

# Business Models for Entrepreneurs: Commercializing, Leveraging, and Monetizing Intellectual Property Rights in India and ASEAN Countries

K.V. Nithyananda

**Abstract** Intellectual Property Rights (IPR), as a critical resource of any organization, has acquired mainstream management discussion space over the past several decades. The management focus has shifted from the traditional approach of generating and securing IPRs to the modern approach of commercializing, leveraging and monetizing of such IPRs. This shift has led to new a research focus of identifying strategies for commercializing, leveraging, and monetizing IPR. The unique nature of IPR coupled with interest in entrepreneurship activities has led to an interest toward the study of business models for commercializing, leveraging, and monetizing IPR. Despite paucity of research on this topic, this chapter aims to create base research direction in this area by creating a map of various business models, which are being practiced in this space across the world. In this exploratory study the author tries to examine different business models available to entrepreneurs and other IP owners for commercializing, leveraging and monetizing IPR along with the strategic intent for adopting them. Each business model would be supplemented with indicative case studies. With IPR and its management taking center stage in the entrepreneurial world in recent times and also given the fact that this decade belongs to the entrepreneurs from the developing countries from Asia, commercializing, leveraging, and monetizing of IPR has become very relevant, particularly for India and for ASEAN countries in general.

**Keywords** Intellectual property rights • Business models • Commercializing IPR • Leveraging IPR • Monetizing IPR

---

K.V. Nithyananda (✉)

Faculty Member in Legal Systems and Finance, Indian Institute of Management Tiruchirappalli, NIT Trichy Campus, Tiruchirappalli, Tamil Nadu 620015, India  
e-mail: nithyananda@iimtrichy.ac.in

## 1 Introduction

Businesses have been capturing and realizing value from intangible assets for some time now (Hall 1992; Peteraf 1993). Intangible assets could include Intellectual Capital, Intellectual Asset, and Intellectual Property (Poltorak and Lerner 2011). Intellectual Property (IP) rights are part of intellectual assets which can be legally protected and include patents, trademarks, copyrights, designs and integrated circuit designs, among others. Traditionally IP assets have been acquired either to have freedom to operate (FTO) or to include them in the goods manufactured and sold by the IP owners. In recent times, however, IP owners have been exploring alternative ways of harnessing value from IP assets (Chesbrough 2003; Rivette and Kline 2000). While some have been exploring alternative strategies for harnessing the value of IP assets (Fisher and Oberholzer-Gee 2013; Al-Aali and Teece 2013) others have been altering corporate culture to utilize IP assets to earn higher revenues (Phelps 2006; Weedman 2002). Many companies are also innovating on business models to achieve success in managing IP Rights (Wheatland 2008).

Henry Chesbrough, in his now classic book *Open Innovations*, deals in greater detail about the importance of business models for profiting from IP rights. Commenting on a remark of Revitte and Klein that about \$1 trillion of business value is being wasted due to underutilization of patent assets, Chesbrough points that IP assets would not create any value for the business without a robust business model designed to exploit value from them (Chesbrough 2003). It is traditionally accepted that patents confer negative rights and does not grant any specific positive right on the inventor (Landes and Posner 2003). The owner of the patent, per se, cannot extract value from patents directly, but if he can prevent others from practicing his invention/technology freely, then the value gets created. The value can be extracted in the form of rent seeking (traditionally in the form of licensing fees) as a compensation for his investment in R&D expenses (Chesbrough 2003), if he designs a business model that can extract value from the business model of others. Beyond this, other business models have also come into being in recent times, which either interacts with someone else's business model to create value or be governed by somebody else's business model to realize value from innovation (Chesbrough 2003).

This paper explores alternative business models available to entrepreneurs for managing IP assets with an objective of creating value for the IP owner. The business models discussed in this paper are mainstream business models for managing IP rights in the western world. They are slowly being introduced in various parts of Asia, on an experimental basis, including in India. This is an exploratory paper with a single objective of examining and understanding existing business models that create value using IP rights. Also the author clearly acknowledges that the study is not exhaustive (only mainstream business models are discussed), and has been prepared from existing published literature on the topic.

First part of this paper discusses the alternative forms for creating value from IP rights, like commercialization, leveraging, and monetization. The second part explores business models for commercializing IP rights, the third part discusses business models for leveraging IP rights, and the fourth part explores business models available for monetization of IP rights. The fifth part concludes the paper.

## 2 Alternative Modes of Creating Value from IP Rights

IP owners could utilize IP rights to create value, for himself or for others who interact with his business ecosystem, in three ways, viz., commercializing IP rights, leveraging IP rights, or monetizing IP rights.

**Commercializing IP rights** involves using IP rights in products and services manufactured/delivered by the IP owner (as part of an existing business model), with an intention to augment its commercial potential. Trademark rights management, and copyrights management, the two popular models of commercializing IP rights, are discussed in part 3. On the other hand, **leveraging IP rights** is a means of creating value from IP assets that would support, strengthen, and augment the competitive advantage of the IP holder (Halt et al. 2014). Various business models for leveraging IP rights like licensing including cross-licensing, franchising, joint ventures, (Nissing 2013), donation and abandoning of IP rights, and technology standardization are discussed in Part 4. **Monetizing IP rights** is a process of extracting value from IP assets of the business through its liquidation (Halt et al. 2014). Popular business models for monetizing IP rights like sale of IP rights including patent sale and lease back, collateralization, securitization, auction and exchange are discussed in Part 5.

## 3 Business Models for Commercialization of IP Rights

### 3.1 Trademark Rights Management

Trademarks primarily reduce search cost for consumers by creating a distinctive image about the products or services of a particular company (Landes and Posner 2003). But today, trademarks are being used not just for distinguishing the goods and services, but also for creating business models around the reputation created by such trademarks.

For instance, Nestle, which is known for producing coffee powder under the brand Nescafe, realized the need for a home espresso machine and created the Nespresso machine. When the product became successful, it partnered with equipment manufacturers to solve the supply chain issues and delivered machines that are efficient and helped prepare espresso quality coffee at homes. Their



**Fig. 1** Trademark rights management by Nestle for its Nespresso Brand

business model was designed to compensate lower margins earned on the sale of Nespresso machine by selling Nespresso bullets, which costs on an average of 23p per serving. This business model has been able to generate 30 % growth rate for the last 5 years. Also Nestle has been able to extend the Nespresso brand to other allied businesses like café outlets and lounges, lifestyle magazine, coffee bullets, and so on (Fig. 1).

Traditionally, trademarks were created to distinguish the goods and services of one manufacturer from that of the competitors (Bainbridge 2012). But business models have been developed around this traditional function to create alternative modes of increasing value for the trademark owner. Branding, which was limited only to the product and the experience surrounding it, has now been extended to integrate IP rights into products and services, which can then be merchandised to create higher value for all stakeholders (Berman and Woods 2002).

### 3.2 Copyright Management

Copyright management has undergone significant changes in recent times. A tangible copyrighted work, like a book, would vest with the author or the assignee of that book an economic right, using which they can create value. But appropriate business models should be created around the copyright to extract value from it. Traditionally, such rights were used to create not more than 2 or 3 other forms of copyrighted works like translation, abridgement, adaptation, etc. Now, with the evolution of the movie industry and also with the advent of digital media, copyrighted books are being used to create additional copyrighted works like

e-books, movies, cartoon series, computer and mobile games, comic books, theme parks, and other merchandise in addition to the traditional forms of translations, abridgments, adaptations, etc.

Disney has been able to execute this strategy successfully, not just by using a copyrighted work, but even utilizing non-copyrighted works (the stories for some of its successful cartoon movies were folk tales which were in the public domain) and merchandising it successfully with an intention of creating higher value for its stakeholders.

J.K. Rowling through Harry Potter book series has successfully adopted copy-right management to become one of the richest literary authors. Apart from being translated into 65 languages worldwide, her Harry Potter books have been made into movies and video games; it has been licensed to LEGO Toys, which brought out 53 sets (Wikipedia 2016a); and merchandise related to books and movies have become very successful. Also The Wizarding World of Harry Potter Theme Park has been set up jointly by Universal Studios and Warner Brothers at Orlando, Japan, and Hollywood (Wikipedia 2016b) for enthusiasts to have personal inter-action with the characters. These merchandising activities provided additional revenue streams to the author, ensuring her a slot in the Forbes Richest persons of the year between 2008 and 2012 (Fig. 2).

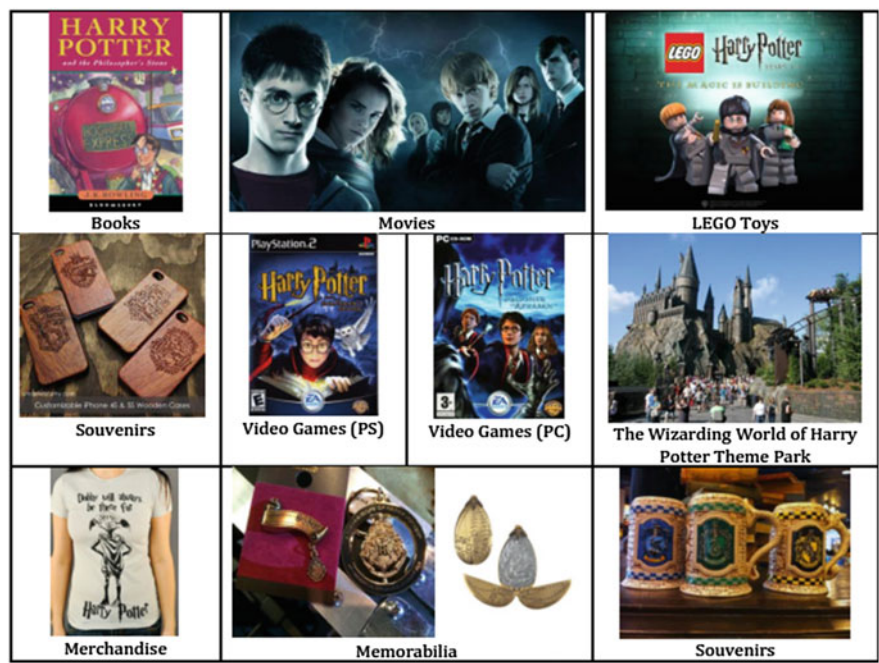


Fig. 2 Copyright management by J.K. Rowling for her successful Harry Potter Series

## **4 Business Models for Leveraging IP Rights**

### ***4.1 Licensing of IP Rights***

Licensing is a contractual arrangement where the licensor/the IP owner makes available the IP assets for commercial use by the licensee in return for a lump-sum payment and/or periodic royalty payments (DesForges 2001). The consideration for licensing could either be for money, goods, or services (plain vanilla licensing of IP rights), or in exchange for another IP right or a bundle of IP rights owned by a competing organization (cross-licensing of IP rights) (Nithyananda 2012). IP assets generated from the R&D investments could be licensed internally (effectively adopted by IBM and Microsoft) to earn higher profits or could be licensed externally to earn royalty payments. While the former is called “In-Licensing,” the latter is known as “Out-Licensing.”

The IP owner might be unwilling or unable to convert IP rights into a marketable/commercial product, because of the efforts and investment required in taking the idea through the stages of ideation, experimentation, prototyping, piloting, market research, product marketing, commercial scale manufacturing, sales and distribution and finally aftersales customer service. But with an intention to earn additional revenues from the IP assets without having to actually commercialize it, the IP owner could license the IP rights to others capable of manufacturing, marketing and distributing the product at required levels of quality standard at lower prices. In return for this arrangement, such licensees would pay a percentage of the sales revenue to the IP owner (WIPO 2003).

It is to be noted that profiting from IP rights is not the only objective of licensing practices. Causing diffusion of new knowledge leading to technological advancement in the society could also be an objective of licensing. For instance, let us take the case of the Cohen/Boyer patent on gene splicing. It is considered as the foundational patent/technology, which led to the growth of the modern biotechnology industry including bioinformatics. The inventors decided to license it widely “only with an intention of spreading knowledge of fundamental importance to the disciplines of bioscience and genetic engineering and creating new therapeutic compounds” (DesForges 2001). Such strategy has two advantages, one is the rapid diffusion of technology in the society leading to the technology being accepted as an industry standard (leading to opportunities to earn higher licensing revenues in future), and second is an opportunity to earn licensing revenues without having to invest resources on manufacture and marketing it.

### ***4.2 Franchising IP Rights***

Franchising is a process of expanding the business of distributing goods and services, by packaging all the related IP rights into a replicable business system and a

recognizable brand name (Seid and Thomas 2006). In this model, typically multiple IP rights are combined with trademarks to provide a unique brand identity, which then is designed into a franchise business system and licensed to many franchisees for a certain license fee. The IP rights that can be combined could be trade secrets (the recipe, taste, and flavor), confidential information (contained in the operating systems and business practices), trademarks (the logo, the brand, the slogan), trade dress (embedded in the look and feel of the store), copyrights (the apparel, the drawings within the store, the menu card), designs (the art/design on the box, the shape of the box, structure of the building), and patents (heating oven containing the patent rights of regulating the heat depending on the kind of food product being cooked). The Pizza Hut example in Fig. 3 effectively illustrates this.

Before franchising the IP rights, it is expected that the IP owner has started a replicable business process, tested its operating efficiencies and be convinced about the economies of scale. This model franchise unit convinces future franchisees to enter into business without having to unnecessarily risk their capital. In addition, it is also expected that the IP owner develop competencies to monitor and control the franchise business (Sherman 2004).

Under a franchising agreement, the franchisor receives an initial lump-sum payment (for licensing of patents, knowhow, technology, and operating process) followed by regular royalty payments as a percentage of gross sales made by the franchisee (for supplying ingredients to produce goods along with a right to use the brand). Though franchising can be implemented in any business, it has become popular in the food, beverage, and snack industry (Seid and Thomas 2006) as the processes can be standardized and it becomes easy to build a brand identity in these industries.

### **4.3 Joint Ventures (JV)**

As an offshoot of the licensing model (specifically cross-licensing model), IP owners could form JV using their IP rights. JV provides “an opportunity to benefit from the skills and experience of others [and] provides access to valuable assets” (DesForges 2001). JV could provide access to complimentary IP assets, knowhow, and production capabilities, or even marketing resources, leading to commercial launch of the product/service.

Maruti–Suzuki partnership in India is a success story in JV arrangements. Suzuki motors of Japan had technological expertise of manufacturing a car and Maruti Udyog limited (a public sector undertaking owned by the Government of India) had access to the market. Suzuki licensed its technology (initial arrangement was just to import cars manufactured in Japan and sell it in India) and also readymade cars to Maruti Udyog, who then sold, serviced and maintained them (Wikipedia 2015) (later, they set up manufacturing facilities in India and started selling finished cars

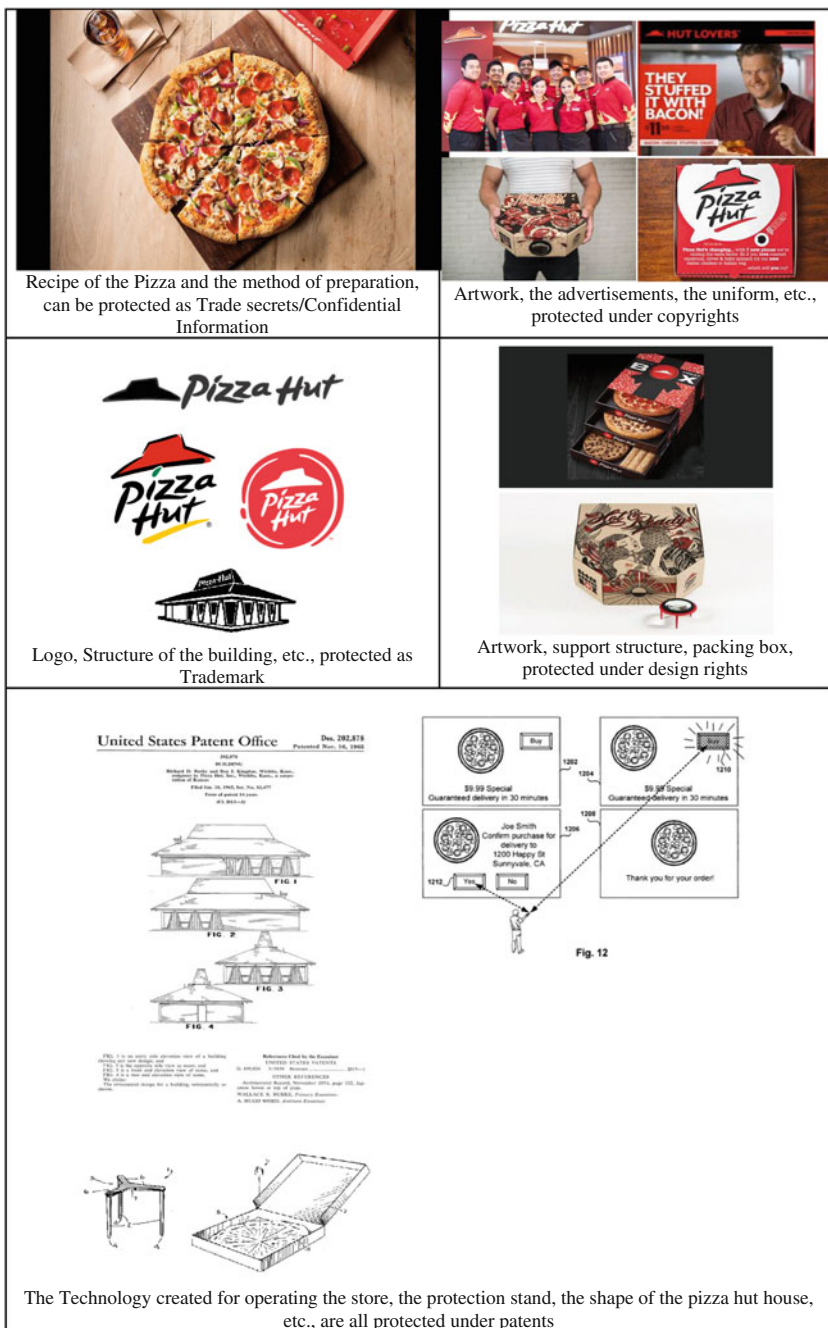


**Fig. 3** Different IP rights combined effectively into a franchising business model by Pizza Hut

in India, which were exported around the world). This model has been so successful that Maruti Suzuki currently maintains 49 % of the market share in the car segment in India (Report and India Auto 2015).



Joint ventures are the most common form of technology entrepreneurship in almost all parts of the world. JVs ensure that the technology required to start an entrepreneurial venture is made accessible to the parties, and also ensure that the business venture becomes successful. For instance, Rolls Royce partnered with Singapore Airlines in 1997 to strengthen the latter's growth (Company and Rolls Royce 1997), and GE has partnered with Malaysian Airlines in 1996 to establish a Centre of Excellence in Engine Overhaul at Malaysia (Company and General Electric 1996).

#### 4.4 Donating and Abandoning IP Rights

An IP owner would *donate his IP rights* to an academic institute/university, or a research agency, thereby relinquishing the rights on his IP assets (Malackowski and Wakefield 2002). On the other hand, an IP owner is said to have *abandoned his IP right*, if and when he stops renewing the IP right with the IP office, which in effect pushes the IP right into the public domain. Although abandoning IP rights is technically not a means of leveraging strategy, it provides significant advantages by eliminating costs associated with managing such IP rights. In order to secure IP rights, an IP owner initially spends time, money, and effort toward conducting due diligence, drafting and translation of the IP application, filing charges payable to the IP office, and IP office prosecution charges. Subsequently, he has to incur expenses toward maintenance of the patent right, conducting IP audit and surveillance, installing anticounterfeiting measures to prevent infringement, and also litigation expenses if there are any infringements. The litigation expenses alone could vary from \$50,000 to \$100,000 for defensive suits and \$250,000 to \$1,500,000 for offensive suits (Graham and Van Zeebroeck 2014). These costs could be saved, by abandoning the IP right. However, it needs to be remembered that abandoning also means that anyone (including direct competitors) can practice the IP rights, thereby in effect, reducing or even eliminating the competitive advantage of the IP owner.

Technically, donation is a form of abandoning of IP rights only from the point of view of the IP owner, but not from the perspective of the IP office. The IP office would remove the IP registration from its records after sometime after being abandoned by the IP owner. But in the case of donation, the IP right would continue

to remain on the register of the IP office, but it would be renewed and maintained by agencies other than the original IP owner.

For the IP donor, all the benefits of abandoning IP rights accrue, but along with that, it also provides tax benefits. In the US, the tax benefit is provided under the IRC Section 501(c) (3); if the IP assets are donated to a charitable organization, then it can offset earnings from other investments within an investment portfolio to reduce taxable earnings (Malackowski and Wakefield 2002). However, it is to be noted that this benefit is not available in most other parts of the world including in India and other ASEAN countries.

#### ***4.5 Technology Standardization Using Intellectual Property Rights***

From technology management perspective, standards are specifications fixed by a Standard Setting Organization (SSO), based on the general consultation with the members of the industry, determining the compatibility of different components in a network industry (Greenstein and Stango 2008). These are generally technical documents, which determine the compatibility of one technology with another, and once a standard is prescribed, the entire industry or the adopters of the technology follow it ubiquitously [National Research Council of the National Academies (NRCNA) 2013]. The monopoly right on technology is granted in the form of patents and the patent owner has an incentive to lobby with the SSO for getting his patent accepted as an industry standard [(de Vries 1999) see generally from pg. 55 to 90]. Once a patent is accepted as an industry standard, all original equipment manufacturers (OEMs) have to adopt the standard in their product, by licensing the patent from the patent owner, typically on Fair, Reasonable, And Non-Discriminatory (FRAND) basis (Lemley 2002). This enables generating alternative sources of revenue, thereby increasing the value creation for the IP owner.

There are many patents, which have been accepted as industry standards leading to higher value creation for the IP owner. For instance, the European Telecommunications Standardization Institute (ETSI) accepted patents on H.264 video compression standard and WLAN technologies owned by Motorola Mobility Inc. (MMI), as GPRS standard (part of the GSM Standard, which were again owned by MMI). These standards were declared as Standard Essential Patents (SEP) at the launch of the 2G and 3G mobile revolutions, due to which, any OEM manufacturing mobile telephone hardware was required to license them from MMI, leading to multiple revenue streams for MMI (Park 2010).

But it is to be remembered that OEMs cannot compete in a network market without access to standards and thus the absolute exclusivity of patents covering standards may result in anticompetitive practices in the industry. In order to address these issues, the SSOs insist that the patent owners declare the patent rights in the technology before being considered for standard (Park 2010). If IPRs are accepted

as technology standards, then patent holders who have contributed SEPs to the standard (both current and previous) could pool their IPRs and effectively manage it well for all the OEMs. (Uijl et al. 2013) provide a strategic framework of managing IPRs using such patent pools.

## 5 Business Models for Monetizing IP Rights

### 5.1 *Sale of IP Rights and Sale and Leaseback of IP Rights*

When the IP owner finds out that he is not the lowest cost manufacturer of the patented product or when he has realized most of the value that could be extracted from the IP rights, he would typically resort to the *sale of IP rights*. Alternatively, such a strategy could be adopted if the IP owner wants to isolate the IP assets from being used by others within the organization. The sale of IP rights has two variants: (i) *the technology sale model*, where the IP owner could transfer IP rights in exchange for either cash or an equity stake in the buying entity; (ii) *royalty trust model*, where the IP owner, who is legally prevented from selling his IP right (like the university or other research institutions) creates a trust with IP owner himself as the beneficiary to receive the royalty streams accruing from the transfer of IP rights.

Assume a situation where the IP owner is working on a path-breaking research project with promising results, but is seriously short of funds. On a review of his IP rights, he finds a good saleable IP right granted to him earlier. But he does not want this IP right to be either made public or allow others to work on it yet. In such a case, he can look for an interested buyer for his saleable IP right and enter into the *Sale and Leaseback of IP rights* arrangement. On completing this arrangement, the IP owner gets immediate cash to carry on his promising research and also the exclusive leaseback would ensure that he has complete control of his technology.

Aberlyn Capital Management carried out one of earliest recorded transactions of Sale and Leaseback of IP rights. It acquired a single patent of RhoMed, a biotech company specializing in radiopharmaceutical products and then leased it back to RhoMed for usage, in exchange for a consideration of \$1 mn and an interest rate of 15 % on the loan. But the transaction failed due to nonfulfillment of certain technical requirements of the transactions. For more details, including generic frameworks and transaction structures, on the business model of Sale of IP rights as well as Sale and Leaseback of IP rights, see (Nithyananda 2012) (Fig. 4).

### 5.2 *Collateralization of IP Rights*

As IP rights are being considered as assets on the financial statements of organizations, financial institutions have started accepting IP assets as collateral security

**Fig. 4** Patent granted to RhoMed Inc

| United States Patent [19]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | [11] Patent Number: 5,078,985     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------|
| Rhodes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | [45] Date of Patent: Jan. 7, 1992 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                   |
| US005078985A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                   |
| <b>[54] RADIOLABELING ANTIBODIES AND OTHER PROTEINS WITH TECHNETIUM OR RHENIUM BY REGULATED REDUCTION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                                   |
| <b>[75] Inventor:</b> Buck A. Rhodes, Albuquerque, N. Mex.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                   |
| <b>[73] Assignee:</b> RhoMed, Incorporated, Albuquerque, N. Mex.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                   |
| <b>[21] Appl. No.:</b> 391,474                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                   |
| <b>[22] Filed:</b> Aug. 9, 1989                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                   |
| <b>[51] Int. Cl.:</b> A61K 39/395                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                   |
| <b>[52] U.S. Cl.:</b> 424/1.1; 530/387; 530/388; 530/402                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                   |
| <b>[58] Field of Search:</b> 424/1.1; 530/388, 389, 530/363, 402, 382, 395                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                   |
| <b>[56] References Cited</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                   |
| <b>U.S. PATENT DOCUMENTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                   |
| 4,305,922 12/1981 Rhodes ..... 424/1<br>4,311,688 1/1982 Burchiel et al. .... 424/1<br>4,323,546 4/1982 Crookford et al. .... 424/1<br>4,331,647 5/1982 Goldenberg ..... 424/1<br>4,348,576 9/1982 Goldenberg ..... 424/1<br>4,421,735 12/1981 Haber et al. .... 424/1.1<br>4,424,200 1/1984 Crookford et al. .... 424/1.1<br>4,472,371 9/1984 Burchiel et al. .... 424/1.1<br>4,478,815 10/1984 Burchiel et al. .... 424/1.1<br>4,479,930 10/1984 Hnatowich ..... 424/1.1<br>4,647,445 3/1987 Less ..... 424/1.1<br>4,652,440 3/1987 Paik et al. .... 424/1.1<br>4,668,503 5/1987 Hnatowich ..... 424/1.1<br>4,670,545 6/1987 Fritzsche et al. .... 534/14<br>4,877,568 10/1989 Reno ..... 530/390                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                   |
| <b>FOREIGN PATENT DOCUMENTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                   |
| 0237150 9/1987 European Pat. Off. .<br>0271806 12/1987 European Pat. Off. .<br>0336678 4/1989 European Pat. Off. .<br>85/02311 8/1985 PCT Int'l Appl. .<br>87/04164 7/1987 PCT Int'l Appl. .<br>W088/07382 10/1988 PCT Int'l Appl. .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                   |
| <b>OTHER PUBLICATIONS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                                   |
| "Three Approaches to Radiolabeling antibodies with 99mTc" by W. C. Eckelman et al., <i>Nucl. Med. Biol.</i> , vol. 16, No. 2, pp. 171-176 (1989).<br>"A New Method for Protein Labeling with 99mTc" by D. Blok et al., <i>Nucl. Med. Biol.</i> , vol. 16, No. 1, pp. 11-16 (1989).<br>"Covalent Attachment of Chelating Groups to Macromolecules" by G. E. Krejcarek et al., <i>Biochemical and Biophysical Research Communications</i> , vol. 77, pp. 581-585 (1977).<br>"Bifunctional Chelating Agents for Binding Metal Ions to Proteins" by T. G. Wessel, et al., <i>Radiolabeling and Radioimmunotherapy</i> , pp. 185-196 (1983).<br>"99m Tc Labeling of Proteins: Initial Evaluation of a Novel Diaminedithiol Bifunctional Chelating Agent" by K. E. Baidoo, <i>Cancer Research</i> , vol. 50, pp. 799-802 (1990).<br>"Radioimmunolabeling of Experimental Thrombi in Dogs Using Technetium-99m Labeled Monoclonal Antibody Fragments Reactive with Human Platelets" by P. Som, et al., <i>Journal of Nuclear Medicine</i> , vol. 27, No. 8, pp. 1315-1320 (1986).<br>"Technetium-99m-Albumin" by H. S. Stern, et al., Book Chapter published by Johns Hopkins Medical Institutions, Baltimore, MD, pp. 359-375 (U.S. Atomic Energy Commission) (1966).<br>"Use of Fe(II) or Sn(II) Alone for Technetium Labeling of Albumin" by M. S. Lin, et al., <i>Journal of Nuclear Medicine</i> , vol. 12, pp. 204-211 (1971).<br>"99m Tc-Human Serum Albumin" by W. C. Eckelman, et al., <i>Journal of Nuclear Medicine</i> , vol. 12, pp. 707-710 (1971).<br>"A Rapid Chemical Method of Labeling Human Plasma Proteins with 99m Tc-Perchlorate at pH 7.4" by D. W. Wong et al., <i>Journal of Applied Radiation and Isotopes</i> , vol. 29, pp. 251-253.<br>"A Rapid Method for Labeling IgG with 99m" by L. G. Colombetti et al., Abstract from <i>Journal of Nuclear Medicine</i> , Proceedings of 26th Annual Meeting, p. 652 (1979).<br>"A Novel Approach to Tc-99m-Labeled Monoclonal Antibodies" by A. Schwarz et al., <i>Proceedings of 34th Annual Meeting</i> , vol. 28, No. 4, pp. 721 (1987).<br>"A Rapid and Efficient Method for Labeling IgG Antibodies with Tc-99m and Comparison to Tc-99m FAB Antibody Fragments" by K. Y. Pak et al., Abstract from <i>Proceedings of the 36th Annual Meeting</i> , vol. 30, No. 5, p. 793 (1989).<br>"Imaging of Inflammatory Arthritis with Technetium-99m-Labeled IgG" by F. Breedveld et al., <i>Journal of Nuclear Medicine</i> , pp. 2017-2021 (1989). |  |                                   |
| (List continued on next page.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                   |
| <b>[57] ABSTRACT</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                   |
| Proteins are radiolabeled with radionuclides of technetium or rhenium by a process in which the disulfide bonds of the protein are first partially reduced with stannous salts or other disulfide reducing agents, all substances other than the desired reduced protein removed, by size exclusion chromatography or other purification means, and a specified, smaller amount of perchlorate or perchinate reducing agent, such as a stannous salt, is added to the reduced protein in a manner such that further reduction of the protein is limited. Perchlorate or perchinate is then added to the mixture of the reduced protein and the perchlorate or perchinate reducing agent; the perchlorate or perchinate is reduced and becomes strongly bonded to the protein via the sulfhydryl groups previously exposed by reduction of disulfide groups. The reduced protein and perchlorate or perchinate reducing agent can be indefinitely stored frozen or lyophilized.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                   |
| <b>18 Claims, No Drawings</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                   |
| Primary Examiner—John S. Maples<br>Attorney, Agent, or Firm—Deborah A. Peacock                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                   |

for providing loans. If the IP owner is suffering from cash crunch, he could pledge his IP rights with financial institutions to raise term loans (Burton et al. 2014). Financial institutions around the world, including India, have started accepting IP assets as collaterals for providing loans.

The MSMEs typically are innovative by nature and, if they spend resources on acquiring IP rights, they feel that they might not be left with sufficient funds for day-to-day operations. Due to this fear, the IP rights gets acquired by big and powerful companies, who try to ease out these MSMEs out of business through IP infringement suits. If and when this business model becoming popular in the Asian countries, the entrepreneurs could fearlessly invest in securing IP rights, which could then be pledged as collaterals with financial institutions to raise finances for running their businesses. This provides another benefit to MSMEs. As they would now be holding IP rights, the bigger firms could invest in these MSMEs or acquire these MSMEs for the IP rights they are so holding. With the entrepreneurial bug

biting people all over the ASEAN countries, it is expected that this business model would become popular in the near future.

Michael Jackson collateralized a portfolio of songs performed by him (based on Beatles and other song writers) to raise US\$270 million loan, which was refinanced in 2006 (Jarboe and Furrow 2008).

One of the most prominent transactions of collateralization of IP rights in India was the pledging of the Kingfisher brand and logo by the Kingfisher Airlines to raise close to Rs. 2190.35 crores (US\$365 mn) in March 2011 (Bureau 2009). As of 2011, Kingfisher had raised Rs. 4100 crores (US\$685 mn) by collateralizing its intangible assets include brands. Generally see (Nithyananda 2012) for a detailed discussion on the rationale, the structure, the process, and cases on this model.



Singapore has also set up a steering committee to look into the option of using IP rights as collateral assets for raising loans from financial institutions (Ho and Yi 2014) and this business model could become very popular in Singapore and other ASEAN countries in the near future.

However, it is to be remembered that the valuation of the IP asset is the most critical aspect of collateralizing IP assets, as the amount of loan provided by the financial institution is dependent on the royalty streams flowing from such IP assets.

### 5.3 *Securitization of IP Rights*

Securitization is “a process of using the cash flows generated by an asset or pool of assets to support the issuance of debt” (Eisbruck 2002). Under this model, the IP asset and revenue streams accruing therefrom are used as the basis for issuing debt instruments to the investors, either on the stock market or through private placements. Here the IP assets are transferred to a separate Special Purpose Vehicle (SPV), which would be issuing and managing the debt instrument.

While in the case of collateralization, royalty streams would be used to repay the interest and the principal of the loan, but in the case of securitization, it would be used to support one or more securities, which would be rated by credit rating agencies. Also see (Lebson 2011) for more details.

One of the earliest recorded transactions was the securitization of 25 albums comprising 285 songs recorded before 1990 sung by the British rock star, David Bowie. Copyrights in the albums were used to issue asset-backed bonds from which US\$55 mn was raised. Pullman Associates structured the deal (Goch 1999). The transaction became so successful that, transactions of IP securitization became generally known as the Bowie Bonds or Pullman Bonds (Fig. 5).

**Fig. 5** David Bowie

Also beyond copyrights in the songs, copyrights in movies have also been successfully used to issue bonds. Apart from copyrights, patents (Royalty Pharma Patents) [See (Rivette and Kline 1999) at pg. 61], trademark/brand names (Dunkin Donuts, Formula One Racing), franchising rights (Domino's Pizza), and other intangible assets (like naming rights, football match revenues, Chinese circus revenues, etc.) have been used issuing securitized bonds. For more details about the strategic intent, the structure, the transaction process, case examples and also problems with this business model, see (Nithyananda 2012).

### ***5.4 IP Auction and IP Exchange***

Getting good valuation for IP assets is a constant challenge for IP owner, especially in IP monetization transactions. This is because, valuation is dependent on multiple factors including the number of players in the market, the frequency of transactions, prior guidance valuations and transactions, secondary market which can be relied if the transaction fails, and so on. Also information asymmetry in the transaction is

significant as the information that is crucial is unavailable to the buyer of the IP asset. To solve both these problems (lack of valuation and information asymmetry), many institutions have started providing auction and exchange services specifically focusing on IP assets. Among them, the prominent players happen to be Ocean Tomo and ICAP services.

ICAP Patent Brokerage has been holding auctions of IP assets since 2006 and has successfully helped auction IP assets worth more than U\$170 mn (Brokerage 2012). As of July 25, 2015, the website has changed the information to hundreds of millions worth of IP assets. Ocean Tomo, on the other hand, has created an exchange platform, both online as well as offline, that could act as a mediator/broker for transactions involving IP assets (Tomo Ocean 2015).



The Draft National IPR Policy of India has also envisioned setting up IP auction and IP exchange under the broad umbrella of IP markets to facilitate easy exchange and transactions on IP assets. The author expects that this model could see a growth spurt in the near future in India. Other ASEAN Countries, especially Singapore and Malaysia, are taking proactive steps in implement IP exchanges in their countries in the near future. This would also.

## 6 Conclusion

IP rights are important resources of any organization. But they are extremely important for entrepreneurial ventures, as the IP rights are capable of providing sustainable competitive advantage to its IP owners. While other strategic resources like location, pricing, personnel, and logistics are losing its strategic strength/importance (competitors can also replicate them), IP rights cannot be easily replicated by competitors (as they are statutory rights granted by the government), and hence can provide sustainable competitive advantage at least till the expiry of the IP right. In order for the entrepreneurs and IP owners to be able to create value, appropriate business models should be designed around the IP rights. Such business models could either be proprietary or it could be in the open domain (Chesbrough 2006). There is a renewed interest in business models and strategic management (Newth 2012), both academic as well as managerial. But entrepreneurial ventures would be better positioned, by focusing on creating IP rights and then building an innovative business models around IP assets, which could provide them with a

much stronger and more sustainable competitive advantage, which could in turn help in creating value for all the stakeholders.

In this paper, the author has explored business models for commercializing, leveraging, and monetizing IP rights. This effort was to create a base literature on the topic, which could spur further research in the area. Also the author has ignored another mode of using IP rights to generate value, viz., trading in IP rights, which is becoming quite popular in the western world. These gaps could be explored by future researches.

The business models discussed here could become mainstream in the near future, not only in India, but also in other parts of Asia including ASEAN countries. The sooner the entrepreneurial companies prepare themselves to embrace them, the more advantageous it would be for them to compete in the IP landscape as well as the business landscape, by enjoying sustainable competitive advantage over their competitors.

## References

- Al-Aali AY, Teece DJ (2013) Towards the (strategic) management of intellectual property: retrospective and prospective. *Calif Manag Rev* 55(4):15–30
- Bainbridge D (2012) Intellectual property, 9th edn. Pearson Education Limited, Essex
- Berman B, Woods JD (2002) Patent “Brands”: positioning IP for Shareholder value. In: Berman B (ed) From ideas to assets: investing wisely in intellectual property. Wiley, Inc., Hoboken
- Brokerage, ICAP (2012) About Us, ICAP Brokerage. <http://icappatentbrokerage.com/auction>. Accessed 25 June 2012
- Bureau ET (2009) Mallya to raise Rs. 2000 Crores from Conservative SBI, The Economic Times. [http://articles.economictimes.indiatimes.com/2009-07-23/news/27663705\\_1\\_brands-sector-banks-bank-lending](http://articles.economictimes.indiatimes.com/2009-07-23/news/27663705_1_brands-sector-banks-bank-lending). Accessed 25 June 2012
- Burton BW, Emma B, Candice KQ (2014) Financial Alternatives for Companies: Using Intellectual Property as Collateral, Stout | Risius | Ross Global Financial Advisory Services. <http://www.srr.com/article/financing-alternatives-companies-using-intellectual-property-collateral>. Accessed 25 August 2015
- Chesbrough H (2003) Open innovation: the new imperative for creating and profiting from technology. Harvard Business School Press, USA
- Chesbrough H (2006) Open business models: how to thrive in the new innovation landscape. Harvard Business School Press, USA
- Company, General Electric (1996) Malaysia Airlines and GE to Form Joint Venture, G E Aviation, [http://www.geaviation.com/press/services/services\\_19961018.html](http://www.geaviation.com/press/services/services_19961018.html). Accessed 08 Apr 2016
- Company, Rolls Royce (1997) Partnerships, Rolls Royce. <http://www.rolls-royce.com/country-sites/singapore/partnerships/joint-ventures.aspx>. Accessed 08 Apr 2016
- de Vries HJ (1999) Standardization: a business approach to the role of national standardization organizations. Springer Science+Business Media, LLC, New York
- DesForges CD (2001) The commercial exploitation of intellectual property rights by licensing, 1st edn. Thorogood Publishers, London
- Eisbruck JH (2002) “Credit Analysis of Intellectual Property Securitization.” In: Berman B (ed) From ideas to assets—investing Wisely in intellectual property. First edn. Wiley, Inc., Hoboken
- Fisher WW, Oberholzer-Gee F (2013) Strategic management of intellectual property: an integrated approach. *Calif Manag Rev* 55(4):157–183

- Goch L (1999) The rocky (and rolling) road to securitization. *Best's Review L/II*(October):34–36
- Graham SJH, Van Zeebroeck N (2014) Comparing patent litigation across europe: a first look. *Stanford Technol Law Rev* 17:655–709
- Greenstein S, Stango V (2008) The economics and strategy of standards and standardization. In: Shane S (ed) *Handbook of technology and innovation management*. Wiley, Inc., Hoboken
- Hall Richard (1992) The Strategic analysis of intangible resources. *Strateg Manag J* 13:135–144
- Halt GB Jr, John C Jr, Donch, Robert F, Amber RS (2014) *Intellectual property in consumer electronics, software and technology startups*. First edn. Springer Science+Business Media, USA
- Ho N, Yi WJ (2014) Intellectual Property As Security And the IP Financing Scheme in Singapore. [http://www.rodyk.com/usermedia/documents/Rodyk\\_Reportsept14-BusinessBulletin2.pdf](http://www.rodyk.com/usermedia/documents/Rodyk_Reportsept14-BusinessBulletin2.pdf). Accessed 08 Apr 2016
- Jarboe KP, Furrow R (2008) Intangible asset monetization—The promise and the reality. *J Inf Innovation Intangible Econ, Athena Alliance* April (3):1–141
- Landes WM, Posner RA (2003) *The economic structure of intellectual property law*, 1st edn. The Belknap Press of Harvard University Press, Cambridge
- Lebson SJ (2011) Creating, perfecting, and enforcing security interests in intellectual property. In: Lanning GB, Scott JL, Matthew DA (eds). *Intellectual property operations and Implementation in the 21st Century Corporation*. Wiley, Inc., Hoboken
- Lemley MA (2002) Intellectual property rights and standard-setting organizations. *California Law Rev* 90:1889–1980
- Malackowski JE, Wakefield DW (2002) Venture investment grounded in intellectual capital: taking patents to the bank. In: Berman B (ed) *From ideas to assets: investing wisely in intellectual property*. Wiley, Inc., Hoboken
- National Research Council of the National Academies (NRCNA) (2013) Patent challenges for standard-setting in the global economy: lessons from information and communications technology. In: Keith M, Stephen AM (eds) *Committee on intellectual property management in standard-setting processes*. The National Academies Press, Washington DC
- Newth F (2012) *Business models and strategic management: a new integration*, 1st edn. The Business Expert Press, New York
- Nissing NJ (2013) *Patents and strategic inventing: the corporate inventor's guide to creating sustainable competitive advantage*. McGraw Hill Publishers, New York
- Nithyananda KV (2012) Alchemy and I.P.R.—Monetizing intellectual property rights. *J Intellectual Property Rights* 17(September):406–416
- Park Jae Hun (2010) *Patents and industry standards*. Edward Elgar, Cheltenham
- Peteraf MA (1993) The cornerstones of competitive advantage: a resource-based view. *Strateg Manag J* 14:179–191
- Phelps M (2006) Turning a patent portfolio into a profit centre. In: Berman B (ed) *Making innovation pay: people who turn I.P. into Shareholder Value*. Wiley, Inc., Hoboken
- Poltorak AI, Lerner PJ (2011) *Essentials of intellectual property: law, economics, and strategy*, 2nd edn. Wiley Inc., Hoboken
- Report, India Auto (2015) Ford India—Flying Hot Balloons? India Auto Report. <http://indiaautoreport.com/author/admin/page/2?print=print-page>. Accessed 25 Aug 2015
- Rivette KG, Kline D (1999) Discovering new value in intellectual property. *Harvard Bus Rev* Jan–Feb(2000):54–66
- Rivette KG, Kline D (2000) *Rembrandts in the Attic: Unlocking the hidden value of patents*. Harvard Bus Sch Press, Boston, USA
- Seid M, Thomas D (2006) *Franchising for dummies*, 2nd edn. Wiley Publishing Inc., Hoboken
- Sherman AJ (2004) *Franchising & licensing: two powerful ways to grow your business in any economy*. American Management Association, New York, USA
- Tomo Ocean (2015) About Ocean Tomo, Ocean Tomo. <http://www.oceantomo.com/about/>. Accessed 25 July 2015
- Uijl SD, Rudi B, de Henk JV (2013) Managing intellectual property using patent pools: lessons from three generations of pools in the optical disc industry. *Calif Manag Rev* 55(4):31–50

- Weedman JD (2002) New economy innovations from an old economy giant: how procter & gamble is maximizing the hidden value of its intellectual property to redefine competitive advantage. In: Berman B (ed) From ideas to assets: investing wisely in intellectual property. Wiley, Inc., Hoboken
- Wheatland J (2008) Business models for effective innovation. In: Adam J (ed) The innovation handbook: how to develop, manage, and protect your most profitable ideas. Kogan Page, London
- Wikipedia (2015) Maruti Suzuki, Wikipedia. [https://en.wikipedia.org/wiki/Maruti\\_Suzuki](https://en.wikipedia.org/wiki/Maruti_Suzuki). Accessed 25 Aug 2015
- Wikipedia (2016a) LEGO Harry Potter, Wikimedia Foundation, Inc. [https://en.wikipedia.org/wiki/Lego\\_Harry\\_Potter](https://en.wikipedia.org/wiki/Lego_Harry_Potter). Accessed 27 Feb 2016
- Wikipedia (2016b) The Wizarding World of Harry Potter, Wikimedia Foundation, Inc. [https://en.wikipedia.org/wiki/The\\_Wizarding\\_World\\_of\\_Harry\\_Potter](https://en.wikipedia.org/wiki/The_Wizarding_World_of_Harry_Potter). Accessed 27 Feb 2016
- WIPO (2003) I.P. licensing: reaping the benefits. WIPO Magazine May–June:10–15

Entrepreneurship in Technology for ASEAN

Mandal, P.; Vong, J. (Eds.)

2017, VIII, 173 p. 34 illus., Hardcover

ISBN: 978-981-10-2280-7