Part I

The Relationship Between Intellectual Capital and Corporate Value

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Introduction

Intellectual capital exploded onto the business scene in the 1990s. When *Fortune* magazine published Tom Stewart's article "Brainpower," in 1991, it was the first article on the topic to appear in a national business magazine. By 1998, a number of books and dozens of articles in professional journals and trade magazines were devoted to the topic, to say nothing of significant coverage in the popular business magazines such as *Fortune* and *Forbes*. In 1999 alone, over a dozen conferences were held around the world on intellectual capital management in one form or another.

In 1999, *CEO Magazine* and Arthur Andersen hosted a roundtable luncheon for chief executive officers (CEOs) interested in discussing intellectual capital (IC) and its impact on the firm as we know it. The luncheon drew 17 CEOs representing both manufacturing and service industry companies. All were intrigued by the potential hidden value that the intellectual capital perspective suggests lies untapped within their businesses, but none knew what kinds of value they could obtain from their company's intangible assets or how they might go about it. They just knew that there was hidden value in their companies and that it was somehow wrapped up in the thoughts, skills, innovations, and abilities of their employees. They wanted to learn more about this value: how to harness it, direct it, and extract value from it.

This book is written for those CEOs and for anyone else who wants to know how to extract the hidden value that resides within the firm's intellectual capital. As of this writing dozens of firms actively engage in extracting value from their IC. The people directing the activities for these firms have formed a community (called the ICM Gathering) to share their ideas and success stories. With the exception of a very few proprietary bits of information that could be useful to competitors, these firms are willing to share their knowledge, and this book draws heavily on their experiences. The purpose of this book is to help businesses profit from one of their most important assets, their intellectual capital.

WHAT IS INTELLECTUAL CAPITAL?

The idea of capital as a euphemism for a strategic business asset is not new. Economists frequently describe the basic resources necessary for an industrial enterprise in terms of the three classic kinds of assets: land, labor, and capital (here capital refers to financial and other economic assets). But the idea of intellectual capital is a new one; it brings to the foreground the brainpower assets of the organization, recognizing them as having a degree of importance comparable to the traditional land, labor, and tangible assets.

If a survey were conducted, there would be agreement that many modern companies are filled with intellectual capital: law firms, consulting firms, software companies, computer companies to name but a few. But if the survey went on to ask people to define what intellectual capital is, there would be a wide range of answers. These answers would not converge onto one simple definition of intellectual capital, but rather on many. The range of views and the number of terms used to describe and define intellectual capital are broad, without a clear focus, and often confusing. Some of the same terms appear in many of the definitions yet seem to have different meanings in each.

For example, the following list of "capitals" is frequently, and differently, used in descriptions or definitions of intellectual capital: human capital, customer capital, stakeholder capital, cultural capital, relationship capital, organizational capital, structural capital, process capital, and economic capital.

In contrast to the list of confusing and ever-changing *types* of capital, there is substantial agreement on the activities and elements that constitute the capital of interest here: intellectual capital. Picture the elements of IC as balloons in a pile. They might look like Exhibit 1.1. If the balloons were piled on the floor of a room, each observer in a different part of the room would have a different perspective on intellectual capital. Someone interested in knowledge or knowledge management would see one face of the pile. From another perspective, the elements of intellectual capital would present a different face.

The diversity of opinion on just exactly what intellectual capital is results from the wide range of interests and perspectives on the subject. Each definition is consistent with the perspective and interests of its users and understandably often neglects or ignores the interests or perspectives of others. The users of intellectual capital tend to fall into several groups as

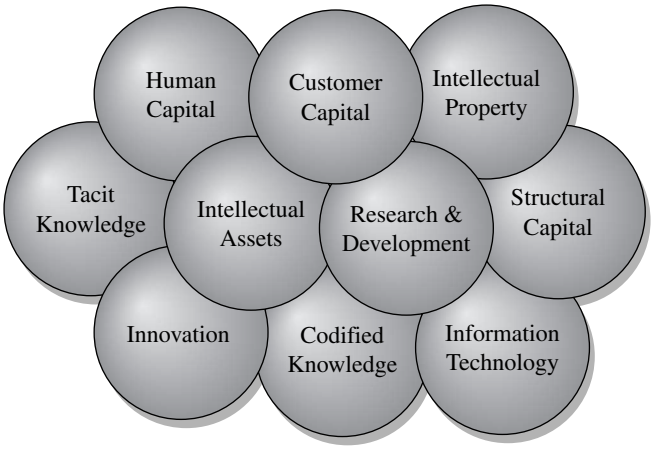

Exhibit 1.1 Elements Comprising Intellectual Capital

listed below, each with strongly held and sometimes vehemently defended points of view.

- *Knowledge and learning*. People with these interests tend to see human capital and the tacit components of intellectual capital in the foreground. They are concerned primarily with the creation of new or more knowledge and methods and environments in which creative processes can be most productive.
- *Knowledge management*. This term is often used as a synonym for computer-based information systems. People with this area of interest concern themselves with the identification of data or information, where it resides, where it needs to be, and how to get it from point A to point B in the most efficient manner.
- *Innovation management*. This term is sometimes used to describe the management of research and development (R&D). People with this interest focus on how to improve the efficiency and effectiveness with which ideas are generated and screened to identify those of greatest interest or value to the organization.
- *Capital markets*. People with an interest in capital markets see intellectual capital as a business asset and are concerned with the *amount* of a firm's intellectual capital, how it is valued, how its value affects the company balance sheet, and how to provide value information to current and potential stockholders.
- *Shareholders*. People in this group have a financial interest in a business enterprise. They see the firm's intellectual capital as a business asset and are interested in both the amount and the use of a firm's intellectual capital. Their interest usually centers on how the intellectual capital can be focused and leveraged to improve profitability or strategic positioning.

- *Company managers*. These are the people who manage the firm's intellectual capital. They, too, see it as a business asset, but their focus is on how to manage it in order to increase both its amount and, more important, its ability to increase cash flow. Company managers involved with intellectual capital are most often focused on creating the firm's *future* cash flow, economic profit, and sustainable competitive advantage.

Exhibit 1.2 illustrates how the view of IC from different perspectives results in different elements appearing in the foreground and background of each view.

HOW DOES IC BRING VALUE TO A FIRM?

Once a firm understands that it has intellectual capital, how does it convert it into something of value? The answer is that *it*

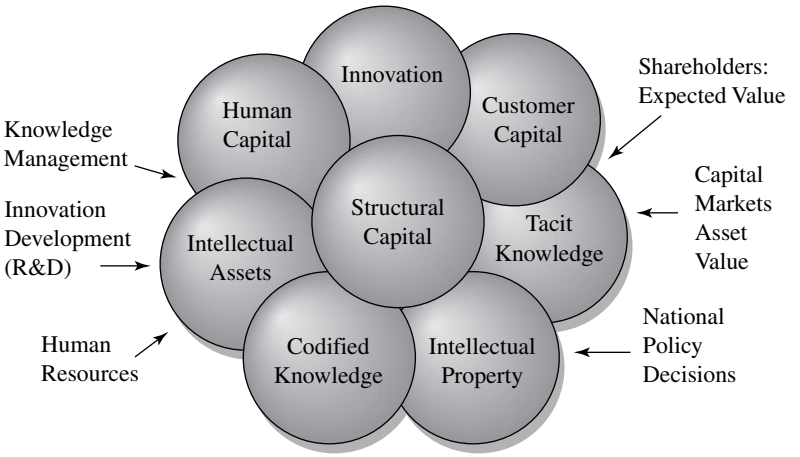

Exhibit 1.2 Different Perspectives on Intellectual Capital

depends! For example, to a company's chief financial officer something is valuable to the extent that it has a positive effect on the firm's financial statement. CFOs tend to ask how much revenue or profit this "IC stuff" generates on a sustained basis. In contrast, a marketing executive may find the strategic positioning made possible by the firm's IC to be valuable. At a recent meeting of the ICM Gathering, member companies, all sophisticated in extracting value from their intellectual capital, were asked to describe how their firms had received value from their intellectual assets. The list that follows shows their response.

Profit Generation

Income from products or services, through:
- sale
- licensing royalties
- joint venture income
- strategic alliance income

Income from patents, through:
- sale
- licensing royalties
- joint venture income
- donation (tax write-off)

Price premiums

Increase in sales, through:
- convoyed sales

Strategic Positioning

Market share

Leadership (innovation, technology, etc.)

Standard-setting

Name recognition, through:

- branding
- trademarking
- reputation

Acquiring innovations of others
Customer loyalty
Cost reductions
Improved productivity
Repeat sales
Long-term sales

On average, each of these companies was receiving four or five kinds of value from its intellectual capital. The value many of these firms receive from their IC is the result of a well-reasoned, well-planned, and well-executed set of management initiatives designed to ensure that specific forms of value deemed important to the business strategy are routinely extracted from the firm's intellectual capital.

STRATEGY AND ITS EFFECT ON VALUE

Different kinds of firms use different strategies to obtain different mixes of value from their intellectual capital. Firms that sell physical products often protect their product innovations by patenting them. The profits of these firms derive from the sale of differentiable products. In other words, they seek innovations from their human capital that will make the company's products different from those of their competitors and attractive to customers. Such firms are likely to seek value from their IC in the form of income from product sales. They may also be expected to seek value in the form of strategic positioning, specifically by creating a reputation or image and using it to generate customer loyalty.

Other kinds of firms profit by selling the knowledge of their human capital. Consulting firms, accounting firms, and law firms are examples. The value these firms can expect to obtain from their intellectual capital is in the fees they receive for services provided to their clients. In addition to income for services provided, these firms may also seek value in the form of reputation or image. The fundamental nature and functions of a firm may be a primary determinant of its strategy and the kind of value it can and should extract from its intellectual capital. The point can be illustrated by a description of four different kinds of firms.

1. *Differentiated products company*. This type of company earns its profits from the sale of differentiable products. Companies in this category sell products in a retail environment. Hewlett-Packard is a good example of this kind of company because its profits derive from product sales and its IC focuses on product innovations that allow it to charge a premium price.
2. *Commodity products company*. This type of company earns its profits from the sale of commodity products, for example bulk chemical manufacturers. Such firms sell tonnage of commodity chemicals to long-term customers. Its innovations tend to focus on reducing manufacturing costs.
3. *A network services company*. This type of firm uses technology to create a network over which customers communicate with one another (i.e., telecommunications/wireless services company). The network becomes the distribution channel through which the firm markets its products and services. Profits are derived from customer "network time or use." The business is driven by market share, which itself is strongly affected by the "quality" of the network and the attractiveness of products and services offered. Innovation focuses on creating, improving, and maintaining network quality and on creating and im-

proving products and services. Telephone and utilities companies are good examples of this kind of company.

4. *A direct services company*. This kind of service company charges an hourly fee for providing its services. Law firms, consulting firms, and accounting firms are examples of direct services companies.

Exhibit 1.3 shows what kinds of value each kind of company would be likely to seek from its intellectual capital. The product firms seek value through product income across the spectrum of income-producing mechanisms. Services firms seek income predominantly through a narrow spectrum of mechanisms.

While all firms seek strategic positioning value, there is significant variability in the amount and kind of strategic positioning value desired. Differences in company type and/or strategy may lead to significant differences in the kind of value a firm expects to realize through its IC. Some kinds of firms (a telecommunications firm, for example) seek a significant portion of the value from their IC in the form of strategic position, image, reputation, market share, etc. Other firms seek to realize value in the form of income or revenue. Still others seek IC value in the form of strategic position or a mixture of income and strategic position. Each firm must develop an appropriate strategy for realizing the value(s) it seeks from its IC. How should it define and measure these values? What activities does it need to undertake to produce these values? How does a firm ensure that the value it wishes to extract from IC is appropriate for its business strategy?

How can a company manage the extraction of value from both intellectual property and intellectual assets? How does anyone value firms, such as these where a significant portion of the firm's value is associated with its intangible intellectual capital?

This book attempts to answer these questions and others that follow from them.

	Differentiated Products	*Commodity Products*	*Network Services*	*Direct Services*
Profit Generation				
Product or Svc.				
Sale	X	X	X	X
License		X		
Joint Venture	X	X		
Stgc. Alliance	X	X		
IP Income				
Sale	X	X	X	
Lic. Royalties		X	X	
Joint Venture	X	X	X	
Donation	X	X	X	
Price Premium	X		X	X
Increase in Sales				
Convoyed	X			X
Repeat	X			X
Long-Term	X			
Cost Reduction	X			
Productivity Imp.	X			
Strategic Position				
Market Share	X		X	
Leadership	X		X	X
Standard Setting	X		X	X
Name Recog.	X		X	X
Branding	X		X	X
Trademarking	X	X	X	X
Reputation	X	X	X	X
Cust. Loyalty	X	X	X	X

Exhibit 1.3 A Matrix of Different Value Sought from IC by Different Kinds of Firms

A BRIEF HISTORY

As mentioned earlier, the subject of intellectual capital appeared on the business scene in the 1990s, as if shot from a cannon. By the end of the decade, the term intellectual capital had been transformed from an interesting new idea to a frequently used and well-understood phrase in the business lexicon.

However, this history actually began in the early 1980s, as managers, academics, and consultants around the world began to notice that a firm's intangible assets, its intellectual capital, were often a major determinant of the corporation's profits. For example, in Japan, circa 1980, Hiroyuki Itami noticed the difference in performance among Japanese companies, and after some study attributed it to differences in the firms' intangible assets. His published analysis concluded that intangible assets are "unattainable with money alone, are capable of multiple, simultaneous use, and yield multiple, simultaneous benefits."[1] In 1986, Karl-Erik Sveiby, the manager and owner of a Sweden-based publishing company, published *The Knowledge Company*—a book, written in Swedish, that explained how to manage these intangible assets. It was the first book in the world to deal with this subject and inspired the very early "Swedish Movement" in knowledge management and intellectual capital in both research and practice. Sveiby, today a Professor at Macquarie Graduate School of Management, and a leading thinker in the field, noted that:

> Managers in some of the fastest-growing and most profitable businesses focus on knowledge, see their businesses from a knowledge perspective, and act as if their intangible assets are real assets. By freeing themselves from the mental straitjackets of the industrial age, some of these pioneer managers have found, seemingly by accident sometimes, a wellspring of limitless resources arising from the infinite human ability to create knowledge and

from the convenient fact that, unlike conventional assets, knowledge grows when it is shared.[2]

During the 1980s the prevalent view of business strategy was based on the "competitive forces" perspective pioneered by Michael Porter of Harvard University. This approach views strategy formulation as relating to a company and its competitive environment. According to this view, competitive advantage lies with the ability to find "holes" in the market and then to fill those holes with products and services while defending one's market position against all possible competitors. During the course of the 1980s others were formulating an alternative view; some American economists developed the view of business strategy based on the resources of the firm and the efficiency with which they are used. This resource-based view of business strategy postulates that firms can create strategic advantage over their competitors by developing unique combinations of tangible and intellectual resources and capabilities.

The resource-based perspective notes that firms are not homogeneous, that they have very distinct individual characteristics and resources, such as unique buildings, facilities, people, and ideas. Further, each firm's resources are "sticky," at least in the short run. That is, firms are to some degree stuck with what they have and may have to live with what they lack. The stickiness arises for two reasons. First, business development is an extremely complex process. Firms lack the organizational capacity to develop new competencies quickly. Second, some assets are simply not readily obtainable on the open market, for example, tacit know-how. Firms with superior systems and structures (i.e., resources) are profitable to the degree that they can develop advantages such as markedly lower costs or markedly higher quality or product performance. Whereas the competitive forces strategy operates "downstream" of the resource allocation and internal operations of the firm, the resources-based strategy derives competitive advantage

"upstream" of product markets. It rests on the firm's idiosyncratic and difficult-to-imitate resources and their use.

In 1986, University of California Berkeley business school professor David Teece wrote "Profiting from Technological Innovation," an article that pulled together much of the then-current thinking of members of the resources-based strategy school. He identified a series of steps necessary for the extraction of value from innovation. The explication of these steps meant that for the first time managers could learn, and subsequently teach their staffs, how to maximize the value of their firms' innovations.

In 1991 and 1992, Tom Stewart, a staff writer at *Fortune* magazine, wrote two articles on "brainpower" in which he discussed the idea that the company's intellectual capital—in other words, its employees—had much to do with its profitability or success. Also in 1991, Skandia AFS organized the first corporate intellectual capital office and named Leif Edvinsson as its Vice President for Intellectual Capital. Edvinsson's mission was to learn how others were managing intellectual capital and using it to generate profits.

In 1993, The Dow Chemical Company, interested in developing new profits from its intellectual capital, began trying to identify ideas or innovations that might have been previously overlooked and to select and develop those ideas with the greatest profit-making potential. Dow named Gordon Petrash as its first Director of Intellectual Assets.

After reading David Teece's article, I became fascinated with the idea that there could be a systematic set of decisions and rules that companies could use to extract profits from their innovations. I refined and expanded on Teece's ideas with a view toward developing a consulting service focused on developing profits from innovation. Teece and I collaborated on our first consulting project in this area in 1990, giving a set of day-long seminars to DuPont executives. I continued to develop the profiting theme. In 1993, I met Gordon Petrash and Leif

Edvinsson and we eventually created an informal network of companies that were actively developing profits from their intellectual capital. This was the genesis of the ICM Gathering.

By the mid 1990s it was becoming clear that there were two separate but related paths of thinking about intellectual capital. One path, the knowledge and brainpower path, focused on creating and expanding the firm's knowledge (as espoused by Stewart, Edvinsson, Sveiby, and others). The other path, the resource-based perspective, was concerned with how to create profits from a firm's unique combinations of intellectual and tangible resources (Itami, Teece, Sullivan, and others).

THE ICM GATHERING

Companies interested in profiting from the intellectual assets they already owned spurred the evolution of intellectual capital management. In Skandia's case, intellectual capital included both its employees and its network of insurance brokers. In Dow's case, intellectual capital comprised the ideas and innovations stuffed into the file drawers and folders of its scientists and engineers. Intellectual capital management became the vehicle by which companies came to learn more about their intellectual capital. By 1994 there were perhaps a dozen companies around the world engaged in the active extraction of profits from their intellectual capital.

Petrash, Edvinsson, and I agreed that it would be highly interesting and instructive to convene a meeting of representatives of all of the companies who were actively extracting value from their intangible assets. This would allow us to get each company's perspective on both intellectual capital (i.e., what it is) and how to profit from it (i.e., how to manage it). We gathered eight of the twelve companies together in January 1995 (Dow, DuPont, Hoffman LaRoche, Skandia, Hewlett-Packard, Hughes Space Systems, and the Law and Economics Consulting Group). At the end of an opening round of show-and-tell it

was clear that each company saw intellectual capital differently and managed its resources in this area differently as well. Through subsequent discussion we came to understand that while using the same terms, each company defined them differently. We proceeded to develop a common set of definitions and descriptions. Using this newly agreed-upon set of terms, we learned that although we each approached intellectual capital differently, we were all dealing with the same thing.

The company representatives involved in this meeting felt as if they had found long-lost relatives. Each had been operating in a vacuum without knowing there were others also trying to deal with the same problems. The group decided to meet again. In 1999, a group of thirty companies met three times a year as the ICM Gathering.

At its first meeting, the ICM Gathering determined that it needed to agree on a definition of the term "intellectual capital," as well as an understanding of its major elements. In pursuing that goal, the members first created a definition of IC that was consistent with their collective responsibilities to their companies. Because the participants in the Gathering held positions such as chief IP counsel, director of intellectual asset management, laboratory director (with financial responsibility), and licensing director, they were more focused on the creation of profits than the creation of knowledge. Thus it is not surprising that the Gathering defined intellectual capital as "knowledge that can be converted into profits."

A graphical representation of intellectual capital was created to depict the components of IC and their relationships to one another. This graphic, shown in Exhibit 1.4, shows the major elements of intellectual capital: humans (with their embedded tacit knowledge) and codified knowledge. Codified knowledge has come to be called the firm's "intellectual assets" (IA). When someone's tacit knowledge is committed to paper (it could also be canvas, electronic media, or any other medium), it becomes a codified asset of the firm. Some of these codified assets (called "intellectual assets") are legally protected as

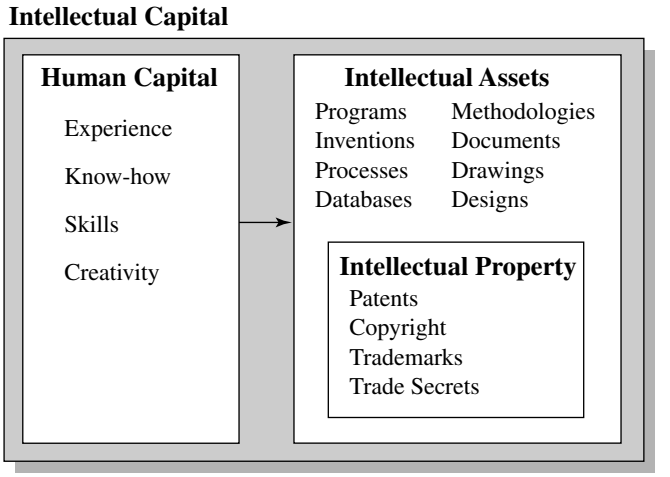

Exhibit 1.4 Intellectual Capital and Its Major Components

patents, copyrights, trademarks, trade secrets, or semiconductor masks. Intellectual assets that are legally protected are referred to by the legal term "intellectual property."

OVERVIEW OF THE BOOK

This book is about the value intellectual capital brings to an organization as well as how to determine the specific kind of value desired; how to organize the firm in order to systematically obtain the desired value; and how to measure the value realized (whether in terms of its impact on company value (stock price) or company strategic position). The intellectual capital management portions of the book relate to all knowledge companies, although many of the examples relate to technology-based companies, the kinds of companies comprising the ICM Gathering.

This first chapter has highlighted many of the key ideas discussed in later chapters. The reader interested in knowing

the "map" of what is contained in the book, and where specific information is located, should find the following outline helpful.

The book is comprised of three major parts:

- Part I The Relationship Between Intellectual Capital and Corporate Value (Chapters 1–4)
- Part II Valuing Knowledge Companies (Chapters 5–7)
- Part III Managing Intellectual Capital (Chapters 8–12)

Part I The Relationship Between Intellectual Capital and Corporate Value

Chapter 1 opens with a discussion of intellectual capital and its importance to the audiences to be addressed. The chapter outlines some of the basic concepts underlying corporate value: quantitative value (in the form of cash flow (current and future)); and qualitative value (strategic position and others).

Chapter 2 discusses what a framework is and how it is useful to managers. The chapter outlines the four key elements of the IC framework: the definition of intellectual capital, an economic model of an IC company, the linkage between strategy, IC, and profits; and a model of a system for managing the firm's IC.

Chapter 3 discusses the kinds of value that intellectual capital provides to the firm. These include direct and indirect, offensive and defensive, and internal and external value. Although these different kinds of value have now been made explicit, the link between the basic innovation that is the source of the value and the realization of that value has not yet been defined. Two further questions remain: How does a firm identify the activities within the firm that make the IC value appear? How does a firm manage and measure progress toward achieving the anticipated value?

Chapter 4 deals with the ways managers may determine which activities are required to produce the firm's anticipated IC value. It is also concerned with how managers may better focus their activities and resources. In cases where there are two, three, or more kinds of IC value anticipated, and all may not require the same set of activities to produce the value, the chapter discusses how managers can prioritize their resource allocation decisions.

Part II Valuing Knowledge Companies

Chapter 5 discusses the different reasons for valuing a knowledge company and for each of these reasons, the methods and approaches that are the most useful. The chapter also discusses why the accounting framework is not useful for valuing intangibles and why a different approach to valuation is more appropriate in the case of intellectual capital.

Chapter 6 identifies a series of steps for companies wishing to implement an ICM capability for managing their intellectual capital. While the chapter is focused on the issues facing technology companies, much of what is included relates to all knowledge companies, not just those commercializing technology. The areas of greatest importance are highlighted as defining the firm's vision and long-term strategy, describing the context within which the firm operates, defining the role(s) for intellectual capital, designing the intellectual property and intellectual asset management systems, and describing and implementing the IC management capability desired by the firm. The steps outlined in this chapter are gleaned from the experiences of all of the firms in the ICM Gathering.

Chapter 7 addresses the following questions: When determining how much to pay for a knowledge company being acquired, how does the potential purchaser make the calculation? Is the frame of reference an accounting or financial one? Or is it an

intellectual capital one? Too often, companies being acquired are valued based on old-fashioned or no-longer-applicable methods. This chapter discusses some new ideas about how to value knowledge companies for acquisition or merger.

Part III Managing Intellectual Capital

Chapter 8 covers extracting value from intellectual property. Intellectual property management is a key set of concepts, methods, and processes designed for aligning the intellectual properties of the firm with its business strategies and objectives. A firm that wants to maximize the value extracted from its portfolio of intellectual properties must have several key elements in place. This chapter describes the key elements involved in extracting value from intellectual property, including key decisions and decision-making processes, including who is involved, what information is needed by the decision-makers, what work processes are necessary to provide this information, what databases are needed to store the information, and how each decision will be implemented.

Chapter 9 discusses the similarities and the differences between IP and IA and the implications this has for the IC management process. Extracting value from intellectual assets, the company's codified knowledge, builds upon the system for extracting value from intellectual property. Intellectual asset management (IAM) is similar to intellectual property management (IPM) in that it uses the same conceptual basis that specifies innovation and complementary assets as the primary sources of value for the firm.

Chapter 10 describes the relationship between knowledge, knowledge types, and intellectual capital. It introduces the relationship between knowledge and profits, the concept of value creation and value extraction, and shows how a firm can determine whether the two sets of activities are in balance.

Chapter 11 contains several key management concepts relating to the firm's human capital, from the perspective of someone interested in extracting value. These include the concept of core human capital as well a discussion of the two areas of focus for core human capital: creativity and productivity.

Chapter 12 lays out a step-by-step approach for how companies can create an in-house capability for managing their intellectual capital, building on the information in the preceding chapters and the knowledge of the companies in the ICM Gathering. Using the information in this chapter, firms can improve, start up, or modify their own capability for extracting value from innovation.

Appendix

The basic language, terms, and definitions used in the text are described in the appendix. It also includes a discussion of the Value Extraction models for intellectual capital and for knowledge companies. It describes some of the basic concepts underlying vision, strategy, value, and valuation. The appendix also discusses principles underlying value creation and value extraction, including concepts and general strategies as well as the approaches used by specific companies. It identifies the sources of value for knowledge companies and discusses the mechanisms used to convert value into cash. It reviews the decision to commercialize, in which companies determine the number and kind of mechanisms they will use to develop cash from their innovations.

NOTES

1. Itami, pp. 12,13.
2. Sveiby, p. x.