the output of creative investment is unpredictable, the ambiguity is often high. You cannot reliably forecast important products and services that people have not yet invented and the market has not yet seen.

In patent strategy, proficiently moving through decision cycles involves proficiently creating or obtaining inventions, advancing those inventions into the market, and defending those inventions from competitors however the market ultimately develops. It also involves creating the orientation in the mind of decision makers that patents can serve as important tools from which to gain competitive advantage. The main body of this book uses the decision cycle as the primary guideline for how an organization should plan patent strategy and organize its intellectual property (IP) department.

3. *The interplay between interaction and isolation*. Patent strategy is an interplay between interaction and isolation.[2] The patent itself is a tool that fosters both interaction and isolation. For example, the patent provides a definable asset from which to arrange licenses, a form of

interaction, and it provides a tool with which to exclude competitors from making, using, or selling an invention in a marketplace, a form of isolation. This interplay provides the primary four rules from which you can build even the most complex and nuanced patent strategies. The rules are simple, but mastering the rules takes practice, experience, and a willingness to refine that practice throughout an entire career.

Although this book is about the business side of patent strategy, it is not specifically just about patents. Instead, it covers all aspects of business strategy in which patents play a part—namely, the creation, use, and defense of technical ideas. To try to explain patent strategy outside the context of business strategy would be like trying to explain the written word without showing its greater utility in sentences, paragraphs, and books. A single enforceable patent, like a single word, can have power; that power, however, is minor compared to the power available when that patent works in concert with other enforceable patents and all the other sources of power that people can use to advance and defend an invention in the marketplace. Furthermore, it is also important to understand that this is a book about what to do in patent strategy, not necessarily how to do it. Although it shows many examples of how to enact a patent strategy, if this was merely a "how to" book, it would not be about strategy. Each stratagem is a unique creation of the human mind that, while using common ideas, addresses situations that are never exactly alike.

Strategy Defined

Before we discuss patent strategy, we need to define specifically what we mean by "strategy." Strategy is a solution that takes you from your current situation "A" to a new situation "B." Strategy is nothing more than that, yet that simple definition still confounds people in practice. People often do not make proper assessments of their current situation "A," leading them to take actions they might not have taken if they had a better understanding of that situation. "B" can prove even more difficult to grasp than "A," since life, in patent strategy and otherwise, is filled with randomness that does not abide by a reliable plot line. You might

know what you would like "B" to be, but in practice you will need to take defined action to get close enough to where a more ambiguous but satisfactory "B" is in order to take advantage of the outcome that actually develops. This becomes a balance between defining "B" so narrowly that you cannot hit it, or defining "B" so broadly that succeeding depends almost entirely on good fortune. So, bottom line: Strategy is a type of solution that, in the end, will work as planned or provide an unexpected result; in either case, it should not have so constrained a definition of success within it that the strategist cannot take the best advantage of both outcomes.

To succeed at strategy, you need to know how to make:

1. An accurate assessment of your current situation "A."
2. An accurate and realistic conception of your desired new situation "B" that is narrow enough to be useful but broad enough to account for unknowns.
3. A correct decision on how to get from "A" to "B" that adjusts for uncertainties that become known.
4. A way to measure your progress or any lack thereof.

Uncertainty is where strategy, as a solution, starts to differ from, say, a technical solution or a mathematical solution. The dynamic nature of strategy complicates your task of finding a successful solution because you cannot necessarily test out uncertainties. You have to address active and often intelligent opposition from people who do not want you to succeed, and who may not themselves know how they will react to you until you take action. You also must contend with the fact that, outside the artificial world of games perhaps, time in strategy does not stop. You are continually executing a strategy that takes you to a new situation "B" in the sense that even doing nothing takes you somewhere. You will go to a new situation "B" even if you do not know what "B" is and cannot articulate your strategy to get there. A ship with wind in its sail will go somewhere. A good strategist needs to get a handle on the situation he or she faces in order to arrive at a desirable destination through something other than the mere vagaries of the wind, while realizing, like ancient seafarers, that the outcome of any given journey to find new land, no matter how well planned, depends on the land that is actually there, not the land that the strategist would like to be there.

Results

To go where you want to go, you need to focus on the results of your actions. Any strategy will create predicted and unpredicted results, both beneficial and harmful. Your capacity to create a beneficial result that is preferably also your predicted result will depend on your understanding of your current situation "A," your desired situation "B," and the pros and cons of your chosen method of getting from "A" to "B." One of the hallmarks of intelligence in strategy is the strategist's capacity to make accurate predictions about potential outcomes most of the time. Your accuracy when making such predictions, as well as your capacity to act quickly and decisively on unexpected results, will depend on your having a solid grasp of "A," "B," and how you plan to get to "B." On the latter point, you should seek to craft a decision on how to get to "B" from the foundation of the past experiences that got you to your present situation "A." Your past experiences, along with the value you have retained from those experiences, provide the base from which you can move forward. Your patents themselves literally encapsulate value captured from your past.

With your desired results in mind, your strategic prowess is anchored on your capacity to:

1. Achieve your predicted and useful results
2. Recognize and exploit your unpredicted useful results
3. Mitigate or avoid your predicted harmful results
4. Mitigate or avoid unpredicted harmful results

In the development of the pharmaceutical compound *sildenafil* that became the commercial pharmaceutical Viagra®, Pfizer researchers achieved a predicted and useful result of increasing blood flow to the heart to treat heart conditions. The compound *sildenafil* was only a marginal improvement over existing treatments, and so while useful, the predicted result had little commercial value. An unpredicted result, however, allowed the same compound to be used for treating male erectile dysfunction. Pfizer patented the method of use and successfully exploited it.[3] So while we need to know our desired new situation, "B," we also need to pay attention to the unpredicted useful results that might offer us an even better outcome than expected.

In contrast to Viagra®, which had useful unpredicted results, the powerful painkiller Vioxx® showed evidence of producing harmful and

unpredicted results. During its development, Merck researchers predicted that Vioxx® would produce manageable harmful side effects, such as abdominal pain, dizziness, and fatigue. They considered these side effects to be acceptable when weighed against the significantly improved capacity of Vioxx® to relieve pain. The market agreed and made the drug a commercial success. Things changed, however, when an unpredicted and harmful rise in heart attack and stroke appeared among some patients using Vioxx.®[4] To add to this, Merck's handling of the unpredicted harm, while not necessarily the case in reality, appeared to be the actions of a company more concerned about defending a line of profitability than the well-being of its customers.[5] Merck was sued under the accusation that its management had deliberately covered up test results that would have led to an earlier withdrawal of Vioxx® from the market. Unpredicted harmful results arose, and although Merck was forced to abandon its originally conceived and desired result "B," addressing the harmful results was a necessary and ultimately unavoidable step to improve Merck's long-term strategic performance.

Reasons for Unpredicted Results

Our present situation "A" is, more often than not, different from the way we predicted it would be. Although not necessarily to their detriment, most people spend most of their lives working on their alternative plans. For many companies, this tendency is the same. Consider that wireless telephony was barely conceivable and certainly not predictable when Nokia, the wireless telephony company, was founded around paper and power products in 1865.[6] Pursuant to our analysis of present situations, Robert K. Merton, a Columbia University sociologist and National Medal of Science winner, provides a framework for why we achieve unpredicted results from our strategies in his paper, "The Unanticipated Consequences of Purposive Social Action." Robert K. Merton's paper was published by the *American Sociological Review* in 1936.[7] It highlights several key reasons why conceived and executed strategies create unpredicted results. Exhibit 1.1 shows Merton's five reasons for unpredicted results.

The first reason for unpredicted results is ignorance, both because of what is not known that could be known and what cannot be known. An example of the former, ignorance of what is not known that could be

Ignorance	What is known What cannot be known
Error	Inappropriate course of action Missed elements
Immediacy Bias	Emotional drive Individual rationality
Basic Values	Wrong priorities Inappropriate beliefs
Consequences of Predicting	Bias toward the expected Interactivity by others to change the predicted

Developed from Robert K. Merton "The Unanticipated Consequences of Purposive Social Action."

Exhibit 1.1 Reasons for Unpredicted Results

known, occurred at a well-recognized automotive company. An internal assessment at that company showed that more than 50% of the new ideas its researchers put forward as new inventions already existed in the prior art. Moreover, 70% of that prior art was created by someone within the home company. This implied that its researchers, by being ignorant of the prior art, wasted a lot of time reinventing prior art, much of which their company already owned, instead of creating something truly new. While accounting for the fact that researchers may need to rework old problems to fully conceptualize new solutions, the possibility that more than 50% of the company's research and development time and resources was spent reinventing known ideas and inventions meant that the organization was losing considerable potential value simply by being ignorant of what it and others already knew. Aside from individual inventions, it also meant that the organization was less focused on researching less explored possibilities than if it had better appreciated where other organizations had already been.

You should make an effort, therefore, to reduce ignorance of what can and should be known. The unknowable already makes strategy challenging enough without that added burden. In patent strategy, this means searching and reviewing the prior art. Patent information is becoming

more, not less, transparent with the increased accessibility and performance of patent databases from commercial and government sources. You can search, or have someone search for you, the prior art used by patent offices worldwide, and this is the best first way to understand a situation in patent strategy. After all, part of the trade-off you or anyone else makes when filing for a patent is to share knowledge in exchange for the right to exclude others from making, using, or selling the described invention for a period of time. Your competitor's "loss," (i.e., the trade-off made by publishing invention details in order to apply for a patent), should be your gain in leveraging the inherent knowledge described.

To reliably make good decisions, in patent strategy and otherwise, requires a full understanding of a situation. Not repeating mistakes requires knowledge of what those past mistakes were or building on the successes of other people that obviate your need to find solutions for yourself. Although you can find instances where successful people acted on an opportunity only because they did not know the improbability of that success, and although the expression "ignorance is bliss" has developed into a positive cliché in the English language, ignorance should not be considered an asset.

The Prior Art Search

The prior art search is a search of any information source that could show that a conceived invention already exists and at best would not be patentable, or at worst would infringe an already existing patent claim. Information sources can include patents, patent applications, research papers, conference proceedings, product manuals—in short, anything that both adequately describes the invention and for which someone could document the time or origin of the source. A large percentage of prior art searches is focused on patents and patent applications from one or more of the United States of America, the European Union, or Japan; most of the commercially important patents will appear in at least one of these authorities. Typically, these prior art searches take a day to perform. In litigation situations, where

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the first line of defense is to invalidate the plaintiff's patents, a prior art search becomes an invalidity search whereby the defendant may "scour the earth" for prior art that could, for example, be hidden in an otherwise forgotten research paper at a Russian university written in the Cyrillic alphabet. Such invalidity searches can take quite a bit of detective work, including interviewing sources who may know where to find more obscure prior art references.

Complicating the issue of ignorance in patent strategy, some companies work under an institutionalized form of "ignorance is bliss," or plausible deniability, in an attempt to avoid treble damage awards if found to have willfully infringed another organization's patents. They deliberately do not perform prior art searches. They often take this course when they assess the risk of infringement as high because of the crowded nature of the field, and then address inevitable infringements as they occur, often with other patents in their portfolio as intended bargaining chips. In so doing, however, they run the risk of reinventing existing inventions and incurring the costs and the lost productivity associated with that. Unless your work is truly at the cutting edge of new technology, reinventing costs caused by an ignorance of the prior art can exceed the savings produced by possibly avoiding treble damages for willful patent infringement. This is particularly true considering that a review of the prior art, as a part of reducing ignorance, can in itself help you to avoid a charge of patent infringement in the first place. Each situation is different and should be considered on its own merits as opposed to a blanket policy.

Fail-Safe

A fail-safe strategy is a strategy that will produce a definitive outcome at some trigger point, no matter what your opposition does after activating that trigger. For example, in a properly secured house, once a thief triggers the house alarm, the police will show up to investigate, regardless of what the thief does next. A fail-safe strategy that some organizations employ to defend against potential treble damages in a patent infringement lawsuit is a policy

of not looking at patent claims belonging to competitors so that the court, as the provider of the definitive outcome, cannot declare an infringement as willful. The idea is that you cannot willfully infringe on a patent claim you did not know was there, even if you knew that it could be there.

Many successful organizations continue as a general policy to avoid searching for prior art or reading patent claims, and this continuity of practice serves as evidence that the strategy works for them. There is certainly an argument, particularly at the very cutting edge of technology, that a prior art search cannot reveal the most likely source of patent infringement in the first place. Since it takes 18 months for most patent offices to publish filed patent applications, a prior invention that might prove to be the basis of a future patent infringement lawsuit by a competitor could simply be unavailable for review at the time you need to decide whether to proceed with your own invention. Then, once your invention is well into development or use within an actual product, there would be a further disincentive to look back at the prior art. This is because the only outcome a prior art search would likely induce is the discontinuation of the product so that you do not infringe, the need to obtain a license from the less-than-favorable negotiation stance of having already invested in the invention, or the creation of the situation where a patent infringement will now be willful if the holder of that patent decides to sue.

Anyone considering whether to conduct a prior art search could see all this as entirely negative, particularly if competitors show themselves to be less than vigilant in policing their own patents and therefore less likely to sue. After all, they might not notice an infringement anyway, or even if they did, they might not enforce their position. Also, since the reinvention risk diminishes at the cutting edge of technology, the commercial argument to conduct prior art searches in order to reduce reinvention costs also carries less weight in newer lines of research and development.

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In actual practice, the question of whether to conduct a prior art search and read existing patent claims before investing in a course of action is really not a black-and-white issue. Organizations take many actions that both raise and lower the actual need for a prior art search or at least change the arguments for or against a prior art search in each situation. In an environment where competitors actively enforce their patents, the need for a prior art search rises, since it affords the opportunity to deal with a likely threat early and perhaps on better terms than otherwise.

In an environment with extensive cross-licensing or patent pools, the need for prior art searching can diminish; as organizations become more closely integrated technically and therefore economically, they will have less incentive to sue each other even when an infringement occurs. As a note, this is a common principle in strategy that explains outside the patent field, among other things, why the now integrated economies of Europe make the wars of the previous centuries, as a means to solve grievances, highly improbable. Following the same principle, a patent infringement lawsuit, which is patent strategy's equivalent to war, becomes less likely when two or more organizations have a lot to lose from any ill will that such an infringement lawsuit could cause. However, even in the case of patent pools, and sometimes because of them, since they afford the possibility to sue multiple organizations for the same offense, there is always the outlier issue that can prove highly problematic if missed in a prior art search.

So in the end, the decisions about whether to conduct a prior art search and who, if anyone, should read patent claims, really do not lend themselves to a policy. It is a judgment call for the situation. The author does maintain, however, that given the overall strategic advantage of knowing what is out there versus not knowing, that any decision *not* to conduct a prior art search in any given circumstance should be accompanied by a very good reason for not doing so.

Even if you can reduce ignorance concerning a decision, error remains a factor in strategy. Error happens when an organization or individual takes an inappropriate action or executes an appropriate action poorly. It is the second of Merton's reasons for unexpected results. Error can occur as a direct result of ignorance or misapplication of skills. It can also occur when personal and emotional elements of decision making take precedence over logic and common sense. The demise of the original Ford Taurus model, which had been the best-selling sedan in the United States, provides an example.

Consumers, the ultimate deciders of the success of a product or service, liked the early Taurus designs because they offered a contemporary look on a reliable and affordable platform. Ford, in an attempt to keep the Taurus on the cutting edge of design—its competitors had imitated original elements of style that had made the Taurus popular—decided to do a complete redesign of the car's interior and exterior. Their implementation of that decision ultimately created a car consumers did not like—the third-generation Taurus, model years 1996 thru 1999. Ford executives accepted a design that consumers did not accept. The executives' predicted result did not match the actual result produced by consumers, and that error essentially killed the product line for the following decade.[8]

Similarly, the effort taken to pursue an error in patent strategy—for example, to invent and patent around the wrong technical standard—can leave you worse off than if you had done nothing. How does such an error occur? Decision makers may not know which standard will succeed, either because the market has truly not defined the standard (this being a de facto standard such as Adobe PDF), or the court has not defined the standard (this being a de jure standard, such as Wi-Fi developed by IEEE). In this case, they take a gamble, and sometimes that gamble is necessary. In fact, when a strong enough player does make a commitment, it can influence the deciding parties of the standard, whether they are the market or a governing body.[9] Consider the uncertainty that occurred between the HD-DVD and Blu-Ray standards of high-definition television display as an example of a market-defined (de facto) standard. It was difficult to know which standard would win, and therefore difficult to determine which way to use limited resources in research and development. This was a classic "horns of a dilemma" problem in that splitting resources to focus on both could lead to inadequate

resources being used to support either. Less forgivable, however, would be to gamble unnecessarily when available but not studied or appreciated trends do favor one standard over the other, or worse, simply because the company has a greater stake in the chosen standard than consumers have.

Third on Merton's list, immediacy bias, builds on the propensity for people to err based on emotional decision making. Company leaders who have a lot invested in a course of action may desire to see that course of action through, even though the facts clearly indicate that their original desired result is not attainable or no longer desirable. The emotion of desiring to complete the task can easily overwhelm the logic of abandoning it. United Technologies continued, with the encouragement of the Pentagon, to research and develop a new Crusader mobile tracked artillery weapon system well into 2002. This lumbering heavy-weapon system was designed to address a Soviet land threat that had ended 10 years earlier. To its credit, United Technologies created a new and desirable result "B" that used intellectual property created from Crusader system research and development when it designed a lighter and more mobile artillery unit suitable for current conditions.[10] Personal attachment to the original goal, both within the product maker and the product consumer, appeared to be a major reason behind delaying a new course that United Technologies could have taken much earlier.

Basic values inherent in people and organizations, number four on Merton's list, can also cause unpredicted results. In *The Innovator's Dilemma*, Clayton Christensen describes a scenario in which IBM executives bet on the continued dominance of mainframe computers while IBM's competitors developed disruptive smaller computers.[11] Related to IBM's choice to bet on mainframes, in the early 1990s, ROLM, a telecommunications subsidiary of IBM, focused only on linking PBX telephone systems to mainframe computers, the IBM core product, to create seamless call center systems. At the same time, competitors AT&T and Northern Telecom focused on linking their phone systems to LANs composed of personal computers, a disruptive technology from the point of view of IBM's mainframe business.[12] As a result, intellectual property developed at AT&T and Northern Telecom proved much more relevant for future office environments dominated by personal computers than that originally developed by IBM. Furthermore, while the intent of linking ROLM PBX telephony equipment to IBM mainframes was to grow ROLM's market share, its market share declined instead.

The consequences of predicting results, the last reason covered in this discussion, can also cause unpredicted results, since the prediction itself, whether spoken or shown by the actions of the predictor, will bias other people's actions. Your prediction of the future itself changes how people react to a situation and therefore can change the result that might otherwise have occurred. To illustrate, the prediction that open-source computer operating systems will eventually dominate the market will drive a body of people to focus their attention on open source computer operating systems, thus making that prediction true—a self-fulfilling prophesy, if you will. On the other hand, the same prediction could redouble efforts of companies such as Microsoft that have a high stake in proprietary software to alter the situation and make the prediction wrong. In any case, the prediction itself changes the environment and therefore the viability of the prediction. In the absence of an appropriate strategy, people with enough power could literally make your predictions wrong no matter what you do. All they have to do is change the situation.

The creation of patents is a purposive consequence of research and development initiatives, an insightful legal department, and supportive management. It is a prediction or a gamble by those who filed for those patents that they will have value when and if they are issued. The relevance of those patents for the future will generally correlate with the company's strategy as a whole, although the one does not necessarily precede the other. Rather they emerge together from all aspects of innovation, advancement, and security efforts. Not all patentable inventions develop from the predicted outcomes and intended plans of research and development initiatives, which themselves have a sloppy back end. You cannot always know for certain what will come out of an effort. An unpredicted but useful invention could substantially influence the fortunes of a company if its leaders are adept enough to recognize and leverage the opportunity. Thus, successful purposive action often requires flexibility to get the best out of what actually happens.

So, bottom line: Strategy is a solution for how to get from "A" to "B," but it is a special type of solution because it addresses active and often intelligent opposition from outside sources as well as from within. Unlike a technical or mathematical solution, you cannot remove uncertainties created by that intelligent opposition or expect that if you find a successful solution to a problem your opposition will not change the conditions

and create new problems for you to address. Strategic decision making is prone to error because of what you do not know, cannot know, or will not accept. A good strategy must therefore be born out of a pragmatic and logical review of the situation and must afford those who execute it the flexibility to handle changing conditions, some of that change being created by the very act of executing the strategy itself.

Rolls of the Dice

Another common reason that people experience unexpected results in apparently favorable circumstances is the consequence of stringing together too many dependent objectives along the way to a goal. For example, if for five key objectives necessary to reach a goal you have a 90% probability that you will succeed with any given one, then when taking into account that you have a 10% chance of failure five times instead of once, you have only a 59% chance of reaching that goal. Fifty-nine percent brings much more uncertainty into play than 90%. This means two things:

1. Pay attention to the number of contingent objectives needed to reach a goal, and pay attention to the innate human tendency not to calculate the combined risk that all those contingencies create.
2. Factor out as many contingencies as you can by either making uncertainties certain, or obviating the need for a contingency at all. For example, if you invalidate a competitor's patent, you eliminate a contingency over your possible infringement of that patent.

Patent Strategy Defined

Patent strategy aligns the power of patents to the objectives of your business. It is crafted from your ability and willingness to *gain*, *exploit*, and *defend* important creations under the system of patent laws. Patent

strategy is a solution to get from "A" to "B" that can be composed of all manner of resources and actions.

Although patents represent an important part of most patent strategies, a given patent strategist may not actually employ his or her own patents within his or her patent strategy. Generic pharmaceutical manufacturers, for example, have geared themselves to compete without their own patents, and yet they certainly have patent strategies associated with traditional pharmaceutical companies that do own patents. So an organization does not have to own patents to use patented technology or to be subjected to actions from other patent owners under the system of patent and broader intellectual property laws. Having few or no patents is a legitimate patent strategy for some organizations. Nor is it an all-or-nothing decision. Dell Computer does file for patents, but owns relatively few patents compared to many of its competitors. Dell Computer instead gains access to much of its technology needs by licensing-in the patented technology of others on a worldwide basis.

How to maneuver in a market with patents depends on what works best for the participating organization. As with anything in strategy, there are trade-offs. For example, while Dell perhaps saves money on research and development costs by relying on the research and development of others, it does so at the risk of trading money, a commodity, for inventions, which are one of a kind. The uniqueness of the latter over the former tends to offer more leverage for the invention owner in negotiations.

Value Capture

A patent is an asset, and as with any other asset, you can exploit its intrinsic value and bear the burden of its cost. Your overriding goal in managing the asset, either as an individual asset or as a part of an asset portfolio, is to make the value of ownership or implementation appreciably higher than the cost of ownership or implementation.

If you are the owner of a patent, then you may exploit the patent through the proprietary manufacture, use, or sale of the claimed invention. This is possible because a patent gives you the right to exclude others from making, using, or selling the invention who have not properly attained the right to make, use, or sell that invention. You gain this

right to exclude in the countries in which you have patent protection. It requires both that you have some capacity to enforce your rights and that the patenting authority has the legal infrastructure from which you can make your case. You can also effectively lease the patent through a license, or sell the patent outright to another person or organization.

As an asset, patents offer an opportunity to capture commercialization value in two key ways:

- Value 1: Property rights—value obtained from being the owner of the invention
- Value 2: Implementation—value obtained from being the producer, user, or seller of the invention

These two values are in addition to the value obtained by being a consumer of a product or service that is made by incorporating the patented invention in some way; here the focus is on your being an entity intent on commercializing the invention itself.

Depending on whether your focus is as an invention owner or an invention implementer, you should always consider how your company can better capture value from Value 1, Value 2, or both. After making that assessment, put your conclusions into action.

For thousands of years the commercial value of inventions resided primarily with the implementers of the inventions—our Value 2. This was the case because creators of new inventions had practically no means to enforce exclusivity if someone else could recreate their invention. Patents changed this dynamic because they offered the means to enforce exclusivity. However, even before the advent of patents, instances appear of value being obtained by owning inventions. The fundamental method used to capture this ownership value developed through the ages still exists in trade secret practices. Consider the craftsman sword makers in 1600 A.D. as an example. Once a craftsman learned a trade, such as sword making, that craftsman could practice the art and reap the implementation value of that art. To protect intellectual property rights, early craftsmen established rules for the teaching of their trade.[13] Apprentice craftsmen would agree to work for a period of time for a master craftsman in exchange for learning the craft. This was an early way to capture invention value—Value 1—even if for a short period of time. Today, an organization with a trade secret can go even further than the

old guild masters, since in many countries it can indefinitely seek to put legal restraints on the dissemination of trade secrets by employees and associates given access to them.

With the advent of the patent system, the inventor no longer needed to produce the invention to capture value from it. The inventor may well have to share a given, and often substantial, percentage of value with the implementer; still, the inventor maintains ownership of the idea and continues to reap value by being the owner of the invention. Taken further, the owner of a patent may sell his or her invention to another person or organization, and this third party can receive considerable value from owning that patent without being either the inventor, maker, user, or seller of the patented invention. With that in mind, you can obtain considerable leverage in your use of patents by choosing to focus your patent strategy on which of either Value 1 or Value 2 requires the least amount or most available of your resources. The ratio of potential value to obtain at Value 1 or Value 2 differs by industry and company. Whereas producing a tractor costs a lot of money even after you have settled on a design, it costs practically nothing to produce software products once you have invested in their creation. On the other hand, if you have a tractor factory already, licensing a patent from an outside owner can prove a highly efficient way to get the most value out of that factory without unduly raising the cost of your research.

Setting a Precedent

On Nov. 21, 2006, a federal jury in Los Angeles awarded damages of $53.5 million to L.G. Philips in a lawsuit over its liquid crystal display (LCD) technology patents. The jury found that Chunghwa Picture Tubes (CPT) and Tatung Co. were infringing on L.G. Philips's patents without properly licensing the technology from the idea owner. The victory over CPT and Tatung provided an opportunity for L.G. Philips to aggressively pursue and implement its licensing program, since it set a precedent for the legitimacy of the L.G. Philips position and the validity of the LCD patent.[14] In other words, L.G. Philips's capacity to capture

(*Continued*)

the value of ownership at Value 1 increased significantly with the verdict.

Part of any patent strategy is to improve the capacity of the organization to capture value as the owner of the invention, the implementer of the invention, or both, by the scientific, business, and legal means available. The success of any action in patent strategy can be measured not only by immediate patent infringement damages gained, deterred, or avoided, but also by its capacity to enhance one or both value capture positions.

The Nature of a Strategic Solution

Strategy is a solution, but it is not the same as a solution you might use for a technical problem. With a solution to a technical problem, you can all but eliminate uncertainties in your results through experimentation and calculation. It is possible, for example, to design and test an entire jetliner on a computer before building a single airplane so that you already know with almost complete certainty that it will work as intended. This allows you to have confidence in the solution and experience less failure when you implement the solution. Throughout the design process of its 777 and 787 models, Boeing made extensive use of computer modeling to simulate the real thing well before it produced parts and then the whole airplanes. Planners often use computers in strategic simulations as well, but they cannot reproduce the precise predictions that a company such as Boeing can produce for technical problems.[15]

Unlike a technical solution, a strategic solution must address problems created by both external and internal opposition from entities that may not want that solution to succeed. So with a strategic solution, you will always have uncertainty because you cannot know what the opposition will do. In fact, the people who are the opposition may not know what they will do until they face a circumstance you create. A key component of a strategy, therefore, is to manage uncertainty, defined here as:

1. The unknown
2. The unknowable

Due diligence in strategy involves learning what you do not know that is knowable and that you should know—for example, that a competitor has recently published a patent application describing an invention critical for your path forward. You should know what art exists, assess the enforceability of the art, and know who the respective owners are most of the time. Similarly, you want to know that an acquisition you plan to make, in which patents play an important part in justifying that acquisition, will include the people, such as the inventors, who will allow you to make use of those patents. Finally, you should manage and direct the uncertainties of competitors regarding your efforts so that you do not become an open book to competitors, and instead force them to make hard choices about your confidential plans from which you might leverage exploitable mistakes. For example, if you file patents broadly around the world only if you believe an invention has more potential value than other inventions in your portfolio, you create a signal that competitors can use in their analysis of you. Competitors can easily create a subset of patents from your patent portfolio that has larger than average patent family sizes. Your competitor can then examine that subset of patents in more detail. That subset of patents, after all, would be the patents in your portfolio that you consider to be the most important.

The Hard Way

In November of 1994, the author took a scuba diving trip to the San Diego kelp beds. The owner of the boat used to shuttle the divers to the kelp beds recounted how he had dropped a diver into San Diego Bay who had the mission to photograph, from underwater, the secret winged keel of the Australian America's Cup contender before the 1983 competition. Unknown to him and the diver, the Australian patent office had published complete documentation of the secret winged keel before that time, which included all the drawings and specifications of the invention. The time, expense, and risk of putting a diver into the water to take pictures was not nearly as efficient as simply obtaining a copy of the Australian patent application. While the availability of patent

(*Continued*)

documentation may seem obvious to people who have familiarity with patents, the availability of this material was virtually unknowable to people without that exposure. Part of a patent strategist's role, therefore, is to educate people within his or her organization about the patent field and what they can learn from it.

Regarding the unknowable, you need to set up contingencies. Contingency planning and action, such as pursuing one course of research while hedging with an investment in the alternative course of research, is an important strategic way to address the unknowable. Scenario play, which is covered in more detail in Chapter 4 and the Appendix, can help you to plan contingencies by allowing you to test how best to handle circumstances in advance of their actual occurrence. Since you cannot fully predict what customers and competitors will do with a product or service until it actually reaches the market, contingencies allow you keep some options open. In this way, if customers choose the alternative, then you will still have a stake in the market.

Bottom line: The patent strategist should make a prudent effort to know what is knowable that decision makers should know and devise contingencies to address that which is not knowable. The patent strategist should also manage uncertainty, not only to make any given situation clearer to the home organization, but also to manage what his or her own organization makes clear or less clear to people from the outside. Doing so puts the patent strategy on a solid foundation.

Contingencies

ACell, Inc., the owner of extracellular matrix (ECM) patents, won a legal victory on August 18, 2006 in an infringement case against Cook Biotech, Inc. and Purdue Research Foundation. The victory provided a boost to ACell by validating a patent position the firm had established in 2002. That validation provided ACell, Inc. with a precedent to aggressively engage potential partners from the life sciences industry that had been waiting for resolution on the infringement question.[16] The

verdict removed a major unknown, the validity of the patent, which was unknowable until the verdict was reached.

In such circumstances as these, a patent strategist concerned with the situation could speculate on the outcome of the case with his or her own validity opinion, but the master patent strategist would have also prepared contingency plans for both outcomes. This is particularly so when a patent case moves to a jury trial where decisions on validity ultimately rest with people who may have no real background in the technical art. Contingency planning to establish options relates to the fact that one of the surest signs that a strategy is otherwise in jeopardy is when its implementers run out of good options.

On Who Decides? The *Markman v. Westview Instruments, Inc.* Case

The 1996 Supreme Court ruling in the *Markman v. Westview Instruments, Inc.* case showed that the meaning and scope of terms in claims would be determined by the courts as a matter of law and not by a jury. Since the *Markman* case, most parties to an infringement lawsuit have desired to have a *Markman* ruling made as soon as possible. It can be a determining factor as to the merit of pursuing, settling, or withdrawing a lawsuit because it eliminates uncertainties associated with how the scope of patent claims will be viewed by the court in the case. Essentially, the parties involved argue in advance on the meanings of key terms and phrases found in patent claims rather than waiting to see how they are ultimately interpreted as the case progresses or concludes. It is a practical example of an action that eliminates an unknown variable and clarifies important decisions that opposing parties need to make.

Opposites

Strategy is often discussed in terms of opposites. The Chinese gave yin and yang to world culture to describe complementary feminine and masculine forces. Western literature offers its tradition of opposing good

and evil. Sports has its winners and losers. These concepts are considered opposites, yet one cannot exist without the other. The patent world also has its corresponding opposites. The profession tends to define inventions as patented or nonpatented, solutions as open or proprietary, and licenses as open or exclusive. As is discussed further on in this book, thinking about patent strategy with these opposites in mind is useful when seeking leverage over competitors or with prospective partners.

Strategy itself is an interplay of two opposites—interaction and isolation; the general goal is to increase your level of interaction and decrease your level of isolation and to see the opposite result for your competition. For example, winning a key account increases your level of interaction with the market in that you have another customer on the books. At the same time, winning a key account also increases the level of isolation for your competitors since they now have one less customer available to them. Strategy also involves direct and indirect action—again, two opposites. For example, you might engage a competitor with a direct action, such as a patent infringement lawsuit, and then win with an indirect action, such as the invalidation of a patent used by that competitor in a countersuit. In patent strategy, patents have both direct and indirect uses, and they play a key role in the interplay between interaction and isolation because they can both isolate competitors if you enforce exclusivity and provide the basis for interaction, such as through licenses or business ventures.

There are additional pairings of opposites. Another important pairing for the strategist is action and inaction. They represent two opposites that have an equal capacity to produce success when skillfully employed together. A strategist should always keep in mind that the attainment of a desired result does not necessarily require purposive action all of the time. In fact, many of the most effective strategies involve *intentionally* doing nothing.

Strategic Inaction

Strategy can be more about what not to do than what to do. The strategic inaction that this implies is a powerful and often overlooked tool of the master strategist. Put another way, an example of a mediocre strategist is the individual who takes action when no action is needed.

Mediocre strategists can have difficulty overriding the compulsion to do something. This can create mistakes for a competitor to exploit, since action often produces more risk than inaction if for no other reason than that it tends to consume limited resources that might not be readily replenished. An example of appropriate inaction was Boeing's response to the Airbus 380. In 2005, Boeing relinquished the title of "seller of the world's largest commercial jetliner," long held by its 747, and a point of pride, to the Airbus 380. While this happened, Boeing focused instead on the smaller 787 Dreamliner. While developing the 787, Boeing produced a number of patents associated with composite-based aircraft, which are likely to have more applicability over the long term than knowledge gained to produce very large aircraft with more conventional materials and methods.[17] If Boeing had reacted to Airbus with action designed to keep or regain the lost title, it would have taken resources away that it could otherwise have used on its 787 venture.

Strategic inaction is a powerful tool because it conserves resources that you can put to use elsewhere. If your goal is to increase your level of interaction with a base of prospective customers, and your competitor takes action that has the effect of isolating itself from that pool of customers, then your competitor in effect does competitive work for you. In both the aforementioned examples of the Taurus and the Airbus 380, the owning organizations took it on themselves to jeopardize their competitiveness in very important market segments—sedans and mid-sized aircraft, respectively. As Napoleon Bonaparte is noted to have said, "Never interrupt your enemy when he is making a mistake."[18] Now, just as Napoleon would prepare his troops for the eventuality that his enemy would realize its mistake, part of what a patent strategist can do while a competitor is making a mistake is to build a patent portfolio that will make it more difficult for that competitor to rebuild its position on its own terms once its decision makers have realized their mistake.

Strategy and Change

Action and inaction are key elements of choice, since in the act of pursuing some options over others you are both doing and not doing what could be done. Through a succession of choices, some perhaps better than others, you are where you are because of what you did or did not do in the

past. You operate in the present, making new choices that will produce new results. Change, resulting from your choices and the choices of others, creates an uncertain future. Your strategy must address your present and your uncertain future in context with your past. The patent system magnifies these truths because of the lag time between the conception of an idea and the award of a patent to protect the idea, the latter outcome itself being uncertain. Today you are making your patent portfolio for five and ten years out, and your patent strategy is currently operating on the base of decisions made five or ten years ago. So, unless you have been involved with the patent strategy of a company for 10 years, or plan to be involved with the patent strategy 10 years from now, you are living with the decisions and actions of your predecessors, while at the same time creating the future that your successors will have to live with.

In this uncertain environment, one unifying element allows you to succeed: innovation. Innovation creates your emergent treasures. Through innovation, along with the intellectual property it generates, you can both create the future and, to some degree, mitigate errors of the past. Through innovation, you make the best of what past actions give you today. Even if you or your predecessors did not make the best choices, innovation provides some measure of control over current events. This applies to both the creation and the improvement of inventions and business models. It also applies to creative licensing and acquisitions, which can make up for inevitable errors or shortcomings in research and development choices and successes.

Always have your desired result "B" in mind when you plan your strategy, but put it into context with your current situation "A" and your past. Innovate to make the best of your current situation and your past. Capitalize on the know-how that you have, and remain open-minded to new opportunities. It may, after all, be possible to purchase the innovation track of another entity if you have otherwise missed out on that innovation. Consider the viability of reaching your desired result "B" in light of what you have done and the resources that you have at your disposal. Then take action and pursue goals that make sense with two considerations that will follow:

1. The perfect strategy
2. The good-enough strategy

Knowledge Links

One of the quintessential American inventions is the airplane, patented by the Wright brothers in 1906. Before the Wright Flyer, powered flight of heavier-than-air aircraft did not exist. The Wright brothers themselves were not even in the existing flying businesses of gliders and lighter-than-air balloons. They did, however, have a track record of making both light and strong but fundamentally underpowered machines, namely, efficient human-powered bicycles.[19] Linking this prior experience to research about the dynamics of flight put them in a good position to take the step toward creating the first successful airplane design. The Wright brothers realized that their technology strengths would become key to the success of powered flight, and they had a versatile enough mindset to venture into a new product area. New ideas and businesses do not generally come out of the blue sky; rather, they build on previous experience, even if they take that experience into a completely different direction.

The Perfect Strategy

We all like the idea of perfection. If we are technologists, in fact, we can often achieve perfection. Sometimes perfection is necessary. Consider laser optics, for example: If there is one minor flaw in the lens, the invention does not function. Even in our processes, we seek perfection. Six Sigma, a process variation control methodology, remains a major initiative for a number of organizations in the attempt to reduce errors in processes to almost nonexistent levels.[20] Can we achieve perfection in strategy? Yes, in theory.

To develop this theoretical ideal strategy, we start with the more common actual practice of strategy, which is a system of managing options. As strategy plays out, it involves the decision to take any number of options, and as the number of options increases, it becomes inherently more difficult to predict exactly how things will turn out. For this the famous Prussian strategist Helmuth von Moltke the Elder coined the

phrase "No battle plan survives contact with the enemy."[21] After even one new decision, your action might already be significantly different from the original plan. So if you want to develop a perfect strategy, or something that emulates that ideal, you have to eliminate your opponent's options as well as the decisions you need to make in response to those options.

Following that logic, the perfect strategy has succeeded before it has been executed and therefore presents no uncertainties for you and no options for your opponent. This is in keeping with the ideal stated by the famous Chinese strategist, Sun Tzu: "Making no mistakes brings certain victory, for it means conquering an enemy that is already defeated."[22]

In practice, the perfect strategy is a target whereby you eliminate as many of your uncertainties and your opponent's options as expediently possible. This means doing the groundwork and preparation so that the achievement of victory at the time of action is little more than a formality. As a case in point, when defending in a patent infringement suit you could do your patent invalidity work up front. You could build your case to the point where it is all but inarguable what the outcome will be before you seek judgment in a court of law. You have clear prior art and effectively win before the trial begins, which if your opposition believes the same, could lead to a settlement before you even step into the courtroom. To further emphasize the idea of the perfect strategy, every attorney knows the trial maxim "never ask a question unless you already know the answer." This is a form of the same ideal.

Realistically though, the perfect strategy is almost impossible to achieve. You will always be uncertain about what the opposition will do. For example, even when you know the answer to a question, as in the foregoing maxim, and even if the witness knows you know the answer, the witness might lie. You simply cannot control what the opposition will do in the way you can control the tolerance of, say, your manufacturing lathe. You will also have missing information that you cannot know, such as unpublished competitive patent applications sitting at the patent office. So although we like the idea of the perfect strategy, you will spend most of your time in the domain of the "good-enough" strategy.

Sun Tzu
Sun Tzu, the famous Chinese strategist from 2,500 years ago, wrote *The Art of War*.[23] His book is still revered by strategists to this day and was even quoted in the 1987 Oliver Stone movie, *Wall Street*, considered by many movie buffs to be a modern classic. Gordon Gekko, the master strategist investor who mentors the movie's protagonist, Bud Fox, said, "I don't throw darts at a board. I bet on sure things. Read Sun Tzu, *The Art of War*. Every battle is won before it is ever fought."[24] Interpretations of this quote are wide and varied. Hollywood's Gordon Gekko interpreted it as having inside information, legal issues aside, so as to know which way a security will go before he invested. Our real life patent strategists could emulate this ideal through thorough legal research. For example, the author has heard on many occasions, and has seen more than enough evidence to believe in its truth, that 90% of patents can be invalidated, in whole or in part, if someone is willing to invest in finding the prior art. Armed with convincing invalidating prior art, a patent strategist could effectively win a patent litigation case before it is actually tried in court if his or her opponent has anchored that case on the now invalidated art.

The "Good-Enough" Strategy

The "good-enough" strategy takes us from our current situation "A" to our desired situation "B" with enough resources still intact to leverage the success or react to an unknowable once we get there or along the way. As the pragmatic World War II General George S. Patton, Jr. stated, "A good plan, violently executed now, is better than a perfect plan next week."[25] This is in keeping with the idea that after a period of time, added preparation produces minimal returns and could even produce negative returns as the situation and opportunity change. It also comes with the realization that in conflict, uncertainties will always exist, and with those uncertainties come chance and probabilities. Therefore, there

comes a time in every strategy to execute a plan, particularly when you have an acceptable probability for success and some measure of control over how the future will look.

Winning is often more about doing a little better than the competition than about being perfect. Doing a little better is itself often achieved simply by focusing on the fundamentals. By doing the fundamentals well, you will have better flexibility to handle changing situations. Vince Lombardi, the late master football coach, said, "Excellence is achieved by the mastery of the fundamentals."[26] It makes sense in his world. If blockers can block, receivers can catch, and the quarterback can throw, all with reliability, then they can adjust to almost anything the opposition throws at them. Likewise, a well-written patent that follows all the fundamentals of the patent prosecution profession will do much better, all things being equal, than a poorly written patent on the same invention. Think about the "good enough" in both business and technical terms. Who would care if you patent and sell the best camera lens on the market if your camera body does not take pictures well? The whole unit must first be good enough to hold its own in the market, and from there you can make it a little more extraordinary, perhaps by adding that special lens.

Of course, alternative methods for success do exist that may be expedient at the time, but are generally neither perfect nor good enough even though they can emulate those results over the long term. These include, among others, insider trading, paying off decision makers, and industrial espionage—appreciating that some cultures view these acts differently than others. Methods such as these are illegal in most industrial countries and would have to be considered cheating, therefore, by the strategist, if not at least highly risky in more accepting cultures. Temptations to cheat occur any time a person or organization is not good enough to succeed or not good enough to succeed as well as envisioned, within the rules of law. The strategist does need to account for such activities when planning. If cheating did not exist, companies as diverse as Dow and Microsoft would not feel pressure from counterfeiters and spies.

Although it's been said that "all is fair in love and war," and "if you ain't cheating, you ain't trying," cheating is an isolating action likely to make it more difficult to interact with people you will need in business over the long term. For example, just having Enron, Worldcom, or Arthur Andersen on your resume can raise the eyebrows of prospective

employers, even if you had nothing to do with the shenanigans that ran afoul of the law. By executing strategy well, you can succeed within the rules or decide on more suitable prospects elsewhere.

Strategic Risk

It almost always makes sense to reduce your risk in any endeavor, unless you have specifically chosen to make increased risk a part of your strategy. Raising the stakes, which means to increase the risk beyond your adversary's capacity to accept that risk, is, after all, a universally understood way to keep out the risk averse. In either case, you need to understand what the real risk is and plan accordingly.

Risk calculation is the ratio of the potential usefulness of an action to the potential harm from the consequences of the action or its alternatives. Up until the threshold where delay or the effort to reduce risk itself causes undue risk, you wish to drive the usefulness of the result up toward 100% and harm down toward 0%. From this ratio of percentages, you can calculate risk, which is an integral part of the strategic decision. You talk about this ratio of percentages in terms of probabilities—for example, you have a 90% probability that your action will succeed at an acceptable cost and a 10% probability that it will fail or cost too much. You measure this against the probability and degree of usefulness in the results and the question of whether a given harm is something from which you can recover or if that harm would be catastrophic.

To illustrate risk in patent strategy, we can look at pharmaceutical companies. In the blockbuster world of large pharmaceutical companies, the vast majority of patents ultimately have no commercial value, but the ones that do have commercial value more than make up the difference. Knowing that a useless patent is of little harm to the viability of the company, but that a failure to file for a necessary patent in a highly competitive environment could be harmful or even catastrophic, pharmaceutical companies typically file for patents early and often. Pharmaceutical companies further manage their investments in research and development and hedge the risk inherent in making significant research and development commitments with licenses and acquisitions so that any given failure, while unpleasant, will not be catastrophic.

Even at the level of the individual patent, you need to concern yourself with strategic risk. Every time you file a new patent application, you take a risk that someone has already filed for a patent that covers your invention and will cause difficulties for you in the future. There is little you can do about this. As stated, in any given patent authority, a filed patent application will not appear in the public domain for at least 18 months after the filing date unless specifically opted out as allowable in USPTO procedures. In patent strategy, moving ahead anyway is a calculated risk that you have to take at least some of the time. Otherwise, you would not get anything done.

Fear of Catastrophic Loss

The fear of catastrophic loss is one of the important tools available to the strategist who seeks to keep potentially dicey situations under control. On the one hand, if an adversary can be made to fear a catastrophic loss out of proportion to its actual probability, then the strategist can influence the behavior and therefore the performance of that adversary with comparatively little investment of resources to that investment of resources that would be necessary to make the probability of a catastrophic loss a reality. One well-executed and publicized lawsuit, for example, can prevent the need to launch many more lawsuits in the future.

The fear of catastrophic loss is another strategic element that needs to be managed and employed well, because as much as it can work for you, it can also work against you if your competitor does not have a suitable orientation. A capable adversary that does not fear catastrophic loss—either from ignorance, overconfidence, or a mental framework that allows him or her to accept catastrophic consequences that may happen—becomes a danger that must be addressed in as efficient a manner as possible. This is especially so when the collateral costs of your adversary's catastrophic result, or the means from which it is created, put your own position in jeopardy. Many lawsuits, for example, create two losers. This adversary needs to be combated, avoided, or in some other way educated to appreciate and respect the gravity of the situation.

Competitive Risk

Risk, both recoverable and catastrophic, comes in two key forms:

1. Risk for surviving
2. Risk for thriving

We can illustrate these forms of risk by starting with the analogy of the relationship between a seal and a great white shark. Let's start from the perspective of the great white shark.

Powerful as it is, muscular and commonly over 16 feet or 5 meters in length, the great white shark uses ambush as a primary hunting technique.[27] It cruises hidden in the depths while it seeks an opportunity presented by a seal swimming above it. When it identifies a suitable target for attack, it rockets vertically to the surface in order to surprise the seal and give the seal no chance to fight back. Certainly the seal is no match for the great white shark once the shark makes physical contact, so why the need for the surprise attack? The first reason is that a fast and agile seal might flee if it becomes aware of the shark and cause the shark to waste energy in a pursuit where the seal will often get away. Second, if the seal had ample opportunity to fight back, as an attack that was not a surprise could allow, the odds of an injury to the shark from the seal's own jaws, however slight, could catch up to the shark over time. Perhaps the seal could cause injury to an eye with one of its long canine teeth, which would prove catastrophic for a shark that relies on vision to hunt. This is a natural version of the "Rolls of the Dice" we discussed earlier that successful sharks have evolved to address. Each time the shark attacks, it is rolling the dice, and it needs to drive its risk to near zero. The shark cannot avoid all risk when it hunts, or it would starve, but it has evolved to take no more risk than necessary to both survive and thrive, both increasing its hit ratio and lowering the possibility of injury by using ambush as its primary hunting technique.

Similarly, for you as someone involved with patent strategy, your company cannot avoid all risk. You cannot know for certain everything that your competitor is doing or will do. But you can take steps to minimize the risk as much as possible through thorough research and by interacting with competitors to lay the groundwork for future trades instead of litigation. After all, even staunch business competitors

can be friends on the golf course, particularly when some measure of cooperation reduces the risk of failures for all.

To produce the best outcome in an interaction with your competitors and to fully understand a situation, it pays to look at the situation from the other point of view. Let us now look at the relationship between the seal and the great white shark from the seal's perspective. An overriding goal of a seal is to eat without being eaten. To do the former, it generally exposes itself to the latter, depending on the presence and the disposition of the sharks. With this in mind, if you could ask a seal to make a choice between swimming and feeding where there are sharks, or swimming and feeding where there are no sharks, and the seal could really think through the consequences of its decision, then the seal would have to choose to swim where there are sharks. Why? Because that is where the fish are. An overemphasis on just surviving can lead to self-isolation, and isolation generally leads to entropy and eventual death. A focus on thriving emphasizes interaction, which tends to lead to growth, provided the risk associated with that interaction is survived. So the seal needs to learn how to survive and thrive in the presence of sharks instead of spending time trying to find some mythical place with lots of fish and no sharks.

Such is the challenge for patent strategists: to allow their companies to thrive in a contested environment. Contested environments become contested by the very fact that they have value, and people who execute patent strategy in contested environments tend to become more capable practitioners of the art, since they must operate with a lower margin for error. Companies that cannot thrive in contested environments ultimately see themselves removed from those environments, either by their own mistakes or when they become valuable to someone more capable. A stark example of this is Netscape. For a brief period of time, Netscape dominated the Web browser market. Netscape managers, however, failed to protect Netscape's intellectual property when a few well-prepared patents could have left them in a much less vulnerable position. This left the door open for Microsoft, a highly adept competitor in matters concerning intellectual property, to enter and then dominate the market with Microsoft Explorer.[28] So the master patent strategist must in effect become a shark-savvy seal in order to thrive and survive. A place to develop that savvy is in the decision cycle.

The Strategy Paradox

A balance between surviving and thriving is a key element for determining where the real risk in business lies. To illustrate, Michael Raynor's book *The Strategy Paradox*, shows that while companies with a high degree of focus appear to outperform their more generalist rivals, these same single-minded companies also have the highest number of business failures. Since the failures are no longer independent business entities, they drop from the performance statistics, giving the appearance that a high degree of focus is a better strategy for success. So when business consultants take measure of the most successful companies and compare what they do differently from average performers, the consultants may not take into account the full picture.[29]

A recommendation to overly focus efforts in business could be akin to recommending that a person quit his or her job, fly to Hollywood, and start a career in acting. Successful movie stars certainly make much more than the average person, but considering the high failure rate among movie star hopefuls, is this truly a wise recommendation? Raynor's idea carries over into patents, considering that while focused companies may score big-time with a hit product in their chosen field, they will also have diminished flexibility to address changing environments. The focused companies have less diversity in their patent portfolio to draw from should the environment change. In a world of opposites, between being completely focused or totally diverse, a healthy in-between position needs to exist in most organizations.