GUIDE TO INTELLECTUAL PROPERTY

STEPHEN JOHNSON studied genetics at Cambridge University before qualifying as a solicitor in 1982. He subsequently also qualified as an attorney and worked in the US for Kirkland & Ellis LLP for over thirty years, most recently in San Francisco. He now focuses on intellectual property (IP) from a business perspective and also consults for the US charity One Mind on IP and other policy issues affecting neuroscience research. In 2015 he was named as one of the world's leading IP strategists by Intellectual Asset Management in its IAM Strategy 300 survey.

OTHER ECONOMIST BOOKS

Guide to Analysing Companies
Guide to Business Modelling
Guide to Business Planning
Guide to Cash Management
Guide to Commodities
Guide to Country Risk
Guide to Decision Making
Guide to Economic Indicators
Guide to Emerging Markets
Guide to the European Union
Guide to Financial Management
Guide to Financial Markets
Guide to Hedge Funds
Guide to Investment Strategy
Guide to Management Ideas and Gurus
Guide to Managing Growth
Guide to Organisation Design
Guide to Project Management
Guide to Supply Chain Management
Numbers Guide
Style Guide

Book of Business Quotations
Book of Isms
Brands and Branding
Business Consulting
Business Strategy
Buying Professional Services
The Chief Financial Officer
Economics
Frugal Innovation
The Great Disruption
Managing Talent
Managing Uncertainty
Marketing
Marketing for Growth
Megachange – the world in 2050
Modern Warfare, Intelligence and Deterrence
Organisation Culture
Successful Strategy Execution
Unhappy Union

Directors: an A–Z Guide
Economics: an A–Z Guide
Investment: an A–Z Guide
Negotiation: an A–Z Guide

Pocket World in Figures

The Economist

GUIDE TO INTELLECTUAL PROPERTY

What it is, how to protect it, how to exploit it

Stephen Johnson

THE ECONOMIST IN ASSOCIATION WITH
PROFILE BOOKS LTD

Published by Profile Books Ltd
3 Holford Yard
Bevin Way
London WC1X 9HD
www.profilebooks.com

A CIP catalogue record for this book is available from the British Library

eISBN 978 1 84765 662 9

Contents

Figures and tables

Figures

Tables

Preface

I HAVE WORKED IN INTELLECTUAL PROPERTY LAW for over 30 years, initially at Bird & Bird in London and then at Kirkland & Ellis LLP in Chicago, New York and San Francisco. I now work with a not-for-profit organisation focusing on IP's role as an incentive for research.

The idea behind this book was to write a guide for business people and investors explaining the strengths and weaknesses of patents as collateral (security) for loans. That was over six years ago and there was a huge lack of communication between the worlds of finance and IP. Today, patents are increasingly being used as collateral and a market for patents is developing. However, IP remains an opaque area for many business people. The scope of the book has expanded, but the idea is to try to shed some practical, business-focused light on IP.

After starting my career in London, I arrived in the US at the end of 1982, which marked the founding of a new specialist patent appeals court, the Court of Appeals for the Federal Circuit, and the beginning of a new appreciation of the economic importance of strong intellectual property rights, initially in the US, then in Europe and the rest of the world. As a result, patents emerged from an obscure backwater and now play a central role in many industries. During the same period, the rise of the personal computer and the expansion of international brands led to the growth of industries based on copyright and trademarks, and IP assumed huge business importance throughout the world.

Today, however, the function of patents in stimulating innovation has been called into question by the mass of patent litigation in

the smartphone industry and the activities of businesses that acquire existing patents simply to enforce them. The trend towards strengthening patent rights in the US has started reversing.

Legal mechanisms have also failed to cope well with the rampant piracy enabled through technology and the internet, and the balance of rights between the owners of intellectual property such as films and television shows and users of the internet remains a national political and international diplomatic issue. The law remains in constant movement and fundamental questions remain to be answered, or if answered in the past, are subject to review and revision.

Despite this uncertainty, an international IP strategy can still be developed, largely thanks to the legal frameworks established comparatively early in the history of industrialisation by such treaties as the Berne Convention on copyright in 1886. These treaties set out an international order for patents, trademarks, designs and copyrights, resulting in a degree of uniformity of general principles. This process of convergence continued in the 20th century globally and notably within the European Union, where, for example, UK IP law now relies heavily on European concepts.

Although an international IP strategy can be developed, it has to be implemented locally in major markets throughout the world. Considerable differences in IP law remain at a national level, even within the EU, and thus there may be differing results in individual countries.

In attempting to cover what is now a huge field (and to keep it a manageable size), this book is painted in parts with a broad brush, with an emphasis on the US, followed by the UK and Europe. However, Asia and especially China have become much more important with regard to IP. China is often characterised as a haven for copyists, but the reality is that the Chinese government and Chinese businesses are highly focused on filing for IP rights. Western businesses that ignore China in their IP strategy may well regret that decision in the future. In 2014 the first patent case addressing important issues on patents on industry standards reached the European Court of Justice. Tellingly, that case was not between US or European companies but between two Chinese groups, Huawei and ZTE.

The book focuses on the issues and principles that matter in

running a business, and for those seeking a quick guide, the main points to note and strategic considerations are listed chapter by chapter in an executive summary at the back of the book. There is also a section containing useful information and resources for readers who may wish to track future changes in the law, which is in a constant and rapid state of flux. Extensive further references can also be found at www.profilebooks.com/stephen-johnson. However, as well as the rapidly changing state of the law, each IP issue depends on the facts and the specific country in question. This book is not intended to offer legal advice as to any country and in all situations a lawyer should be consulted.

I owe thanks first to Christopher Rees, a long-time friend and a partner at Taylor Wessing in London, who generously reviewed my manuscript from a UK and European perspective; to David Tenenbaum of Global Economics Group, who reviewed and contributed to the chapter on valuing IP; to Stephen Brough and Penny Williams and the team at Profile Books for their editing; to Andrew Clark, who checked facts and citations and made useful suggestions; and to my research assistant, Megumi Yukie. More generally, I owe thanks to all my colleagues and clients, who over the years have provided such interesting work as well as their friendship. However, please note that the content of (and mistakes in) this book are entirely my own, and that the views expressed are mine and do not reflect those of my current or former clients, or my current or former colleagues or employers. Lastly, thanks to my wife, Kimberly, who so generously encouraged and enabled this effort and to my children, Graham and Violet, who have lived through its long gestation.

Stephen Johnson
April 2015

1 An introduction to intellectual property

INTELLECTUAL PROPERTY (IP) is worth an enormous amount of money. A crude calculation of the value of intangible assets, including IP, held by public companies can be made by subtracting the value of financial and tangible assets from their market capitalisation. According to a survey by Ocean Tomo, an IP merchant bank, the implied share of intangible assets as a percentage of the value of the S&P 500 was 80% in 2010.[1] Although a portion of the intangible assets of corporations comprises goodwill (an accounting entry which addresses, for example, the value of an acquired business not attributable to identifiable assets), a substantial amount is attributable to IP, such as patents, designs, trademarks, domain names, copyrights, databases, trade secrets and know-how.

By default, investors in most publicly quoted companies are investing in intellectual property. Each year BrandZ, a global brand equity database, determines the world's most valuable brands. The leader in 2014 was Google, with a calculated brand value of over $158 billion.[2] According to the *Wall Street Journal*[3] and other sources, an actual transaction transferring the IKEA brand from a parent to a subsidiary company in 2012 valued the IKEA brand at $11 billion. A year earlier $4.5 billion was paid for the portfolio of patents owned by Nortel Networks, a bankrupt Canadian telecommunications company.

IP affects countries' economies. In March 2013, the US Bureau of

For a quick summary of points to note and strategic considerations, go to page 280

Economic Analysis announced that it was changing the calculation of gross domestic product (GDP) to capture output based on IP and to recognise a new group of "intellectual property products" by capitalising research and development (R&D) spending and treating it as a balance-sheet asset, rather than treating it as an expense on the income statement, and adding to GDP a category of creative works, such as long-lasting television programmes. These and other technical changes in GDP calculation had the effect of increasing US GDP by 3%.

The US and Canada lead the world in viewing intellectual property as an investment asset in itself. For example, Intellectual Ventures was established in Seattle in 2000 by Nathan Myhrvold, formerly of Microsoft, and later Peter Detkin, formerly of Intel, to assemble a portfolio of patents acquired from third parties to be licensed to corporations, as well as to develop new intellectual property. And it is in Canada and the US that private equity funds have been established to focus on the acquisition of royalties arising under pharmaceutical or biotechnology licences. The idea of investing in "pure-play" IP has now spread to Europe and can be seen in the success of companies such as IP Group.

Individuals and organisations in the US have made a point of acquiring patents with a view to profiting from their enforcement. The large sums awarded in damages for patent infringement in the US (according to Lex Machina, a company providing statistical analysis of US IP litigation, the median amount for such awards was approximately $1.26 million in 2013, but with a much higher average amount of over $34 million as a result of some large awards),[4] together with the costs and uncertainties of litigation, have fostered an industry of professional plaintiffs that purchase patents for enforcement. They are often referred to in derogatory terms as "patent trolls", or more recently "non-practising entities" or "patent assertion entities" (PAEs), and some of them are publicly quoted. This type of patent enforcement, where the sole purpose is to obtain a financial reward, has, because of the costs imposed on the technology industry, become a political issue; it has also spurred patent reform legislation in the US that targets PAE litigation practices but arguably may weaken patent rights in general. Barack Obama addressed these

issues in February 2013 and subsequently has taken action aimed at trying to counter some of the perceived ills of PAEs:[5]

> *The folks that you're talking about are a classic example; they don't actually produce anything themselves. They're just trying to essentially leverage and hijack somebody else's idea and see if they can extort some money out of them.*

However, research by historians of the patent system shows that an active market in patents and the involvement of investors is nothing new. B. Zorina Khan, a professor at Bowdoin College in the US, points to the *Railway Times* of 1870, which reported that in the US railroad industry:[6]

> *[There is] a ring of patent speculators, who with plenty of capital, brains, legal talent and impudence, have already succeeded in levying heavy sums upon every considerable railway company in the land. This case is not an isolated one, there are hundreds of them, and the railway company that made up its mind to insist upon its rights had to keep a large legal force, a corps of mechanical experts, and other expensive accessories, in order to secure that end.*

IP may be property, and valuable property at that, but it is very different from a tangible asset in the way that it is valued and treated for accounting purposes. IP developed internally may be invisible on an organisation's balance sheet because it is not recognised under generally accepted accounting principles (as *The Economist* stated in August 2014, "if it's intangible, bean-counters won't touch it"[7]). Methods of valuing IP remain, if not in their infancy, certainly still in adolescence. The same applies to markets for buying and selling IP. Legal aspects are far from settled. For example, the remedies available to owners of patents used in critical technical standards in the telecoms industry are only in the process of being clarified.

The market impact of successful patent challenges in the pharmaceutical industry, where patents on blockbuster drugs may be invalidated and generic medicines allowed onto the market, reveals that IP is an asset class where legal challenges and the scope of legal

protection can have a dramatic impact on the fortunes of a company reliant on intellectual property. In 2015, for example, an activist US hedge fund announced that it would challenge certain types of patents on pharmaceuticals as part of a strategy of shorting the stock of the owners of those patents.

Equally, digital technologies and the internet have destroyed value for the holders of copyright and to a lesser degree the owners of brands. Virtually any user of the internet can copy and distribute copyrighted material. The impact on the music industry of illegal copying and sharing was early and severe. As technology developed and bandwidth broadened, film and television started to suffer. Technological change has also resulted in the publishing industry facing greater levels of copyright infringement.

For trademark owners, especially in the fashion industry, the internet has become a worldwide marketplace for the sale of counterfeit goods. The regulation and control of piracy on the internet remain controversial, and there are concerns about the effect on free speech of stricter controls. Meanwhile, organised crime has not been slow to take advantage of the internet in profiting from copyright piracy and counterfeiting as well as fraud; thus the internet has become a vehicle for cybercrime and hacking, with such dramatic examples as the hack of Sony Pictures in 2014 which revealed reams of corporate information.

Intellectual property is an intangible creation of the law and intellectual property rights can be enforced only through legal process. To capitalise on the value of this asset class, business people and investors need to understand the legal strengths and weaknesses of IP, how it may be protected, its practical and legal limitations, and how transactions or strategies may enhance or destroy its value. This book aims to explore these legal issues from a business perspective.

International norms, national systems

As noted in the Preface, IP's international legal standing dates back to the 19th century. The current international era dates back to the conclusion of the World Trade Organisation's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) negotiated as part of the 1986 to 1994 Uruguay Round of trade negotiations. TRIPS

substantially raised the standards for the protection of intellectual property, and it requires minimum standards from all WTO members. TRIPS builds on two fundamental older treaties: the Paris Convention, which covers international patent, trademark and design rights in member states; and the Berne Convention, which covers copyright protection in member states. In addition, TRIPS legislates for the topography of integrated circuits and the protection of trade secrets.

Although treaties have led to a degree of harmonisation and simplified the process for applying for registrations of intellectual property internationally, the legal rights underlying intellectual property generally remain national in nature, and ownership and other legal rights may differ along national lines. Litigation in the phone industry also shows that differing legal systems may lead to differing results in related litigation in different countries.

Notwithstanding or possibly because of TRIPS, IP has become both a diplomatic and a business issue internationally. According to a 2012 article in the *Financial Times*, "Intellectual Property: A New World of Royalties", the US ("the imperial capital of intellectual property rights") now earns almost as much from royalty and licence fees from abroad as it does from farm exports.[8] It was felt that TRIPS pushed the agendas of technologically advanced countries as opposed to those of the developing world, particularly in the field of pharmaceuticals. This is still an issue with India and other developing countries (see below), but it is by no means always a developing-world issue. A dispute has begun to develop between the US and Canada over implementation of Canadian patent law leading to invalidation of Canadian patents owned by US companies.

Meanwhile, the US is seeking to protect its creative industries against infringement. For example, the intellectual property provisions of the pending Trans-Pacific Partnership (TPP) treaty – between the US, Canada, Mexico, Australia, Brunei, Chile, Peru, Japan, Malaysia, New Zealand, Singapore and Vietnam – expand on and go further than TRIPS, and seek to further protect the interests of copyright and other IP owners. In the process, the US is pitting not only the differing economic agendas of countries in different stages of economic development against each other, but also the interests of industries such as entertainment and software, which are dramatically affected by piracy, against those of

large internet companies such as Google and Yahoo, which are wary of being required to police users who may be committing those acts of piracy, as well as against advocates of free speech.

By contrast, the interests of large internet companies seem to have influenced the agenda on issues such as protection of data privacy, where proposed changes in EU regulation have prompted a massive lobbying effort in Brussels to enable these companies to maintain their current business models of monetising data. More than 4,000 amendments – a record – were proposed for the latest draft of the EU Data Protection Regulation. As a result of Edward Snowden's intelligence revelations, data privacy has become a major diplomatic issue.

However, outside the area of data privacy, it is probably fair to say that in the US and Canada, the EU, Australia, New Zealand and Japan the similarities between approaches to IP outweigh the differences. For example, each of these regions has historically accounted for the majority of international patent filings under the Patent Cooperation Treaty (PCT), which is the primary international treaty allowing for multiple international patent filings in a streamlined manner.

The BRIC countries

In the BRIC countries (Brazil, Russia, India and China) attitudes to intellectual property vary enormously. China may have a poor record of prosecution of "knock-offs" in the fashion and entertainment industries and a history of software piracy, but according to OECD statistics between 1995 and 2005 its international patent filings grew by an annual average of 33%. China entered the top 15 patent filing countries in 2005 and now is among the top five filers of patents under the PCT. It is also developing rapidly in terms of the importance of IP, as Chinese companies and individuals become more innovative and benefit from IP protection. For example, in 2013 ZTE Corporation and Huawei were among the top filers of PCT patents, according to the World Intellectual Property Organisation (WIPO).

Patent filings have become a focus of Chinese government policy, with ambitious patent filing targets being set in the National Patent Development Strategy 2011–20. In the area of infringement, in 2010 the government launched a "special campaign" against IP infringement

and counterfeiting, which led to judicial and administrative changes as well as increased enforcement activity. Subsequent moves by the government suggest a more determined commitment to dealing with issues such as piracy. Some observers, however, have highlighted policies aimed at encouraging indigenous innovation in China, which could be perceived as discriminating against other countries.

Between 1995 and 2005, India's patent filings grew by 26% per year on average. By contrast, Russia became a member of the WTO only in December 2011. Following new laws and commitments to improve its protection of intellectual property, there has been a significant increase in patent filings in Russia, but from a low base. Table 1.1 shows the balance of external royalty payments for the BRIC and selected other countries in 2013.

TABLE 1.1 **Intellectual property: balance of external royalty payments, $ million, 2013**

	Payments	Receipts	Net
US	39,016	129,178	90,162
Japan	17,831	31,587	13,756
Germany	8,399	12,908	4,509
UK	9,037	12,947	3,910
France	10,150	11,556	1,406
Brazil	3,669	597	–3,072
India	3,904	446	–3,458
Russia	8,389	738	–7,651
China	21,033	887	–20,146

Source: World Bank (http://data.worldbank.org)

Brazil and India may be grouped together superficially, in that each has the treaties and laws in place following TRIPS to protect intellectual property, but in practice IP rights remain problematic and inefficient. However, Brazil does appear to see IP protection as an economic driver, whereas India gave the impression of being more ambivalent.

However, in 2014, the administration of the new prime minister, Narendra Modi, has expressed an intent to draw up policies on IP.

Although the information technology (IT) sector in India may be regarded as being pro-intellectual property, and India has been a forum in the worldwide patent "phone wars", the country's pharmaceutical industry has historically been opposed to patent protection as restricting the production of generic drugs and thereby denying poor people access to medicine. India now provides patent protection to drugs following the TRIPS round, but litigation over the scope of rights continues. For example, one of many disputes over drug patentability led to a March 2012 headline in the *New York Times*, "Patent v. Patient".[9] However, in July 2013 the *Financial Times* reported that an Indian health-care company, Zydus Cadila, had brought to the market a new chemical entity – a treatment for diabetes – that was discovered and developed in India.[10] Thus over time, as India moves from being a low-cost producer of generic drugs to an innovator, attitudes may change.

What is intellectual property?

What does the term intellectual property mean? Put simply, it is a collective term for patents, trademarks, copyrights, design rights, trade secrets and other similar rights (a couple of decades ago patent lawyers woke up and found they were intellectual property lawyers, which sounded a lot better). According to the WIPO website, "intellectual property refers to creations of the mind".[11] Intellectual property is often distinguished from real property, meaning land and buildings and other structures attached to land, and personal property, which generally refers to items that you can pick up and touch and move around, such as a book or a laptop. Confusingly, however, in many systems IP is technically a form of personal property. As stated in the UK Patents Act of 1977: "Any patent or application for a patent is personal property."

IP law covers a set of rights in works, inventions, ideas and information and how they are expressed or used, and the ways in which the products of companies are recognised by consumers and in the marketplace. As a general rule, intellectual property laws prevent or set limits on copying or use of these types of rights. Furthermore, the rights of an owner of intellectual property to prevent such copying

or use vary by geography and time depending on the rights obtained in a particular country and whether those rights are in force or have expired or have been lost.

For example, if you buy a hard copy of this book in England, you own that copy and the law that applies is the law of personal property. However, I as the author own the copyright in the text, and as copyright owner I have the right to determine who may make copies of this text. I have entered into a "licence" (a permission to use a patent, trademark, copyright, trade secret or other form of IP) with the publisher of the book, Profile Books, to allow it to publish the book. Profile in turn has a licence to use the Economist trademark from the owner, The Economist Newspaper Limited, which controls how that trademark is used and can prevent unauthorised use.

The ownership of the copyright, what rights it gives me, the ownership of the Economist brand and the rights to that brand are all governed by intellectual property law. If you are reading this book using a laptop or tablet, that device incorporates hundreds if not thousands of inventions, the inventors of which have been granted patents. A number of those patents no longer have legal effect or will have "expired" because of the passage of time since the patent was obtained. Some may be owned by the laptop or tablet manufacturer, and others by third parties. Some of the third-party patents may have been licensed in a cordial business negotiation, but others may have been asserted by third parties in expensive litigation resulting in the laptop or tablet manufacturer agreeing to pay for the right to use those patents. Patents are a form of intellectual property, and all the issues of patent ownership, duration and infringement are governed by intellectual property law.

From a business perspective, the single most important piece of intellectual property relating to the laptop or tablet may not necessarily be any one of the patents but rather the brand of the device itself, for example Dell, Apple or Lenovo. Others may argue that the most important intellectual property rights may be those of the developer of the operating system, for example Microsoft, which owns the copyright in the operating system programs used by Dell and Lenovo and also owns many thousands of patents on inventions relating to its software.