

EDISON IN THE BOARDROOM *REVISITED*



How
Leading Companies
Realize Value
from Their
Intellectual Property

SUZANNE S. HARRISON
AND PATRICK H. SULLIVAN

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Second Edition

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We dedicate this book to all ICM Gathering members, past and present. Your individual and collective wisdom and experiences created the best practices and underlying principles that are the basis for this book. Through your willingness to openly share and build upon each other's ideas, you have contributed significantly to our community's understanding of how to successfully manage that most complex of company assets: intellectual property.

Good fortune is what happens when opportunity meets with planning.
The value of an idea lies in the using of it.
If we all did the things we are really capable of doing, we would literally
astound ourselves. . . .

—Thomas Alva Edison

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Acknowledgments

The contents of this book represent a snapshot of the current state of understanding of the ICM Gathering companies as they continue the journey they began in 1995. At that time, seven companies met to share ideas about “Intellectual Capital” and how to manage it. The group has been meeting three times each year and continues to share its ideas on new and better ways to create and extract value from intangibles such as intellectual property. To fully acknowledge all of the people who contributed to the concepts and best practices in this book, we must thank everyone who has ever participated in a Gathering meeting, because each meeting inevitably produced counterintuitive insights into all aspects of intellectual property management.

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Chapter 1

Introduction

The lightbulb and its inventor, Thomas Alva Edison, have become synonymous with invention. When we think of a bright idea, we envision a lightbulb. When we think of prolific inventors, Edison usually tops the list. But the true legacy of Edison did not stop with invention; it expanded to include innovation—the subject of this book.

Invention is merely the conception of an idea—the start of a process that will eventually produce value. *Innovation*, by contrast, is the life of an idea. It begins with “invention” and ends with value that can be captured and demonstrated in financial statements and, yes, in the cash box. An invention becomes an innovation when it is successfully introduced into the marketplace. And this is true whether the “product” emerges as tangible goods or an intangible service.

It is innovation, not invention, that generates corporate profits and competitive advantage. Far too many companies focus solely on invention at the expense of devoting resources and attention to the full process of innovation.

Most companies are fascinated by invention—from proof of concept to launch. Much energy goes into creating an initial working version of a product, scaling it to achieve industrial levels of production, and creating and testing a beta version.

To some companies, it may seem that, at this point, the job is done. In truth, it is only beginning.

To extract commercial value from an invention, a company must do more. It must *innovate*, by creating the pipeline of business capabilities needed to transform the invention into a marketable product and positioning it in locations where the customer can obtain it. This means creating (or contracting for) the key business assets or capabilities needed to convert the invention into something a customer can buy. This may include manufacturing and distribution, advertising, financing, packaging, and even legal protection for the original idea and sometimes also for additional inventions that will support the creation of the eventual product.

For centuries, companies have converted ideas into profits by embedding their new concepts (legally protected or not) into products that are sold or bartered. In recent decades, however, the emergence of intangibles as important business assets has revolutionized the way companies get value out of their ideas. In addition to embedding an invention into a product to create value (classical innovation), ideas are licensed, sold, or bartered in their raw state. But for greater amounts of value, companies often link the invention to the firm's complementary capabilities, thus creating new and marketable innovations. In some cases, this value through innovation fails to recapture the original investment; in other cases it turns a profit; and in yet other instances it makes an ongoing fortune that can be shared all along a value chain.

So how are companies profiting from their ideas? In brief, they are deriving value through intellectual property (IP) management. But to do this requires a new mind-set. Intangible assets, much more than tangible ones, can be difficult to value and to measure. *Edison in the Boardroom*, first published in 2001, described the real-life experiences of companies at different levels of IP sophistication and how they manage their intellectual property for business value. When Davis and Harrison wrote the earlier edition of *Edison* a decade ago, they wanted to create a simple framework to measure the differences in how IP management is

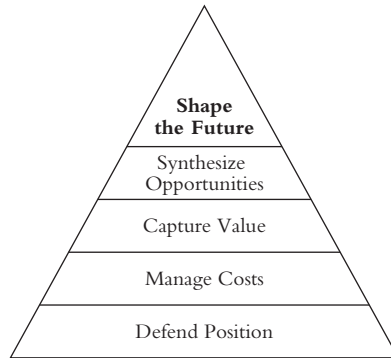


Figure 1.1 The Value Hierarchy

practiced by a range of companies. Ultimately, they identified five different levels of IP management that they had observed—from the primary need to defend a concept to more sophisticated use of IP to shape the future. They called this the Value Hierarchy (see Figure 1.1) and it is discussed later in this chapter and throughout this book.

The pyramid describes how companies used their IP portfolio to support the firm’s business and what it was trying to accomplish. To learn best practices for companies residing at each level of the pyramid, Davis and Harrison turned to the ICM Gathering, a group founded in 1995 that focused on discovering how to get value out of a firm’s intangibles.¹ The Gathering companies helped revise the descriptions of each level, discussed the processes involved, and eventually provided examples of best practices for companies at each level, based on their own applications of the principles of IP management, which they had evolved through The Gathering for themselves.

Why Update *Edison in the Boardroom*?

Over the decade since the original *Edison* was published, the ICM Gathering companies have continued to meet and discuss how to create and extract ever more value from their intangibles, particularly in the face of the rapidly changing business and IP environments.

Sharon Oriel, CEO of Talisker Consulting and a member of The Gathering since its inception, explains, “Gathering companies are able to

share what they do to manage their patents, so that Gathering companies are able to learn from each other and yet no competitive advantages are lost by the sharing company. Why is that? The reason is that the ‘what’ is shared and discussed, but not the ‘how.’ Since each company needs to adapt the ‘what’ to their own company, each company is free to create a competitive advantage with how they implement the new IP process[es].”

But many of the best practices mentioned by Gathering members in the original *Edison* began to change. As the first decade of the new century progressed, significant changes began to appear, along with changes in the world of technology, such as cloud computing,² Skype, and the iPad. For their part, the grantors of intellectual property rights revolutionized their own technology through such innovations as the electronic Priority Document Exchange (PDX).³ Gathering companies began to recognize that their IP management techniques were evolving to reflect the changing state of the IP and business worlds.

Eventually the Gathering companies began to discuss whether to update the original *Edison* book to reflect the current state of play. They decided to share their own experiences and observations as they related to the levels of IP management sophistication, and best practices associated with each new level.

Julie Davis’s professional interests had shifted away from IP management toward images analysis in IP litigation. Suzanne Harrison turned to her ICM Gathering co-facilitator and long-time collaborator, Patrick Sullivan, and soon the new edition was under way. Originally seen as a cut-out-the-old-stuff and paste-in-the-new-stuff book, it soon became apparent that this would not be possible. The changes in the business and IP environments were too significant and their impact on IP management too great. A total update was needed.

This book retains the format of the original edition, as well as a small amount of its material. Over 85 percent of the content of this book is new:

- We’ve added a chapter describing the changes that have occurred in the environment within which IP is managed by companies in 2011 as compared with 2001.
- While we have retained the pyramid icon, the focus of each level has been updated to reflect the changes that have occurred in the IP management environment over the past decade.
- All of the best practices for each level have been upgraded or revised.

- The generic IP management system has been significantly updated to reflect the latest practices of Gathering companies.
- We've added a chapter that speaks directly to companies asking themselves what they should do if they aren't even sophisticated enough to qualify for the first level of the Edison pyramid.
- This book differentiates between invention and innovation and shows how Gathering companies are managing that distinction to benefit their companies.
- In the first edition, the focus for companies was largely inward; what they could and should do to match their IP management activity with what they wanted to accomplish. In *Edison Revisits the Boardroom* we show how IP-sophisticated companies are focused on using IP to gain strategic position outside of the company.
- In the first edition, optimizing the interaction between IP and R&D was simple and relatively direct. In *Edison Revisits the Boardroom*, a core premise of the future is that IP and R&D will need to become intertwined. This book discusses and shows examples of how companies use Open Innovation to expand their invention and innovation capabilities, as well as use it to improve the company's profit position.
- We've added several new Appendices:
 - Significant Developments in Intellectual Property Law in the Past 10 Years.
 - The Rise of Patent Aggregators.
 - An Update on IP Damages.
- In this book we have added a number of topics that have become part of the IP management set of capabilities for Gathering companies:
 - Determining the Context of the Future.
 - Influencing and Creating the Future.
 - Developing Make versus Buy Decision Processes.
 - IP Metrics and Reporting.
 - Managing IP Risk/Reward Trade-Offs.

There is, however, an important distinction about the new book that should be called out. *Edison in the Boardroom Revisited* is a book about patents. This does not imply that there is nothing new in either copyrights or trademarks; it is merely a reflection that the ICM Gathering has spent much of the past three years focusing on how changes in

the patent ecosystem have affected their bottom lines and their need to create better processes to manage those impacts. But one important part of this book has not changed since our first edition: the history of how this book began.

A Brief History

The authors first became interested in the business value of intellectual property in 1987 after reading a research paper by Professor David Teece of the Haas School of Business at the University of California, Berkeley.⁴ Even prior to Teece's work, it was common knowledge that patents, trademarks, and copyrights have value. But Teece's concept went further. His hypothesis that they have *additional* economic value beyond their defensibility was startling, as was Teece's concept of the steps companies could take to increase the amount of that value. It was to be seven more years until a few adventurous companies would begin methodically extracting economic value from their company's knowledge, know-how, and intellectual property.⁵

Historically, tangible assets held the greatest value for business and industry: cash, real estate, oil, gold, and so forth. But by the middle of the 1990s an invisible line was crossed and things that were *intangible* came to be of greater value.

In October 1994, Tom Stewart of *Fortune* magazine coined the term intellectual capital (IC), which he defined as the intangible assets such as skill, knowledge, and information. In late 1994, The ICM Group, LLC, a consulting company founded by the authors, began contacting all the companies who were actively trying to manage their intangible assets. In January 1995, representatives from seven of these companies assembled for a meeting to share what their IC efforts entailed. At that first meeting, the group defined intellectual capital as "knowledge that can be converted to value." They also determined that IC has two main components: human capital (tacit knowledge—ideas we have in our heads) and intellectual assets (codified knowledge—ideas that have been codified in some manner). Within intellectual assets, there is a subset of ideas that can be legally protected, and these are called intellectual property (IP). See Figure 1.2.

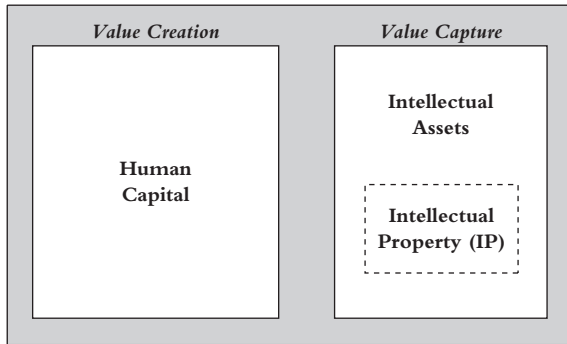


Figure 1.2 Intellectual Capital

The original group of seven companies that met in January 1995 has now grown to over 30 companies that meet three times a year to create, define, and benchmark best practices in the emerging area of ICM. This group is collectively known as the ICM Gathering. The Gathering has spent the past years working on creating and defining systems and processes for companies to routinely create, identify, and realize value from intellectual assets.

Early in its existence, The Gathering decided to share its lessons openly, reasoning that the more companies there were that practiced these lessons in practice, then the more companies there would be to learn from. To date the members of the ICM Gathering have produced five books (including this one) and more than four dozen published articles, all about capturing and realizing value from an organization's intellectual property.

This value is growing with each new generation. We all know that in-process research and development (R&D)—as well as the entire patent portfolio—has immense value to the firm, yet in accounting, value is not “accounted for” until it is realized or a transaction has occurred.

The businessperson's view of the world has been shaped largely by double-entry accounting, which was first created in 1494 by Luca Pacioli, an Italian monk. Believe it or not, this is fundamentally the same accounting system that is used by global corporations around the world today to calculate and report revenues, profits, and expenses, and make decisions about resource allocations, risk management, and investment returns. While accounting is very good at recording transactions that

have occurred in the past, it is not good at predicting future revenue streams. In addition, accounting only records transactions, so financial statements routinely exclude ideas that have not yet manifested themselves in a transaction.

In recent years, the amount of company value attributable to intellectual capital has increased dramatically. In a study of thousands of nonfinancial companies over a 20-year period, Dr. Margaret Blair, of the Brookings Institute, reported a significant shift in the makeup of company assets. She studied all of the nonfinancial publicly traded firms in the Compustat database. In 1978, her study showed that 80 percent of the firms' value was associated with its tangible assets, with 20 percent associated with its intangible assets. In 10 years, by 1988, the makeup had shifted to 45 percent tangible assets and 55 percent intangible assets. By 1998, only 30 percent of the value of the firms studied was attributable to their tangible assets, while a stunning 70 percent was associated with the value of their intangibles.

This study, often cited as support for assertions about the increasing portion of a firm's market value associated with its intangibles, was prescient, but flawed.⁶ Like many analysts of corporate value, Dr. Blair defines the value of a company's intangibles as the difference between its market value and the value of its tangible assets. But this definition treats IP as if it could be valued as an "asset." Our experience is different. We find that IP acts more like a mini-generator of revenue and income than it does as an asset. From our perspective, valuing IP as an asset is meaningless, whereas valuing it as a generator of value seems to more accurately reflect the kind of value it provides to the firm.⁷ It is best to analyze this for oneself; the market is too volatile to make such a determination. We agree, however, with Dr. Blair that the portion of a firm's value associated with its intangibles has increased dramatically and persistently over the past four decades, and for this finding we owe her a debt of gratitude.

Intellectual Property: The Big Three-Plus

Patents

A patent is typically defined as a grant extended to the owner of an invention (the individual inventor, or an entity that owns the

invention) that excludes others from making, using, or selling the invention, and includes the right to license others to make, use, or sell the invention. Patents are protectable under the U.S. Constitution, and under the Patent Cooperation Treaty of 1970, in Title 35 of the U.S. Code. Patent protection can be extended to inventions that are novel (new and original), useful, and not obvious. Some corporations have patentable inventions but choose to protect them as trade secrets, rather than filing for a patent.*

Patents may be issued for four general types of inventions/discoveries: compositions of matter, machines, man-made products (including design and bioengineering), and processing methods (including business processes). To obtain a patent, the inventor must send a model or a detailed description to the U.S. Patent and Trademark Office, which employs examiners who review applications. The average time between patent application and issuance is about 2.5 years, although the process may be much shorter or longer, depending on the situation.

Under current international trade law (as described in the most recent General Agreement on Tariffs and Trade), patents are issued for a nonrenewable period of 20 years measured from the date of application. Inventors being granted patents in the United States must pay maintenance fees. Federal courts have exclusive jurisdiction over disputes involving patents.

Trademarks

A trademark is the right to use a name associated with a company, product, or concept, as well as the right to use a symbol, picture, sound, or even smell associated with these factors. The mark can already be in use or be one that will be used in the future.

*A trade secret is “information, including a formula, pattern, compilation, program, device, method, technique, or process” that is kept a secret and that derives value from being kept secret. Many states have adopted the Uniform Trade Secrets law to govern this area.

(Continued)

A trademark may be assigned to a trade name, which is the name a company uses to operate its business. Trademarks may be protected by both federal statute under the Lanham Act, which is now part of Section 15 of the U.S. Code, and under a state's statutory and/or common law. Trademark status may be granted to unique names, symbols, and pictures, and also unique building designs, color combinations, packaging, presentation, and product styles (called trade dress), and even Internet domain names. Trademark status may also be granted for identification that does not appear to be distinct or unique, but that over time has developed a secondary meaning identifying it with the product or seller.

The owner of a trademark has the exclusive right to use it on the product it was intended to identify and often on related products. Service marks receive the same legal protection as trademarks but are meant to distinguish services rather than products. A trademark is indefinite in duration, so long as the mark continues to be used on or in connection with the goods or services for which it is registered, subject to certain defenses. Federally registered trademarks must be renewed every 10 years. Trademarks are protected under state law, even without federal registration, but registration is recommended. Most states have adopted a version of the Model Trademark Bill and/or the Uniform Deceptive Trade Practices Act.

Copyrights

A copyright is the right of ownership extended to an individual who has written or otherwise created a tangible or intangible work, or to an organization that has paid that individual to do the work while retaining possession of the work. Copyright protection grew out of protection afforded by the U.S. Constitution to "writings." Subsequent law (U.S. Copyright Act, U.S. Code in Title 17, Section 106) has extended this term to include works in a variety of fields, including architectural design, computer software,* graphic arts, motion pictures, sound recordings (for example, on audio compact discs and MP3 files), and videos. Any

*Uniform Trade Secrets Act, Section 1ff., 14 U.S.C.A. 541.

type of work may be copyrighted, as long as it is “original,” and in a “concrete medium of expression.” (Computer software, although intangible, is considered a concrete medium.)

A copyright gives the owner exclusive rights to the work, including right of display, distribution, licensing, performance, and reproduction. A copyright may also grant to the owner the exclusive right to produce (or license the production of) derivatives of the work. In general, a copyright lasts for the life of the owner, plus 70 years. “Fair use” of the work is exempt from copyright law. The fairness of use is judged in relation to a number of factors, including the nature of the copyrighted work, purpose of the use, size, and substantiality of the portion of copyrighted work used in relation to that work as a whole, and potential market for or value of the copyrighted work. Copyrights are protected under both state and federal law, with federal law superseding. A number of organizations promote the protection of intellectual property, including the World Intellectual Property Organization, which covers copyrights, patents, and trademarks.

The Edison Mind-Set

The growing emphasis on ideas is not new to the times. In Thomas Edison’s era, the key inventions were related to the airplane, lightbulb, telegraph, telephone, and automobile. Today key inventions are emerging around the Internet, software, and business processes. Thomas Edison personified the “creative genius” of the era when he said (in a phrase captured by his colleague Francis Upton):

Men are just beginning to propose questions and find answers, and we may be sure that no matter what question we ask, so long as it is not against the laws of nature, a solution can be found.⁸

The “we” here was no mere rhetorical device, but a new way of thinking. Thomas Edison is often romanticized as a maverick inventor—the creator of the lightbulb, the motion picture, the microphone, and

myriad other technologies. Less well known is his invention of the modern research laboratory using teams of inventors.

To be sure, Edison will forever be the very symbol of brainpower. In his lifetime, he would obtain 1,093 patents, including one for the incandescent electric lamp—a prototype of the “lightbulb” that would come to symbolize the “bright” idea. Other patents included those for the phonograph, the microphone, and the motion picture projector—technologies that would shape a century. His years of invention came at the outset of an era. Starting in the late nineteenth century, the United States would experience a steady rise in patents that would continue to the present, boosted by innovations in telegraphy, electricity, automobiles, airplanes, synthetics, aerospace, and most recently, high technology including the new Internet economy.

But despite the brilliance of Thomas Edison’s inventions, one might well say that his greatest contribution to society was not any particular discovery, but rather the creation of the world’s first research laboratories—two laboratories, in fact, in Menlo Park and West Orange, New Jersey. As one source notes, his workshops were “forerunners of the modern industrial research laboratory, in which teams of workers, rather than a lone inventor, *systematically investigate a problem.*”⁹ Edison, more than any other scientist of his day, knew that to generate ideas and successfully commercialize them required *sustained and methodical effort.*

The Lightbulb: A Brief History

The lightbulb may symbolize the quick flash of invention, but it also represents the long, slow process of bringing an idea to the marketplace. Known technically as the incandescent lamp, a lightbulb is simply a glass bulb enclosing an electrically heated filament that emits light. As simple as it may sound, this object was very difficult to produce, and had a significant impact on society.

Before Thomas Edison began working on the lightbulb, 20 inventors before him had similar insights, but nothing significant came of their efforts. For example, in 1802, Humphry Davy passed an electric current through a platinum wire and lit it up, but he did not protect or pursue this invention. In 1845,