CHAPTER 1

LEARNING TO SEE, TO ADAPT TO, AND TO VALUE UNCERTAINTY

Life can be understood backward, but … it must be lived forward.

—Søren Kierkegaard

Suppose there are two types of CEOs who differ in how they approach their investment decisions. The first we call the *designers*.[1] These executives have a clear view of their desired competitive positioning and of the means and metrics of success in their chosen competitive playing field, and intend to design and execute premeditated strategic paths. The others—named *opportunists*—may also have a clear view of how value is created in their chosen playing field, but are not committed to a master plan, preferring instead to continuously take advantage of any opportunities that fit their value criteria as they emerge and when conditions are favorable to them.

Both of these CEO types have their shortcomings. For designers, successfully executing an envisioned acquisition strategy without any apparent mistakes will be a difficult task. The flaw in their logic is that the world—including their competitors—will sit back and permit them to execute their planned strategy unhindered. In the real and uncertain competitive world, macroeconomic change, evolving customer needs, or competitor preemption may render apparently realistic targets unavailable or unattractively expensive. At the same time, a pure opportunist approach cannot provide an organization with the strategic and organizational direction it requires to function successfully, or even to survive in the long term.

We have often seen these seemingly opposing views competing in the boardroom at the moments when key decisions are made—sometimes even in the

[1] With a series of articles in the *Harvard Business Review* and several books, Roger Martin developed new ways of thinking on business design. For instance, see Martin (2009, 2013) and Lafley and Martin (2013).

mind of a single decision maker when deliberating an acquisition, for example. Indeed, there appears to be a recurring dilemma when designing and executing acquisition strategies: for designers, on the one hand, designated targets embody the risk of overpayment, which may be founded on unconscious irrational justifications—such as neglecting uncertainty, overoptimistically expecting synergies or growth opportunities, or becoming trapped in an escalating bidding contest. The designer, however, is aware that acquisition opportunities that fit the value criteria and the strategic pathway are limited—especially in consolidating industries—and the missed chance is a very real threat to a company's future competitive position. On the other hand, for the opportunist, the risk lies in waiting for a better deal or even in underbidding—failing to pay the price required to secure a critical target. Pure opportunists may frame an opportunity too narrowly—may tend to consider it in isolation, and so fail to recognize the impact of new long-term growth options the target may bring, or to fully appreciate its value as part of a broader strategy. This applies equally to organic growth and other options available to an organization.

Successful resolution of this CEO acquisition conundrum—especially in the context of uncertainty—can determine the firm's future success, market value, and even survival. Yet too often managers make these decisions based on intuition and experience alone, leaving them vulnerable to the pitfalls of cognitive biases when making them under uncertainty, with little guidance from objective tools to analyze and assist their investment decisions.

In this book we offer a set of approaches and tools that resolve the conundrum, bringing together the best aspects of *design* and *opportunism* in a way that recognizes the need for organizational objectives; a clear strategic framework, which includes the selection of where the organization will elect to compete; value metrics; and even one or more strategic paths aimed at moving the organization toward their desired goal—while at the same time accounting for the inherent uncertainty which the future represents.[2] *Strategic opportunism*—as we have elected to call this new approach to strategy—represents melding the two CEO caricatures of designer and opportunist into a single powerful methodology for designing and executing strategy at the corporate, business unit, and operational levels by augmenting the existing strategic tools and frameworks with those from behavioral and corporate finance and from decision science.

In this book, we illustrate our approach to strategic opportunism by focusing on the design, valuation, and execution of an acquisition strategy. So how can you know whether a deal is beneficial? Given the uncertain future, you can't. Fortunately, both the designers and opportunists among us are biased in predictable ways. You can stack the odds in your favor by limiting the degree to which your own biases influence your valuation analysis and your decisions. For

[2] For instance, see Alan G. Lafley and Roger L. Martin (2013) in their book *Playing to Win: How Strategy Really Works.*

this purpose this book integrates insights from behavioral finance with (rational) decision models—such as real options and game theory—to counter these biases in an effort to estimate uncertainty in strategic value and price rigorously and objectively.

In this overview chapter we provide the reader with a helicopter view of a quantitative value-based framework. A key argument in this book is that volatility is always present, and rather than ignoring it in our analysis, we acknowledge its inevitability—even embrace it to our advantage—and adjust our approach to decision making accordingly. Uncertainty means that today's successful CEOs and their executive teams need to be able to act simultaneously as strategists—that is, designers of corporate strategy—and opportunists—with the ability to grasp opportunities that meet their value criteria as they arise. In essence, this requires the setting of clear strategic goals, but—given the reality of uncertainty—also being willing to revise intended decisions, seeking to continually maximize the organization's options to appropriate value. While uncertainty generally deters investment, executives who reframe their roles as strategic opportunists can actually benefit from uncertainty. Once you learn to see uncertainty, you can learn to adjust to uncertainty and benefit by reducing exposure to specific sources of uncertainty, effectively limiting downside vulnerability, while fully exploiting opportunities presented by high uncertainty and change. The goal of valuing uncertainty in an acquisition strategy using option games is to improve the organization's decision making so as to counter known biases and, by enhancing the value of optionality within and external to the organization, to allow for flexibility to revise intended decisions.

LEARNING TO SEE UNCERTAINTY

Consider the two lines in the picture of Figure 1.1. Which one is longer? For most of us, the line on the right seems longer. But if you measure them you will see they are exactly the same length—it is the background perspective that can deceive your objective vision. If perspective can affect our objective visual judgment, it is not hard to imagine how easily we can be deceived in the much more elusive judgments involved in acquisitions. The length of estimation horizons, the sheer complexity of deals, and the uncertainties and ambiguities inherent in valuing targets can make executives' acquisition decisions vulnerable to their personal biases.[3] Grounded in psychology, behavioral theory describes how bounded rationality and personal-level behavioral limitations can distort how we perceive the uncertainty that surrounds our decisions.[4] Interestingly, psy-

[3] Dan Lovallo and Daniel Kahneman illuminate the impact of biases on practical acquisition decision making: see, for instance, Lovallo and Kahneman (2003); Kahneman and Lovallo (1993); Koller, Lovallo, and Williams (2011).

[4] See Cyert and March (1963).

Figure 1.1 The Ponzo Illusion: How Perspective Can Bias Vision

Source: Walt Anthony, 2006, used with permission. The Ponzo Illusion: http://opticalillusions4kids.blogspot.nl.

chological experiments have highlighted some stereotypical deceptions to which we are inherently vulnerable. For instance, experimental and empirical studies have repeatedly found that bidders tend to overpay in hot markets, synchronously execute deals, and are—too often—influenced by high stock market valuations. It is also likely that individual framing infects objective valuation analyses.

Psychology has been applied to managerial practices to test the existence and implications of managerial biases in real-life business situations. Although, traditionally, we expect decision makers to make decisions founded on rational arguments—accurately portraying and weighing the possible benefits and risks—there is evidence of deviation from rationality that results in the under-

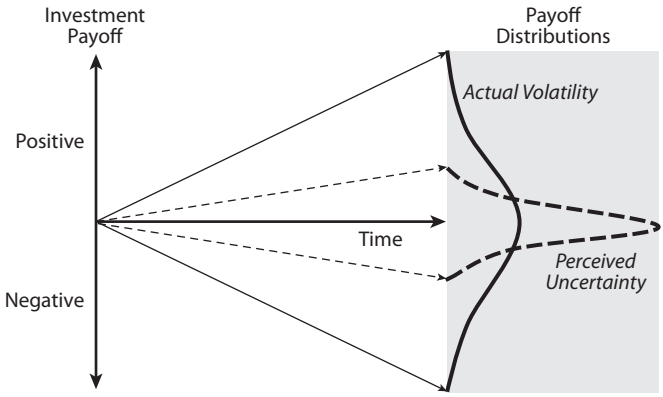

Figure 1.2 Perceived Uncertainty in the Payoff of Acquisitions (Inner Distribution) Is Lower Than Actual Uncertainty (Outer Distribution)
Source: Kil and Smit (2012).

estimation of uncertainty.[5] Schematically presented by the two rotated bell-shaped distributions in Figure 1.2, perceptions of uncertainty (inner distribution) can differ from true volatility (outer distribution) from person to person, depending on how each frames the opportunity, explaining the differences in competing firms' strategic actions. Cognitive biases such as executive overconfidence can result in underestimating firm-level uncertainty, which may otherwise be controllable and resolvable through corporate actions (endogenous uncertainty). This includes overconfidence in the potential realization of synergies or ignoring the threat of rival bidders. Biases can also distort our perception of uncontrollable environmental uncertainty (exogenous uncertainty), such as uncertainty in demand, macroeconomic shocks, and financial crises.[6] Furthermore, self-attribution can bias our perception of the controllable. In hindsight we often attribute successful corporate actions to our unique insight, but blame exogenous uncertainty when transactions fail. To see uncertainty-related biases in a broad perspective, behavioral theory offers three warnings for CEOs and management teams who aim to pursue acquisitions.

1. YOUR INTENDED STRATEGIC PATH IS MORE UNCERTAIN THAN YOU PERCEIVE

When CEOs project the future, like most of us they tend to rely too heavily on their familiarity with the status quo, and underestimate uncertainty: this per-

[5] See Garbuio, Wilcox, and Lovallo (2011).

[6] Uncertainty can be endogenous or exogenous (Miller 1992). Endogenous, firm-level uncertainty is controllable and can be resolved through corporate actions, while resolution of exogenous, environmental uncertainty is uncontrollable on a personal or firm level. Industry-specific uncertainty incorporates competitive influences (Miller 1992; Miller and Waller 2003).

spective may limit their awareness of optionality. Macroeconomic or industry demand uncertainty is easily underestimated, in particular because managers have trouble predicting potential low-probability, high-consequence events,[7] such as the potential for and impact of the global financial crisis. Not only do we tend to ignore exogenous extreme events, but we are also prone to underestimating controllable uncertainty—such as uncertainty regarding the realization of synergies or the existence of latent claims, which could be mitigated. Success and confidence can easily become overconfidence and influence CEOs' perception of the uncertainty inherent in their strategic plans. *Overconfidence*—ignoring uncertainties that might influence the potential for success, postacquisition synergies, and target company value—is only one of the biases that executives need to overcome in executing transactions. In particular, when there is groupthink in the management team, executives may suffer from *confirmation bias* and seek data to confirm their prior convictions of the desired strategic path, and subconsciously resist actively seeking disconfirming data. As a result of these biases, the strategic paths they envision are likely to be more uncertain than they think.

2. THE TARGET VALUE YOU OBSERVE IS MORE UNCERTAIN THAN YOU MIGHT PERCEIVE

Bubbles, overpriced financial markets, and the deviation of prices from fundamental values have been with us for centuries. The tulip mania of 1636—often used to illustrate the first recorded economic bubble—was a period in the Dutch Golden Age during which contract prices for bulbs of the (then only recently introduced) tulip reached extraordinarily high levels compared to their intrinsic value, before suddenly collapsing. The price of some single tulip bulbs skyrocketed to 10 times the annual income of a skilled craftsman, close to the price of an Amsterdam canal house, until, suddenly, in February 1637, the buying frenzy instantly turned into a selling stampede.[8]

When people make decisions under uncertainty, they use familiar positions or known anchors—but they often make insufficient adjustments to their valuations from such starting points. When the value of an asset is hard to assess—as in high-tech, dot-com, or biotech ventures, for example—executives and financial analysts base estimates on relative or multiple valuations. As with many things, company or asset beauty is in the eye of the beholder. As a consequence, when comparable valuation methods are used, assets that are acquired for unique strategic reasons—and which, hence, command higher prices—can

[7] See March and Shapira (1987).

[8] Dutch dealers started tulip bulb options trading, so that producers could buy the rights to purchase tulip bulbs in advance and secure definite prices.

contribute to the misperception of the value of opportunities in an entire sector.

At times, stock prices in financial markets can reflect a common misperception phenomenon, when valuations may result from expectations of how others will perceive the value of a specific target who, in turn, also based their value on multiples. Anchoring is innate in human nature, and can cause the price of a single commodity or asset to soar to unsustainable heights as long as the expectation remains that it can be sold to a "greater fool" at a higher price. In such cases, prices deviate from fundamental value across the board, as happened in the tulip mania or the dot-com bubble that shook financial markets in the early 2000s. While executives seem to underestimate the volatility in a target's value, irrational investors may cause exuberance, resulting in excess volatility of financial market prices.[9]

3. WINNING THE BIDDING PROCESS ON GOOD TERMS IS MORE UNCERTAIN THAN YOU THINK

Behavioral economists have illustrated that participants in company auctions are vulnerable to the *winner's curse* when they underestimate uncertainty, because they don't possess all the necessary information to value the target accurately or, alternatively, rivals have access to private information on the assets being sold. By definition, the auction mechanism selects the cursed winning bidder as the one who overvalues the asset the most.

The chances of successfully appropriating a target may also be overestimated initially before it becomes apparent that rival bidders may enter the field. CEOs can tend to overestimate their firm's role and influence in the industry,[10] and this may result in an initial bid that is too low. However, once bidders are committed to acquiring the target, a competitive bidding situation can cause irrational bidding as they feel trapped by their pride or aversion to take a loss in an escalating bidding contest, with excessive premiums being paid to secure the target. Auctions structured over several rounds, common in private equity, venture capital, and privatizations, can increase the potential for bidders to become overcommitted once they have participated in the early rounds. This dynamic is mimicked in competitive bid situations for traded companies. The financial, emotional, and reputational costs escalate as the process unfolds, making it difficult for executives to back down. Even when management makes proper use of sophisticated valuation methods before entering an auction or contest, competitors may still base their decisions on irrational heuristics, or be subject to psychological biases and outbid them.

[9] See, for instance, Schiller (1981).

[10] See Zajac and Bazerman (1991).

LEARNING TO ADAPT TO UNCERTAINTY

The first record of an option on a real asset can be found in chapter 11 of book 1 of Aristotle's *Politics*.[11] The chapter, which tells the story of the philosopher Thales of Miletus (624–547 BC), is often quoted by professors in business schools who use it for the same purpose as Aristotle: to refute the view that scholars are unable to turn their theories into real-world success: "If you are so smart why aren't you rich?"

People had been telling Thales that his philosophy was useless, since it had left him a poor man. In response, Thales raised a little capital and used it to pay deposits on all the oil presses in Miletus and Chios. Thus, instead of buying the main asset (the olives), he bought the cheaper right to hire olive presses, whose value would go up and down with that of the olive harvest. Thus, he was effectively securing an option on the olive press capacity. As it was still winter and outside the olive pressing season, there were no other bidders and he acquired these options cheaply. The owners of the olive presses, who were exposed to the uncertainty of the size of the harvest, secured profits through the sale of the options to Thales irrespective of how the harvest might turn out.

For Thales, however, the payoff looked quite different: uncertainty over the quality of the harvest would actually work in his favor. In other words he would benefit from volatility. By controlling the option rights to using the olive presses, Thales had the right to either use these olive presses when harvest time came (exercising the options) or suffer a small loss (his deposit) on a bad harvest. Like all call options, the greater the uncertainty, the greater the potential upside (profit) potential, whereas the downside risk is limited to the premium of the option. In the case of a big upward move in the market rental price for presses—due to a large harvest—the owner of the option exercises it and receives the difference between the prevailing rental price at that time he or she took out the option and the exercise price. In the case of a downward move the option expires unexercised and the owner of the option loses only his or her initial deposit, that is, the option premium. In fact Thales was a classical strategic opportunist. Having cornered the market at a time when there were few bidders for oil presses, Thales further enhanced the value of the option by using asymmetric information—his knowledge of the stars, which pointed to a good olive crop. After proving his point—by making a fortune—he exited the olive pressing business and went back to being a philosopher.

The parallel risk mitigation mechanism at the corporate level is the creation of real options. Thales's experience represents one of the first documented real option games. Real options refer to choices on whether and how to proceed with business investments. Nowadays real options, combined with game theory, offer a formal framework through which decisions relating to capital in-

[11] See, for instance, Copeland and Antikarov (2003).

vestment, minority stakes, technology investments, international operations, and the firm's ability to adapt to a changing competitive landscape under uncertain conditions can be considered. In a way, each opportunity to acquire a target is analogous to obtaining a call option. A strategic buyer acquiring a firm in a new geography as part of a serial strategy, seed financing by a venture capitalist, and a platform acquisition by a private equity investor in a new sector all create new options to execute follow-on investments as soon as the initial deal is set. As such, these are examples of managerial decisions that establish a firm's ability to appropriate future options in an uncertain future.

ANALYZING REAL OPTIONS PREVENTS UNCERTAINTY NEGLECT IN STRATEGY

Modeling the real options in a strategy can force executives and analysts to focus explicitly on alternative trajectories and contingencies, options that are likely to arise when the path evolves differently than expected. Moves to develop a new platform with new capabilities can open up follow-on moves that enable the company, due to its accumulated assets to date, to exploit such platforms by exercising growth options that are unique relative to those held by competitors. We further argue that—when properly applied—rational tools such as real options and games may help to overcome several psychological biases in decision making with respect to uncertain opportunities, and can help guide objective managerial judgment to find the best strategic route, given the industry environment. The methodology developed here can structure acquisition trajectories by helping management decide when to pass on opportunities and when to bid aggressively. Expressing an acquisition path as a series of options with clear go or wait intersections puts the focus on the economic logic of the *conditionality* of future strategic decisions. In a real option view within a long-term strategy, acquisitions by and of industry players can no longer be viewed as stand-alone investments, but rather should be seen as options on future options—as links in a chain of interrelated investments.

ANALYZING REAL OPTIONS PREVENTS UNCERTAINTY NEGLECT IN VALUATION

Using NPV analysis alone to analyze opportunities creates the illusion of greater clarity for the decision maker, with the organization's objectives seemingly being met according to a defined scenario of targets and cash flows. However, these approaches do little to account for the impact of the acquisition itself on the organization's future growth path. This contrasts with the strategic opportunist's instinct that some acquisitions can shape the uncertain future of the firm by creating new opportunities and, hence, improve the firm's ability to appropriate further options as they arise over time. Figure 1.3 illustrates the

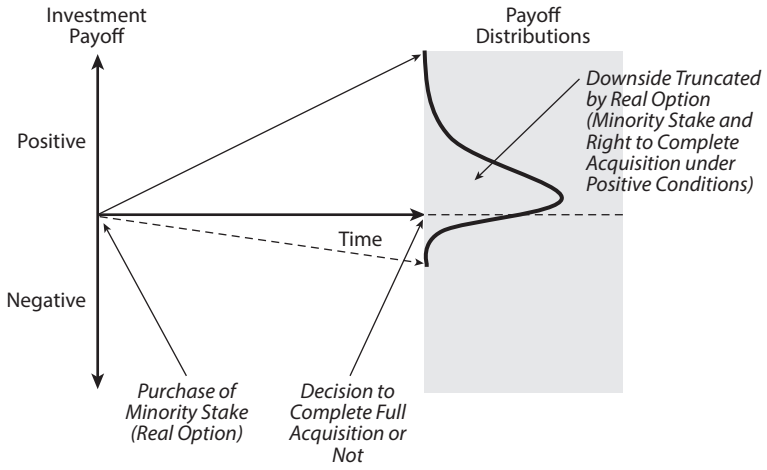

Figure 1.3 Learning to Adapt to Uncertainty: Optionality Generates a Positively Skewed Distribution

Source: Kil and Smit (2012).

acquisition of a minority stake as a real option that may potentially lead to a full acquisition if the conditions are right. Real options permit the holder of a minority stake to perceive volatility and learn to limit losses on the downside by not exercising the full acquisition option in an unattractive environment, exercising caution and effectively truncating the downside in the distribution of Figure 1.3. The holder of such a stake can thus avoid very low payoffs involved in an immediate full acquisition and unfavorable economic development. At the same time, optionality preserves the upside potential of the option to make the full acquisition under more favorable conditions. When investments create growth options—i.e., real options that can be exercised when conditions become conducive—they skew the upside in Figure 1.3, creating an asymmetric risk profile favorable to the holder of the real option.

ANALYZING THE GAME PREVENTS RIVAL NEGLECT

While a firm might acquire another company to increase its growth options, it does not necessarily follow that the acquirer will be able to appropriate all (or even any) of that value. Part of such discrepancies between strategic intentions and financial outturns can be ascribed to deficient or absent price analysis in competitive or game situations, including the failure to rigorously assess the target's true value to competitive bidders. In addition to the growth options embedded in the target company's value, the *price*—what the successful bidder ultimately pays—depends on the intensity of competition in the bidding. To

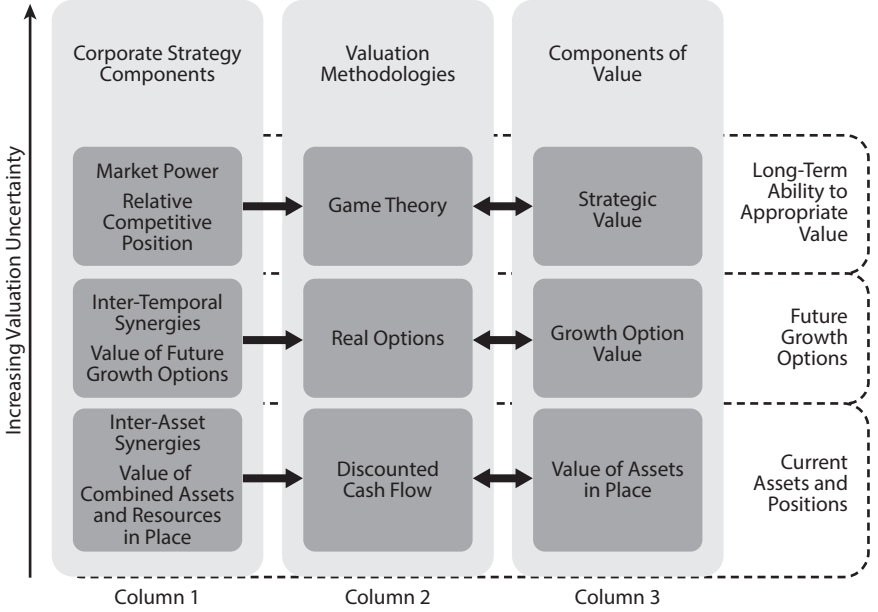

Figure 1.4 Components of Company Value
Source: Based on Smit and Trigeorgis (2004).

prevent underestimating the uncertainties in the bidding process, the winner's curse, or the escalation involved in being overcommitted to intended targets, valuation analysis is more effective in decision making if combined with insights from game theory.

LEARNING TO VALUE UNCERTAINTY

In addition to learning to see and adjust to uncertainty, executives need to appreciate its value. Figure 1.4 positions components of company value in relation to both the traditional constituents of corporate strategy and the proposed approaches to valuing each element.[12] It illustrates the essence of the link between corporate strategy and company value that we seek to strengthen through the behavioral option game approach proposed in this book. Column 1 illustrates the potential strategy components of a merger. The value of the new company is not just the net present value of the future cash flow generated by its assets in place and its interasset synergies. The value of the merged entity in

[12] We here extend the earlier work of Smit and Trigeorgis (2004) on option games with insights from behavioral theory.

financial markets also incorporates the prospective value of its new growth options, and its intertemporal synergies—its ability to capture new opportunities over time despite the uncertain environment due to its scale, market positions, or acquired capabilities. The strategic value reflects the company's ability to exercise these options relative to its competitors so as to improve its own strategic position—and, hence, its *relative* ability to appropriate value into the future.[13]

While interasset synergies are occasionally overestimated at the top of the economic cycle, intertemporal synergies and long-term growth options are often overlooked at the bottom. In addition to the psychological biases of the decision maker, acquisition decisions can be influenced by the bounded rationality of *investors*, who may cause share prices to soar or plunge without any fundamental changes in underlying company value. We therefore propose a dual—bottom-up and top-down—approach to real option valuation, with various adjustments to prevent distortion of the rational analysis involved. The bottom-up fundamental analysis (column 2) should help avoid potential acquirers relying too much on financial market values that can occasionally be mispriced. An important contribution of the top-down approach (column 3) is that it mitigates executive biases when the value of investment and acquisition opportunities along the acquisition path can—in principle—be quantified and related directly to value creation in financial markets.

COLUMN 2: USE BOTTOM-UP OPTION GAMES VALUATION TO AVOID ANCHORING ON EXCESSIVE MARKET PRICES

The primary components of a target's value that lend themselves to being incorrectly valued are those of growth option value and strategic value, as it is relatively easier to value existing assets and the associated interasset synergies. When growth expectations—as reflected in financial market prices—become excessively high, we strongly recommend the use of fundamental valuation techniques (such as option games) to rationalize value and price estimations, and to complement market methods. The bottom-up or fundamental method attempts to value all the growth opportunities of the target company as a portfolio of options and bidding games. While DCF methods are well suited to estimating the value of company assets in place and any interasset synergy, none of the currently popular valuation methods explicitly analyze the effect of uncertainty or rival bidders on value creation. In practice, the acquisition price is determined by the value perceptions of others—in particular rival bidders.

[13] The value of a firm can be viewed as consisting of assets in place and growth opportunities. See, among others, Miller and Modigliani (1961), Myers (1977), and Pindyck (1988). A series of articles by Tony Tong shows empirically various insights related to a firm's growth option value. For empirical implications, see Kester (1984), Chung and Charoenwong (1991), Tong and Reuer (2006), Tong et al. (2008), and Tong and Reuer (2008).

Tools such as real options and games can help management teams focus on the rational economic logic of strategic planning, and so provide an interactive link between strategic and financial valuation. Indeed, we can best view the real options game approach to general acquisition strategy valuation, when applied properly, as an attempt to subject the strategic intuition of acquisitions to the discipline of a more rigorous analytical process.

Executives and private equity partners pursuing strategic opportunism should estimate various uncertainties, discuss the most important acquisition options in detail, and identify possible causal links between them. Which acquisition options are mutually exclusive, which can create growth, and which divestment options can limit losses? Which acquisition options are likely to create synergies and which to function as a platform and even spawn new acquisition options? These conditional trajectories—and the potential impact of the resolution of the identified uncertainties on each of them—can point to specific targets and include execute, wait, or abandon intersections at several junctures over time, as well as identify the limited number of possible outcomes for the industry endgame.

COLUMN 3: EMPLOY TOP-DOWN VALUATION TO MITIGATE EXECUTIVE VALUATION BIASES

The market values of targets and bidders encompass, in part, the value of the *potential* future options that a company may enjoy as its strategic position advances. The implied value of a company's growth options can be observed by adjusting the current stock price for the present value of future earnings generated by those assets that are already in place. In fact, depending on the industry and the specific company, the present value of these growth opportunities (PVGO) can constitute a significant part of a company's market value and thus explains any differential from competitors with apparently comparable collections of assets and future cash flows. Since the market value of the target is known,[14] we can tease out the market's perception of the value of its growth options by subtracting the value of assets in place. The gap between the company's market value and the present value of the earning capacity of its assets in place represents the value placed on the firm's strategy to appropriate profitable corporate growth opportunities (PVGO) and includes *growth option value* and *strategic value*. The top-down or market method is commonly used in empirical research for estimating a company's growth option value, but we develop and apply an extension—named the market method for acquisitions (MMA). As well as estimating the PVGO of firms, this method looks at the relative difference between the growth option value and the value of assets in place of large

[14] Based on the stock price before announcement of the transaction, or an average of the market value over a reasonable period of time preceding the announcement.

firms compared to the portfolios of smaller firms. Thus, for consolidation to make sense from a shareholder perspective, an efficient financial market should assign a higher value to leading companies' assets in place and growth opportunities than to those of smaller firms (potentially, the sum of the parts of a future consolidated entity). In chapter 5 we describe how in the mining and metals industry, the pursuit of growth, scale, and scope coupled with how industry leaders outperformed midsize and smaller players—due to diversification or size premiums—created momentum for consolidation toward a few powerhouses that came to dominate the industry. These majors created preferential access to growth options due to their global presence and their financial power to undertake significant capital investments. This relative appreciation explains the intention to create similar relative power structures and various merger attempts in consolidating industries.

By contrast, if the differential in PVGO is significantly smaller for the majors (often conglomerates) than for smaller companies, this may point to the need for restructuring strategies. When a management team has a static and biased view and cannot envision the full range of their divestment options or feel reluctant to terminate operations or abandon assets into which they have invested in the past, their companies attract a discount to the company's underlying assets value, estimated simply as value difference, with the value of their individual subsidiary units on a stand-alone basis. This "conglomerate discount," often due to an expensive corporate center, can make them vulnerable to hostile takeovers, and the company risks falling prey to opportunistic investors such as private equity buyers and hedge funds. For instance, in chapter 2 we provide an example of a leading private equity fund that acquired a diversified retail company because it saw divestment options the retail company management did not. The private equity fund could immediately put a floor on their investment by a sale and leaseback of the fashion business's property portfolio, immediately recouping a significant part of its initial equity investment, and subsequently released further value by exercising its options to divest various of the conglomerate's retail elements.

While corporate raiders were notorious for such restructuring strategies in the 1980s, constructive strategies based on a premium for larger companies compared to small firms—such as the buy-and-build and serial acquisitions discussed in this book—have received little attention. Private equity supports—and in some instances leads—strategic players in driving inexorable consolidation trends by restructuring inefficient conglomerates and consolidating fragmented industries through roll-ups and buy-and-build strategies. Based on metrics such as the growth option-to-price ratio and the price-earnings ratio of large global firms and local firms in the same industry, these players see the logic of consolidation and the multiple-arbitrage opportunities involved—assembling local companies together increases the market appreciation of the combined entity and improves overall valuation multiples, resulting in a rerat-

ing of the combined entity's cash flows. The metrics developed in this book can also be used to identify the best target companies and industries. For instance, in general, the best target industries for consolidation are those that are fragmented for noneconomic reasons—often including former nationalized companies that have the potential to operate globally: examples include former national airlines and telecom, banking, and mining companies.

SUMMARY

The tools you will discover in this book are of interest to anyone involved in acquisitions—from executives of companies desiring growth through acquisitions to investors, financial analysts, and private equity partners who follow active investment or divestment strategies. In a rapidly evolving and highly competitive business world, designers' plans are likely to have ever shortened life spans. Executive teams should, therefore, be careful of committing rigidly to their chosen courses of action, effectively underestimating uncertainty. Today's successful CEOs and their executive teams need to act as strategists—i.e., designers of long-term corporate strategy—as well as opportunists, embracing new opportunities, dealing with uncertainty, and showing willingness to revise their decisions accordingly. This mind-set requires management to be active in restructuring and rebuilding their companies, setting clear and effective strategic goals, defining distinctive competitive boundaries, identifying and mitigating risks, and putting the right metrics for success in place, while at the same time continually seeking to maximize the organization's options to appropriate value within its strategic framework.

To deal with the growing uncertainty in the world, decision makers need improved approaches to recognizing and adjusting to volatility, supporting their ability to exercise opportunism appropriately, for example, in executing acquisition strategies. The new tools we offer in this book enable practitioners to quantify the value of an entire acquisition strategy in ways that account for changes in strategic position and new optionality resulting from acquisitions, while at the same time mitigating their own biases and accounting for the potential impact of rival bidders' actions.

SUGGESTED READING

Baker, M., R. Ruback, and J. Wurgler. 2004. "Behavioral Corporate Finance: A Survey." In *The Handbook of Corporate Finance: Empirical Corporate Finance*, ed. E. Eckbo et al. New York: Elsevier: 351–417.

Martin, R. L. 2009. *The Design of Business*. Cambridge, MA: Harvard Business Review Press.

Smit, J. T. J., and L. Trigeorgis. 2004. *Strategic Investment: Real Options and Games*. Princeton: Princeton University Press.

Trigeorgis, L. 1996. *Real Options: Managerial Flexibility and Strategy in Resource Allocation.* Cambridge, MA: MIT Press.

SUGGESTED MATERIALS, TOOLS, AND GADGETS

For links to webcasts, tools, and presentations in this book, see http://press.princeton.edu/titles/10333.html.

For webcasts and presentations of the chapters in this book and related books, see http://companyvaluationtools.com/materials.

For game theory resources for educators and students, including lecture notes, textbooks, interactive game theory applets, and online games, see http://gametheory.net.