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# Understanding Risk and Uncertainty

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Is your market in turmoil? Are the physician or hospital systems that once seemed invincible currently disbanding, divesting, or rethinking their core **strategies**? Do you hear board members or physician leaders lamenting the lost stability of the health care environment of even five years ago? If so, you are not alone. This chapter explores the new reality of health care: that uncertainty is here and will not go away.

To show how uncertainty affects health care organizations, this chapter develops a framework for understanding and characterizing risk and uncertainty. We then discuss how an organization can manage risk through its planning and implementation approaches.

## The Reality of Uncertainty

Most health care professionals, whether board members, managers, or physicians, generally would say that the environment they face today is much more uncertain than it was even five years ago. Why? Because, as indicated in Table 1.1, many past predictions have not been realized. Which so-called experts would have predicted that, today, tuberculosis once again is widespread? That capitation is not? That single-signature contracting is not valuable? And that physician practice management companies (PPMs) have been so weakened?

Table 1.1. Past Predictions in Health Care.

Year	Experts Agree That . . .	Instead, Current Reality
1960	Worldwide, TB is controlled.	Drug-resistant strains reappeared in the late 1980s, and TB is currently the world's biggest infectious killer (Moore, 1999a).
1993	Capitation is the payment form of the future.	Only one-third of doctors have any capitated contracts, which account for less than 25 percent of doctors' revenues (Peters, 1999).
1993	Federal health care reform has failed.	Market reforms produced many of the proposed changes (Toner, 1999).
1994	Large hospital systems will have greater negotiating clout with payers.	In many markets, managed care organizations still contract on a hospital-by-hospital basis, regardless of system membership ("Chicago's Northwestern . . .," 1999).
1997	Physician practice management companies are good investments.	In the first three quarters of 1998, the market capitalization of PPMs plunged from \$12.6 billion to \$4.4 billion (Hudson, Haugh, and Serb, 1999).

Despite the hopes of many, uncertainty in health care is likely to increase. Figure 1.1 presents but a few of the many major sources of future uncertainty in the industry. Certain sources, such as potential Medicare reform or payer initiatives, directly affect an organization's bottom line. Other sources of uncertainty, such as the timing and extent of medical advances, hint at a profound affect on health care delivery. Every system with a cancer center, faced with the capital costs associated with upgrading imaging and radiation

Figure 1.1. Examples of Future Uncertainties.

**Medicare reform**

Payments to hospitals were cut \$71 billion in 1999 (“A Comprehensive Review . . .,” 1999), with an additional \$39 billion in cuts proposed in 1999 (“Highlights of Clinton Medicare Plan,” 1999). How much more will be cut in the future?

**Managed care**

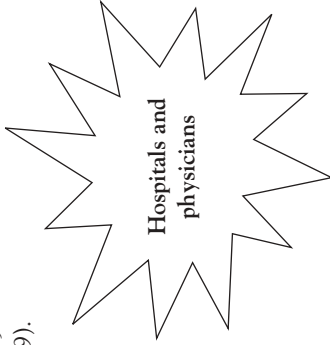
Consumer demand and a booming economy have allowed a shift in enrollment from gatekeeper to open-access forms of managed care (Hudson, Haugh, and Serb, 1999). Will this last?

**Medical advances**

Advances in gene therapy could radically alter how patients are treated. How quickly will advances occur?

**Niche players**

Dr. Regina Herzlinger argues that “the guy who has a narrower range of mission is bound to be better than you are” (Meyer, 1998). Will “focused factories” continue to grow and develop?



therapy technology, has to consider the likely timing of future introductions of effective gene therapies. Will an investment in cancer care have a useful life of three years? five years? The answer could change the willingness to invest on the part of the decision makers in a system. Without such investment, a system could not support state-of-the-art cancer care, and what would a system or hospital without oncology services be like?

### **The Impact of Uncertainty on Strategic Planning**

Uncertainty confounds the planning process by invalidating the rules of the game under which the industry has operated, without revealing obvious new rules. This lack of direction (rules) increases discomfort and frequently results in a perception of greater risk than what actually exists. For example, many providers established managed care plans that not only required new management skills and operated under different rules but also assumed the responsibility for extending an uncertain amount of care for a certain price, thus increasing their real risk. Although management paid lip service to absorbing actuarial risk, the magnitude of the losses generated by many of these provider-sponsored managed care initiatives was unexpected. The assumed risks extended beyond the narrow focus of providers' investments. Many providers failed to realize that "the risks of getting into managed care include not only the potential of direct losses that must be replaced by cash reserves but possible contamination of the parent system's credit rating" (Moore, 1999b, p. 2).

Uncertainty further confounds the planning process by clouding strategic imperatives. Management and board members of many health care organizations developed strategies based on the perceived "certain" futures described in Table 1.1. As these assumptions failed to materialize, organizations often were left with strategies ill-suited to the resultant environments, but they refused to acknowledge their failure and develop alternative strategies. A

good example of this is primary care practice acquisition. Many hospitals acquired primary care because of the assumption that gatekeeper models of managed care could and would channel patients to selected providers. Most of them have since experienced significant losses in their primary care practices and, with the decline of the gatekeeper model of care, have not enjoyed the benefits of channeling (Peters, 1999). In 2000, many organizations are continuing to allocate considerable resources in an attempt to make their physician practices profitable, without first addressing the question of whether it still makes sense to own practices at all.

### **Traditional Approaches Fail to Address Uncertainty**

According to Michael E. Porter, “every firm deals with uncertainty in one way or another. Uncertainty is not often addressed very well in competitive strategy formulation, however” (1985, p. 18). Traditional strategic planning approaches often failed to adequately incorporate uncertainty because they approached it in a “binary” way of thinking, that is, seeing the world either as certain and predictable or as uncertain and entirely unpredictable (Courtney, Kirkland, and Viguerie, 1997). Neither approach develops strategies well suited for the dynamic, uncertain health care environment.

#### **“The World Is Certain”**

Organizations that think or want to believe in a world of certainty typically develop a single vision of the future and then craft appropriate, discrete strategies to succeed in the future envisioned. This approach to planning downplays the presence of uncertainty, often by averaging out uncertainties in order to develop a “most likely” future scenario. By doing so, they develop a vision and strategies that may not reflect the future environment in which they will operate. Organizations accustomed to approaching the future as one knowable outcome often find it difficult to create a new culture that is able to embrace, or even recognize, uncertainty.

### **“The World Is Uncertain”**

At the other extreme, some organizations tend to think that right now everything is uncertain; therefore they question the value of planning. This attitude is especially prevalent in those organizations disappointed with or disillusioned by the results of their strategic initiatives over the past five years. The danger of this approach is that it frequently leads to one of two equally dysfunctional courses of action: (1) to abandon analysis and base strategies on instinct, or (2) to be so overwhelmed by uncertainty as to develop strategic paralysis.

Organizations that rushed to invest in primary care practices before such practices were bought by competitors exhibited behaviors consistent with the former response. Members of many system boards have been unpleasantly surprised to learn that their organizations invested in primary care practices not to expand market share (as they understood the intent); instead, the systems in effect purchased and now subsidize their own primary referral sources.

Organizations that have adopted wait-and-see plans are examples of the latter course of action (or in their case, inaction). Many organizations have focused recent efforts only on improving existing operations by reengineering. In doing so, they have successfully cut costs and streamlined processes but nonetheless seen their financial positions erode thanks to lack of a long-term vision or cohesive strategy for managed care positioning.

### **Ramifications on Planning**

If uncertainty is a given and traditional approaches to strategic planning do not adequately address uncertainty, then new planning approaches, tools, and processes are required. This book focuses on updating traditional planning techniques, where appropriate, and introducing new techniques that address uncertainty more effectively so that health care organizations can develop dynamic strategies and cultures that meet the challenges of an uncertain health care environment.

## A Framework for Conceptualizing Risk and Uncertainty

By understanding more about uncertainty and what causes it, managers can begin to combat the binary approach to thinking about uncertainty. There are varieties and varying degrees of uncertainty, and properly assessing its level assists health care organizations in quantifying the risks they take and developing strategies better suited to uncertain environments.

### What Is Risk? What Is Uncertainty?

Although related, uncertainty and risk differ. *Uncertainty* is defined as the condition of being uncertain, or doubt; *risk* is the probability of loss. In true uncertainty, it is impossible to imagine all potential outcomes or assign probability to any one particular outcome. With risk, by definition, it is quite possible to assign a probability to a particular outcome.

**Information**, where available, can help one move from uncertainty to risk—that is, from being in doubt to knowing the odds. Organizations confronting profound uncertainty may reduce some of the perceived unknowns by obtaining and using credible **data**. However, as discussed later in this chapter, not all uncertainties can be eliminated by information.

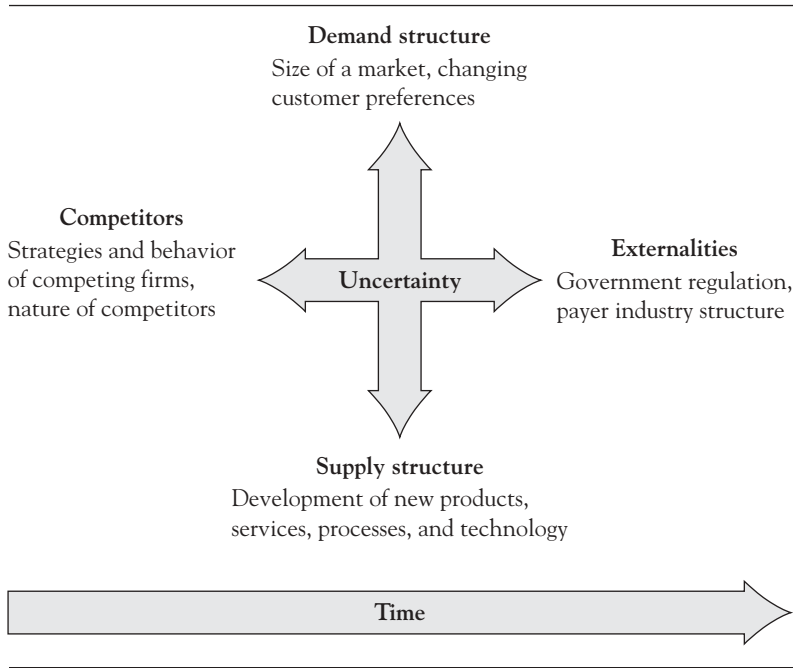
### What Are the Sources of Uncertainty?

To develop strategic planning approaches that accept and address uncertainty, it is important to understand its basic sources. As illustrated in Figure 1.2, uncertainty can arise from any of five sources: demand structure, supply structure, competitors, externalities, and time (adapted from Wernerfelt and Karnani, 1987).

#### *Demand Structure*

First, uncertainty can arise from not knowing what the future market will be, including the overall size of a market or how it will be segmented. For example, a hospital with an open-heart surgery

Figure 1.2. Sources of Uncertainty.



program that is considering upgrading or expanding its surgical and intensive care capabilities needs to consider clinical advances in less-invasive approaches such as intracoronary stents and radiation and transmyocardial laser revascularization. If the less-invasive approaches cannibalize coronary bypass surgery, open-heart surgery volumes decrease significantly and demand for operating rooms and intensive care beds can decline. The hospital faces uncertainty in the ability to amortize its investment in open-heart surgery, even if the total number of invasive cardiac procedures performed at the hospital increases.

*Supply Structure*

Second, uncertainty can arise from changes in how products or services are supplied or provided. Such structural changes can result from unforeseen adaptations of internal operations as well as from

developments in technology. For example, many urban health care providers expected that there would be an adequate supply of trained, experienced individuals to staff operations. Many providers are now dealing with a shortage of qualified staff, not just in nursing but at all levels. To address these shortages, providers are enhancing on-site training programs and reevaluating traditional approaches to care delivery.

A parallel example from another industry may further illuminate health care's staffing supply dilemma. Consider how the role of and expectations for a cashier have changed. Twenty years ago, cashiers generally were expected to recognize a product, ring up the price marked on it, and give the customer the correct change, even if the process required subtracting. Today's cashier at a fast-food restaurant is no longer even expected to translate a verbal order into words on cash register buttons. He or she translates the order into a picture or icon that automatically rings up the correct price. Today no fast-food cashier needs to determine what change a customer is owed; the register computes it for the employee. Some chains have even eliminated the need for the cashier to count out the correct coinage. A fast-food chain requiring a cashier with yesterday's skill set could not compete in today's labor market. Those who gambled correctly on the systems that support today's employees gained competitive advantage.

### *Competitors*

Third, uncertainty can arise from not knowing how your competitors will act, or from not being able to predict who your future competitors will be. For example, in Pittsburgh in 1999, Highmark Blue Cross Blue Shield proposed to finance the purchase by West Penn Health System of the failed AHERF hospitals. If yours is another system or hospital in the city, by traditional thinking is your hospital competitor now an insurer—one that says it will have no say in operations (Robinet, 1999)? Is the traditional insurer now *de facto* a competing provider?

### *Externalities*

Fourth, uncertainty can arise from such externalities as government intervention and social norms or societal pressures. These uncertainties generally are the least controllable and can cause major changes to occur rapidly. For example, many states have certificate-of-need (CON) rules that regulate provision of selected services. Planning in a state such as Florida, which as of the end of 1999 had CON legislation in place, would be vastly different if CON requirements were eliminated. Overnight, profitable services that have been protected by the CON franchise could face price pressure, as they become subject to increased competition from new market entrants.

### *Time*

Jeffrey Williams, who writes on business strategy, has said that “the significance of time in business goes beyond the reality that markets and companies are moving faster. There is a more interesting force at work. Business time is not only speeding up—business time is splitting markets apart, as well as the companies that compete within them” (1998, p. 1).

The final source of uncertainty originates in not knowing when and how fast a phenomenon will occur. Further, the parts of a health care organization face different strategic imperatives brought about by such issues as advances in technology and economic pressures. In 1998, the economics of home care were radically altered by changes in Medicare reimbursement. Systems with home health agencies faced a financial imperative to plan more quickly for home health services than for their other services.

### **The Level of Uncertainty**

It is essential to differentiate levels of uncertainty based upon the extent to which it is possible to know of or understand an aspect of the future. Although there are no facts about the future, some

aspects are clearer than others. A common framework classifies uncertainty into three levels: clear trends, unknowns that are knowable, and residual uncertainty (Courtney, Kirkland, and Viguerie, 1997). The extent to which an outcome can be understood ultimately determines its level of uncertainty.

### *Clear Trends*

The future may be uncertain, but there are usually some **clear trends** that are knowable, easily researchable, and generally predictable. For example, population trends three to five years out can be predicted with a relatively high degree of accuracy. In addition, there are some less statistical trends that also are fairly safe to project. For example, assuming that there will be continued downward pressure on health care payment rates is a fairly safe assumption. We may not all agree on the exact form payments will take, but most of us would agree that prices are unlikely to increase in the near future.

### *Unknowns That Are Knowable*

**Unknowns that are knowable** represent a level of uncertainty for which, if the right kinds of analysis are completed, the probability of certain outcomes can be assigned. In other words, the unknowns (uncertainties) become knowns (risks). Examples include consumer preferences, demand trends, and payer strategies. Companies in other industries spend considerable resources on market research and market intelligence to understand such unknowns and reduce business risk. Our experience is that many health care organizations are not willing to allocate resources for this kind of research. By default, they accept and assume greater levels of business risks than their counterparts in the corporate world do.

Leaders of health care organizations often say, “We know our customers (or markets, or competitors).” All too often, these statements are based on individual opinion or anecdotal evidence and do not adequately address the uncertainty inherent in the planning process. As outlined in Chapter Three, proper market research is essential to

identifying, quantifying, and minimizing the risks an organization faces. As such, it also is important in developing strategy.

As an example, a large community hospital in a metropolitan market decided that it should affiliate, believing that its leaders knew the best affiliation partner on the basis of personal relationships and historical reputation. After conducting some primary market research on market position, organizational values and mission, clinical programs, and financial position, the hospital's management came to realize that they lacked an objective view of the strengths and weaknesses of each potential partner. The supposedly ideal partner identified by the organization prior to its market research had significant financial issues that excluded it from consideration as a viable affiliate.

### *Residual Uncertainty*

The final level is termed **residual uncertainty**. Externalities and timing are prime sources of this level. Such uncertainties cannot be researched away, which leaves no basis on which to predict the future. Examples are the U.S. business cycle and its impact on health care, or the influence that consumer choice has on the future of health care.

Research related to residual uncertainty may not yield definitive answers. In some cases, organizations can pinpoint two or three alternative futures but cannot assign a probability to each. In other cases, a specific alternative cannot be predicted, but it is possible to bracket uncertainty and consider a range of possible outcomes.

Since residual uncertainties may cause discomfort, fear, or stress, the organization must assess an issue's strategic importance. Does a particular residual uncertainty pass the "so what" test? If so, then the organization should address this key uncertainty explicitly in its planning process.

Residual uncertainty often migrates to lesser levels of uncertainty over time. For example, at first, speculation about Medicare reform is unfocused. However, as potential reform proposals are pre-

sented and debated, especially during comment periods, hints of likely outcomes become clear. At this point, health care organizations can research alternative outcomes and approach the issue as an unknown that is knowable.

### **Conceptualizing Risk and Exposure**

Because traditional planning techniques typically ignore uncertainty, they fail to give the organization adequate understanding of the degree of risk it is assuming and the sources of this risk.

#### *Prudent Risk Taking*

After assessing the levels of uncertainty it faces, an organization must decide on a course of action. This decision *de facto* means selecting a preferred level of risk. Dangerously, most people view risk as associated with change. It is important to recognize that an organization also faces risk from the actions it does *not* take, or from perpetuating the status quo. One hospital refused to discuss joint-venture development of a outpatient surgery center with its medical staff because the executives viewed the center as controversial and risky. Several surgeons made it clear that although they thought a venture with the hospital was best for everyone, they were going to pursue developing a center with or without the hospital. In this case, the far riskier course of action for the hospital was to seek to maintain the status quo, thus risking losing volume to the physicians' new ambulatory surgery center and creating ill will with the medical staff.

#### *Exposure*

Health care organizations tend to think of each risky action individually. Given the traditional approach to capital budgeting, a surgery center usually is considered a separate risk from an advertising campaign. In actuality, the risk the organization faces reflects its collective actions. This overall risk of the organization is called *exposure*.

The investment bank J. P. Morgan operates in constantly changing international financial markets marked by a high degree of uncertainty. To grapple with risk, J. P. Morgan produces what is called the “4:15 Report.” Every day at 4:15 P.M., on a single sheet of paper, J. P. Morgan analysts project the company’s exposure: the earnings worldwide that it has at risk of loss over the next twenty-four-hour period. Management then analyzes its positions, assesses the sources of risk, and, based on market prices, calculates a probability of loss.

Health care organizations cannot and probably need not calculate such a figure daily, but in an era of uncertainty a system or hospital must consider how much of its strategic budget and capital plan are at risk and to understand the implications of being wrong. Traditional planning approaches fail on both counts. Assessing risk exposure can be done properly only by linking strategic and financial planning; this linkage is discussed in Chapter Eight.

It is also helpful to identify and assess the major sources of risk the organization faces. For this, the scenario planning techniques discussed in Chapter Five are extremely valuable. For example, an organization may find that most of its strategies depend on the market moving in one linear direction. If so, this greatly increases the risk the organization faces. Even though the market may move in the expected direction, the movement often is not linear, causing strategic doubts or setbacks. By understanding the sources and levels of risk that it faces, a health care organization is better able to develop prudent strategies.

## **The Impact of Uncertainty and Risk**

Developing better techniques that assess uncertainty, quantify risk, and lead to prudent strategies is only half of the story. Organizations and organizational cultures must also adapt in order to accept and respond to uncertainty. In their landmark examination of the firm, Cyert and March claim that organizations try to avoid uncertainty

rather than confront it (Wernerfelt and Karnani, 1987). The best strategic planning can be undone by fearful, closed organizational cultures. Consider the following examples.

### **Example One: Auto Insurance Pricing**

Insurance companies set premiums for automobile coverage according to a sophisticated actuarial analysis of several factors, one of which is geography. A car parked in New York City has a greater statistical risk of being stolen than the same car parked in Des Moines. Thus, the insurance company charges the New York City resident more for comparable insurance than it does the Des Moines resident.

To create an example, say a New Yorker who wants to pay lower insurance premiums claims to be a resident of Des Moines. The insurance company agent fails to check residency and sells the New Yorker the policy at a lower rate. As a result, the agent puts the insurer at economic risk despite the insurer's efforts to assess, quantify, and develop a strategy to adjust for different levels of risk. Further, if the insurer has inadequate monitoring processes in place, the risk is unrecognized until the policy holder files a claim for a stolen car.

### **Example Two: Clinical Protocols**

A hospital and its largest cardiovascular medical group developed a clinical protocol that identified specific medical devices to be used. Both sides agreed that the protocol improved quality of care and cost efficiency. The hospital entered into contracts with payers on the basis of costs associated with this agreed-upon protocol. After a year, the hospital generated significant losses on the contracts in large part because of noncompliance with the protocol. It turned out that a second, smaller cardiovascular medical group, not directly involved in the protocol planning, did not support the selected protocol and continued to use the more expensive medical devices it favored.

In this example, the hospital's financial analyses and managed care strategy were appropriate, but the hospital put itself at financial risk because it did not develop a monitoring plan to ensure compliance.

### **Example Three: Service Line Planning**

Sixteen surgeons approached a hospital asking for financial support for a freestanding surgery center, for which the physicians submitted a CON application. The hospital declined the request because it felt there was no need for a second center, given that the hospital had its own recently remodeled ambulatory surgery unit. In addition, the physicians did not want to give the hospital a say in operations, even though it was being asked to supply half of the financing. In working with the surgeons, the hospital realized that the physicians' real issue was frustration with inefficiencies in operation of the hospital's ambulatory surgery unit. By agreeing to overhaul areas such as scheduling and staffing, the hospital convinced eleven of the surgeons to pull out of the group supporting a new center.

### **Summary**

These three examples illustrate that dealing with uncertainty involves much more than assessing uncertainty, assigning probability, and calculating financial risk. Successful organizations need to develop organizational cultures that are able to respond quickly, and willing to establish mechanisms that monitor implementation. These issues are dealt with fully in Chapter Nine.

### **Conclusion**

It would not be enough for J. P. Morgan simply to recognize that uncertainty and risk exist. The company takes steps daily to respond to the risks it faces by developing and altering strategies over time to minimize or exploit risk. Similarly, understanding uncertainty and risk is just a first step for health care organizations. It is critical

for success to develop planning processes and tools that address uncertainty in the planning cycle and to strive for an organizational culture responsive to risk. Chapter Two begins the work of developing effective strategic planning processes by identifying aspects of traditional planning approaches that are useful, those aspects requiring modification, and those that must be augmented with new tools.

*Lessons Learned*  
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- ✓ Uncertainty is a reality in health care.
- ✓ Traditional planning approaches inadequately address uncertainty. As such, organizations that rely on these techniques and processes face the danger of developing strategies that place them at too much risk, of not having appropriate monitoring devices to stay in step with future developments, and of fostering an organizational culture unable to recognize and capitalize on uncertainty.
  - ✓ The future is neither certain nor wholly unknowable. There are shades and nuances of uncertainty and risk in all future events and potential outcomes.
  - ✓ Uncertainty can be managed to some extent by understanding its core sources and carefully assessing what levels of uncertainty exist.
  - ✓ The degree of risk that an organization assumes is influenced significantly by its approach to planning. Inadequate planning or improper implementation can put any organization at great strategic or financial risk.

