1

INTRODUCTION

> Which of you, intending to build a tower, sitteth not down first, and counteth the cost?
>
> Jesus
> Luke 14:28

This book concerns the age-old question, "What does it cost?" But not just in monetary terms. Not understanding the uncertainties and risks that divide an organization from its desired results is also a "cost" because it can, and often will, result in a loss. Therefore, if we were to build a tower, we should also consider the risks and uncertainties of building it when counting the costs.

Despite the fact that cost management has been around as a field of study for more than 150 years, the answers we have found so far to this simple question have obvious shortcomings. That is evident from the fact that virtually all cost management systems only concern the costs incurred within the four walls of the organization. Even worse, we try to control costs after they are incurred instead of eliminating them before they are committed. The result is a massively wasteful economy.[1]

In this book, a new approach is presented that deals with estimating future costs and directing attention toward its root causes so that companies and organizations can get useful decision support for solutions both inside and outside the organization. The approach, called Activity-Based Life-Cycle Costing (LCC), is presented by theory, argumentation, and illustrative case studies.

WHAT DOES IT COST?

Most businesses, if not all, live by buying something, adding some value to it, and then selling it for a higher price to someone. The organization cashes in the difference between the price charged and the costs incurred as a profit. Whereas the price is given in the marketplace and is ideally a function of suply and demand, the incurred costs are a result of a series of decisions throughout the organization that started long before the product was even conceived. This chain of decisions leads

to costs being committed before they are incurred. Managing costs effectively and efficiently thus implies that costs must be eliminated in the commitment stage and not reduced in the incurring stage. Many organizations realize this, but is few practice it. The costing methods employed by most companies simply do not take such notions into account as they embark on cost cutting. This happens for many reasons, but it might simply be a matter of bad habits or because we dislike to learn new things unless the consequences of not learning are worse than those of learning, as world-renowned psychologist Edgar H. Schein claims.[2]

The points argued so far are illustrated in Figure 1.1. The numbers are heuristics from manufacturing. In the literature, we typically find that the number is somewhere between 70/30 and 90/10; the most often quoted numbers are along the 80/20 ratio. Figure 1.1 shows that although about only 20 percent of the costs are actually incurred in the activities prior to production, these activities actually commit 80 percent of the costs. The production costs, however, incur about 80 percent of the costs, but production improvement efforts impact only about 20 percent of the cost commitment. This has been a well-known fact for many years. In fact, LCC came about in the early 1960s due to similar understanding concerning weapons systems procurement in the U.S. Department of Defense.

The first to use such ideas extensively in cost management on a continuous basis and on extensive scale, however, were the Japanese. After World War II, Japan was in ruins, and to rise, the Japanese had to be more clever than the rest. American industry, in contrast, saw no need to become smarter because they were already doing so well—for the time being. It is therefore not strange that a Japanese cost management concept, target costing, has most clearly emphasized the need for the elimination of costs through design. Such emphasis leads to *proactive* cost management, as opposed to reducing costs after they are incurred, which is *reactive* cost management.

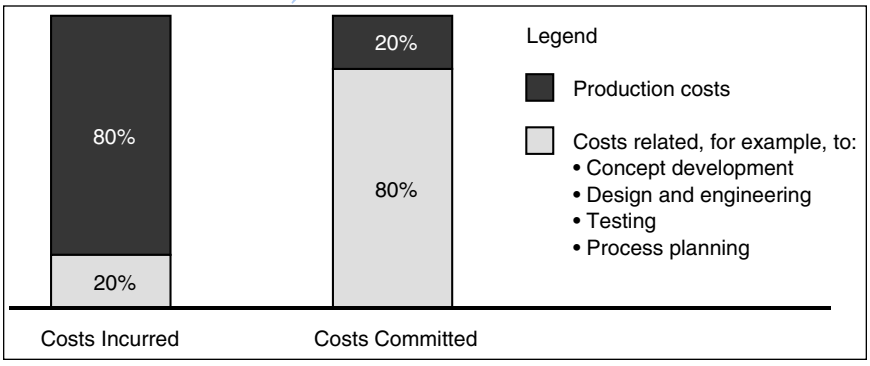

Figure 1.1 Cost committed versus costs incurred.

Unfortunately, even today, more than 30 years after Japanese industry became world class, most companies still manage costs reactively. While they try to eliminate costs via design, unless cost management follows suit, it will be two paradigms fighting each other. Thus, the most established paradigm will usually prevail unless the challenger can present a convincing case.

The traditional, reactive paradigm is a challenge for the new, proactive paradigm because this paradigm inevitably incurs more costs up front, which traditionally is thought to be bad for business since traditional accounting regimes treat Research and Development (R&D) costs as period costs and not investments. Then design departments will get insufficient funding to eliminate costs before they are incurred. The intended results do not materialize, which in turn will be used as an argument against the new paradigm. Therefore, what is needed is a change of mindset and a change of cost management approaches. We simply cannot achieve the results promised by the proponents of cost elimination via design unless we commit wholeheartedly to it. As Michael Porter argued concerning strategic positioning, middle positions are never successful.[3] The traditional paradigm has some other unwanted side effects that the new paradigm can overcome. The best-known side effect is quality. Just as the Japanese designed products that were less costly than their American counterparts, they also produced products that many considered better in terms of quality. The overall value of Japanese products was in other words greater, at least if we use the definition of value that the European Committee for Standardization uses.[4]

Value[5] is defined as proportionate to the satisfaction of needs divided by the use of resources. In other words, value is proportionate to quality divided by costs. Value-driven organizations must therefore be both quality driven and cost conscious, something traditional management systems simply cannot deliver, as explained in Chapter 4. On top of that, despite the fact that traditional cost management systems are partially designed to satisfy external needs for reporting, they have completely missed the concept of shareholder value and its measure of economic profit, or Economic Value Added (EVA).[6]

Costs like quality and other important aspects of the product, such as image and branding, cannot be fixed after the product is manufactured, as is traditionally done. They can be successfully handled only during an effective and efficient design process supported by relevant cost management systems and value-driven strategies. The new paradigm of cost elimination through design has far-reaching implications that must be taken seriously if the intended results are to materialize. Quick fixes and shortcuts, which have often been the rule of the day in many companies,[7] will not sustain a change toward the new paradigm. A change must occur in both the culture of business and the performance measures, because those two factors are the most important ones in change management efforts, as shown by the two large surveys carried out by A.T. Kearney and Atticus.[8]

One such change in performance measures is to expand the horizon of the cost management efforts from the four walls of the company to the relevant parts of the life cycle where value is created and to employ foresight instead of hindsight. In this context, LCC can play a far greater role than traditionally thought, and that is one of the main messages of this book.

THE ROLE OF LIFE-CYCLE COSTING

As discussed in Chapter 2, LCC serves mainly three purposes today:

1. To be an effective engineering tool for use in design, procurement, and so on. This was the original intent.
2. To be applied proactively in cost accounting and management.
3. To be a design and engineering tool for environmental purposes.

Numerous publications are available on how LCC can be used as an engineering tool, and I therefore give this little attention. This book focuses on how LCC can be a managerial tool because most organizatins seem to forget to use LCC in cost accounting and management despite its great potential. Some attention is also given to the use of LCC in the environmental domain because much confusion exists in that area (see Chapter 2).

Nonetheless, the three purposes have a common denominator, which is the role of LCC to provide insight in future matters regarding *all* costs. Furthermore, since the future is always associated with uncertainty and risks, truly proactive cost management should also handle all sorts of risks that can incur losses to the organization. Such risks are commonly referred to as business risks and have become a new focal point of corporate governance. In fact, due to the many corporate scandals in the 1980s and 1990s, large institutional investors have demanded better financial transparency, integrity, and accountability.[9] This push toward improved corporate governance has resulted in the Turnbull Report, published in 1999 in the United Kingdom, which was made at the request of the London Stock Exchange (LSE). In fact, the Listing Rules disclosure requirements of the LSE demand full compliance with the reporting requirements stated in the Turnbull Report for accounting periods ending on or after December 23, 2000. It has been said that "non-compliance with the Turnbull guidance would result in an embarrassing disclosure in the annual report, which could attract the attention of the press, shareholder activists and institutional investors."[10]

In this light, it is evident that cost management should ideally be expanded to *risk-based* cost management as well as a focus on total costs. In fact, just as "The (Turnbull) guidance is about the adoption of a risk-based approach toward establishing a system of internal control and reviewing its effectiveness,"[11] LCC must take risks and uncertainties into account in order to be really useful for decision-

makers. LCC should therefore be an important way to help companies eliminate costs before they are incurred *and,* to manage some crucial business risks related to costs, cash flow, and profitability.

Unfortunately, as discussed in Chapter 2, most LCC methods cannot handle these issues credibly, except cash flows, and that is why a different LCC method was needed. Professor Bert Bras of the Georgia Institute of Technology and I first came up with an approach called Activity-Based Costing with Uncertainty.[12] Then, based on my growing experience and insight from other areas of cost management, I saw the need to improve it further. This book is about this new improved approach called Activity-Based LCC.

WHY ACTIVITY-BASED LIFE-CYCLE COSTING?

On the one hand, Activity-Based LCC is a result of research spurred by dissatisfaction with existing LCC methods; on the other hand, during my consulting work I have seen that using the life-cycle cost idea purely for LCC purposes is a gross devaluation of the idea. Many cost management efforts are ineffective because cost management traditionally is performed after the fact. Although hindsight is 20/20, it gives little room for effective decision-making.

Now, suppose we want to look at cost management from a different perspective. This perspective should be one in which we look forward in time, we look farther than the four walls of the organization, and we reduce the wasteful activities of the annual budgeting ritual of chasing the numbers. Cost management and budgeting of the future should concern itself with identifying the underlying drivers of business performance, manage these, then settle for ballpark numbers, and manage the risks: This is the ultimate goal of Activity-Based LCC. After all, costs are statistical in nature and cannot be managed unless we understand the underlying drivers.

This can be achieved by using the basic LCC idea (not the methods), coupling it with the Activity-Based Costing (ABC) concept, and being more flexible in our definitions of what constitutes a life cycle. To power the whole thing, we use Monte Carlo simulations to handle uncertainty and risks much more efficiently and effectively than traditional methods, besides also effectively identifying critical success factors. This is also done much faster than traditional approaches.

In short, this new perspective on the LCC idea entails three shifts and an improvement:

1. From a partial focus to holistic thinking
2. From structure orientation to process orientation
3. From cost allocation to cost tracing
4. Managing risk and uncertainty realistically

From a Partial Focus to Holistic Thinking

Several issues spring to mind when we talk about partial focus versus holistic thinking in the context of cost management, notably:

- Making cost management relevant.
- Linking costs to quality. This linkage is important because value is a function of cost and quality.
- Linking costs to uncertainty and risks.

Making Cost Management Relevant

As discussed, cost management is predominantly concerned about costs in a very fragmented way. Roughly speaking, in traditional cost management as performed by most companies today:

- Downstream costs are largely ignored despite the fact that we know they are of considerable importance.
- Historic costs are studied because the future costs are believed to be unknown.
- The focus is mostly on variable costs because fixed costs are assumed to be fixed.
- Direct costs are better understood than indirect costs because traditional cost accounting systems virtually ignore overhead costs.
- The distinction between costs and expenses cannot be captured and is ignored.

In sum, traditional cost management focuses only on some aspects of an organization's costs. It has been described in many unflattering ways, but essentially it has lost its relevance.[13]

When LCC first was developed in the early 1960s, the first three of these "partialities" were remedied; namely, one started to look beyond the four walls of the organization, think of future costs, and treat all costs as costs or to think in terms of *total* costs. Unfortunately, such thinking has not progressed much outside of LCC. In parallel, however, ABC brought an elegant solution to the latter two points in addition to the first and third ones. Activity-Based Budgeting (ABB), a step further in the development of Activity-Based Management (ABM), whose roots are ABC, also provides a sort of remedy to the third point. The point is that remedies exist for the aforementioned shortcomings of traditional cost management.

These remedies can be put together—synthesized—and that is essentially what Activity-Based LCC is about. Whether the name of the method should incorporate LCC or not is a matter of perspective. I have chosen to do so because the underlying idea of LCC—managing all relevant costs throughout the life cycle of a product—is so intuitive, basic, and paramount. However, one can probably argue convincingly for another name, such as value chain costing, (see Glossary).

Activity-Based LCC also incorporates effective and efficient handling of uncertainty and risk, which neither ABC nor most LCC methods can do. This is discussed more in the sections "Linking Costs to Uncertainty and Risks" and "Managing Risk and Uncertainty Realistically."

Linking Costs to Quality

Everybody finally realized the importance of quality as the Japanese industry swept the globe. What is less recognized is the enormous impact quality has on the *operating* costs of the company. In the distribution industry, for example, it is estimated that up to 25 percent of operating expenses stem from internal quality problems.[14] Unfortunately, traditional costing systems have little, if any, chance of estimating the cost of quality, that is, what it costs to provide a certain level of quality.

The cost of quality is important to assess because "Too much quality can ruin you," as former vice chairman of Chrysler Corporation, Robert Lutz, puts it.[15] The other extreme version of quality commitment would be organizations that simply seek ISO 9000 certification to comply to pressure. Such work is not expensive, but it does not have any clear, measurable improvements on the organization according to several surveys.[16]

In any case, what is needed is a cost management system that can link cost and quality together. A well-designed ABC system can handle this challenge because ABC is transaction based, and one significant group of transactions is related to quality, as discussed in Chapter 4. This explains the large potential for quality-driven organizations to implement ABC and total quality management (see "Activity-Based Costing and Total Quality Management in Chapter 4). Therefore, ABC can be used as a quality-enforcing system, not just as the cost-cutting tool for which it has been criticized.[17]

By extending ABC to Activity-Based LCC, we benefit from having the opportunity to think of quality in life-cycle perspectives, which is difficult for traditional LCC because traditional LCC methods are not transaction based. The traditional LCC method can at best handle what is referred to as grade,[18] which is defined by the product's features. Since quality and process performance is closely linked, the structure orientation of traditional cost management approaches (see "From Structure Orientation to Process Orientation") inhibits the effective cost of quality management.

Linking Costs to Uncertainty and Risks

In cost management, except LCC and some special areas, uncertainty and risk are completely forgotten topics. It is as if future costs can be determined with certainty, although they are largely unknown at the time. However, as we shall see later, both costs are statistical in nature, as is quality. Statistical quality control and statistical process control are cornerstones of Total Quality Management.[19] In cost manage-

ment, however, the world is still deterministic and determinable by simple averages. We hear, for example, about how executives rush into implementing integrated cost systems but that "some (real-time cost information) will cause confusion and error, delivering information that is far less accurate than what managers currently receive."[20] The reason for such confusion and error is lack of understanding in the statistical nature of costs because "there will always be fluctuations in spending, volume, productivity and yield."

It is time to internalize the fact that costs simply cannot be determined with certainty and act accordingly. Basically, while it is important to avoid cost management practices that act on random variation, information about cost fluctuations should be incorporated in forecasts to provide uncertainty and risk measures for budgeting and so on.

From Structure Orientation to Process Orientation

Structure orientation refers to the fact that costs are categorized according to their types or structure. Examples of this would be marketing costs, direct labor costs, depreciation, and so on. This thinking is not very effective because it does not consider the underlying demands for jobs to be done. Cost effectiveness in such a setting will inevitably lead to cost cutting, starting with the largest costs. Such cost cutting can be highly damaging, as many in the literature report, because one might cut costs for jobs that are in high demand rather than the intended idle capacity. Then the company has reduced its ability to produce value and will consequently be worse off. Further ill-founded cost cutting can further aggravate the situation, and the organization may approach a so-called death spiral.

The only way to get around this problem is by thinking in terms of processes: process orientation. The costs should be categorized according to the processes, activities, tasks, jobs, or whatever desirable process element. Then a manager can see that a particular machine costs such and such, with all costs included (depreciation, energy, labor, tools, and so on). Then it is a lot easier to measure the time the machine is idle, estimate what that idleness costs, and find out whether this activity should be performed or not, or how it should be changed. A further advantage of the process orientation is that a direct link is made to quality management, as noted earlier. Cost of quality can be realistically estimated, and cost management will become a quality and continuous improvement enforcer. Today, however, quality management in many companies is done despite the cost management systems.

Unfortunately, the general ledger is structure oriented. It should be reorganized to become object oriented (in terms of organizing the data) or process oriented (in terms of its relation to the work processes), but this is probably not legal due to Generally Accepted Accounting Principles (GAAP). Sound cost management will

entail having a costing system for internal control and management and another one for external reporting and compliance. This is, in fact, what many leading companies do.

As of today, ABC is the costing method that has captured process orientation the best, in my opinion. Activity-Based LCC enjoys the same benefits as ABC does because it piggybacks on ABC in this context.

A more subtle part of process orientation is to also think about continuous improvement when implementing or designing a costing system or model. That is, it is important to steadily improve the costing model. When this is done, it is crucial to notice that the cost estimates inevitably will change as well. Such changes should not be interpreted as a sign of error, but rather a sign of improvement or inevitability. Costs are, after all, statistical in nature. Hence, an estimate of $100 for something might be equally correct as $90, or vice versa. In fact, both are probably correct at some time, but not at the same time. The problem is that we will never know when this "some time" occurs. Cost should therefore be treated according to its nature, statistical and uncertain, as discussed earlier.

From Cost Allocation to Cost Tracing

Cost allocation refers to the process of assigning costs to cost objects using arbitrary allocation bases (see Glossary), whereas tracing is based on the establishment of cause-and-effect relationships (drivers) between costs and cost objects. The basic difference between allocation and tracing is therefore that allocation is arbitrary while tracing relies on cause-and-effect relationships.

Traditional cost management allocates costs in a single step, whereas ABC traces costs using two stages of cause-and-effect relationships. The result of this apparent small difference is enormous; it is in fact reported that the difference in product costs can shift several hundred percent.[21] In Chapter 4, this fact, along with the theory of ABC, is explained in detail.

Traditionally, this difference would, however, play no role in LCC because most LCC models concern only one cost object at a time. By performing LCC like this, overhead costs are grossly mistreated, as in traditional, volume-based cost accounting systems, or simply ignored. When overhead costs constituted up to 35 percent of total costs in a typical U.S. company in the mid-1980s,[22] it is clear that ignoring such a large proportion of total costs is a large risk in itself. For advanced technological systems, the error of this approach is even larger. Activity-Based LCC aims at handling overhead costs as realistically as possible, using ABC principles, also in the context of LCC.

To do that, LCC cannot be performed product by product but must incorporate the entire system whose cost base can be clearly defined. In order to clearly define the cost base, however, the purpose of the LCC must be defined and an appropri-

ate life cycle chosen. Often it is more work limiting an analysis than performing a complete analysis for the entire organization. The reason is that much work must be spent trying to understand the consequences of limiting the analysis. Also, if people know that many assumptions have been made to limit the analysis, they may try to undermine the results, particularly if they do not like them.

Managing Risk and Uncertainty Realistically

When discussing risks and uncertainty, it is important to be aware of two things: (1) assessing risks and uncertainties, and (2) reducing risks and uncertainties. Both are important when it comes to managing risks and analyzing uncertainties. This is discussed in the two subsequent sections. Then the topics of forecasting and how to forecast are discussed because LCC is an attempt to forecast, or predict, the future, and such predictions are always subject to risks and uncertainties.

Assessing Uncertainty and Risks Realistically

As will be evident from Chapter 3, the most common approaches of handling uncertainty and risks have many problems. In fact, some people do not even distinguish between risk and uncertainty, and that is probably a reason why they have never challenged some of the common approaches toward risk and uncertainty assessments.

Many risk assessment methods are unnecessarily limiting, as explained in detail in Chapter 3. On top of that, many of the most popular sensitivity analyses are incapable of measuring the consequences of interplay between variables. For example, what happens if a variable has a high value, another variable has a medium value, and a third has a low variable? Popular methods have a great difficulty in answering this simple question, especially if we do not find discrete choices (high, low, and so on) satisfactory, but rather think in terms of continuous ranges (all real numbers).

What is truly amazing in my opinion is that even though the remedy for all these unnecessary limitations, and much more, have been known for more than 30 years, few seem to care or even know about them. The remedy for all these problems is Monte Carlo simulations, and why they are applicable in this context can be explained by both fuzzy logic and probability theory. This is discussed in detail in Chapter 3, but here it is sufficient to recognize that with Monte Carlo simulations, no limitations exist on how risk and uncertainty can be assessed. In fact, due to the simple crudeness of Monte Carlo simulations, it does not matter if a variable is probabilistic, statistic, stochastic, or fuzzy in nature; it will all be solved in the same way. Moreover, as a by-product of the Monte Carlo simulation, you get a sensitivity analysis that outperforms any form of sensitivity analyses. It is not with-

out reason that Monte Carlo methods have been referred to as "the perfect tool of numerical theories and applications."[23]

Some may argue that they do not like the Monte Carlo methods because they involve the problem of random errors. Random errors occur as a consequence of Monte Carlo methods being statistical in nature, and all statistical measures are associated with some random errors. However, since costs are statistical in nature, surely using a statistical method to handle the associated risks and uncertainties is most appropriate. Also, the random errors are not a problem as long as you have a computer that enables you to run enough trials to reduce the errors to acceptable levels. As the clock speed of chips still seems to double every 18 months, it is safe to assume that the problem of random errors is one of the past. In fact, most PCs today have more than enough Random Access Memory (RAM) and high enough clock speed to handle even large LCC Monte Carlo simulations. Add to that the possibility of running Monte Carlo simulations over a local area network (LAN) or a similar system, and the use of such simulations is virtually endless for any practical cost-modeling purpose.

Reducing Risks and Uncertainty

Once the risks and uncertainties are assessed, the next step is to handle them. Uncertainties should be handled with particular care, as explained in Chapter 3, because an apparent reduction in uncertainty can in fact increase risks. This fact ties nicely into the earlier discussions; excessive simplification of cost assessments and management to reduce the uncertainty in the cost assessment—that is, making it "simple"—in fact increases the risks associated with cost management.

When it comes to managing the risks, numerous, well-known, and road-proven methods are available, as discussed in Chapter 3. But any analysis, regardless of how well it is done, is worth nothing if it does not lead to action. This is possibly the largest risk of all the risks, because nonaction is in many cases worse than wrong action. As one of the great executives of Ford put it:

> *If you've got ten decisions to make and you spend all your time making just four, then you've made six wrong decisions.*[24]

If we can act sensibly, we should be in good shape. In order to act sensibly, we need to act on facts and not on whims, myths, and erroneous information. Here the role of a good performance measurement system becomes crucial. When discussing performance measurement systems, it is important to emphasize that research shows that in many cases of cost system implementation, success is strongly correlated with behavioral and organizational variables, but not with technical variables, such as the type of software used.[25] In fact, two large studies point

out that in the context of change management, changes in the performance measurement system and in culture are the two most important factors of success.[26]

How to Forecast the Future

LCC is essentially the art of forecasting future costs, but any forecast is uncertain. Being capable of assessing uncertainty and managing the associated risks is important, but it is not sufficient. We must also decide what kind of mental model of forecasting we want to choose. Figure 1.2 shows four ways of performing forecasting (in relation to economic performance):

1. The most common one is probably *extending a trend line*. The assumption is that the future will roughly follow this trend line. That can be true, but that approach completely misses new opportunities and threats.
2. Another common approach is to use *experiments* of some sort and, based on the experiment, make generalizations concerning the future.
3. Basing the work on *general economic forecasts* is another approach, but then you are in the hands of those who made the forecast. Also, it may be the case that your organization will not follow the industry forecast.
4. The last approach is the *grassroots approach* where those facing the issues are asked, surveyed, interviewed, and so forth, and based on this set of information a forecast is made. Note that front-line representatives are the people who work the closest with the issue under investigation. For example, if

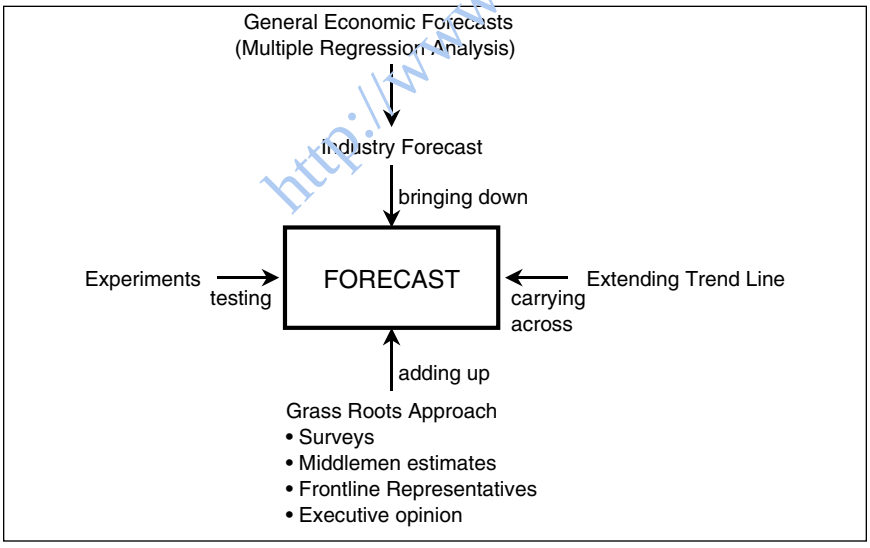

Figure 1.2 The four ways of forecasting. Source: Adapted from F. Allvine, *Marketing: Principles and Practices*. Boston, MA: Irwin/McGraw-Hill, 1996.

we want to make a sales forecast, the front-line representative will be the sales representative. If we want to make a technology forecast, the front--line representative will be a technology worker who has a good overview of all possible technologies. This approach is probably the most flexible in that it is not necessarily based on past data or performance. We are allowed to guess.

When innovations are the subject of the LCC, only the grassroots approach is flexible enough to allow a wide-enough scope for the forecast. Extending a trend line and performing experiments are not feasible options since an innovation is by definition something new. Innovations are therefore more risky, but it is better to make a forecast about the future than to ignore it. This is even truer when we talk about the improvements of existing products and systems.

From this discussion, it follows that we need a way to handle uncertainty and risks that is so flexible that guesses can be made, historical data can be utilized when available, and so on. Otherwise, the approach will become a limitation in terms of assessing uncertainty and risks and also in supporting forecasting. Basically, we want no limitations.

Luckily, as explained in Chapter 3, modeling uncertainty and risks as probability distributions, fuzzy numbers, and/or fuzzy intervals, and solving the problem using Monte Carlo simulation are the most flexible approaches for both assessing uncertainty and risks and for forecasting. Of course, the usefulness of the Monte Carlo simulations cannot go beyond the meaningfulness of the mathematical modeling, and some uncertainties and risks are simply impossible to formulate mathematically. Consequently, there are limitations, as Albert Einstein put it:

As far as the laws of mathematics refer to reality, they are not certain; and as far as they are certain, they do not refer to reality.

Outside of this, no limitations exist. However, even if we can guess as much as we want, and use as much historical data as we want, we are ultimately affected by the past, because even a guess is made with the past in mind to some extent or the other. To forecast the future, we must understand the past, which further emphasizes the need to make cost management relevant. ABC can be used to understand the past, but Activity-Based LCC can be used to both understand the past and forecast the future just as easily. This is because uncertainty and Monte Carlo simulations work both ways, past and future.

I would like to point out that although this book builds on well-known subject matter, and thus offers little new information per se, it is the unique synthesis of that provides the real value. In the words of Robert Frost:

Two roads diverged in a wood, and I—I took the road less traveled by. And that has made all the difference.

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