PART I

Questions

CHAPTER 1

The Challenge of Intangibles

LEARNING OBJECTIVES

- Describe different definitions of intangibles.
- Explain why measurements matter.
- Explain the different reasons for measurements.
- Explain the purpose of a decision-oriented framework for measurement.
- Describe the key steps in the Applied Information Economics approach to measurement.
- Explain why we use "power tools" for measurement.
- Provide an outline to the remainder of the book.

CHAPTER OVERVIEW

Chapter 1 proposes that anything can be measured and explains why measurements are critical to business, government, and life, and it outlines the case for this in the book. In business, there is an unlimited array of so-called "intangibles" like management effectiveness, research productivity, and public image, each of which turns out to be measurable by methods that are simpler than the reader may think.

The book proposes a "decision-oriented" framework for measurement. It is preferable to use quantitative models over unaided subjective intuition. For each decision, there are many "micro-decisions" about what to measure.

A method called Applied Information Economics (AIE) is introduced as a universal approach to measurement problems. The complexities of measurement can be simplified with a "power tools" approach to statistics.

QUESTIONS

1. Two common understandings of the word "intangible" apply to things that can be measured but are not _____, and things that cannot be measured at all. One purpose of this text is to argue that the second type of intangible _____.

A. Physically touchable; does not exist
B. Physically touchable; is the best-working definition of the word
C. Analyzed; does not exist
D. Analyzed; is unavoidable to some degree
E. None of the above

2. To which type of decisions does this book apply?

A. Government policy
B. Personal decisions
C. Business planning
D. All of the above

3. Which of the following is true of intangibles?

A. They defy measurement entirely.
B. The term is essentially a misnomer because anything is measurable.
C. They have little direct impact on decisions.
D. They are rarely measurable and relatively unpredictable.

4. Which of the following statements is true of "intangible" variables?

A. One can measure the tangible effects of seemingly "intangible" variables; if a variable literally had no detectable effect, then it would not be relevant to any decision.
B. The low-cost measurement of "intangible" variables usually requires the application of state-of-the-art statistical techniques.
C. Immeasurable variables can only be assessed intuitively.
D. The routine treatment of "intangible" variables as unimportant in prevalent decision models suggests the effect of allegedly "immeasurable" factors is, in most cases, negligible.
E. None of the above

5. If you are trying to figure out how a specific measurement process should work, how should you use this book?
- **A.** Check for your specific problem in the index. If you find it, skip to that chapter. If you don't find it, that issue is not addressed.
- **B.** The book is purely theoretical and doesn't address specific measurement problems.
- **C.** The steps described in the book apply to any measurement problem and are presented sequentially by chapter. Read the whole book and apply the steps within.
- **D.** None of the above

6. Which purpose of measurement is emphasized the most in this book?
- **A.** Measurements for resale
- **B.** Measurements for curiosity or entertainment
- **C.** Measurements that support decisions
- **D.** None of the above

7. Why do managers need to have a method to analyze options for reducing uncertainty about decisions?
- **A.** There are so many possible things to measure.
- **B.** Only some measurements impact the outcome.
- **C.** Measurements can be costly and time-consuming.
- **D.** All of the above

8. Which of the following statements is true?
- **A.** The value of a measurement is a direct function of the cost to obtain it.
- **B.** Measurements can be done only on things with no uncertainty.
- **C.** If a thing is difficult to measure, it's probably not as important to a decision.
- **D.** The value of a measurement is partly a function of the uncertainty associated with that variable.

9. Why are decision makers in organizations often less informed than they could be?
- **A.** They presume that some things are totally immeasurable.

B. They use traditional statistical methods to describe an intangible quantity.
C. They don't rely enough on experience and expert opinion.
D. They don't isolate and eliminate all uncertainty.

10. What is/are example(s) of a "micro-decision" to which the author refers?
A. Small, inconsequential investments
B. Small corrections to projects
C. The choice about what to measure about a decision and how much to measure it
D. All of the above

11. Which of the following statements about quantitative models is false?
A. They don't have uncertainty.
B. They tend to be more reliable than intuition.
C. Studies indicate that they perform better than human judgment alone.
D. They help to optimize the reduction of uncertainty.

12. Which is a valid reason for wanting to measure something?
A. Upper management has suggested that it's a good idea.
B. It's easy to do.
C. It ultimately informs a decision of some kind.
D. Any uncertainty in a decision process can lead to catastrophic consequences.

13. While the author stresses that "anything can be measured," why does he *not* also say that everything *should* be measured?
A. The second statement is practical only when applied to micro-decisions.
B. The second statement is contrary to basic economic measurement principles.
C. The second statement applies only to cheap measurements.
D. The second statement applies only to an organization's "core values."

14. True or False: Those who work in business tend to employ careful measurement methods more often than those working in the physical sciences.
True
False

15. Which of the following are examples of "power tools" as described in the book?
A. Proofs based on probability axioms
B. Spreadsheets
C. Tables
D. A list of mathematical laws of statistics to memorize
E. All of the above
F. B and C

16. What is the purpose of "power tools" as described in the book?
A. To teach us how to mathematically derive fundamental principles of statistics
B. To take apart each problem and make sure we understand every detail of the process
C. To make statistics practical to a wider audience
D. To help us quickly look up formulas

17. How do most scientists handle statistical measurement problems required for research?
A. They use software to analyze data and they copy output to their research articles.
B. They have committed all the required equations to memory.
C. They can derive all required equations from fundamental axioms.
D. They hand their data over to PhD statisticians for analysis.

18. Which of the statements below best describes the purpose of this book?
A. It discusses all types of measurement problems specifically.
B. It provides a framework for measurement that can be applied to any problem.

C. It specifically mentions a small number of areas in which measurement methods may apply.
D. It tells us why we should refrain from measurement whenever possible.

19. The methods of the book won't apply to which of the following so-called "intangibles"?
A. The chance of a given political party winning the White House
B. Public image
C. The productivity of research
D. Management effectiveness
E. None of the above

20. What are some of the common misconceptions about statistics?

21. Provide three examples of alleged intangibles, or items that many might consider to be immeasurable. Keep track of them as you study the book and propose ways to measure them.

22. What is the first step of the Applied Information Economics framework?

23. Within the Applied Information Economics framework, when do you know it's okay to stop measuring?