

## SECTION I

# Measurement: The Solution Exists

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## CHAPTER 1

# Intangibles and the Challenge

*When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the state of science.*

—Lord Kelvin, British physicist and member of the House of Lords, 1824–1907

Anything can be measured. If a thing can be observed in any way at all, it lends itself to some type of measurement method. No matter how “fuzzy” the measurement is, it’s still a measurement if it tells you more than you knew before. And those very things most likely to be seen as immeasurable are, virtually always, solved by relatively simple measurement methods.

As the title of this book indicates, we will discuss how to find the value of those things often called “intangibles” in business. There are two common understandings of the word “intangible.” It is routinely applied to things that are literally not tangible (i.e., not touchable, solid objects) yet are widely considered to be measurable. Things like time, budget, patent ownership, and so on are good examples of things that you cannot touch but yet are measured. In fact, there is a well-established industry around measuring so-called intangibles such as copyright and trademark valuation. But the word “intangible” has also come to mean utterly immeasurable in any way at all, directly or indirectly. It is in this context that I argue that intangibles do not exist.

You’ve heard of “intangibles” in your own organization—things that presumably defy measurement of any type. The presumption of immeasurability is, in fact, so strong that no attempt is even made to make any observations that might tell you something—anything—about the alleged

immeasurable that you might be surprised to learn. You may have run into one or more of these real-life examples of so-called intangibles:

- Management effectiveness
- The forecasted revenues of a new product
- The public health impact of a new government environmental policy
- The productivity of research
- The “flexibility” to create new products
- The value of information
- The risk of bankruptcy
- The chance of a given political party winning the White House
- The risk of failure of an information technology (IT) project
- Quality
- Public image

Each of these examples can very well be relevant to some major decision an organization must make. It could even be the single most important impact of an expensive new initiative in either business or government policy. Yet in most organizations, because the specific “intangible” was assumed to be immeasurable, the decision was not nearly as informed as it could have been.

One place I’ve seen this many times is in the “steering committees” that review proposed investments and decide which to accept or reject. The proposed investments may be related to IT, new product research and development, major real estate development, or advertising campaigns. In some cases, the committees were categorically rejecting any investment where the benefits were primarily “soft” ones. Important factors with names like “improved word-of-mouth advertising,” “reduced strategic risk,” or “premium brand positioning” were being ignored in the evaluation process because they were considered immeasurable. It’s not as if the idea was being rejected simply because the person proposing it hadn’t measured the benefit (a valid objection to a proposal); rather it was believed that the benefit couldn’t possibly be measured—ever. Consequently, some of the most important strategic proposals were being overlooked in favor of minor cost-savings ideas simply because everyone knew how to measure some things and didn’t know how to measure others. Equally disturbing, many major investments were approved with no basis for measuring whether they ever worked at all.

The fact of the matter is that some organizations have succeeded in analyzing and measuring all of the previously listed items, using methods that are probably less complicated than you would think. The purpose of this book is to show organizations two things:

1. Intangibles that appear to be completely intractable can be measured.
2. This measurement can be done in a way that is economically justified.

To accomplish these goals, this book will address some common misconceptions about intangibles, describe a “universal approach” to show how to go about measuring an “intangible,” and provide some interesting methods for particular problems. Throughout, I have attempted to include some examples (some of which I hope the reader finds inspirational) of how people have tackled some of the most difficult measurements there are.

Without compromising substance, this book also attempts to make some of the more seemingly esoteric statistics around measurement as simple as they can be. Whenever possible, math is converted into simpler charts, tables, and procedures. Some of the methods are so much simpler than what is taught in the typical introductory statistics courses that we might be able to overcome many phobias about the use of quantitative measurement methods. Readers do not need any advanced training in any mathematical methods at all. They just need some aptitude for clearly defining problems.

Readers are encouraged to use this book’s Web site at [www.howtomeasureanything.com](http://www.howtomeasureanything.com). The site offers a library of downloadable spreadsheets for many of the more detailed calculations shown in this book. There also are additional learning aids, examples, and a discussion board for questions about the book or measurement challenges in general. The site also provides a way for me to discuss new technologies or techniques that were not available when this book was printed.

## **Yes, I Mean *Anything***

I have one recommendation for a useful exercise to try. When reading through the chapters, write down those things you believe are immeasurable or, at least, you are not sure how to measure. After reading this book, my goal is that you are able to identify methods for measuring each and every one of them. And don’t hold back. We will be talking about measuring such seemingly immeasurable things as the number of fish in the ocean, the value of a happy marriage, and even the value of a human life. Whether you want to measure phenomena related to business, government, education, art, or anything else, the methods herein apply.

With a title like *How to Measure Anything*, anything less than a multi-volume text would be sure to leave out something. My objective does not include every area of physical science or economics, especially where measurements are well developed. Those disciplines have measurement methods for a variety of interesting problems, and the professionals in those disciplines are already much less inclined even to apply the label “intangible” to something they are curious about. The focus here is on measurements that are relevant—even critical—to major organizational decisions and yet don’t seem to lend themselves to an obvious and practical measurement solution.

If I do not mention your specific measurement problem by name, don't conclude that methods relevant to that issue aren't being covered. The approach I will talk about applies to *any* uncertainty that has some relevance to your firm, your community, even your personal life. This extrapolation should not be difficult. When you studied arithmetic in elementary school, you may not have covered the solution to 347 times 79 in particular but you knew that the same procedures applied to any combination of numbers and operations. So, if your problem happens to be something that isn't specifically analyzed in this book—such as measuring the value of better product labeling laws, the quality of a movie script, or effectiveness of motivational seminars—don't be dismayed. Just read the entire book and apply the steps described. Your immeasurable will turn out to be entirely measurable.

## The Proposal

Let me begin by stating the three propositions as a way to define and approach the problem of measurement in business:

1. Management cares about measurements because measurements inform uncertain decisions.
2. For any decision or set of decisions, there are a large combination of things to measure and ways to measure them—but perfect certainty is rarely a realistic option.
3. Therefore, management needs a method to analyze options for reducing uncertainty about decisions.

Perhaps you think the first two points are too obvious to make. But while it may seem obvious, few management consultants, performance metrics experts, or even statisticians approach the problem with the explicit purpose of supporting defined decisions. Even if they had that squarely in mind, the last point, at a minimum, is where a lot of business measurement methods fall short.

It is very useful to see measurement as a type of optimization problem for reducing uncertainty. Upon reading the first edition of this book, a business school professor remarked that he thought I had written a book about the somewhat esoteric field called “decision analysis” and disguised it under a title about measurement so that people from business and government would read it. That wasn't my intention when I set out, but I think he hit the nail on the head. Measurement is about supporting decisions, and there are even several decisions to make within measurements themselves.

If the decision in question is highly uncertain and has significant consequences if it turns out wrong, then measurements that reduce uncertainty

about it have a high value. Nobody should care about measuring something if it doesn't inform a significant bet of some kind. Likewise, if measurements were free, obvious, and instantaneous, we would have no dilemma about what, how, or even whether to measure.

Granted, a measurement might also be taken because it has its own market value (e.g., results of a consumer survey) or because it is simply satisfying a curiosity or will be entertaining (e.g., academic research about the evolution of clay pottery). But the methods we discuss in the decision-focused approach to measurement should be useful on those occasions, too. If a measurement is not informing your decisions, it could still be informing the decisions of others who are willing to pay for the information. And if you are an academic curious about what really happened to the woolly mammoth, then, again, I believe this book will have some bearing on how you set up the problem.

From here on out, this book addresses three broad issues: why nothing is really immeasurable, how to set up and define any measurement problem, and how to use powerful and practical measurement methods to resolve the problem. The next two chapters of this book build the argument for the first point: that you can really measure anything. Chapters 4 through 7 set up the measurement problem by answering questions from the point of view of supporting specific decisions. We have to answer the question "What is the real problem/decision/dilemma?" underlying the desired measurement. We also have to answer the question "What about that problem really needs to be measured and by how much (to what degree of accuracy/precision)?" These questions frame the problem in terms of the primary decision the measurement is meant to resolve and the "microdecisions" that need to be made within the measurement process itself.

The remainder of the book combines this approach with powerful and practical empirical methods to reduce uncertainty—some basic, some more advanced. The final chapter pulls it all together into a solution and describes how that solution has been applied to real-world problems. Since this approach can apply to anything, the details might sometimes get complicated. But it is much less complicated than many other initiatives organizations routinely commit to doing. I know, because I've helped many organizations apply these methods to the *really* complicated problems: venture capital, IT portfolios, measuring training, improving homeland security, and more.

In fact, measurements that are useful are often much simpler than people first suspect. I make this point in Chapter 2 by showing how three clever individuals measured things that were previously thought to be difficult or impossible to measure.

