

## Chapter 1

# Introduction

To many people, patents are associated with intelligence, pride and honor. Being granted a patent is considered a significant achievement. But even though obtaining a patent is certainly a milestone, it is absolutely not the ultimate goal.

Many researchers are not clear on when and why they need to file patents. One professor told me his group had developed a tool for teaching a machine to learn to imitate human's voices and decided to file a patent on his underlying speech technology. I asked him if he had thought about patenting his system including design, user interface etc. He said he thought he should focus on patenting the algorithm because it was the core of the system. Unfortunately, what this professor did not understand is that sometimes an invention on a system or user interface that seems to be trivial and less technical can often end up being a strong patent.

I have also heard stories of some companies filing patents on every single incremental improvement of their technologies because their goal was to create intellectual property (IP) for the company and thus, the number of patents counted. Such a strategy is time consuming, very expensive — and completely unnecessary. These types of examples demonstrate to me that there is much confusion among scientists, engineers, corporations and the general public about the purpose of patents, why and under what circumstances patents should be filed and what goals they should hope to achieve by filing a patent.

The focus of this book is to give scientists and engineers various technical, business and legal perspectives regarding patents and the

patenting process, with the ultimate goal of helping them create better and higher quality of patent assets that can be utilized.

This first chapter gives a brief explanation of the patent value chain, followed by an illustration of the scope and organization of this book.

## 1.1 Ideas to Assets: Patent Value Chain

A global picture of the patent value chain is illustrated in Fig.1.1. This process consists of two major stages: patenting and enforcement. The patenting process is primarily concerned with generating patents while enforcement is about enforcing patents after they have been granted, including technology transfer, licensing and sales.

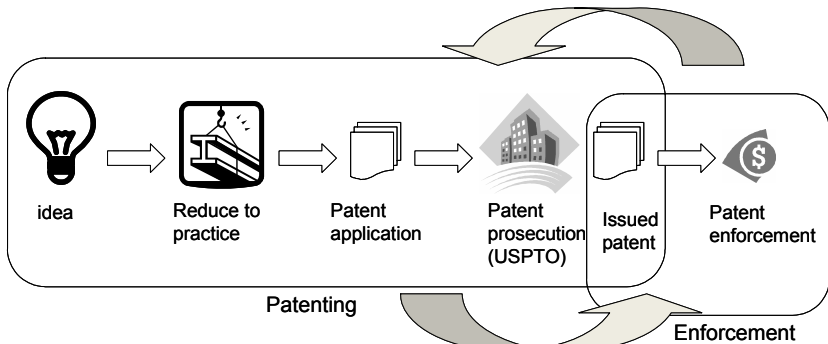


Fig. 1.1 Patent process and patent value chain.

A typical patenting process starts with an idea. This is followed by what is referred to as the reduction to practice. The reduction to practice involves building the invention, experimentation, proving the invention actually works and further refinement of the original concept. The completion of reduction to practice phase is typically marked by the filing of a patent application with the patent and trademark bureau. In the United States, this bureau is the United States Patent and Trademark Office (USPTO), a federal agency under the Department of Commerce.

Under subsequent examination of the application, also called patent prosecution, the USPTO uses laws and rules to examine the patentability of the application. During this process, inventors can rebut and appeal

any rejections posted by a patent examiner (often in Office Action). A patent application should not be considered to be a patent unless and until it has actually been granted by the USPTO. Only a granted patent gives its owner legal rights. Only a granted patent can be enforced or licensed.

The enforcement stage is primarily concerned with the monetization of the patent after it is granted. This process is beyond the authority of the USPTO. These two stages of patenting and enforcement happen at different times, and often involve different groups of people. The patenting stage usually involves law firms, patent attorneys and agents who are considered to be part of the patent filing and prosecution system that work all under the guideline of the USPTO. The patent licensing and sales phase will probably involve many business people who are considered to be part of the patent licensing community. The functional division of the patent value chain inevitably causes a disconnection between inventors and the beneficiaries of the invention. Inventors have little knowledge about how their invention is ultimately utilized, whether it is made into a product, licensed, or sold. The main purpose of this book is to fill this information void.

## **1.2 The Scope and Organization of This Book**

This book is not intended to be a “Patent it Yourself” book, nor is it intended to be a patenting guideline text book of the type often written for patent attorneys. This book is intended to help scientists and engineers, whether they are “patent it yourselfers” or people who work with patent attorneys. It is intended to help such inventors turn their technologies into the most valuable assets possible. This book covers various aspects an inventor should know about, from patent preparation to patent licensing, in a language that is easy for technologists to understand.

A unique approach has been taken when selecting the materials and addressing the various topics, differentiating this book from the many similar titles currently on the market. Particularly:

1. Readers of this book are not required to possess prior knowledge about patents or patent laws. If you are new to patents, you will find several introductory chapters which will be quite helpful, and make it easy for you to begin to understand the patent process and the relevant laws. The language used throughout the book can be easily understood by an inventor or technologist without overwhelming him or her with overly complex legal terms and case laws.
2. Patenting and enforcement stages in the patent value chain do not happen in isolation. This book ties the many technical, legal and business aspects of patent enforcement to the innovation and patenting stage. This will give readers much insight into the process of determining whether a patent is strong or weak. It will also show them how to create a strong patent asset.

This book is organized into four parts.

### PART I: BASICS (Chapters 1–3)

Chapter 2 discusses some common misconceptions about patents. This chapter will provide you with insightful and valuable perspectives on many common issues inventors frequently encounter, such as exclusive rights, trade secrets, best mode, patent maturity, etc.

Chapter 3 is intended to give the reader a condensed version of patent laws and rules, highlighting all the necessary basic information an inventor will need to know. This chapter may either be read at your leisure or may be used as a reference when any issues arise from your real patenting case.

### PART II: FUNDAMENTALS IN PATENTING (Chapters 4–7)

This part covers various aspects of patenting, including how to read a patent, how to harvest your own innovation and how to file your own patent.

Chapter 4 gives the anatomy of a patent and shows you the essentials of reading patents. It will teach you how to understand embodiments and

claims. It will also show you which specific things you need to be looking for when reading someone else's patents for different purposes.

Chapters 5 and 6 cover various topics pertaining to innovation, including harvesting ideas, patent landscaping and strategy, making decisions on filing and preparations necessary before you file your own patent.

Chapter 7 gives many details about patent filing, such as what you need to pay attention to in your patent specification, as well as the pitfalls to avoid when working with attorneys.

### PART III: PATENT PROSECUTION AND POST GRANTING (Chapters 8–10)

Even most inventors who have successfully obtained patents have little or no exposure to the patent prosecution process since most matters related to this process have probably been handled by their attorneys. Once a patent application has been filed, the inventor is often kept out of the loop in regard to the status of the application. However, there are many important things an inventor should know as he carries out his duty throughout the life of the patent.

The first half of Part III gives many insights on the patent prosecution process and offers practical suggestions about how an inventor should get involved in this process to create a stronger portfolio, all from a real inventor's perspective. Later, in Chapter 10, outlines are also provided for how an inventor should continue carrying out his duty in maintaining the integrity of his invention even after the patent has been granted.

### PART IV: BUSINESS PERSPECTIVES AND BEYOND (Chapters 11–15)

Part IV is intended to give interested readers a broad spectrum of business and financial perspectives concerning patents and the patenting process, particularly their monetization. It discusses various issues and common practices in patent strategy, licensing, sales, evaluation, maintenance and valuation. It also highlights some patent database tools

and resources to help readers accomplish various tasks pertaining to patents.

What makes this book valuable to scientists, engineers and research managers responsible for creating and managing a company's IP asset is its abundance of insights into various business and financial interests concerning patents. This book gives readers a broader view of what the global intellectual property market is and in turn helps them create stronger patents.