

Unleashing Small Business Through IP

.....
*Protecting
Intellectual Property,
Driving Entrepreneurship*



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About “Unleashing Small Business Through IP”

In our global, knowledge-based, innovation-driven economy of the twenty-first century, it is imperative to establish, protect and enforce intellectual property rights. Robust entrepreneurship and economic growth are strengthened by such protections.

In fact, intellectual property matters the most to smaller enterprises and entrepreneurs. No matter what the industry or line of business - from local shops to Internet ventures to manufacturing - intellectual property, or IP, is essential to business growth, capital acquisition and success.

This booklet provides insights on the role of IP in our economy and within various industries, on the tremendous costs of IP theft, and on IP's impact on entrepreneurship and small business.

The booklet will serve as an invaluable guide for policymakers, entrepreneurs, and the general public in helping to understand the critical role that intellectual property protections play in driving entrepreneurship, economic growth and job creation. The U.S. must continue to lead on protecting and enforcing intellectual property rights. IP is central to innovation. It is essential to global prosperity and human progress.

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1

Intellectual Property: Best of Times, Worst of Times?

In the nineteenth century, Charles Dickens wrote in *A Tale of Two Cities*, “It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness...” In the twenty-first century, that quote might be applied to the tremendous opportunities, as well as threats, that exist when it comes to vast leaps forward in assorted technologies.

Consider that in mid-December 2012, Apple iPhone 5 handsets established a record for sales during a weekend launch of an Apple product in China.¹ It was reported that “Apple CEO Tim Cook called China a ‘very important market for us,’ and said ‘customer response to [the] iPhone 5 in China has been incredible.’”²

However, it was announced on January 3, 2013, that U.S. Customs and Border Protection officials seized

¹ Matthew Shaer, “Apple iPhone 5 see blockbuster weekend in China,” *The Christian Science Monitor*, December 17, 2012, accessed at <http://www.alaskadispatch.com/article/apple-iphone-5-sees-blockbuster-weekend-china>.

² Ibid.

counterfeit Apple adapters and USB cables in Anchorage, Alaska.³ Arriving by plane from China, the goods looked like “iPhone 5 USB ‘lightning’ connector cables and adapters [and] the products included fake Apple logos and Underwriters Laboratories (UL) trademark icons.”⁴

Of course, there are countless examples of small businesses finding unprecedented success via new technologies. One high-profile example is how conservative television commentator Glenn Beck left traditional television behind and started up his own Internet-based network, TheBlaze TV, operated by Beck’s Mercury Radio Arts. Beck gained total control over programming, built up 300,000 paid subscribers, and announced in September 2012 that his network would be on Dish Network, and offered to other cable and satellite systems.⁵

Meanwhile, a small Minnesota-based company reaching into the international marketplace also faced a case of international IP theft: “Plymouth-based Midwest Rubber Service and Supply makes squeegees for floor scrubbing machines with Linatex, a red rubber that is so unique and durable, its Malaysian manufacturer had it trademarked. But since the companies didn't do anything more to protect the rubber's good name, counterfeiters made knockoffs of Midwest's squeegees... Midwest's business plummeted as its customers in China and Europe demanded it cut prices to match counterfeits.”⁶

³ Laurel Andrews, “More than \$635,000 in counterfeit Apple products seized in Anchorage,” *Alaska Dispatch*, January 3, 2013, accessed at <http://www.alaskadispatch.com/article/more-635000-counterfeit-apple-products-seized-anchorage>.

⁴ *Ibid.*

⁵ Brian Stelter, “Beck Takes His Conservative Internet Shows to the Dish Network,” *The New York Times*, September 12, 2012, accessed at <http://www.nytimes.com/2012/09/12/business/media/glenn-becks-show-heads-to-dish-network.html?pagewanted=all>.

⁶ Dee DePass, “Intellectual property theft hurts small businesses,” *Star Tribune*, November 3, 2012, accessed at <http://www.startribune.com/business/177025241.html?refer=y>

In this entrepreneurial, high-tech, global, knowledge-based, innovation-driven economy of the twenty-first century, a great deal of emphasis is placed on intellectual property (IP) – from large firms, like Apple, to small, entrepreneurial ventures – and for good reason.

In economics, business, government and public policy, it's common to hear that it is imperative to establish, protect and enforce intellectual property rights. Yet, some observers actually are rather cavalier towards intellectual property rights, with a few even asserting that protecting intellectual property is counter-productive.

Let's first define what we are talking about exactly.

Private property rights provide the property owner with the rights to the use of property (that is, possession, use and control); to legal protection against those who would invade or infringe upon that property without the owner's permission; and to trade or transfer that property.⁷

Through copyrights, patents and trademarks, legal protections are extended to the intellectual property of individuals and businesses. As defined by the *New Oxford American Dictionary*, intellectual property is “a work or invention that is the result of creativity, such as a manuscript or a design, to which one has rights and for which one may apply for a patent, copyright, trademark, etc.”

The World Intellectual Property Organization offers a more comprehensive explanation of intellectual property:

“Intellectual property (IP) refers to creations of the mind: inventions, literary and artistic works, and symbols, names, images, and designs used in commerce. IP is divided into two categories: Industrial property, which includes inventions

⁷ James D. Gwartney, Richard L. Stroup, Russell S. Sobel, and David A Macpherson; *Economics: Private & Public Choice* (Mason, OH: South-Western Cengage Learning, 2011), pp. 32-33.

(patents), trademarks, industrial designs, and geographic indications of source; and Copyright, which includes literary and artistic works such as novels, poems and plays, films, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs. Rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and those of broadcasters in their radio and television programs.”⁸

In any economy, a central function of government is to protect private property. Specifically, the law must secure private property from violations by either government or other private actors. These property rights serve as a foundation for what might be called the four “I’s” – investment, improvement, innovation, and invention. After all, why invest, improve, innovate or invent, if others are free, in effect, to steal those investments, improvements, innovations or inventions? There must be the expectation of a return for one’s labor and capital. Without the establishment, protection and enforcement of property rights, economies, at best, simply stagnate and suffer relative decline. It’s natural to see how property rights extend from physical property to intellectual property.

Nonetheless, plenty of people inside and outside the U.S. fail to understand or choose to ignore the importance of intellectual property, and/or willfully violate rights when it comes to IP.

But just how different is the violation of physical property and intellectual property? Consider two scenarios.

⁸ World Intellectual Property Organization, “What is Intellectual Property?” <http://www.wipo.int/about-ip/en/>.

Scenario 1: Late one night, you happen to be strolling by a retail store advertising the arrival of the latest release from your favorite band. The store is open, but you don't have any cash handy. At the same time, though, you really want to hear and possess those new songs. Inside the store, a clerk is paying absolutely no attention to what's going on, and you notice no electronic detector at the door. In a few seconds, you have found the CD, slip it into your coat, and off you go, ready for a pleasant night of music listening.

Scenario 2: Late one night, you're sitting on the couch cruising the Internet on a laptop or tablet, and you discover that the new release from your favorite band came out earlier in the day. Without thinking about copyright, you quickly go to your preferred peer-to-peer site or digital storage locker. The songs are on your hard drive in just a few minutes, and you paid nothing. You're ready for a pleasant night of music listening.

Is there really a moral, ethical or economic difference between these two acts? Most people would not even consider shoplifting, as in Scenario 1, but many of the very same people have no problem with or have played out the same or similar actions as in Scenario 2.

For most people, it's clearly wrong to steal a CD from a store. Yet, millions of individuals apparently have no qualms about ignoring copyright laws and protections by going online to steal the very same songs that were on the CD. In the end, whether shoplifting a CD, buying a bootlegged CD from the back of someone's van, or downloading copyrighted music without paying, it's all the same – it's stealing. Specifically, what we're talking about is the theft of intellectual property, and the negative

impact spreads to those who compose, perform and produce music directly, as well as to all of the businesses – most of them small firms, as we shall see later – and employees that work with and serve those in the music business.

The same, of course, goes for computer software, movies, books, video games, and so many other products. And given how important these and other IP industries are to the U.S., IP theft undermines our own economy, entrepreneurs, businesses and jobs.

Again, though, we must not lose sight of the unprecedented expansion of opportunity for IP creators and owners served up by advancements in telecommunications, digital and computer technologies, along with increased globalization. Entrepreneurs and other creators in the music, software, movie, book, video, and gaming industries, for example, have avenues for distribution and sales now that were unimaginable by most not that long ago. The opportunities are breathtaking.

In a February 2004 speech at the Stanford Institute for Economic Policy Research Economic Summit in California, then-Federal Reserve Board Chairman Alan Greenspan summed up the increasing importance of IP to the U.S. economy:

“Over the past half-century, the increase in the value of raw materials has accounted for only a fraction of the overall growth of U.S. gross domestic product (GDP). The rest of that growth reflects the embodiment of ideas in products and services that consumers value. This shift of emphasis from physical materials to ideas as the core of value creation appears to have accelerated in recent decades... If the form of protection afforded to intellectual property rights affects economic growth, it must do so by increasing the

underlying pace of output per labor hour, our measure of productivity growth. Ideas are at the center of productivity growth. Multifactor productivity by definition attempts to capture product innovations and insights in the way that capital and labor are organized to produce output. Ideas are also embodied directly in the capital that we employ. In essence, the growth of productivity attributable to factors other than indigenous natural resources and labor skill, is largely a measure of the contribution of ideas to economic growth and to our standards of living.”

That process has only further accelerated over the near decade since Greenspan’s address.

In the same speech, Greenspan observed: “Market economies require a rule of law. A society without state protection of individual rights, especially the right to own property, would not build private long-term assets, a key ingredient of a growing modern economy.” Hence, the imperative to establish and protect IP rights.

As we shall see in the rest of this book, protecting IP is a very big deal for U.S. competitiveness, investment, innovation, economic and income growth, entrepreneurs, businesses and workers.

When it comes to the twenty-first century’s IP economy, let’s strive to paraphrase Dickens by stating: It is the best of times, it will be a time of great opportunity as long as it is the age of wisdom when it comes to protecting intellectual property.

2

IP Intensity in the Marketplace

It's hard to think of a business that is not directly – or at least, indirectly – involved in an industry where intellectual property plays an important role. That's not surprising when considering the realities, including the numbers, regarding IP in the economy.

A 2012 report titled “Intellectual Property and the U.S. Economy: Industries in Focus” (published by the U.S. Department of Commerce, and prepared by the Economics and Statistics Administration and the United States Patent and Trademark Office) identified “IP-intensive industries” and estimated their contributions to the U.S. economy.

Of a total of 313 industries, 75 were classified as IP-intensive.

Consider the size and role of patent-intensive industries.

Patents are defined by the USPTO as “a property right granted by the Government of the United States of America to an inventor ‘to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States’ for a limited time in exchange for public

disclosure of the invention when the patent is granted.” It’s also noted that patents “are granted for new, useful and non-obvious inventions for a period of 20 years from the filing date of a patent application.”

The Commerce study focuses on utility patents,⁹ and only those issued to U.S. manufacturing corporations, “which accounted for about 45 percent of total patents issued between fiscal years (FY) 2004 and 2008 and 87 percent of all U.S.-owned patents for this time period.”

The study labeled “patent-intensive industries as ones with above-average patent intensity (patent/job ratio) when comparing all industries.” Those broad industry categories were:

⁹ As noted in the study: “In addition to utility patents, there are two other types of patents: design and plant. Utility patents apply to processes, machines, articles of manufacture, composition of matter, or any new and useful improvements thereof. Design patents apply to ornamental designs for an article of manufacture. Plant patents apply to the invention or discovery of selected new varieties of asexually reproducing plants.”

Industry Title	Patent Intensity (patents/1000 jobs)
Computer and peripheral equipment	277.5
Communications equipment	264.8
Semiconductor and other electronic equipment	111.6
Other computer and electronic products	108.5
Navigational, measuring, electromedical, and control instruments	96.1
Basic chemicals	80.2
Electrical equipment, appliance and components	54.3
Pharmaceutical and medicines	46.8
Other miscellaneous	37.5
Other chemical products and preparation	32.4
Medical equipment and supplies	32.0
Machinery	31.6
Resin, synthetic rubber, fibers and filaments	26.0

Source: “Intellectual Property and the U.S. Economy: Industries in Focus,” published by the U.S. Department of Commerce, prepared by the Economics and Statistics Administration and the United States Patent and Trademark Office.

The study also looked at trademark-intensive industries.

The USPTO defines trademarks as protecting “words, names, symbols, sounds, or colors that distinguish goods and services from those manufactured or sold by others and to indicate the source of the goods. Trademarks, unlike

patents, can be renewed forever as long as they are being used in commerce.” As for trademarks in the Commerce report, it is pointed out, “Unlike patents, there is little academic research examining industry use of trademarks. Accordingly, this report offers what may be the first comprehensive analysis of trademark use by U.S. industries that is grounded in original research, data, and measurement theory.”

It was acknowledged, “Industries throughout the economy rely on trademarks registered at the USPTO to protect brands for the goods and services they market.” Trademark-intensive industries were identified as having a trademark-intensity measure (trademarks relative to employees) above the sample industry mean. Out of 235 industries, 55 were classified as trademark intensive. The top 15 were:

Industry Title	Trademark Intensity (trademarks/1000 workers)
Audio & video equipment mfg.	82.5
Other miscellaneous manufacturing	64.5
Satellite telecommunications	35.3
Lessors of nonfinancial intangible assets	33.3
Other information services	14.8
Travel arrangement & reservation	13.5
Other telecommunications	12.4
Lessors of real estate	11.2
Software publishers	8.2
Electronic shopping & mail-order houses	7.7
Soap, cleaning compound & toiletries	7.4
Cutlery & handtool manufacturing	7.3
Other general purpose machinery manufacturing	6.1
Medical equipment & supplies manufacturing	5.9
Newspaper, book & directory publishing	5.8

Source: "Intellectual Property and the U.S. Economy: Industries in Focus," published by the U.S. Department of Commerce, prepared by the Economics and Statistics Administration and the United States Patent and Trademark Office.

Finally, there is the matter of copyright.

The USPTO notes that copyright “protects works of authorship, such as writings, music, and works of art that have been tangibly expressed.” A copyright lasts for the life of the author plus 70 years. The Commerce study focused on “the set of industries that are primarily responsible for the *creation or production* of copyrighted materials and designate them as copyright-intensive.”

Those industries are:

- Newspaper, periodical, book and directory and publishing
- Software publishers
- Motion picture and video industries
- Sound recording industries
- Radio and television broadcasting
- Cable and other subscription programming
- Other information services (news syndicates and Internet sites)
- Specialized design services (visual and graphic arts)
- Computer systems design and related services (software and databases)
- Advertising, public relations, and related services
- Other professional, scientific, and technical services (photography and translation)
- Performing arts companies
- Independent artists, writers, performers

Overall, it was reported that the full slate of IP-intensive industries account for 35 percent of GDP, and 28 percent of all jobs in the economy.

At the same time, however, it must be understood that this comes up short as to the full IP story in the U.S. economy. As noted in the study: “Because all U.S. industries rely on IP to some degree, the statistics reported here for the sectors that use IP most intensively may tend

to under-represent the broad impact of IP in the American economy. Moreover, the statistics reported here may not fully reflect the long-run economic benefits and costs of IP in promoting innovation and productivity growth. For example, while this report shows that employment in trademark-intensive industries is almost six times as great as employment in patent-intensive industries, it may be that the kinds of innovation protected by patents play a larger role in driving the long-run growth of productivity throughout the economy.”

Actually, over the three most recent years, growth in IP filings ran ahead of economic growth in general, according to data from the World Intellectual Property Organization and the World Bank.

WIPO’s “2012 World Intellectual Property Indicators” reported that following “a drop of 3.6% in 2009, patent applications rebounded strongly in 2010 with growth of 7.5%, and continued to grow by 7.8% in 2011.” In addition, trademark applications “grew by 9.6% in 2011, following the 9% growth recorded in 2010.”

As for the U.S. in particular (according to WIPO’s “Statistical Country Profiles: United States of America” at http://www.wipo.int/ipstats/en/statistics/country_profile/countries/us.html, accessed in January 2013), annual U.S. patent applications grew from 1997 to 2007, but declined in both 2008 and 2009, during the U.S. recession. Growth resumed in 2010, but patent applications declined again in 2011.

Meanwhile, annual trademark applications grew from 1997 to 2000, declined in both 2001 and 2002 during a poor economy, and resumed growth from 2003 to 2007. But with recession, trademark applications declined in 2008 and 2009, with growth resuming in 2010 and 2011.

Even during recent tough economic times, growth in IP industries has become essential to U.S. economic growth,

as well as for and reflecting the health of small business, as will be further highlighted in the next two chapters.

3

IP in the U.S. Economy

No matter how the numbers differ from study to study, from estimate to estimate, the important role that intellectual property plays in the twenty-first-century economy comes through loud and clear.

IP represents a major share of the U.S. economy, while also being an area for high-valued, robust growth. For good measure, IP industries provide a big share of exports, a large portion of U.S. jobs, and pay a premium in terms of salaries and wages.

A wide range of economic studies has provided fascinating estimates on the economic impact of IP.

In April 2005, for example, the International Intellectual Property Alliance issued a valuable survey of findings regarding the role copyright industries play in economic development.¹⁰ The key point was: “The general consensus among economists and scholars is that enhanced copyright protection leads to positive economic growth. The statistical evidence suggests that economies with

¹⁰ International Intellectual Property Alliance, “Initial Survey of the Contribution of the Copyright Industries to Economic Development,” April 2005.

stronger copyright protection experience a greater contribution to GDP from those sectors.”

Following are key findings worth noting, not just about copyright, but also patents and IP protections in general:

- “An adequate and effective copyright regime creates jobs in developing countries, creates taxable income for the governments of those countries, and compels foreign investment by assuring protection for the investors’ intellectual property.”

- Economist Keith Maskus “notes that copyright protected products have extremely high investment costs but very low copying costs, and points out the detrimental effects of a regime that would allow piracy: ‘If other members of society were allowed to free ride on works without compensating their creators, the incentives to create would be severely dampened...’ Maskus offers statistical evidence of increased international trade in goods protected by intellectual property rights in both developed and developing countries.”

- “The strong suggestion is that strengthened IPRs [that is, intellectual property rights] contribute to positive growth by creating more attractive [foreign direct investment] opportunities for foreign investors and thus create a spill-over which leads to greater domestic growth. Maskus identifies four implications of this dynamic. First, weaker IPR regimes tend to isolate countries from technological advances, including computer software advances protected by copyright. Secondly, those countries with weaker protection of IPRs receive fewer spillover benefits that new technologies would bring. Third, the technologies that are available to such countries tend to be out of date. *Finally, and perhaps most importantly, countries with weak IPRs provide almost no incentive to*

their people to create or innovate, nor do they attract new technological investment.” (Emphasis added.)

- A 2005 study by World Bank economist “Smarzynska Javorcik concludes that weak IPR protection acts as a deterrent for investors. Furthermore, ‘[t]here is also some evidence that weak IPR protection may discourage all investors, not just those in the sensitive sectors.’ Finally, Smarzynska Javorcik finds that where there is a ‘lack of IPR protection,’ investors are discouraged ‘from undertaking local production and encourag[ed]. . . to focus on distribution of imported products.’ As with the general statement about IPR protection, ‘this effect is present in all sectors, not only those relying heavily on IPR protection.’”

- Economist Edwin Mansfield found that “IPR protection afforded by the patent system provides a way for inventors to get back some of the benefits to society at large that would not be theirs were there no patent system at all. Mansfield’s findings indicate that the existence of the patent system is thought to be crucial for innovation in both the chemical and drug industries.”

- Economists Claude E. Barfield and Mark A. Groombridge “make the compelling point that the kinds of growth the United States has seen as a result of the contribution of the copyright industries, will go to any country that institutes a strong intellectual property regime.”

- “The general consensus of the academic literature is that stronger copyright protection contributes to positive growth. This is arguably the case regardless of a country’s level of development. Strong intellectual property rights provide incentives for local creators to bring the products of their mind to their local markets. By doing so, they help to lay the groundwork, in their countries, for strong growth

the likes of which have been seen in countries which have effective regimes for IPR protection.”

Subsequently, various studies have reconfirmed the importance of IP rights and protections for economic growth, incomes, jobs, investment, trade, etc. Consider the key findings from various studies published over the last few years that provide a powerful message as to IP and the economy.

• In 2005, Stephen E. Siwek and Economists Incorporated did a study commissioned by NBC Universal titled “Engines of Growth: Economic Contributions of the US Intellectual Property Industries.” It was billed as “the first study that quantifies the economic contributions of intellectual property (IP) industries to the U.S. economy.” Among the key findings were:

1) IP industries “had an approximate 20% share of U.S. private industry GDP in 2003,” but were “responsible for nearly 40% of the growth achieved by all of U.S. private industry during that year.”

2) IP industries “had approximately 40% of the GDP of U.S. exportable products and services yet contributed nearly 60% to the growth of the U.S. exportable high-value-add products and services.”

3) IP industries “are essential to the future growth of the U.S. economy. GDP 10-year growth estimates would be approximately 30% lower than current predictions without the contributions of the IP industries.”

4) IP industries account for nearly 18 million workers, and pay higher wages than most other industries.

5) “For all IP industries, *gross exports* in 2004 exceeded \$455 billion.”

- In the *Economic Report of the President 2006*, an essay titled “The Role of Intellectual Property in the Economy” served as an excellent primer on intellectual property’s economic significance.

It was reported that IP industries, that is, those “highly dependent” on patent or copyright protections, “represented approximately 17.3 percent of total U.S. economic activity and approximately one-fifth of private economic activity” in 2003.

As for public firms, it was noted, “Intellectual property accounts for approximately 33 percent of the value” of publicly traded U.S. corporations, and in all, the value of IP in the U.S. could top \$5 trillion. But this estimate excluded trademarks due to the difficulty in separating the value of trademarks from the value of branding. It was pointed out that “the combined value of branding and trademarks represents approximately 14 percent of the total value of publicly traded U.S. firms.”

Indeed, it was noted that the economic importance of IP is under-estimated in the analysis, as “many industries that are not counted among the intellectual property industries ... generate innovations and rely on patent and other intellectual property protection to create incentives for innovation and growth.” In addition, the economy still benefits from previous IP advances even though IP protections have expired, and the information and innovations have moved into the public domain.

Robust growth in the IP sector was highlighted as well: “Other studies have indicated that intellectual property-related industries tend to grow at approximately twice the rate of the economy as a whole and are an important contributing factor not only to the productivity growth of

the intellectual property-related sectors of the economy but also to the growth of all sectors of the economy.”

And then there is IP’s role in U.S. trade. From 1991 to 2002, but for one year, “exports from copyright industries grew at a faster rate than total exports” – on average six percentage points higher and becoming “an increasing share of our total exports.”

And finally, others studies highlighted made clear the “direct link between greater intellectual property protection and capital investment.”

- In April 2010, NDP Consulting published a study titled “The Impact of Innovation and the Role of Intellectual Property Rights on U.S. Productivity, Competitiveness, Jobs, Wages, and Exports.” It provides a wealth of information on IP and the economy, but it’s worth highlighting here key points on trade and investment.

On trade: “IP-intensive industries promote exports and America’s competitiveness abroad. Investment in IP creates new products and services that strengthen America’s competitiveness in global markets. IP-intensive industries, which made up nearly half of output and sales of all 27 U.S. tradable industries and employed more than 30 percent of American workers in all 27 tradable industries, accounted for about 60 percent of total U.S. exports. During 2000-07, the annual value of exports per employee in IP-intensive industries was 235 percent higher (3.4 times) than in non-IP-intensive industries, \$91,607 and \$27,369, respectively. Employment and economic activities to support exports in IP-intensive industries were also higher than in non-IP-intensive industries.”

And on investment: “IP-intensive industries create jobs and spur economic growth resulting from high investments in research and development (R&D) in comparison to non-IP-intensive industries. While the direct outputs of R&D are typically the development of new forms of intellectual

property, R&D spending also affects the economy by creating jobs and economic activities in R&D industries as well as in their supporting industries. During 2000-07, IP-intensive industries spent almost 13 times the R&D per employee that non-IP-intensive industries spent—averaging \$27,839 and \$2,164 per employee per year, respectively.”

- In January 2011, NDP Consulting published a study titled “Employment and Gross Output of Intellectual Property Companies in the United States.”

As for economic output, the key findings were: “IP companies in the manufacturing and non-manufacturing sectors generated more than \$7.6 trillion in gross output in 2008, accounting for 33.1 percent of total U.S. gross output. IP companies in the manufacturing sector alone generated \$3.9 trillion in output, constituting 75.2 percent of total U.S. manufacturing output. IP companies in the non-manufacturing sector generated \$3.7 trillion in output, accounting for 20.8 percent of U.S. non-manufacturing gross output.”

And in terms of employment: “Based on the latest U.S. official data, we estimate that, in 2008, IP companies in manufacturing and non-manufacturing sectors employed more than 19 million full- and part-time (headcounts) workers and accounted for 16.3 percent of U.S. full- and part-time employment. Nearly 70 percent of U.S. manufacturing jobs and 9.3 million workers (full- and part-time) were in IP companies and less than 10 percent of U.S. non-manufacturing jobs and 9.8 million workers (full- and part-time) were in IP companies.”

- The 2011 edition of “Copyright Industries in the U.S. Economy,” prepared by Economists Incorporated for the International Intellectual Property Alliance, reported that in 2010, total copyright industries contributed significantly

to the overall economy, with added value of \$1.627 trillion, or 11.1% of GDP. In addition, during recent tough economic times, copyright industries grew at a much faster pace than the broader economy, i.e., from 2007-10, total copyright industries grew at an average annual rate of 1.47%, compared to 0.05% for the overall economy.

On the jobs front, it was estimated that total copyright industries accounted for 9.9% of private sector employment in 2010, and average annual compensation in total copyright industries (\$70,513) topped the U.S. average by 15%, with compensation in “core” copyright industries (\$78,128) beating the national average by 27%.

- In the World Intellectual Property Organization’s “2011 World Intellectual Property Report: The Changing Face of Innovation,” the role that IP rights play in explaining differences in income between nations was laid out. It was reported, “As early as the mid-1990s, the economic literature suggested that innovation accounted for 80 percent of productivity growth in high-income economies; whereas productivity growth, in turn, accounted for some 80 percent of gross domestic product (GDP) growth.” In addition, it was stated: “Differences in innovative activity and related technological gaps between countries are a significant factor in explaining cross-country variation in income and productivity levels. According to several studies, roughly half of cross-country differences in per capita income and growth can be explained by differences in total factor productivity, a measure of an economy’s long-term technological change or dynamism.”

- As noted in the previous chapter, the 2012 report titled “Intellectual Property and the U.S. Economy: Industries in Focus,” published by the U.S. Department of Commerce, and prepared by the Economics and Statistics Administration and the United States Patent and

Trademark Office, found that “IP-intensive industries” are major contributors to GDP and jobs. Specifically, IP-intensive industries “contributed 34.8 percent to gross domestic product (GDP), with total value added of \$5.06 trillion in 2010,” while “[d]irect employment in the subset of most IP-intensive industries ... amounted to 27.1 million jobs in 2010, while indirect activities associated with these industries provided an additional 12.9 million jobs throughout the economy in 2010, for a total of 40.0 million jobs, or 27.7 percent of all jobs in the economy.”

A further breakdown on employment pointed to copyright industries providing big job gains. As reported, “Due primarily to historic losses in manufacturing jobs, overall employment in IP-intensive industries has lagged other industries during the last two decades... [However,] copyright-intensive industries provided a sizeable employment boost, growing by 46.3 percent between 1990 and 2011.” That was more than twice the rate of non-IP-intensive industries.

More recently, IP-intensive industries have been ahead of general job creation: “Between 2010 and 2011, the economic recovery led to a 1.6 percent increase in direct employment in IP-intensive industries, faster than the 1.0 percent growth in non-IP-intensive industries. Growth in copyright-intensive industries (2.4 percent), patent-intensive industries (2.3 percent), and trademark-intensive industries (1.1 percent) all outpaced gains in non-IP-intensive industries.”

For good measure, employment in IP-intensive industries paid better – by significant margins. It was reported in the study: “Average weekly wages for IP-intensive industries were \$1,156 in 2010 or 42 percent higher than the \$815 average weekly wages in other (non-IP-intensive) private industries. This wage premium nearly doubled from 22 percent in 1990 to 42 percent by 2010. Patent- and copyright-intensive industries have seen

particularly fast wage growth in recent years, with the wage premium in patent-intensive industries increasing from 66 percent in 2005 to 73 percent in 2010, and the premium in copyright-intensive industries rising from 65 percent to 77 percent.”

Once again, IP proves to be critical to U.S. trade. It was noted that 60.7 percent of U.S. merchandise exports came from IP-intensive industries in 2010, and despite limits on data, that 19 percent of U.S. private services exports came from IP-intensive service-providing industries in 2007.

- In May 2012, the U.S. Chamber of Commerce Global Intellectual Property Center (GIPC) published a report titled “IP Creates Jobs for America.” This analysis was unique in that it broke out the impact of intellectual property on jobs, output, wages, and exports on a state-by-state basis.

The GIPC study found that, nationally, IP-intensive industries accounted for 55.7 million direct and indirect jobs, generated more than \$5 trillion in GDP, and produced 74 percent of total U.S. exports.

As for the state aspect, it’s worth noting the IP impact in the four largest states – California, Texas, New York and Florida.

- In California, 7.38 million jobs, or 55 percent of private sector employment, are supported by IP, while 58 percent, or \$922.8 billion, of economic output is created by IP-intensive firms. In addition, 76.8 percent of exports are IP exports. Average wages in IP-intensive companies are higher than non-IP businesses – \$65,171 and \$47,571, respectively.

- In Texas, 4.61 million jobs, or 49 percent of private sector employment, are supported by IP, while 54 percent, or \$541.3 billion, of economic output is created by IP-

intensive firms. In addition, 85.4 percent of exports are IP exports. Average wages in IP-intensive companies are higher than non-IP businesses – \$55,148 and \$41,320, respectively.

- In New York, 2.78 million jobs, or 36 percent of private sector employment, is supported by IP, while 49 percent, or \$385.8 billion, of economic output is created by IP-intensive firms. In addition, 63.7 percent of exports are IP exports. Average wages in IP-intensive companies are higher than non-IP businesses – \$69,581 and \$53,660, respectively.

- In Florida, 2.05 million jobs, or 28 percent of private sector employment, is supported by IP, while 36 percent, or \$225.5 billion, of economic output is created by IP-intensive firms. In addition, 75.3 percent of exports are IP exports. Average wages in IP-intensive companies are higher than non-IP businesses – \$49,550 and \$36,366, respectively.

Indeed, IP matters to economic growth on an international level, the national level, by state, and therefore, right down to local cities and towns. In turn, it must be understood that the significant role that IP plays in the economy, and the major economic part that small business plays, mean that IP and small business basically go hand in hand. That is made clear in the following chapter, as well as in chapters focused on specific IP industries.

4

IP Matters Most to Small Business

What does it really mean when someone says, “Small businesses are the backbone of the economy”? It’s not unusual to hear politicians making such proclamations, for example.

Is it mere rhetoric, devoid of any substance?

Even worse, could it be outdated, a point relegated to our economic past? Is today’s high-tech, global economy all about big business?

To the contrary, when elected officials sing praises about small business, they’re absolutely correct. In fact, the centrality of the entrepreneurial sector to the U.S. economy was the case yesterday, is the case even more so today, and if the U.S. remains friendly to entrepreneurship – including protecting property rights – then it promises to be increasingly the case far into the future.

The Small Business Administration’s Office of Advocacy – in its “Frequently Asked Questions” (September 2012) publication – notes that of the nation’s 27.9 million businesses, 99.9 percent had fewer than 500 employees. If that does not make clear that the U.S. economy is a small business economy, it’s hard to figure out what might.

But there's more. Small businesses generate 46 percent of private-sector output, account for 98 percent of all identified exporters, and employ 43 percent of private payrolls. And in terms of job creation, small firms created 64 percent of net new jobs over the period of 1993 to 2011, according to the SBA.

Another recent study focused on the role start-ups play on the employment front. In July 2010, the Kauffman Foundation published "The Importance of Startups in Job Creation and Job Destruction" by economist Tim Kane. Using "a relatively new dataset from the U.S. government called Business Dynamics Statistics (BDS) ... that incorporates the age of firms in a dynamic format," Kane concluded that "startups aren't everything when it comes to job growth. They're the only thing." Specifically, looking at nearly thirty years of data, Kane reported, "Startups create an average of 3 million new jobs annually. All other ages of firms, including companies in their first full years of existence up to firms established two centuries ago, are net job destroyers, losing 1 million jobs net combined per year."

Given the prominent role that small business plays in terms of GDP, exports and employment, combined with the striking reality that among nearly 28 million businesses in the U.S., a mere 18,500 were defined as "large" with 500 or more workers, it's not all that surprising that smaller firms are central to innovation.

The World Intellectual Property Organization's "2011 World Intellectual Property Report: The Changing Face of Innovation" offers some key insights, trends and findings on innovation at the firm level. For example:

- "Innovation is a central driver of economic growth and development. Firms rely on innovation and related investments to improve their competitive edge in a globalizing world with shorter product life cycles."

- “Turning to the IP system, there is every indication that IP ownership has become more central to the strategies of innovating firms. IP policy has, therefore, moved to the forefront of innovation policy. Demand for patents has risen from 800,000 applications worldwide in the early 1980s to 1.8 million in 2009. This increase has occurred in different waves, with Japan driving filing growth in the 1980s, joined by the United States (US), Europe and the Republic of Korea in the 1990s and, more recently, by China.”

- “Demand for other IP rights – which firms often use as a complement to patents – has also seen marked growth. Trademark applications worldwide increased from 1 million per year in the mid-1980s to 3.3 million in 2009. Similarly, industrial design applications worldwide more than doubled from about 290,000 in 2000 to 640,000 in 2009. Greater internationalization is also an important factor behind the rising demand for protection of these forms of IP.”

- “Innovation is a driver of economic growth and development. Importantly, innovative capability is no longer seen only in terms of the ability to develop new inventions. Recombining existing inventions and non-technological innovation also counts.”

Combine the importance of small business and innovation, and it’s fair to say that IP is the backbone of America’s innovative small businesses.

Again, the U.S. Small Business Administration’s Office of Advocacy has provided some valuable information and findings on small business and innovation.

For example, a February 2003 report titled “Small Serial Innovators: The Small Firm Contribution To

Technical Change” noted that “small patenting firms produce 13-14 times more patents per employee as large patenting firms.” For good measure, “small patent firms are on average more technically important than large firm patents,” in that the smaller businesses produce “more highly cited patents.” It also was observed that “small firm innovation is twice as closely linked to scientific research as large firm innovation on average, and so substantially more high-tech or leading edge.”

And in January 2004, an Advocacy study titled “Small Firms and Technology: Acquisitions, Inventor Movement, and Technology Transfer” found that “the technological influence of small firms is increasing” as the number of small firms with 15 or more patents over the previous five years increased from 33% in 2000 to 40% in 2002. Also, from the mid-1990s to the early 2000s, the share of highly productive inventors at small firms rose while the share at large firms fell.

Anthony Breitzman and Diana Hicks authored a 2008 study – “An Analysis of Small Business Patents by Industry and Firm Size” – that updated and expanded upon this type of analysis. It looked at nearly 1,300 technology firms with 15 or more patents issued over the period of 2002 to 2006, and examined “the relative strengths of small and large technology businesses.” The authors concluded: “The results demonstrate that small businesses that innovate are indeed special and that the technology they create helps define the cutting edge in a number of industries. The report presents a convincing case that small firms in emerging industries are one of the greatest engines of American economic growth.” Among the studies findings, two were key:

- “Small firm patents outperform large firm patents on a number of impact metrics including growth, citation impact, patent originality, and patent generality. These

metrics have been used for decades to measure the innovativeness of firms, labs, and agencies. The metrics have been validated and shown to correlate with increases in sales, profits, stock prices, inventor awards, and other positive outcomes. This suggests that the patents of small firms in general are likely to be more technologically important than those of large firms.”

• “[S]mall firms are much more likely to develop emerging technologies than are large firms. This is perhaps intuitively reasonable given theories on small firms effecting technological change, but the quantitative data here support this assertion. Specifically, although small firms account for only 8 percent of patents granted, they account for 24 percent of the patents in the top 100 emerging clusters. This means that they produce three times as many patents as one would expect in this special patent set. Put another way, approximately one in 31 small firm patents are contained in the top emerging clusters, compared with one in 117 large firm patents.”

It’s expected that innovations from small firms are going to be more technologically important than those from large businesses, and that small firms are more likely to develop emerging technologies. After all, the little guy or start-up is far more willing to partake in the Schumpeterian process of “creative destruction,” whereby innovation, invention and efficiencies overturn old businesses, and/or create entirely new industries.

Continuing with the focus on small business and innovation, a July 2005 Congressional Research Service analysis (“Patent Reform: Innovation Issues”) not only summed up the role played by small business, but also explained that IP protections tend to be more important to smaller businesses. It was noted: “Entrepreneurs and small, innovative firms play a role in the technological

advancement and economic growth of the United States. Several studies commissioned by U.S. federal agencies have concluded that individuals and small entities constitute a significant source of innovative products and services. Studies have also indicated that entrepreneurs and small, innovative firms rely more heavily upon the patent system than larger enterprises. Larger companies are said to possess alternative means for achieving a proprietary or property-like interest in a particular technology. For example, trade secrecy, ready access to markets, trademark rights, speed of development, and consumer goodwill may to some degree act as substitutes to the patent system. However, individual inventors and small firms often do not have these mechanisms at their disposal. As a result, the patent system may enjoy heightened importance with respect to these enterprises.”

As for the self-employed, some believe that IP protections are not as important under the assumption that the self-employed are not as innovative as other businesses. But economists Andrew Burke, from the University of Cranfield in the United Kingdom and the Max Plank Institute of Economics in Germany, and Stuart Fraser, from the University of Warwick in the U.K., examined the issue in a paper titled “The Impact of Intellectual Property Rights on Self-Employed Entrepreneurship: An International Analysis,” and found the exact opposite. Based on their research, they offered the following on how IP protections tie in with or affect the self-employed:

- “Cumulatively, the analysis indicates that a well developed IPR regime has a net positive effect on the self-employed sector.”
- There is “a positive effect of international IPR conventions and agreements. Contrary to some of the most

vocal objections to the TRIPS [Trade-Related Intellectual Property Rights] Agreement we find that rather than undermine the self-employed enterprise base it actually boosts it. We also note that there appear to be spillover effects from industry specific conventions to self-employment rates and that these are positively related to the strength of commitment to IPRs inherent in these conventions.”

- “[D]emocracies boost self-employment rates which is what one would expect in terms of the political conditions necessary to promote free enterprise thought and expression,” and “that the most fundamental tenets of IPR laws, namely the existence of the laws themselves, their specificity and strength, and a democratic society in which to accommodate them are three very positive drivers of self-employment.”

Focusing on the U.S., the 2012 report “Intellectual Property and the U.S. Economy: Industries in Focus” (published by the U.S. Department of Commerce, and prepared by the Economics and Statistics Administration and the United States Patent and Trademark Office) noted that while the self-employment share of employment is roughly the same in IP-intensive industries as non-IP-intensive industries overall – which itself is noteworthy – that was not the case in copyright industries. As reported: “The highest self-employment share, however, was in the copyright-intensive industries, in which the 0.8 million self-employed workers filled 16.5 percent of all jobs. This high share is not surprising as many jobs in the creative and performing arts are contract rather than payroll jobs, usually related to the completion or performance of a specific authored work.”

To drive home the importance of IP protections to the entrepreneurs, one of the great tech entrepreneurs and

innovators made the point quite clearly. In his biography *Steve Jobs*, Walter Isaacson quoted the late Steve Jobs, observing: “From the earliest days at Apple, I realized that we thrived when we created intellectual property. If people copied or stole our software, we’d be out of business. If it weren’t protected, there’d be no incentive for us to make new software or product designs. If protection of intellectual property begins to disappear, creative companies will disappear or never get started.” As a broader matter, which by the way is just as critical to business, Jobs added, “But there’s a simpler reason: It’s wrong to steal. It hurts other people. And it hurts your character.”

For good measure, it’s critical to point out that invention and innovation need investment, and IP rights and protections obviously affect that investment.

In the policy arena, again, it seems to come quite naturally for elected officials to celebrate inventors, innovators, and entrepreneurs. At the same time, though, politicians often dismiss or even demonize investors.

Just consider terminology: the returns gained by investors – such as capital gains and dividends – are labeled as “unearned income.” But given that investing in new ideas and expanding businesses are risky endeavors, and that entrepreneurs and innovators would get nowhere without investors, the returns from such risk taking clearly rank as “earned income.” In terms of their roles and importance in the economy, alongside the inventors, innovators and entrepreneurs, investors deserve to be celebrated.

As for IP and investment incentives, the question is: Why would investors risk their resources without strong protections for intellectual property? History is strewn with nations and regimes where property rights were ignored or abused, and investment and economies suffered accordingly.

In order to fully flourish, venture capital and angel investment – both important to small and growing entrepreneurial firms – need strong patent and copyright protections.

Mario Cardullo, former counselor on technology and entrepreneurship to the U.S. Department of Commerce, provided a valuable reminder of this economic reality in an analysis for the World Intellectual Property Organization titled “Intellectual Property – The Basis for Venture Capital Investments.” He observed: “While technology has been seen as one of the engines for the dramatic economic growth and productivity the United States has experienced over the last several decades, an underlying factor has been the strength of the intellectual property developed during that period. Intellectual property provided the basis for investors to place their resources at risk. Intellectual property is an integral part of value creation in a technology-based enterprise and as such is a critical element in obtaining venture capital for SMEs [small and medium-sized enterprises].”

He added that “venture capitalists want to maximize returns and minimize risks.” In turn, it follows: “Without the strength of the intellectual property and its protection, little if any investments would be made into new or growing enterprises.” The economics are anything but mysterious. As Cardullo explained: “Exclusive rights offered by the intellectual property system are often the main assets from which an SME technology-based enterprise can benefit. The appropriate use of the intellectual property system may contribute to bring high rates of return on capital, which is crucial in order to attract venture capital investors to an SME.”

Again, given how critical and elusive financial capital is for start-up and small businesses, strong and clear IP protections arguably are more crucial to the well being –

indeed, the very survival – of smaller firms than to the health of large businesses.

In the sixth edition of the National Venture Capital Association's "Venture Impact: The Economic Importance of Venture Capital-Backed Companies to the U.S. Economy," it was reported: "While investment in venture-backed companies only equates to between 0.1 percent and 0.2 percent of U.S. gross domestic product each year, these companies employed 11 percent of the total U.S. private sector workforce and generated revenue equal to 21 percent of U.S. GDP." In addition, during the 2008-2010 downturn, the contraction in both revenue and employment among venture-backed firms were smaller than the larger U.S. economy. It was noted: "The ability of VC-backed companies to outperform their non-venture counterparts – during good times and bad – flows from venture capital's focus on highly innovative, emerging growth companies."

The previous (fifth) edition of the NVCA report brought the importance of VC investment back to IP rights: "For decades, the U.S. venture capital industry has garnered the envy of the world. It has spurred the development of many high-tech industries ... and has helped to build innovative powerhouse companies that are now household names: Amazon, Google, Apple, Cisco, Staples and eBay. These successes have made the U.S. a magnet for the globe's best and brightest scientists and entrepreneurs. Today, countries around the world have begun to emulate the U.S. model by adjusting their tax and regulatory policies and by strengthening intellectual property protection."

The entire entrepreneurial process is dependent upon strong property rights and protections, including intellectual property. Without strong IP rights, entrepreneurs, innovators and investors simply would be far less likely to undertake the tremendous risks involved

with creating and bringing a new or improved good or service to the marketplace. In turn, of course, consumers wind up with fewer choices and benefits, economic growth falters, and workers face reduced job opportunities and lower incomes.

5

Property Rights Lessons from History

Given the technological revolution that our economy has undergone over the past three or four decades, some people might believe that intellectual property only came to the forefront of the economy, business, entrepreneurship and investment during these recent times. That would be a mistaken assumption.

In reality, intellectual property has played a critical role in economic development for a few hundred years. And the difference before and after the establishment of IP rights is quite striking.

Throughout much of history, government abused, never acknowledged any substantive notion of, or failed to adequately protect property rights.¹¹

Under Europe's feudal system, for example, with arbitrary assessments by the sovereign on property a constant threat, it was "prudent for any considerable accumulation of assets of the subject to be held in mobile

¹¹ See, for example, David S. Landes, *The Wealth and Poverty of Nations: Why Some Are So Rich and Some So Poor* (New York, NY: W.W. Norton & Company, 1998), pp. 31-36.

and concealable form.”¹² This was anything but conducive to economic development.

Nobel Prize winning economist Douglass C. North and Robert Paul Thomas made clear the importance of property rights at the open of their book *The Rise of the Western World*. The authors stated: “The affluence of Western man is a new and unique phenomenon. In the past several centuries he has broken loose from the shackles of a world bound by abject poverty and recurring famine and has realized a quality of life which is made possible only by relative abundance... Efficient economic organization is the key to growth; the development of an efficient economic organization in Western Europe accounts for the rise of the West. Efficient organization entails the establishment of institutional arrangements and property rights that create an incentive to channel individual economic effort into activities that bring the private rate of return close to the social rate of return.”¹³

Where property rights were recognized and protected against governmental abuses, economic development jumped forward. England’s Magna Carta in 1215 obviously must be noted, which is “accepted conventionally as establishing the right of subjects to the enjoyment of their property without arbitrary expropriation by the Crown.”¹⁴ Additional legal advancements after the Middle Ages made a significant difference.

As for IP, the first true patent system that promoted invention and innovation came in the United Kingdom with the Statue of Monopolies in 1624. The UK also gets

¹² Nathan Rosenberg and L.E. Birdzell, Jr., *How the West Grew Rich: The Economic Transformation of the Industrial World* (New York, NY: Basic Books, Inc, 1986), p. 119.

¹³ Douglass C. North and Robert Paul Thomas, *The Rise of the Western World* (New York, NY: Cambridge University Press, 1973), p. I.

¹⁴ Nathan Rosenberg and L.E. Birdzell, Jr., *How the West Grew Rich: The Economic Transformation of the Industrial World* (New York, NY: Basic Books, Inc, 1986), p. 119.

credit for the first copyright law with the Statute of St. Anne in 1710.

In the U.S., the nation's Founders overwhelmingly saw the wisdom of protecting intellectual property. As a result, Article I, Section 8 of the U.S. Constitution includes that Congress has the power: "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." In *Federalist XLII*, James Madison wrote: "The utility of this power will scarcely be questioned. The copy right of authors has been solemnly adjudged in Great Britain to be a right at common law. The right of useful inventions, seems with equal reason to belong to the inventors. The public good fully coincides in both cases, with the claims of individuals." (In the U.S. currently, the term for a new patent is 20 years from the time the application for the patent was filed, while copyright lasts for the life of the author plus seventy years.)

For good measure, in his first address to Congress on January 8, 1790, President George Washington urged Congress to act to ensure the protection of IP: "I cannot forbear intimating to you the expediency of giving effectual encouragement, as well to the introduction of new and useful inventions from abroad as to the exertion of skill and genius at home."¹⁵ Congress acted by passing patent legislation in 1790, 1793, and 1836, for example.¹⁶

North and Thomas noted that the key aspect of the Statute of Monopolies in 1624 was that it "embodied in the

¹⁵ Quoted in Jason O. Watson, "A History of the United States Patent Office," April 17, 2001, Commonwealth of Virginia Historical Markers website, <http://www.historical-markers.org/usptohistory.cgi>.

¹⁶ Quoted in Jason O. Watson, "A History of the United States Patent Office," April 17, 2001, Commonwealth of Virginia Historical Markers website, <http://www.historical-markers.org/usptohistory.cgi>.

law a patent system to encourage any true innovation.”¹⁷ Later, they continued: “In effect the rewards of innovating were no longer subject to royal favor, but were guaranteed by a set of property rights embedded in the common law.”¹⁸

In *How the West Grew Rich*, Nathan Rosenberg and L.E. Birdzell, Jr., acknowledged the role that greater security of property played in the expansion in trade between 1300 and 1750.¹⁹ They also explained how innovation and economic growth benefited from patents. Note that the authors speak of patents under the umbrella of competition, not monopoly. They observed:

“Competition also became involved in innovation. The market rewards of innovation depended largely on the innovator’s ability to charge a high price for a unique product or service until such time as it could be imitated or superseded by others. The rewards deepened, in other words, on the innovator’s margin of priority in time over imitators and successors. This was true even of patents, which go to the first inventor, and whose economic life is measured by the time it takes to find a better alternative. Given the multiplicity of Western enterprises, the possibility of forming new ones, and the possibility that old ones could shift to new activities, the process of gaining the rewards of innovative ideas takes on the characteristics of a race, informal but still competitive. The competitive nature of the process was intensified by the Western practice of leaving

¹⁷ Douglass C. North and Robert Paul Thomas, *The Rise of the Western World* (New York, NY: Cambridge University Press, 1973), p. 148.

¹⁸ Douglass C. North and Robert Paul Thomas, *The Rise of the Western World* (New York, NY: Cambridge University Press, 1973), p. 154.

¹⁹ Nathan Rosenberg and L.E. Birdzell, Jr., *How the West Grew Rich: The Economic Transformation of the Industrial World* (New York, NY: Basic Books, Inc, 1986), p. 123.

the losers to bear their own losses, which were often substantial. This use of a competitive spur to stimulate change was a marked departure from tradition, for societies and their rulers have almost always strongly resisted change unless it enhanced the ruler's own power and well-being."²⁰

In his *Structure and Change in Economic History*, Douglass C. North made the case that "the Industrial Revolution was an acceleration in the rate of innovation" due to "better specified property rights," which raised "the rate of return on innovating."²¹

North later went on to show and explain that "throughout man's past he has continually developed new techniques, but the pace has been slow and intermittent. The primary reason has been that the incentives for developing new techniques have occurred only sporadically. Typically, innovations could be copied at no cost by others and without any reward to the inventor or innovator. The failure to develop systematic property rights in innovation up until fairly modern times was a major source of the slow pace of technological change."²² North added that "a systematic set of incentives to encourage technological change and raise the private rate of return on innovation closer to the social rate of return was established only with the patent system... More important than patent law per se is the development and enforcement of a body of impersonal law protecting and

²⁰ Nathan Rosenberg and L.E. Birdzell, Jr., *How the West Grew Rich: The Economic Transformation of the Industrial World* (New York, NY: Basic Books, Inc, 1986), p. 23.

²¹ Douglass C. North, *Structure and Change in Economic History* (New York, NY: W.W. Norton & Company, Inc., 1981), p. 159.

²² Douglass C. North, *Structure and Change in Economic History* (New York, NY: W.W. Norton & Company, Inc., 1981), p. 164.

enforcing contracts in which property rights are specified.”²³

As for the twenty-first century economy, Harold Furchtgott-Roth, a former FCC commissioner, made clear the effect of protecting IP in an April 18, 2002, American Enterprise Institute speech:

“Intellectual property is in some ways the highest form of economic activity. It is a form of property that would not exist absent law. Many of the most subtle and complex forms of contracts in the world involve intellectual property. We also have a natural experiment: a few countries, including the United States, take intellectual property laws seriously; and much of the rest of the world does not. Not surprisingly, the countries with serious intellectual property laws have substantially more intellectual property and investment than the countries that do not take the laws seriously.

“The U.S. is the international intellectual property leader not because of any natural resource allocation. It is not because we have great forests, or natural resource deposits. Nor is it because we are smarter than other people.

“The United States is strong in intellectual property because we take intellectual property serious. We have laws that protect intellectual property more here than in most countries around the world. And, even more importantly, we have a government that takes enforcement of those laws seriously. Not as seriously as some would like, but seriously nonetheless.

²³ Douglass C. North, *Structure and Change in Economic History* (New York, NY: W.W. Norton & Company, Inc., 1981), pp. 164-165.

“As a result, and precisely because we are not smarter than other people, smart people from around who want to capitalize on their own intellectual property gravitate to the United States. Whether it is software engineers to Silicon Valley, recording artists to Nashville, video artists to Hollywood, writers to New York, manufacturing geniuses to Chicago, medical geniuses to Boston, many people with ambition to develop their own intellectual property wants to be in the United States.”

That is a notable summation of the power of IP as properly protected in our high-tech, modern economy. It also jibes with the excellent summation of the historical lessons on property rights offered by Rosenberg and Birdzell:

“Governments also affect economic growth by the nature of the property rights that they establish and enforce. People are, for example, not very likely to invest in expensive enterprises unless they have some assurance that the fruits of investment will accrue to the investor. Property rights are not a simple matter of supplying police protection, but rather of formulating legal rights and liabilities in such a way that the benefits and costs of economic action accrue, so far as possible, to the actor. Through this service, if well performed, is of great economic benefit...”²⁴

The need to protect intellectual property does not change in our current economy. At the same time, though,

²⁴ Nathan Rosenberg and L.E. Birdzell, Jr., *How the West Grew Rich: The Economic Transformation of the Industrial World* (New York, NY: Basic Books, Inc, 1986), p. 306.

it does not mean that it will be easy to do so. Indeed, technological advancements and economic change mean that new challenges will emerge in terms of protecting property. History teaches this lesson as well. North and Thomas noted examples, including the expansion of ocean shipping. The benefits of expanding trade were apparent, but pirates and privateers raised cost and reduced trade. Before it became economical to squash high seas piracy via navies, the English chose to use bribes, as “the income gains from trading freely in the Mediterranean were sufficiently greater than the bribes to leave the nation better off.”²⁵

The following point from North and Thomas about the varying challenges faced in protecting property over the centuries apply today as well in terms of protecting IP: “Right to the present day, technical problems have made it similarly difficult, and therefore costly, to develop and enforce property rights in ideas, inventions, and innovations... Property rights are always embedded in the institutional structure of a society, and the creation of new property rights demands new institutional arrangements to define and specify the way by which economic units can co-operate and compete.”²⁶

²⁵ Douglass C. North and Robert Paul Thomas, *The Rise of the Western World* (New York, NY: Cambridge University Press, 1973), pp. 3-4.

²⁶ Douglass C. North and Robert Paul Thomas, *The Rise of the Western World* (New York, NY: Cambridge University Press, 1973), p. 5.

6

*Economic Thinking
on IP*

It's not surprising that given the emphasis on intellectual property served up by various policymakers, assorted analysts, and leading businesses, along with the role that IP has played historically, the economics of IP are foundational. It's important for entrepreneurs to have a basic understanding of the economic logic supporting property rights protection in general, and how those arguments address or relate to intellectual property.

Some of the great economic thinkers over time have highlighted the centrality of property rights.

For example, Adam Smith, the father of modern-day economics, noted in 1776 that industry developed and prosperity flourished in towns because of the protections offered for private property. Smith explained:

“Order and good government, and along with them liberty and security of individuals, were, in this manner, established in cities, at a time when the occupiers of land in the country were exposed to every sort of violence. But men in this defenceless state naturally content themselves with their necessary subsistence; because to acquire more

might only tempt the injustice of their oppressors. On the contrary, when they are secure of enjoying the fruits of their industry, they naturally exert it to better their condition and to acquire not only the necessaries, but the conveniences and elegancies of life.”²⁷

It’s easy to see how this phenomenon extends to intellectual property today. For example, why invest the time and resources in an invention if anyone can come along and copy that invention due to a lack of patent protection? Or why be involved in writing, performing and producing music, if online thieves are free to steal it?

The issue really is the reach and development of the market. Smith noted that even in a “defenceless state,” a subsistence level of activity occurs. But when property rights are truly secure, that’s when markets, innovation and economies flourish. Shift to our twenty-first century economy, when thinking about how much opportunity and growth have been created courtesy of broadband and digital technologies, consider how much wider and deeper those opportunities would be with greater security of intellectual property both at home and internationally.

French economist Jean-Baptiste Say left no doubt as to how important property rights were in his view. He boldly declared in the early 19th century: “Political economy recognises the right of property solely as the most powerful of all encouragements to the multiplication of wealth.”²⁸ On protecting private property, Say wrote:

“Without this protection of each individual by the united force of the whole community, it is

²⁷ Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Chicago, IL: The University of Chicago Press, 1976), p. 426.

²⁸ Jean-Baptiste Say, *A Treatise on Political Economy* (New Brunswick, NJ: Transaction Publishers, 2001), p. 127.

impossible to conceive any considerable development of the productive powers of man, of land and of capital; or even to conceive the existence of capital at all; for it is nothing more than accumulated value, operating under the safeguard of authority.”²⁹

Say makes clear the necessary role government plays in establishing and protecting property rights. And again, reflecting on Say’s points, can one really conceive of development occurring to its fullest extent in the twenty-first century without the full protection of intellectual property? That goes for developed nations, like the U.S., as well as developing nations, including high-growth locales like China.

As for the specifics of copyright and patent protections, in his *Human Action*, originally published in 1949, Austrian economist Ludwig von Mises highlighted the importance of incentives in economics, and to the functioning of individuals and firms in the economy:

“But it is obvious that handing down knowledge to the rising generation and familiarizing the acting individuals with the amount of knowledge they need for realization of their plans require textbooks, manuals, handbooks, and other nonfiction works. It is unlikely that people would undertake the laborious task of writing such publications if everyone were free to reproduce them. This is still more manifest in the field of technological invention and discovery. The extensive experimentation necessary for such achievements is often very expensive. It is very probable that technological progress would be

²⁹ Jean-Baptiste Say, *A Treatise on Political Economy* (New Brunswick, NJ: Transaction Publishers, 2001), p. 131.

seriously retarded if, for the inventor and for those who defray the expenses incurred by his experimentation, the results obtained were nothing but external economies.”³⁰

Along similar lines, Milton Friedman, the Nobel Prize winning economist, pointed to the importance of rewarding creators in his classic 1962 book *Capitalism and Freedom*. Friedman wrote:

“In both patents and copyrights, there is clearly a strong prima facie case for establishing property rights. Unless this is done, the inventor will find it difficult or impossible to collect a payment for the contribution his invention makes to output. He will, that is, confer benefits on others for which he cannot be compensated. Hence he will have no incentive to devote the time and effort required to produce the invention. Similar considerations apply to the writer.”³¹

In his book *Applied Economics: Thinking Beyond Stage One*, Thomas Sowell explains how property rights affect everyone throughout the economy, including small entrepreneurs in need of capital. Sowell noted “the role of property rights as a key link in a chain of events that enable people without property to generate wealth for themselves and the whole society.”³² To make his point, Sowell focused on woes illustrated in some Third World nations that do not vigorously protect property. He continued:

³⁰ Ludwig von Mises, *Human Action: A Treatise on Economics* (Chicago, IL: Contemporary Books, Inc. 1963), pp. 661-662.

³¹ Milton Friedman, *Capitalism and Freedom* (Chicago, IL: The University of Chicago Press, 1962, 1982), p.127.

³² Thomas Sowell, *Applied Economics: Thinking Beyond Stage One* (New York, NY: Basic Books, 2004), p. 200.

“In short, although property rights are often thought of as things that are important primarily to the affluent and the rich, these legal recognitions of existing assets may be especially needed by poor individuals in poor countries, if they do not wish to continue to be poor. Millions of Third World people have already demonstrated their ability to create, in the aggregate, vast amounts of wealth, even if their tangled legal systems have not yet demonstrated an ability to let that wealth readily become property that can be used for further expansion and development... [W]hat property rights provide, in countries where these rights are readily accessible, is the ability of people to convert physical assets into financial assets, which in turn enables them to create additional wealth, whether individually or in combination with others... In short, property rights are an integral part of a price-coordinated economy, without which that economy cannot function as efficiently. This in turn means that its people in general – not just property owners – cannot prosper as much as if it did operate more efficiently.”³³

Sowell’s case certainly can be made for intellectual property as well. The legal recognition and protection of intellectual assets allow for greater efficiency, development and growth.

Michael Novak ably summed up the economic logic of protecting intellectual property:

³³ Thomas Sowell, *Applied Economics: Thinking Beyond Stage One* (New York, NY: Basic Books, 2004), pp. 200-201.

“Regimes without patents penalize inventors and reward freeloaders. Patent regimes recognize the right of inventors and authors to the fruits of their own labors as a right in common law. They do so because the right serves the common good by stimulating useful inventions and creative works from which a grateful public benefits. Far from protecting private interests at the expense of the common good, patent protection advances the common good by means of private interests.”³⁴

But what about the argument – again, occasionally even put forward by some advocates of free markets – that copyrights and patents are government-created monopolies, and therefore amount to unwarranted government interference in the marketplace?

In an MBA class in international business that one of the authors periodically teaches, the textbook – *International Business: Competing in the Global Marketplace* by Charles W.L. Hill – did a solid, straightforward job of explaining what intellectual property is, and why it’s important that nations adequately protect IP through strong copyright and patent systems, for example. Hill correctly pointed out, “Such laws stimulate innovation and creative work. They provide an incentive for people to search for novel ways of doing things, and they reward creativity.” Hill went on to highlight the pharmaceutical industry, noting, “Without the guarantees provided by patents, companies would be unlikely to commit themselves to extensive basic research.” However, it also was stated in the text: “A patent will grant the inventor of a new drug a 20-year monopoly in production of that drug.” There’s that word “monopoly.”

³⁴ Michael Novak, *The Fire of Invention: Civil Society and the Future of the Corporation* (Lanham, MD: Rowman & Littlefield Publishers, Inc., 1997), pp. 82-83.

Does it really make sense to refer to copyright or a patent as a “monopoly”? The clear answer is that a patent in no way stops a competitor from developing a similar product that serves or accomplishes the same purpose for the customer. For example, when it comes to pharmaceuticals, the creation and patent of a drug that deals with a certain disease does not stop another company from bringing another drug to the market targeted at the same illness.

Milton Friedman noted that

“...the grant of patents to inventors and copyrights to authors ... are different, because they can equally be regarded as defining property rights. In a literal sense, if I have a property right to a particular piece of land, I can be said to have a monopoly with respect to that piece of land defined and enforced by the government. With respect to inventions and publications, the problem is whether it is desirable to establish an analogous property right. The problem is part of the general need to use government to establish what shall and what shall not be regarded as property.”³⁵

Novak labeled the widely accepted concept of copyright and patents being government-granted “temporary monopolies” as “a terminological mistake.”³⁶ He went on to show that copyright and patent protections effectively are the exact opposite of a true monopoly in that these means for protecting IP promote competition. He wrote:

³⁵ Milton Friedman, *Capitalism and Freedom* (Chicago, IL: The University of Chicago Press, 1962, 1982), p.127.

³⁶ Michael Novak, *The Fire of Invention: Civil Society and the Future of the Corporation* (Lanham, MD: Rowman & Littlefield Publishers, Inc., 1997), p. 69.

“*Monopoly* belongs to the language of domination over competition, but *copyright* belongs to the language of private property and establishes a right to enter into markets. The point of a monopoly is to extinguish competition, but the point of protecting the copyright of authors is to ignite competition. The recognition of copyright increases the number of competitors; its aim is the opposite of monopoly... [C]ritics further forget that existing patents and copyrights often inspire new rounds of competition to ‘go around’ the existing claims, with the hope of launching more successful creations. This is especially true in medical and pharmaceutical research. Patents and copyrights do not end competition; often, their success inspires it in surrounding areas.”³⁷

Novak’s explanation is the best I’ve come across in terms of a concise explanation as to the actual economic role and effect of intellectual property rights.

In the end, the economic logic of protecting intellectual property is straightforward. Incentives for creativity, invention and innovation – all critical to entrepreneurship and economic development – are secured and enhanced. At the same time, equating patents and copyrights with monopolies is fallacious. To the contrary, as Novak and others have argued, such legal protections of intellectual property don’t impede competition, but instead boost beneficial rivalry, innovation and growth.

Once it is understood that patents are not in reality a grant of monopoly, but instead a critical part of the competitive market process that advances invention and

³⁷ Michael Novak, *The Fire of Invention: Civil Society and the Future of the Corporation* (Lanham, MD: Rowman & Littlefield Publishers, Inc., 1997), pp. 69-70.

innovation –i.e., that the economic foundation has been established – then it follows that policymakers in the U.S. and around the world should be focused on establishing and maintaining a strong system of protecting intellectual property, and be very leery of arguments pushing for undermining or undercutting patents or copyright.

The first duty of government is to protect life, limb and property. Economics makes clear that this most certainly includes intellectual property.

7

IP in a Digital World: Opportunities and Challenges

Advancement in computer, digital and telecommunications technologies have created an explosion of opportunity for consumers, entrepreneurs, small businesses, and other innovators and creators.

Entrepreneurs, for example, are able to reach new markets and customers, to provide new and improved goods and services, to gain greater access to financial capital, and to achieve increased efficiencies and productivity gains due to the combination of increased power in computer hardware and software, and the expansion of broadband Internet service.

Consider how the costs of getting a business off the ground have been reduced in substantial ways.

In April 2012, the Small Business & Entrepreneurship Council and the Internet Innovation Alliance released a report titled “Start-Up Savings: 10 Ways Entrepreneurs Can Save Money Through Broadband Internet.” Comparing traditional means versus online offerings, the study found that entrepreneurs could save a potential \$16,000 in start up and annual costs.

In percent terms, comparisons revealed small business owners could save 87 percent in accounting services going the online and software route. On printing costs, 43 percent could be saved through online services for a basic package of business cards, brochures, postcards, letterhead and envelopes. As for setting up a website, online, do-it-yourself options can save as much as 88 percent compared to what might be considered a more traditional website designer/developer. Similarly, online logo design services can provide savings reaching 92 percent compared to the low-cost end of fees charged by freelancers or independent firms.

Some of the biggest savings that broadband access can provide start-ups come on the office front, specifically, the option of a home office. According to recent office rental rate data for 60 metro areas from Grubb & Ellis, the average asking rent is \$20.60 for Class B office space on an annual basis. For a 300 square foot office, making the home office choice means cash savings topping \$6,100. It should surprise no one then that so many businesses initially open their doors in a home office. In fact, 52 percent of U.S. firms are home-based businesses, according to the SBA.

As for travel costs, according to the numbers from the U.S. Department of Transportation, average domestic airfares registered \$361 in the third quarter of 2011. For a start up, just a few flights a year can add up quickly. Compare that to online video calls/conferencing. For example, the premium service from Skype – which includes unlimited calls to a country of your choice, group video calling and screen sharing, and live chat customer support – costs \$4.99 per month, or an annual cost of \$59.88.

The potential thousands of dollars saved by start ups due to broadband Internet translates into more resources available for innovating, hiring, and additional marketing and advertising, for example.

Another SBE Council study – “Saving Time and Money with Mobile Apps: A Small Business ‘App’ortunity” published in June 2011 – highlighted the growth in mobile technologies and the impact on small businesses. The study surveyed small business owners and found that mobile apps help these entrepreneurs squeeze more productivity from their workweek and enable their employees to do the same. Specifically, the use of mobile apps among small business owners reduced overhead costs, increased revenues and sales-related activity, improved competitiveness, and even allowed firms to add employees.

“Saving Time and Money with Mobile Apps” found that small business owners who use mobile apps estimated that they personally saved an average of 5.6 hours weekly. And 75 percent of small businesses using mobile apps reported employee time savings as well – an average of 11.33 hours on a weekly basis. The study estimated that small business owners were saving 372.8 million hours of their own time, and 725.3 million employee hours annually. In total, it was estimated that small businesses saved almost 1.1 billion hours annually by using mobile apps. The study conservatively estimated that an additional 3.54 billion hours could be saved annually by small businesses through wider mobile app adoption.

Hours saved, of course, translate into dollars saved. Small business employee hours saved, for example, are worth an estimated \$17.6 billion each year, under conservative assumptions. If all small businesses were to take advantage of mobile apps, annual owner hours saved could reach an estimated 1.2 billion, with employee hours saved hitting a projected 2.34 billion. The 2.34 employee hours potentially saved were valued at \$56.9 billion annually.

Nearly 50 percent of the small businesses surveyed for the study believed they have been able to spend more time on growing business revenues due to their use of mobile

apps. Fifty one percent of these small businesses say their firms were more competitive, 36 percent were able to reduce overhead costs and 10 percent were even able to add workers because of mobile app usage.

A variety of additional studies and reports have pointed to the broader benefits from IT investment, including broadband, experienced by small businesses and the economy.

In a December 2005 study from the SBA's Office of Advocacy ("Broadband Use by Rural Small Businesses" by Stephen B. Pociask), it was reported:

"There are numerous studies showing an inextricable link between IT investment and the health of the U.S. economy. While total IT manufactured output accounted for a mere two percent of Gross Domestic Product GDP during 1990-1995, IT capital investment contributed to nearly thirty percent of GDP growth for the same period. Thus, IT investment appears to have large stimulative effects, meaning that an increase in IT investment produces a much larger increase in U.S. economic output. According to a number of studies, IT investment, including investment in broadband networks, has provided an important catalyst for operational efficiency in the U.S. In one such study, Kevin Stiroh showed that industries with higher capital stock in telecommunications and computing equipment experienced higher productivity gains. His conclusion is consistent with other studies. For the period 1989 to 2001, IT-intensive industries experienced a 3.0% increase in productivity, while less IT-intensive industries had productivity growth of only 0.4%."

In 2008, a study titled “The Increasingly Important Impact of Wireless Broadband Technology and Services on the U.S. Economy” (written by Roger Entner and published by CTIA—The Wireless Association) reported that in 2005, “the productivity value of all mobile wireless services was worth \$185 billion, greater than the total value of the U.S. pharmaceutical industry (according to BizStats.com).”

More recent, consider Darrell M. West, who is vice president and director of Governance Studies and a senior fellow at Brookings, while also being the founding director of the Center for Technology Innovation. In December 2011, his report – “Top Facts About Mobile Broadband” – cited the importance of broadband to entrepreneurship:

“Entrepreneurs play a major role in the economies of many countries. They launch companies, build businesses, and provide jobs. Increasingly, as the globe moves towards a digital economy, they require mobile technology to develop their businesses. Mobile devices allow them to stay connected even while they are on the go. They can reach bank officers, suppliers, and customers as they travel around the area. This helps them remain in close contact and build the required relationships.”

In addition, Connect Michigan offered a report in May 2012 (“Broadband: Empowering Small Businesses to Grow and Thrive”) that “surveyed Michigan business establishments to measure their current state of technology adoption and usage.” The survey found that businesses with fewer than 20 employees tended to use broadband services at a “significantly lower” rate than larger firms. As for those using broadband services, it was found:

“Many small Michigan businesses use broadband to help themselves grow and increase their sales. Nearly three out of four broadband-connected Michigan businesses with fewer than 20 employees (72%) stay in touch with their current customers via the Internet, while 61% advertise their products online to find new customers. More than two out of three of these businesses (68%) use broadband to research ways to make their businesses more efficient. Plus, one in four broadband-connected Michigan businesses with fewer than 20 employees accepts payments online, and 44% sell or accept online orders for their goods and service. The result of these applications can be seen in those businesses’ bottom lines: broadband-connected Michigan businesses with fewer than 20 employees report median annual revenues of approximately \$300,000, compared to just \$100,000 among similarly-sized competitors that do not use broadband.”

Again, the computer, digital, telecommunications revolution has empowered the entrepreneur in ways never before imagined. Paradoxically, though, challenges come with many of these same technological advancements, in particular threats to intellectual property of entrepreneurs and businesses.

One of the factors working in favor of the creator, innovator or inventor over the centuries, even far into the twentieth century, was the cost of copying or duplication, according to Tom Bethell in his book *The Noblest Triumph: Property and Prosperity Through the Ages*. Bethell added: “The digital revolution, on the other hand, may have changed everything. Once information is digitized, its physical embodiment drops away. It then becomes much more difficult to protect, and therefore to own... What took

the scribe a year, and the Xerox machine an hour, can now be copied in seconds. And when copies multiply, value collapses. Information can be multiplied almost without cost and transmitted to any number of distant terminals. Furthermore, it can be copied exactly, not in a form that becomes increasingly inexact with each succeeding ‘generation.’”³⁸

Bethell does not miss the irony here: “An information economy is one in which the value added by intellectual goods, such as songs and films and software, is higher at the margin than that added by steel or oil. But thanks to the possibility of almost costless replication, that ‘value added’ is threatened with collapse. Such goods are like pillars of sand – perhaps one should say silicon. They will tumble down unless shored up. If a borrowed car could be ‘copied’ as easily as borrowed software, the automobile industry would collapse immediately.”³⁹

Keep in mind, Bethell made these points in 1998. The challenge Bethell explained has only grown, with faster computers, the vast expansion of broadband, and an increasingly integrated global economy. Some wonder: Can – or even should – copyright and patent protections survive in such a world?

Economist Douglass C. North noted that controversy has long swirled around the value of patents, and he acknowledged that rules will be imperfect and carry costs. However, he made a fundamental point worth recalling in today’s shrinking, digital world: “But as compared to no protection at all, the value of some property rights over invention is not an issue. Idle curiosity or learning by doing will produce some technological change of the type we have observed throughout human history. But the

³⁸ Tom Bethell, *The Noblest Triumph: Property and Prosperity Through the Ages* (New York, NY: St. Martin’s Press, 1998), pp. 266-267.

³⁹ Tom Bethell, *The Noblest Triumph: Property and Prosperity Through the Ages* (New York, NY: St. Martin’s Press, 1998), p. 267.

sustained devotion of effort to improve technology – as we observe in the modern world – is stimulated only by raising the private rate of return.”⁴⁰

In a *Wall Street Journal* column, Alan Murray seemed to take the issue of online/digital theft as a given. He wrote: “In the digital age, there is no marginal cost, or at least very little, for copying ideas. Great books and movies, clever software, life-saving drugs, breakthrough computer chips, all are difficult to create, but are replicated with ease... There are no clear-cut answers to these problems, and no free-market solutions. Ultimately, governments must decide how to balance the need to encourage innovation against the need to spread its benefits.”⁴¹

Murray was dead wrong. In reality, there is a clear-cut, free market answer. The copying that Murray refers to, of course, is not about spreading the benefits of innovation. Quite the opposite, the theft of creations and innovations limit the pace or existence of such creativity and innovation, which means, by definition, that innovation is limited. Protecting property is the key fundamental role for government in a free market economy. No conflict exists between encouraging innovation and spreading its benefits.

History shows how this all works: protect private property (both tangible and intellectual); entrepreneurship, investment and innovation are encouraged; productivity advances; consumers benefit; and the economy grows, with higher incomes and more jobs resulting. A global, high-speed, digital economy does not change the fundamentals of human nature and economic common sense.

⁴⁰ Douglass C. North, *Structure and Change in Economic History* (New York, NY: W.W. Norton & Company, Inc., 1981), p. 165.

⁴¹ Alan Murray, “Protecting Ideas Is Crucial for U.S. Business,” *The Wall Street Journal*, November 9, 2005, p. A2.

8

Why Protect IP? The Ills of Piracy

When listening to the various arguments *against* intellectual property – that is in favor of reducing or even eliminating the creation and protection of intellectual property rights – many seem to boil down to the basic notion that ideas cannot be owned. At first glance, there might be a certain appeal to this assertion. But it rests on a flawed understanding of IP.

The problem is that copyrights and patents, for example, do not mean that an individual or business owns an idea. Rather, it's about the particular expression of an idea, such as in a particular book, in a song, in a machine, in a prescription drug, or in software.

In his book *The Fire of Invention: Civil Society and the Future of the Corporation*, Michael Novak countered the “own an idea” notion with the correct formulation of what copyrights and patents actually are and accomplish. Novak pointed out that

“...patent and copyright laws do not protect ideas or concepts, considered in their immateriality and shareability. On the contrary, copyright laws protect the concrete expression of ideas, their

incarnation in the precise particulars of language and song singled out by their creators. Similarly, patent laws protect the concrete reduction to physical practice of practical insights. In both cases, it is not the general idea that is protected but the concrete incarnation... [A] *patent* covers a practical insight reduced to practice – that is the trick of the thing, the hard part – and a copyright covers the unique, personal way of presenting something by a writer or an artist.”⁴²

That is an essential difference that undermines one of the theoretical protests, if you will, against IP.

Nonetheless, for a variety of reasons – from the mistaken theory about “owning ideas” to claims that it’s too difficult to protect IP today to government simply not adequately fulfilling its responsibilities to cultural biases and trends – the undermining of intellectual property persists, with significant negative results. Indeed, the ills of piracy – that is, IP theft – create real-world ills.

In April 2010, NDP Consulting published a study titled “The Impact of Innovation and the Role of Intellectual Property Rights on U.S. Productivity, Competitiveness, Jobs, Wages, and Exports.” That report highlighted the six most commonly cited negative effects of IPR infringement:

- Number one was lost revenue. It’s noted: “Legitimate businesses – the backbone of employment and economic growth – suffer sales losses when consumers, knowingly or unknowingly, buy counterfeit or pirated products.”
- Number two was lost employment. It was reported: “Legitimate businesses lose jobs when counterfeit and

⁴² Michael Novak, *The Fire of Invention: Civil Society and the Future of the Corporation* (Lanham, MD: Rowman & Littlefield Publishers, Inc., 1997), pp. 65-66.

pirated products establish a presence in the market. IDC estimates that a 10 percent reduction in global computer software piracy would add 600,000 legitimate jobs, contribute \$141 billion to global GDP, and raise an additional \$24 billion in global tax revenues. A 10 percent reduction in U.S.-based computer software piracy would create 32,031 jobs, add \$41 billion to U.S. GDP, and add \$6.7 billion to U.S. tax revenues.”

- Number three was damaged reputation and compromised brand value. The point was made that “the loss in reputation and brand value attributable to counterfeit or pirated products ... makes consumers lose trust in the genuine product.”

- Number four were health and safety concerns. It’s explained: “These concerns arise in connection with counterfeit and pirated products ranging from fake auto and aerospace parts to medical devices and pharmaceuticals. Counterfeit drugs in particular pose a major health and safety problem. According to the World Health Organization, between 30 percent and 40 percent of the drugs sold in developing countries – and in some cases up to 50 percent – can be counterfeit. Indeed, hundreds if not thousands of deaths can be attributed to counterfeit medicines.”

- Number five is the resulting discouragement of investment. It was noted: “Companies invest in R&D to achieve innovations and boost their competitiveness in global markets. Bringing new innovations to market requires large, upfront R&D investments and entails the risk that the competitive gains will not be realized. Counterfeiting and piracy, on the other hand, allow illegitimate firms to avoid the investment and the risk and to reap immediate profits. This discourages legitimate

firms from making the R&D investment and, in turn may discourage breakthrough drug innovations that demand large R&D investments. For example, a 2003 study by DiMasi, Hansen and Grabowski estimates that it costs \$802 million for a pharmaceutical company to take a drug from Phase I trials through to approval, including the cost of drugs that fail to be approved. Counterfeit drug makers skirt the approval process altogether, use untested substitute chemicals, and steal revenues from legitimate producers.”

- Finally, number six is lost tax receipts. NDP explained: “Businesses and employees suffering economic setbacks pay less taxes. The loss of legitimate business revenues and jobs owing to counterfeiting and piracy requires corporations and employees to pay higher taxes. According to a 2009 study commissioned by the International Chamber of Commerce’s BASCAP, lost business revenues and jobs from counterfeiting and piracy cost the Group of Twenty (G20) countries about \$85 billion annually in lost tax revenues and increased welfare spending.”

What are the overall costs of such woes? It’s pointed out in the NDP Consulting study that the “OECD estimates that international trade in counterfeit and pirated goods grew from \$200 billion in 2005 to \$250 billion in 2007.” For good measure, “IP experts estimate that when the costs of domestic production and consumption of counterfeiting and piracy, internet digital piracy, health and safety consequences, and other related costs are added to the OECD’s estimates for international trade, the overall economic impact of counterfeiting and piracy could top \$600 billion.”

Of course, an assortment of studies has served up estimates on the lost economic output due to IP violations.

For example, a January 2011 study from MarkMonitor titled “Traffic Report: Online Piracy and Counterfeiting” presented some daunting findings in the online environment. MarkMonitor used 22 major brands, “ranging from pharmaceuticals, luxury goods, and apparel to entertainment titles and software,” and scanned the Internet searching out sites suspected of offering counterfeit goods and/or stolen digital content. As noted in the study’s accompanying release: “Global piracy affects a wide range of digital content, including movies, music, games, software, television shows and e-books while the trade in counterfeit goods online touches almost every item, including apparel, footwear, electronics, luxury items, sports merchandise and pharmaceuticals.”

Through its own scanning technology, filtering and examinations, MarkMonitor found the following:

- Sites offering pirated digital content produced 146 million visits per day, or more than 53 billion visits annually.
- Sites selling counterfeit goods produced “more than 240,000 visits per day on average or more than 87 million visits per year.”
- Of the sites classified as “digital piracy,” 67% had their host locations in the U.S. and Western Europe. As for sites classified as “counterfeit,” 73% had host locations in the U.S. and Western Europe. However, this most certainly is a global endeavor, as MarkMonitor noted: “In previous ‘test buys’ of prescription pharmaceutical products from some of these sites, MarkMonitor found that payment processing and order fulfillment took place in countries other than that used to host the site or register its domain name. These findings demonstrate that while reliable infrastructure is a key factor for sites hosting piracy and

counterfeit goods, many of these sites conduct business across multiple national boundaries.”

- “The combined traffic to the 26 sites selling counterfeit prescription drugs is more than 141,000 visits per day on average or more than 51 million visits per year.”

Unfortunately, this is far from comprehensive in scope. As noted in the report, “Since the study used a sample of only 22 brands, it provides a small glimpse of the nature of online intellectual property (IP) theft and the dark side of illicit e-commerce. However, given the large number of popular brands, it is reasonable to assume that hundreds of thousands of other rights-holders, brands and content creators are suffering the same damage.” In fact, MarkMonitor has estimated global annual losses due to counterfeiting and digital piracy at \$200 billion.

The MarkMonitor study correctly concluded: “The bottom line is that online IP theft ultimately affects the most creative and innovative sectors of the economy, contributing to billions in lost revenue and millions of lost jobs. Protecting IP rights is a critical component of our economic resurgence, and vitally important to our future; stopping the spread of pirated and counterfeit goods is a necessity.”

The U.S. Patent and Trademark Office has pointed out on its website that the annual costs of IP theft are estimated at \$250 billion and 750,000 jobs.⁴³ But the USPTO goes on to point out how IP protections are particularly critical on the small business front: “While every IP-based business is vulnerable to piracy and counterfeiting, small businesses can be at a particular disadvantage because they lack the resources and

⁴³ U.S. Patent and Trademark Office’s StopFakes.gov website at <http://www.uspto.gov/smallbusiness/index.html>, accessed on June 18, 2012.

expertise available to larger corporations. Small businesses may also often lack the familiarity with the process of protecting intellectual property: research conducted in the spring of 2005 by the U.S. Patent and Trademark Office (USPTO) indicates that only 15 percent of small businesses that do business overseas know that a U.S. patent or trademark provides protection only in the United States.”⁴⁴

Of course, the challenge of stopping IP violations is not just a domestic issue. In the increasingly integrated economy of the twenty-first century, it's very much a global concern.

Keep in mind that the U.S. economy and our economic growth are far more reliant on international trade than in the past.

For example, in 1961, total trade (exports plus imports) equaled 9.2 percent of U.S. GDP. Total trade climbed to 20.4 percent of GDP in 1991 and to 23.6 percent in 2001. As of 2011, trade as a share of GDP had jumped to 31.5 percent.

As for economic growth, from 1991 to 2011, the growth in total trade equaled 38.8 percent of GDP growth. And from 2001 to 2011, the expansion in total trade equaled 48.3 percent of the growth in GDP.

In addition, international trade most certainly is not just about large businesses. To the contrary, the International Trade Administration has reported that 97.8 percent of U.S. exporters have less than 500 employees, and 97.2 percent of firms involved in importing also have less than 500 workers. The international marketplace, especially with the vast advancements in technology in recent decades, has become far more accessible and presents many more opportunities for small businesses than ever before in history.

⁴⁴ U.S. Patent and Trademark Office's StopFakes.gov website at <http://www.uspto.gov/smallbusiness/index.html>, accessed on June 18, 2012.

Again, though, there are increased challenges in terms of protecting the IP of U.S. entrepreneurs and businesses.

Where some of the key challenges lurk is highlighted in an annual report from the United States Trade Representative (USTR). Regarding the 2012 edition of the “Special 301 Report,” which examines how effective our trading partners are in protecting and enforcing IP rights, U.S. Trade Representative Ron Kirk noted, “This year’s Special 301 Report is more significant than ever in light of recent U.S. government data showing that IP-intensive industries support as many as 40 million American jobs and up to 60 percent of U.S. exports. When trading partners don’t protect IPR, they threaten those critical jobs and exports.”

The report looked at 77 countries, and 13 were placed on the Priority Watch List. That list included the nations that “present the most significant concerns regarding insufficient IPR protection or enforcement, or otherwise limited market access for persons relying on IPR protection.”

With its ongoing struggles enforcing property rights, it’s not surprising that China was on the Priority Watch List. While noting some improvements by China, the “Special 301 Report,” in part, stated:

“A wide spectrum of U.S. rights holders reports serious obstacles to effective protection and enforcement of all forms of IPR in China, including patents, trademarks, copyrights, trade secrets, and protection of pharmaceutical test data. Compounding these obstacles is the troubling direction that China’s policies in the IPR area have taken recently. These policies include China’s efforts to link eligibility for government preferences to the national origin of the IPR in products. In addition, many companies are

concerned that Chinese government agencies are inappropriately using market access and investment approvals as a means to compel foreign firms to license or sell their IPR to domestic Chinese entities. Further, for many industries, sales of IP-intensive goods and services in China remain disproportionately low when compared to sales in similar markets that provide stronger environments for IPR protection and more open market access. These concerns, coupled with the size of China both as a consumer marketplace as well as a globally significant producer of a wide array of products, mean that China's protection and enforcement of IPR must remain key priorities for U.S. trade policy."

Indeed, China remained a land laden with opportunity, along with significant IP risks.

Most nations, including the U.S., have gaps in protecting intellectual property, and therefore, need to make improvements that are important to innovation, investment and economic growth. However, certain nations, like China, have much more to do.

And each nation's historical and cultural roots must be understood as well. For example, it must be recalled that given China's communist history, the basic notion of "intellectual property" has a thin, at best, background.

Writing in the December 15, 2010, *Wall Street Journal*, Tian Lipu, commissioner of China's State Intellectual Property Office, noted: "Before the end of the 1970s, the Chinese people's knowledge about intellectual property was all but nonexistent—there was no concept of linking knowledge to property. It took over a decade, beginning in the 1980s, to enact some core IP-protection laws, including trademarks, patents and copyrights. It was only at the end of the last century that the term 'intellectual property' was

formally included in the Xinhua Dictionary, which is used by hundreds of millions of Chinese students.”

No doubt, it's a mighty undertaking to move from communism to an understanding of the importance of intellectual property. But how hard the Chinese government actually is working in that direction remains open to question. For example, part of the U.S.-China agreement announced on December 2010 was to push for the Chinese government itself to use, for example, legal software. All efforts to enhance IP rights in China are most welcome, but the fact that the government, which had been saying for some time that it is working hard to enforce such rights, needed to pledge to expand the use of legal software in government – therefore, acknowledging the use of pirated software in government – was a striking indictment of China's IP efforts up to that point.

On its website, the Business Software Alliance offers an analysis on China that would fit many other industries as well. The BSA notes, “China is a top market for software and IT companies, offering immense opportunities that can be realized if significant software piracy and market access challenges are addressed.” The size and scope of those IP challenges regarding software will be highlighted in the next chapter.

In the end, though, whatever the industry, and whether domestically or internationally, the ills of piracy come down to lost output, lost competitiveness, lost businesses and lost jobs.

9

IP Industry: Software

Software, whether system software or application software, serves as the brain of computers and computer systems, from the tablets to personal laptops to server farms to the Internet itself. In the end, hardware needs software to accomplish anything.

Computer hardware and software permeate nearly every endeavor in daily life, such as acquiring and preparing food, delivering health care, communications, entertainment, transportation, and most other forms of work and leisure.

Therefore, the brains – from operating systems to Microsoft Office applications, for example – provide tremendous value to the consumer, including individuals, families, students, entrepreneurs, investors, businesses and their employees.

That value, combined with the reality that software can be easily copied and exchanged, means that software piracy looms large, imposing serious losses on software firms, their workers, and the many businesses that serve software enterprises and employees.

In May 2012, the Business Software Alliance published its piracy report titled “Shadow Market: 2011 BSA Global Software Piracy Study.” Consider the key findings:

- “Well over half of the world’s personal computer users — 57 percent — admit they pirate software. That includes 31 percent who say they do it ‘all of the time,’ ‘most of the time,’ or ‘occasionally,’ plus another 26 percent who admit they pirate, but only ‘rarely.’ Fewer than four users in 10 (38 percent) say they ‘never’ acquire software that is not fully licensed.”

- “The global piracy rate for PC software hovers at 42 percent.”

- “The commercial value of this shadow market of pirated software climbed from \$58.8 billion in 2010 to \$63.4 billion in 2011, a new record, propelled by PC shipments to emerging economies where piracy rates are highest.”

- “Software piracy rates in emerging markets meanwhile towered over those in mature markets: 68 percent, on average, compared to 24 percent. Emerging economies thus continue to account for an overwhelming majority of the global increase in the commercial value of pirated software.”

- “Among the economies with the highest commercial values of software piracy, two stand apart from the rest in scale — and apart from each other in their market profiles. First, there is the United States, the world’s largest software market by far, with legal sales approaching \$42 billion. It has the world’s lowest piracy rate at 19 percent, but because it is such a large market, the commercial value of that piracy adds up to almost \$10 billion.

“Next, there is China, which is on course to overtake the US in the commercial value of its piracy despite having a legal software market just one-fifteenth the size of America’s. China’s illegal software market was worth

nearly \$9 billion in 2011 versus a legal market of less than \$3 billion, making its piracy rate 77 percent.”

- Interestingly, and providing hope, computers users were generally supportive of IP rights. The BSA reported: “By a wide 71-percent to 29-percent margin, respondents aligned themselves with the idea that ‘it is important for people who create new products or technologies to be paid for them, because it provides an incentive to produce more innovations. That is good for society because it drives technological progress and economic growth.’”

On some specifics, the global responses in favor were:

<u>Issue</u>	<u>Percent Agreeing</u>
IP profits benefit local economies	56%
People should profit from ideas	55%
IP creates jobs	58%
IP encourages creativity	75%
Important to reward innovation	71%

- Finally, there is the daunting task of how does one stop IP theft? The BSA study noted: “Compounding that problem, this year’s survey finds a troubling lack of incentive among admitted pirates around the world to change their behavior. In mature markets, only 20 percent of those who admit they frequently pirate software say the risk of getting caught is a reason not to do it. In emerging markets, the figure is even lower — just 15 percent of pirates appear to be concerned about the risk of getting caught. This suggests there is a need for authorities to ramp up enforcement to send a stronger deterrent signal to the marketplace.” Indeed, as with any form of law breaking, there must be consequences.

It also must be recognized that the negative fallout from software piracy is not limited to large software makers, but

small firms as well. In fact, as noted in the following table, small and mid-size firms overwhelmingly populate the computer software industry.

Total Employer Firms	Firms with < 500 Workers	Firms with < 20 Workers	Percent < 500	Percent < 20
Software publishers				
5,286	5,076	3,772	96.03	71.36
Computer, equipment and software merchant wholesalers				
7,329	7,189	6,066	98.09	82.77
Computer and software stores				
5,305	5,285	5,099	99.62	96.12

Data Source: U.S. Census Bureau, Statistics of U.S. Businesses, latest numbers from 2010

The last column of the above table is the most striking, i.e., that among employer firms, 71 percent of software publishers, 83 percent of wholesalers that include software among their products, and 96 percent of computer and software stores have fewer than 20 workers. Those truly are small businesses, which certainly are affected by software piracy.

For good measure, it's worth noting that large software firms wind up generating a host of small businesses that work with, benefit from, and serve those larger businesses.

For example, an October 2009 study from IDC, sponsored by Microsoft, was titled "Aid to Recovery: The Economic Impact of IT, Software, and the Microsoft Ecosystem on the Global Economy." Among the areas examined was how large firms like Microsoft wind up working with and being served by small businesses.

It was reported, “IT spending provides revenues for more than 1.2 million companies selling or distributing hardware, software, and services.”

As for the Microsoft ecosystem, it encompassed nearly 700,000 companies. It was noted in the report: “This ecosystem is not only large but also diverse, ranging from large, name brand OEMs to small firms that build a few systems a year for a handful of customers, from the big application software companies to small, entrepreneurial companies writing applications in local languages, from multinational service firms to three-person shops selling value-added solutions into niche markets.” Furthermore, it was estimated “that more than two thirds of the companies in the ecosystem are small, local companies – often dealing with equally small, local IT using organizations.”

As for the impact of piracy on this Microsoft ecosystem, an earlier study, published in June 2008 by IDC (sponsored by Microsoft and the International Association of Microsoft Certified Partners), found, “For every dollar Microsoft realizes from lower software piracy in 2008, other companies in the software ecosystem will realize, in aggregate, \$5.50.”

As with music and movies (as we shall see), many people rationalize stealing software by claiming that the big software companies like Microsoft can afford to make a little less money. Of course, stealing is stealing, whether one steals from a big company or a small firm, or from a rich person or a poor person. In addition, the shareholders who own Microsoft include pension plans and small investors. Finally, as illustrated here, it’s not just large software firms that are affected, but also the small businesses that make up a huge share of the firms that populates and serves the software industry.

10

IP Industry: Music

Perhaps the most interesting award given at the 54th Grammy Awards in February 2012 did not go to a singer, songwriter or musician. Instead, it went to a businessman. The late Steve Jobs, co-founder of Apple Computer Inc., received a Trustees Award.

At the Recording Academy's Special Merit Awards Ceremony, as noted on the Grammy's website, "Jobs' Trustees Award was accepted by Eddy Cue, Apple's senior vice president of Internet software and services, who made note of Jobs' love of music. 'Music shaped his life and made him who he was,' said Cue. 'When he introduced the iPod in 2001, people asked, "Why are you doing this?" He said, "We love music and it's always good to do something you love.'"

It has been argued by many, and rather persuasively, that Steve Jobs saved the music business.

Keep in mind that online theft of music took off in the late 1990s. According to RIAA data, album units shipped climbed ever higher from the early 1970s to 1999. What happened to change things at the end of the twentieth century? Napster kicked off the explosion in music piracy, with other copyright-breaking services following over the subsequent years.

It was Jobs and Apple Computer that introduced the iPod and iTunes in 2001, which made online purchases of songs affordable, easy and appealing. It was something that, amazingly, the music industry was unable to accomplish on its own.

Of course, iTunes did not mean that music piracy went away. Rather, it remains a major problem and challenge. On its website (www.riaa.org accessed on June 21, 2012), the RIAA has reported:

“While the music business has increased its digital revenues by 1,000 percent from 2004 to 2010, digital music theft has been a major factor behind the overall global market decline of around 31 percent in the same period. And although use of peer-to-peer sites has flattened during recent years, other forms of digital theft are emerging, most notably digital storage lockers used to distribute copyrighted music... Since peer-to-peer (p2p) file-sharing site Napster emerged in 1999, music sales in the U.S. have dropped 53 percent, from \$14.6 billion to \$7.0 billion in 2011. From 2004 through 2009 alone, approximately 30 billion songs were illegally downloaded on file-sharing networks. NPD reports that only 37 percent of music acquired by U.S. consumers in 2009 was paid for.”

The RIAA also notes a striking correlation between the decline in music sales and a decline in the number of people working as “musical groups and artists” according to Bureau of Labor Statistics numbers.⁴⁵ The RIAA

⁴⁵ See the analysis, titled “Illegal Downloading = Fewer Musicians,” at http://www.riaa.com/blog.php?content_selector=riaa-news-blog&blog_selector=Illegal%20Downloading%20Fewer%20Musicians&news_month_filter=7&news_year_filter=2010.

analysis sums up: “Selling music is an important motivator to creating music, and ... the decline in sales has correlated with fewer people making a living in music.”

As is the case with piracy of software, there is a great deal of flippant justification for illegal downloading of music by writing it off as big music companies and famous stars able to afford some lost sales. Again, this in no way justifies stealing. But it’s also dead wrong in terms of the make up of the music business, as noted in the following table:

Total <u>Employer Firms</u>	Firms with <u>< 500 Workers</u>	Firms with <u>< 20 Workers</u>	Percent <u>< 500</u>	Percent <u>< 20</u>
Musical groups and artists				
4,294	4,290	4,007	99.91	93.32
Sound recording industries				
3,459	3,441	3,323	99.48	96.07
Music publishers				
744	735	703	98.79	94.49
Sound recording studios				
1,640	1,636	1,601	99.76	97.62
Prerecorded tape, compact disc, and record stores				
1,736	1,730	1,620	99.65	93.32

Data Source: U.S. Census Bureau, Statistics of U.S. Businesses, latest numbers from 2010

All five of the music industries are overwhelmingly about small firms with less than 20 employees, i.e., 93 percent of musical groups and artists; 96 percent of sound

recording industries; 94 percent of music publishers; 98 percent of sound recording studios; and 93 percent of music stores.

Jobs' love of music, combined with his business common sense, led him to understand the need to protect intellectual property if the music business were to survive.

Of course, while piracy is a major challenge, broadband and digital technologies have provided benefits for consumers and the music industry, including services such as iTunes that allow the immediate purchase, download and consumption of music.

In the "IFPI Digital Music Report 2013: Engine of a digital world," it was reported: "Record companies' digital revenues for 2012 are estimated at US\$5.6 billion, up an estimated 9 per cent on 2011 and accounting for more than a third of total industry revenues (34%). Digital channels account for the majority of income in an increasing number of markets including India, Norway, Sweden and the US." From 2008 to 2012, global digital revenues increased by 30 percent. Download stores represent 70 percent of digital revenues, with subscription services on the rise. Again, as noted in the IFPI report: "Subscription services are now an integral part of the recorded music market, with 20 million paying subscribers globally in 2012 – an increase of 44 per cent on 2011. Subscription services are expected to have crossed the 10 per cent mark as a share of total digital music revenues in 2012 for the first time."

In addition, broadband Internet, and assorted services and sites, like YouTube, have allowed musicians to get their music out through new and varied avenues, without the need for backing from a recording company.

No doubt, the music industry of the past decade has been altered in dramatic fashion, requiring new thinking and new business models in the face of technological upheaval and dramatic declines in overall revenues.

But the idea that the music business, as well as government, should simply give up the piracy fight is rooted in an astounding economic ignorance.

In contrast, Steve Jobs understood the realities of music and protecting IP. In his recent biography *Steve Jobs*, Walter Isaacson wrote about Jobs, piracy and protecting IP:

“At this point Jobs could have decided simply to indulge piracy. Free music meant more valuable iPods. Yet because he really liked music, and the artists who made it, he was opposed to what he saw as the theft of creative products. As he later told me:

“From the earliest days at Apple, I realized that we thrived when we created intellectual property. If people copied or stole our software, we’d be out of business. If it weren’t protected, there’d be no incentive for us to make new software or product designs. If protection of intellectual property begins to disappear, creative companies will disappear or never get started. But there’s a simpler reason: It’s wrong to steal. It hurts other people. And it hurts your character.’

“He knew, however, that the best way to stop piracy – in fact the only way – was to offer an alternative that was more attractive than the brain-dead services that music companies were concocting.”

Steve Jobs combined an understanding of the importance of IP with an incredible talent for innovating, and the result allowed the music industry to have a

fighting chance in competing with “free,” that is, online piracy.

11

*IP Industry:
Movies and TV*

What's the most pirated television show?

According to TorrentFreak.com, during the spring 2012 season up to June 1, it was HBO's "Game of Thrones."⁴⁶ Following were "How I Met Your Mother" and "The Big Bang Theory" from CBS, FOX's "House," and "Mad Men" from AMC.

What's so striking about the estimates on the "Game of Thrones" is that the number of illegal downloads (3.9 million per single episode) nearly matched the show's average U.S. viewership (4.2 million).

But consider that when TorrentFreak.com looked at all of 2011, it found that the most pirated show – Showtime's "Dexter" – actually did have more per episode downloads (3.62 million) than average viewership (2.19 million), with "Game of Thrones" running second, followed, again, by "The Big Bang Theory," "House," and "How I Met Your Mother."

What about films?

⁴⁶ TorrentFreak.com, "Game of Thrones Crowned Most Pirated TV-Show of the Season," August 6, 2012, accessed at <http://torrentfreak.com/game-of-thrones-most-pirated-tv-show-of-the-season-120608/>

For 2012, TorrentFreak.com estimated that “Project X” was the top pirated film at 8.72 million downloads, followed by “Mission: Impossible – Ghost Protocol” at 8.5 million, “The Dark Knight Rises” at 8.23 million, “The Avengers” at 8.11 million, and “Sherlock Holmes: A Game of Shadows” at 7.85 million illegal downloads via BitTorrent.⁴⁷

Again, TorrentFreak.com offered estimates for pirated movies in 2011 as well.⁴⁸ The top movie downloaded illegally was “Fast Five” at an estimated 9.26 million downloads, followed by “The Hangover II” at 8.84 million, “Thor” at 8.33 million, “Source Code” at 7.91 million, and “I Am Number Four” at 7.67 million.

At the same time, of course, enormous opportunities and benefits have emerged and will continue to do so due to advancements in computer, telecommunications and digital technologies. Those opportunities and benefits exist for current movie and television businesses, as well as new creative entrepreneurs – or one might say, for both old and new Hollywood – and most obvious perhaps, for consumers, who reap the rewards of increased choices, improved picture and sound quality, vastly enhanced special effects, and expanding avenues for viewing films and television, including services like iTunes, and video streaming from Hulu.com to Netflix to YouTube to Amazon.com.

In terms of longtime studios, for example, in March 14, 2011, testimony before the U.S. House of Representatives Subcommittee on Intellectual Property, Competition and the Internet, Frederick Huntsberry, chief operating officer for Paramount Pictures, said, “At Paramount Pictures, we believe in coming years consumers will increasingly choose

⁴⁷ TorrentFreak.com, “Project X Most Pirated Move of 2012,” December 27, 2012, accessed at <http://torrentfreak.com/project-x-most-pirated-movie-of-2012-121227/>.

⁴⁸ TorrentFreak.com, “Top 10 Most Pirated Movies of 2011,” <http://torrentfreak.com/top-10-most-pirated-movies-of-2011-111223/>

to view our motion pictures via authorized online and mobile distribution. Paramount currently licenses more than 200 online digital distribution platforms across more than 70 countries covering more than 750 films in more than 25 languages.”

Meanwhile, various firms are chipping away at the traditional television model through original online content. Businesses already providing or considering original online content include Netflix, YouTube, Hulu, Amazon.com, Apple, and various cable companies working with TV Everywhere.

But there’s more. Consider the following from a February 2012 column by one of the authors of this book (Raymond J. Keating) for the Dolan Company (running in *Long Island Business News* and the *Colorado Springs Business Journal*):

“But one of the most interesting people talking up the enormous opportunities at hand is Zachary Levi, who starred as the tech-nerd-turned-spy in the NBC show ‘Chuck’ that just finished its five-year run in January. Levi is quite entrepreneurial, with his own company and website called The Nerd Machine, which hosted “NerdHQ” in July [2011] during Comic-Con International in San Diego. Levi brought in various TV buddies to talk to fans, with the idea to have fun and raise funds for charity.

“During a ‘Chuck’ panel, Levi spoke about his own vision for television, which is far bolder and more exciting than what others are considering.

“Using shows like “Chuck” and the cult classic ‘Firefly’ to make his points with a sci-fi heavy audience, Levi noted that with the technology at hand, no reasons exist for such shows to ‘be on the chopping block any more.’ He explained that the

livelihood of such shows could be put directly in viewers' hands 'because you have the power already... If all of a sudden we were to say, hey look, "Chuck" is not going to be on TV any more, but we can make it online and we're going to sell it for two bucks an episode, would you guys buy 'Chuck' for two dollars an episode?'

"Levi recognized the challenge of offerings being 'free' on the Internet, whether due to advertising or piracy. He noted the role consumers must play: 'In the next five years, as everything goes to a subscription model, or goes to an iTunes-type of model, if you guys decide somebody else is going to pay for it – I'm just going to enjoy it – it will die. But if you support it, it will live. And then 2 million people, by the way, can keep a show on the air.'

"That model makes a lot of sense in the Internet age. But being an avid video gamer, Levi's vision is even more expansive: 'I want to make fun video-game television shows or movies. I want to go fly around in space and go kill aliens... Maybe you can watch that, you can just sit back and passively watch it like all the other shows you've known and loved ... or at any given time, maybe your Xbox goes, 'Hey, pick up your controller if you want to participate in the fight.' ... You finish a level and then the story picks up again.'

"That's what today's technology should be about, i.e., more consumer power and choices. And make no mistake, that's where it's headed."

It's increasingly a digital world, and entertainment entrepreneurs and companies realize that embracing digital means embracing opportunity.

At the same time, the threat of losing one's intellectual property is real and significant, as noted in the aforementioned numbers on pirated movies and TV shows, and by Levi's mentioning that if consumers don't pay but just choose to enjoy, it will die.

Movie and TV piracy, of course, can happen via various tools. Advancements in digital camcorders mean high-quality versions of films recorded in movie theaters to be distributed online or via bootlegs. Peer-to-peer networks have been a major source of pirated content for more than a decade now. And digital storage lockers and streaming videos via rogue website have become a more recent favorite for distributing copyrighted material.

In November 2011 testimony before the House Judiciary Committee, Michael O'Leary, executive vice president of global policy and external affairs for the MPAA, reported: "Currently, the most pernicious forms of digital theft occur through the use of so-called 'rogue' websites or cyberlockers. These platforms – I will refer to them today as 'rogue sites' for simplicity – facilitate the illegal distribution of copyrighted works through many different forms, including streaming, downloading, or linking to another site or service offering unauthorized content. These rogue sites, whose content is hosted and whose operators hide around the world, are increasingly sophisticated in appearance and take on many attributes of legitimate content delivery sites, creating additional enforcement challenges and feeding consumer confusion."

But some argue that movie and TV piracy is on the decline, at least in the U.S., given the expanding legal alternatives for consumers. Regarding films, TorrentFreak.com noted: "The total number of downloads for 'Fast Five' pales in comparison to last year's victor 'Avatar' which was downloaded more than 16 million times. This downward trend is also visible throughout the rest of the top 10, where the average number of downloads

is lower than in 2010. In part this drop might be explained by the increase in legal alternatives, although upcoming alternative piracy sources (such as cyberlockers and steaming sites) may have also had an effect. However, since the total number of active BitTorrent users isn't shrinking, the downloads may simply be spread out over more titles in 2011."

As for television, TorrentFreak.com put forth the following: "The percentage of TV-show downloaders, from the US in particular, has steadily declined in recent years. This is in part thanks to alternative viewing options such as Hulu and Netflix... In common with many branches of the entertainment industry, the challenge for TV companies is to come up with a business model that allows users to consume what they want at any given time, without losing revenue in the process. When that puzzle is solved worldwide the number of unauthorized downloads will be pretty much insignificant."

No doubt, entertainment entrepreneurs and businesses must stay at the cutting edge of serving customers, meeting their needs and desires, and therefore, at the cutting edge of technology. At the same time, though, competing with free – i.e., stolen – remains a formidable business feat.

Does such IP theft really matter, though? Again, as with music and software, plenty of people say that big movie and television companies can afford to lose some business. But that, once more, is mere rationalization for stealing. For good measure, IP theft in the movie and television industries is not just about big Hollywood studios. Indeed, far from it.

In his testimony, the MPAA's O'Leary noted:

"Our industry also includes more than 95,000 small businesses across the country that are involved in the production and distribution of

movies and television, the vast majority of which employ fewer than 10 people. These are businesses like Fletcher Camera & Lenses in Chicago, whose full-time staff of 25 employees works to provide equipment for film, television, and commercial productions in the Midwest.

“And beyond even these are the hundreds of thousands of other businesses that every year provide services to productions, like the local drycleaner that served the cast and crew on location or the local hardware store that supplied paint and lumber. For example, Budecke’s Paints & Decorating of Baltimore, Maryland, a fifth-generation family-owned and-operated retailer, which has supplied paint for virtually every major production filmed in the area in recent years. The motion picture and television industry made \$38.9 billion in payments to more than 208,000 such businesses in 2009. On average, a major motion picture shooting on location contributes \$225,000 every day to the local economy.”

Based on Census Bureau industry codes, consider the following table that shows the important role of small businesses in Hollywood:

Total Employer Firms	Firms with < 500 Workers	Firms with < 20 Workers	Percent < 500	Percent < 20
Motion picture and video industries				
16,850	16,748	15,576	99.39	92.44
Television broadcasting				
913	836	573	91.57	62.76
Cable and other subscription programming				
427	398	323	93.21	75.64
Video tape and disc rental				
3,040	3,034	2,859	99.80	94.05

Data Source: U.S. Census Bureau, Statistics of U.S. Businesses, latest numbers from 2010

According to the MPAA, the motion picture and television industries supported 2.1 million jobs and \$143 billion in wages in 2010, as well as generating \$13.5 billion in exports. And like so many other industries, as we have seen, the movie and television business is mostly about small business. The MPAA estimates that the entire industry is “comprised of nearly 95,000 businesses in total, located in every state in the country,” and it “made \$37.4 billion in payments to nearly 278,000 businesses around the country in 2010.”

When intellectual property is undercut regarding television and movies, tens of thousands of small businesses and millions of jobs are undercut.

12

IP Industry: Video Gaming

Video gaming is not just for kids anymore, not by a long shot.

The Entertainment Software Association (ESA) has reported, for example, that 37 percent of gamers are 36 years of age or older, and 31 percent are between 18 and 35, with 32 percent under 18.⁴⁹ In addition, the average age of the most frequent game purchaser is 35 years old.

For good measure, gamers aren't just guys. The ESA reported that gamers break down as 53 percent male and 47 percent female.

But while all of this might be interesting, it doesn't answer a key question: How big is this industry? Well, 49 percent of "U.S. households own a dedicated game console, and those that do own an average of 2."⁵⁰

Also, according to the ESA's "Video Games in the 21st Century: The 2010 Report," among the computer and video

⁴⁹ Entertainment Software Association, "Essential Facts About the Computer and Video Game Industry: 2012 Sales, Demographic and Usage Data."

⁵⁰ Entertainment Software Association, "Essential Facts About the Computer and Video Game Industry: 2012 Sales, Demographic and Usage Data."

game software industry's contributions to the U.S. economy during the 2005-2009 period were:

- added value to U.S. GDP of \$4.9 billion;
- real annual growth rate of 10.6 percent, versus real annual growth for the U.S. economy of 1.4 percent;
- direct employment exceeding 32,000, and total U.S. employment, both direct and indirect that depends on game software, topping 120,000;
- annual growth rate in direct employment registering 8.65 percent;
- and average annual compensation per employee of \$89,781 in 2009.

More broadly, according to a January 14, 2010, report from The NPD Group, "U.S. retail sales of video games, which includes portable and console hardware, software and accessories, generated revenues of close to \$19.66 billion," including \$538 million in retail sales in the PC game software industry. And while video game retail sales were hit by the tough economy – declining by 8% in 2009 – those sales were up by more than 250% since 2000.

But like other software and entertainment industries, theft, or piracy, is a major problem. The Entertainment Software Association of Canada summed up the costs of piracy, including the effects on small firms, as follows:

"Piracy is estimated to cost the U.S. and Canadian entertainment software industries more than \$3.5 billion annually. This figure only includes hard goods and does not include losses from Internet piracy. Piracy levels in Canada are abnormally high and have significant negative impacts on the Canadian video game industry. Piracy siphons the revenue necessary to recover the enormous investments associated with video game

production. This can often have a disproportionate impact on smaller, independent studios whose success often hinges on the release of a single game it has spent years developing. If the company is unable to generate significant revenue from the royalties of game sales, it may not be capable of weathering such a staggering financial loss. The impact of piracy, then, can be ruinous.”⁵¹

In response to the formation of a new Department of Justice Task Force on Intellectual Property in early 2010, Michael D. Gallagher, president and CEO of the ESA, observed: “Intellectual property is the lifeblood and backbone of entertainment software. Consumers benefit with the lower cost, high-quality and more diverse title offerings that are made possible by strong measures protecting the creative works of our industry’s artists.”

Gallagher, of course, was absolutely correct. And his sentiments apply both domestically and in the international marketplace. Once again, small businesses are the dynamic innovators, and they suffer most when intellectual property rights are violated – including in the video gaming industry.

That was made clear in a January 2013 report highlighting the impact that gaming piracy can have on new game developers.⁵² Peter Ong, co-founder “Epic Mickey 2: The Power of Illusion” studio DreamRift, was quoted: “We definitely found that piracy was a significant factor in our Nintendo DS development efforts. When we approached publishers to propose potential game projects

⁵¹ Entertainment Software Association of Canada website at http://www.theesa.ca/?page_id=170

⁵² Damien McFarren, “DreamRift: Publishers Are Scared Of Piracy,” NintendoLife.com, January 11, 2013, accessed at http://www.nintendolife.com/news/2013/01/dreamrift_publishers_are_scared_of_piracy.

with them, most of them brought up their concerns about piracy at some point. Many publishers even cited the issue of piracy as a specific reason why they decided to back away from our game project, especially with it being an original intellectual property concept. The publishers' fear was that, in a climate where piracy is commonplace, original games and new mechanics are far less likely to be successful than games based on previously successful mechanics, established licenses, sequels, and sports.”

Indeed, IP theft undercuts entrepreneurs and winds up hurting consumers.

13

IP Industry: Pharmaceuticals

U.S. firms lead the global pharmaceutical industry.

For example, in its “2011 Profile: Pharmaceutical Industry,” the Pharmaceutical Research and Manufacturers of America (PhRMA) reported the following: “Today, much of the pharmaceutical research formerly done in other countries – especially in Europe – is conducted in the United States. In fact, a recent study found that about 64% of research on new medicines approved in the last 10 years was done in this country. In addition, the United States generates 80% of global biotechnology R&D.”

The International Trade Administration (ITA) has reported: “According to an industry survey by Ernst and Young, the U.S. accounts for over 60 percent of the world’s employment in dedicated biotechnology firms and 70 percent of R&D.”⁵³

A variety of reasons exist for this U.S. leadership, but in an increasingly competitive, integrated and mobile global economy, critical is the lack of price controls on drugs in

⁵³ International Trade Administration, “Pharmaceutical Industry Profile,” July 2010, <http://trade.gov>.

the U.S., coupled with stronger intellectual property protections compared to most other nations.

Given the tremendous costs and risks involved with developing new medicines, the ability to create, protect and earn returns on intellectual property is paramount in making sure that crucial investments and innovation occur.

In the *Economic Report of the President 2006*, it was noted in an essay titled “The Role of Intellectual Property in the Economy”: “Industries such as chemicals, pharmaceuticals, information technology, and transportation are highly dependent on patent protection to provide the incentives to innovate.”

Later, it was explained:

“The link between improved intellectual property protection and increased innovation can be seen at the firm level for companies in developing and developed countries. One study showed that 80 percent of 377 firms surveyed in Brazil would invest more in internal research if more legal protection, such as improved intellectual property-right protection, were available. A similar study of U.S. firms showed that the availability of patent protection in the United States was a critical factor in research and development decisions. Using a random sample of 100 U.S. manufacturing firms, this study found that had it not been for the availability of patents, 60 percent of the inventions in the pharmaceutical industry and nearly 40 percent of the inventions in the chemical industry would not have been developed.”

The ITA also pointed out, “The United States has a supportive domestic environment for the development and commercialization of pharmaceuticals. Its strengths

include a robust intellectual property system that recognizes and rewards innovation and a science-based regulatory system that is considered the most rigorous in the world. FDA approval facilitates regulatory approval in other countries, especially in developing economies. The U.S. is the world's largest market by value and its reimbursement and pricing environment is considered by industry as the most favorable in terms of recognizing the value of innovative drugs."

It's important to understand that price controls amount to government-imposed theft of returns on intellectual property investment. Then consider the fact that bringing a drug to market is a costly and risky endeavor. According to the "2013 Profile: Biopharmaceutical Research Industry," PhRMA reported:

- It takes 10-15 years to bring a drug to market.
- "The average R&D investment for each new medicine is \$1.2 billion, including the cost of failures, with more recent studies estimating the costs to be even higher."
- "For every 5,000 to 10,000 compounds that enter the pipeline, only one receives approval."
- "Only 2 of every 10 brand name medicines earn sufficient revenues to recoup average R&D costs."

Again, this is a high risk, high cost venture. When government steps in to set prices and limit returns, no one should be surprised that investment and innovation are diverted elsewhere. As noted, by the ITA: "Sometimes pricing levels can make it difficult to generate returns to

compensate for investment into high risk, innovative drugs.”⁵⁴

Likewise, the failure to explicitly protect intellectual property means reduced industry activity. When it comes to pharmaceuticals, there are numerous problems looming internationally on the IP front, such as “the lack of protection against unauthorized disclosure of test data generated to obtain regulatory marketing approval for pharmaceuticals, ... unfair commercial use of regulatory test data, ... laws that limit the scope of patentability for certain chemical forms, inadequate protection and enforcement of patented products on the market, the proliferation of counterfeit medicines, and lack of an effective system to prevent the issuance of marketing approvals of generic copies of patented drugs.”⁵⁵

Indeed, such IP worries were confirmed in, for example, IMAP’s “Pharmaceuticals & Biotech Industry Global Report – 2011,” where it was pointed out that “protection and enforcement of IP rights remains a difficult issue in many emerging markets, with counterfeit and first-copy products rife. For example, India’s patent system fails to reach the required standard, with the recent rejection of the patent for Bayer’s Nexavar (sorafenib) as one notable example. Unless such issues are sorted out, pharma companies must adapt their drug portfolios and commercialization strategies to the particular local market conditions.”

For good measure, there is the matter of compulsory licensing, whereby a government authorizes a company to produce a drug without the consent of the firm holding the IP rights on the drug. A January 2013 report noted that the government in India “appointed a panel to look into

⁵⁴ International Trade Administration, “Pharmaceutical Industry Profile,” July 2010, <http://trade.gov>.

⁵⁵ International Trade Administration, “Pharmaceutical Industry Profile,” July 2010, <http://trade.gov>.

issues related to compulsory licensing of drugs and whether cheaper versions of cancer medicines Trastuzumab, Ixabepilone and Dasatinib can be launched under the provision...”⁵⁶ Unfortunately, it’s easy to see how compulsory licenses would move beyond legitimate health emergencies, and become a policy of government to undermine IP. In a June 2012 statement on India’s compulsory licensing, PhRMA President and CEO John Castellani noted, “While India has not routinely issued compulsory licenses (CL), PhRMA believes it is not an appropriate tool even if granting CLs may be a legal option. Assessments of particular compulsory licensing policies and decisions need to be made on a case-by-case basis, taking into account a number of factors. Legitimate health emergencies that require making exceptions to intellectual property rights can and should be accommodated under the international framework, but only after exhausting all other efforts and under extraordinary circumstances... If countries begin to routinely use CLs, we could see a ‘race to the bottom’ in which governments in the developing world walk away from their responsibility to support research and innovation in public health. In the absence of the investment made by our members, and the resulting research and development, there would be no generic medicines for the world’s patients.”

In the midst of sorting out all of these issues, many people, including various policymakers, think of the pharmaceutical industry as being all about big businesses. For the reasons cited already, half of the top 10

⁵⁶ Divya Rajagopal, “Compulsory license likely for three cancer drugs,” The Economic Times, January 14, 2013, accessed at http://articles.economictimes.indiatimes.com/2013-01-14/news/36331897_1_compulsory-licence-indian-patent-act-patent-controller.

pharmaceutical firms are headquartered in the U.S.⁵⁷ But for much the same reasons, the U.S. has a very entrepreneurial pharmaceutical industry, populated by small and mid-size firms. For good measure, that's coupled with a drug distribution network overwhelmingly about small businesses.

Consider the following breakdown of the industries:

Total <u>Employer Firms</u>	Firms with <u>< 500 Workers</u>	Firms with <u>< 20 Workers</u>	Percent <u>< 500</u>	Percent <u>< 20</u>
Pharmaceutical and medicine manufacturing				
1,546	1,390	894	89.91	57.83
Pharmacies and drug stores				
18,727	18,512	16,185	98.85	86.43
Drugs and druggists' sundries merchant wholesaler				
6,130	5,941	5,056	96.92	82.48

Data Source: U.S. Census Bureau, Statistics of U.S. Businesses, latest numbers from 2010

The U.S. needs to recognize the value presented by the pharmaceutical industry. For example, on the health care front, the ITA points out: “Pharmaceuticals have brought tremendous benefits for public health and economic productivity by saving lives, increasing life spans, reducing suffering, preventing surgeries, and shortening hospital stays.”⁵⁸ Consider the following: “Today, more than 5,000 medicines are in development globally, all of which have

⁵⁷ International Trade Administration, “Pharmaceutical Industry Profile,” July 2010, <http://trade.gov>.

⁵⁸ International Trade Administration, “Pharmaceutical Industry Profile,” July 2010, <http://trade.gov>.

the potential to help patients in the United States and around the world... According to another data source, there are 3,400 medicines in development today just in the United States, an increase of 40% since 2005... 70% of the more than 5,000 new molecular entities (NMEs) being investigated are potential first-in-class medicines, meaning that they are in a unique pharmacologic class distinct from any other marketed drugs.”⁵⁹

In terms of the economy in general, the Bureau of Labor Statistics noted that in 2010, pharmaceutical manufacturers employed 278,000 people, and “average annual wages in 2008 ranged from \$96,000 in pharmaceutical manufacturing to \$105,000 in biotechnology research.”⁶⁰

PhRMA offers the following estimates of the industry’s economic contributions: “The U.S. biopharmaceutical sector employs more than 650,000 workers, supports a total of 4 million jobs across the country, and contributes more than \$917 billion in economic output on an annual basis when direct, indirect, and induced effects are considered.”⁶¹ As for jobs in the industry: “In 2009, the average annual total compensation for biopharmaceutical workers was \$118,690, compared with \$64,197 for all U.S. workers.”⁶²

And central to these contributions to America’s health and economy, as noted in the table above, are small, entrepreneurial firms. Such entrepreneurship, along with the accompanying innovation and investment in new and improved medicines, will be restrained or destroyed if the

⁵⁹ Pharmaceutical Research and Manufacturers Association, “2013 Profile: Biopharmaceutical Research Industry.”

⁶⁰ International Trade Administration, “Pharmaceutical Industry Profile,” July 2010, <http://trade.gov>.

⁶¹ Pharmaceutical Research and Manufacturers Association, “2013 Profile: Biopharmaceutical Research Industry.”

⁶² Pharmaceutical Research and Manufacturers Association, “2013 Profile: Biopharmaceutical Research Industry.”

U.S. weakens its own IP protections, fails to fight for improved intellectual property rights internationally, and/or goes down the path of price controls.

14

IP Industry: Book Publishing

For entrepreneurs and authors, it's an exciting period to be in the book publishing business. At the same time, for longtime publishing industry firms and executives, it can be a tumultuous time.

Consider the story of Borders, as an initial example.

Borders Group Inc., once the nation's second largest bookstore chain, was liquidated in 2011, falling prey to a combination of gross failure to keep up with industry changes, bad business decisions and a poor economy.

Previously, Borders helped change the industry by spreading book superstores across the nation, particularly in the 1990s. Shoppers appreciated the big selections, along with the inviting store environments. Interestingly, that superstore trend challenged many small, independent bookstores.

But poor decision-making took over at Borders in the 2000s. The firm failed to grasp the significance of two fundamental industry changes.

First was the impact of Internet book sales. As it struggled online, Borders handed over the operations of its Internet business to top-competitor Amazon.com in 2001. By the time Borders retook the reins of its online business in 2008, Amazon.com was the Internet book king.

It's hard to imagine a worse decision in the book business, but then Borders also came to the ebooks trend far too late. By the time Borders partnered with Canada's Kobo Inc. to introduce the Kobo e-reader in 2010, it was nearly three years after Amazon.com had launched the Kindle. Barnes & Noble's Nook and Apple's iPad also beat Borders to the market.

Missing the initial shifts on broadband Internet and ebooks were monumental fumbles. Few businesses would be able to recover from coming too late to the biggest revolutions hitting books since Gutenberg's printing press in the 15th century.

On top of all of this, Borders took on too much debt; jumped from CEO to CEO in a short period of time; and faced one of the worst recessions since the Great Depression running from December 2007 to mid-2009, followed by a dismal recovery.

The end of Borders clearly is an example of Joseph Schumpeter's "creative destruction," that is, innovation, invention and new ways of doing business destroying old companies and even industries to make way for new enterprises.

Indeed, technological changes have expanded, and will continue to expand opportunities for authors, publishers and retailers. And consumers make the final call as to what works and what does not in the marketplace.

On the old side of the book business, authors try to get agents (the industry gatekeepers) interested in their work; and agents have access to major publishing houses. The big hit occurs when an agent sells the book to a big publisher, the author gets a substantial advance, well-financed marketing occurs, and everyone gets wealthier from profitable hardcover sales. But without an agent, the writer tries to get a small publisher interested. That house might do a small print run, and, despite promises to market aggressively, the serious marketing efforts too

often are left to the author. The writer gains the satisfaction of a published book, and gets a very small cut per book after the publisher's take.

But technological change has dramatically opened up, and is in the midst of destroying much of this closed system. Quite simply, improvements in print-on-demand publishing, and ebook readers like Amazon.com's Kindle have empowered authors and readers. Author publishing – or Indie publishing – include options such as Lulu.com, AuthorHouse, SmashWords, or Amazon's CreateSpace, to name a few.

For authors, Indie publishing means that the least known author has the same, or at least similar, “shelf space” as the hottest writers around via sites like Amazon.com; greater speed to market, as print-on-demand books can be available for sale in less than two weeks, or, in the case of an e-book, mere days; and complete author control.

But the biggest plus for the author clearly is revenue. The per-book author revenue is far higher than it ever would be with a small, traditional publisher.

Of course, there also are added responsibilities and costs. Most notable are editing, creating book covers, and marketing. Many authors do not like or are not adept at these aspects of publishing business, and/or do not have the resources to tackle such important undertakings. The good news is that Indie publishing services and others can help authors meet these challenges.

But in the end, readers get the best deal of all. They see more choices at lower prices, and in a greater variety of formats. Books that might never have been published before – whether due to quality questions, or due to agents and publishers missing good works or making bad decisions – are increasingly available for people to read, enjoy, discuss and debate. Upending the book industry is

an exciting development for readers and authors, even if agents and old-line publishers probably feel uncomfortable.

These are exciting developments. At the same time, though, risks exist in terms of protecting intellectual property. That risk comes via the same broadband and digital technologies that have created big problems for music and video industries.

Make no mistake, though, the publishing business has not faced anything near the woes confronted by the music and movie industries, for example, when it comes to piracy. Why is that?

Writing in *The Wall Street Journal*, Rob Reid, who founded Listen.com, the company that created the Rhapsody music service, compared the differences between the music and book businesses in their online strategies.⁶³ Reid pointed out, “Both industries saw a roughly 20% drop in physical sales four years after their respective digital kickoffs. But e-book sales have largely made up the shortfall in publishing—unlike digital music sales, which stayed stubbornly close to zero for years.”

Reid sums up the beginnings of the digital book business as follows: “Although it had some small-time forerunners, the Kindle, like the Rio MP3 player, brought portability to a mass market. But the Kindle launched with licenses rather than lawsuits from the key rights-holders in its domain, and offered more than 90% of the day's best sellers when it shipped. This meant that consumers discovered digital books through a licensed experience that delighted them. Exciting hardware, a critical mass of titles and Amazon's retail sensibilities were all integrated into a single elegant package that piracy has never matched.”

Of course, piracy does exist in the digital book world. There always is that problem of how one can compete with “free.” Reid offered the following take: “Countless

⁶³ Rob Reid, “What To Do When Attacked by Pirates,” *The Wall Street Journal*, June 2, 2012, page C3.

unlicensed e-books can be found online, and millions of people use them. But sales figures suggest that relatively few of these downloads represent foregone purchases. Most Kindle, iPad and Nook owners seem to view piracy as a low-rent and time-consuming experience compared with the sanctioned alternatives.”

Others, though, rank as far more concerned than Reid about the potential ills of book piracy. For example, writing on June 4, 2012, for TechCrunch.com⁶⁴, columnist John Biggs warned:

“Arguably, book piracy is a small problem but that could quickly change. Bestsellers are always available on pirate sources but the vast majority of books won’t appear on The Pirate Bay. However, as a poll commissioned a year ago shows, book piracy draws in a fairly unique demographic – in this case older women. Whereas a publisher was once secure in knowing that romances, thrillers, and other popular fiction could keep folks coming back, title after title, the fact is that many of these best sellers quickly appear on pirate sites.

“More important, these books are easy to grab. You can download a dozen books in a few seconds, filling up an e-reader in an hour or so. Although it is amazingly easy to buy books on a Kindle, it’s far cheaper and now far easier to grab a few dozen e-pubs.”

As is the case with music and movies, Biggs explained, “Publishers need to make e-books worth the download.

⁶⁴ John Biggs, “E-Publishing May Be Doing Everything Right, But We Can’t Ignore The Spectre Of Piracy,” TechCrunch.com, June 4, 2012, at <http://techcrunch.com/2012/06/04/e-publishing-may-be-doing-everything-right-but-we-cant-ignore-the-spectre-of-piracy/>

They need to explain the value of the book to a plugged-in audience and they need to grab fans' attention before the pirates do.”

Also similar to music and movies, these efforts are not just about protecting large book publishers, but about protecting entrepreneurs, small businesses and individual creators from the negative consequences of theft.

The book industry, as noted in the following table, is largely about small businesses.

Total Employer Firms	Firms with < 500 Workers	Firms with < 20 Workers	Percent < 500	Percent < 20
Book stores				
3,969	3,940	3,628	99.27	91.41
Book publishers				
2,640	2,558	2,215	96.89	83.90
Book, periodical and newspaper merchant wholesalers				
1,791	1,734	1,498	96.82	83.64
Books printing				
501	483	353	96.41	70.46

Data Source: U.S. Census Bureau, Statistics of U.S. Businesses, latest numbers from 2010

The above table, by the way, only covers firms with employees. It excludes, for example, self-employed authors. Indeed, no group, arguably, is more deeply affected by the theft of intellectual property than are the authors whose very livelihood is directly tied to IP protections.

At the same time, the rest of the book business – from stores to publishers to printers – also is overwhelmingly about small business.

15

Yes, That's an IP Industry

At first glance, it seems pretty easy to identify businesses and industries that fall under the classification of “intellectual property” industries. But there’s more to the IP story than might be typically assumed.

In terms of the obvious industries, several already have been highlighted in earlier chapters of this book – software, music, movies and television, video gaming, pharmaceuticals, and book publishing.

In Chapter Two, IP-intensive industries and their contributions to the U.S. economy were noted. Among patent-intensive industries were computer equipment, semiconductor, communications equipment, chemical, electrical equipment and component, medical equipment and supplies, and synthetics industries. And among the copyright-intensive sectors were newspaper and periodical publishing, advertising and public relations, and performing arts industries.

In reality, though, the reach and importance of intellectual property goes far beyond businesses and industries deemed to be IP “intensive.” Indeed, any business with a trademark, a copyright or a patent obviously is a business dependent to some degree on IP rights and protections. As noted in the following examples,

IP theft through counterfeiting ranks as a widespread, formidable problem.

Golf

The May 26, 2003, issue of *Sports Illustrated* published a fascinating article (“Pssst ... Wanna Buy Some Clubs?”) by E.M. Swift and Don Yaeger that explored the intellectual property challenges confronted by golf club manufacturers.

Swift and Yaeger took a behind-the-scenes look at the burgeoning business of counterfeit golf clubs. While golf club manufacturers spend significant sums of money to design new golf clubs, counterfeiting those clubs ran rampant in China. The authors explained what could be done with some photographs of the latest hot driver or set of irons: “Those photographs, industry experts say, could have been digitally transmitted to a tooling factory in China, converted into three-dimensional form by means of a computer program and used to create a copper master of a head that could be ready for mass production in two weeks.”

They went on to try to explain what’s legal and illegal: “There are different levels of counterfeiting,” says Debra Peterson, a U.S. Customs official ... There is the direct counterfeit, which is a dead-on copy that carries the legitimate product’s trademark, and that’s illegal. Also illegal is a club that is very close to a direct copy and is termed either ‘confusingly similar’ (if it infringes on company trademarks) or ‘substantially similar’ (if it infringes on design patterns). What *is* legal is the generic look-alike that does not infringe on a company’s trademarks or patents. Some features of a driver – its head size, for instance – cannot be protected, while others can. But with confusingly or substantially similar knockoffs, the line between legality and patent or trademark

infringement is often fuzzy and is subject to legal challenge and interpretation. A counterfeiter tries to alter a company's protected features just enough to avoid prosecution. Whether the result is illegal can be established only in court, on a case-by-case basis; in other words, the aggrieved company has to sue."

The issue of counterfeit clubs has persisted in the years following this article. On its website, for example, PING, the golf club manufacturer, has noted: "PING has successfully built its premium brand based on quality and innovation. Unfortunately, that success attracts a growing number so counterfeiters who offer fake PING products using websites, internet auctions and retail stores. We continue to work hard to stop these activities."

A June 2012 report on NationalClubGolfer.com noted, "A recent raid in Shanghai has resulted in the seizure of more than 7,500 counterfeit golf products, bringing the total number of seizures over the last 18 months to 110,000 pieces of equipment - including clubs, balls, bags and apparel. Although the issue may not be apparent to the majority of everyday golfers, it is estimated that approximately two million counterfeit golf clubs are produced every year. With the internet market becoming a rapid source for people buying golf equipment, the problem is growing at an alarming rate. The recent raid in China, a stronghold source for the production of counterfeit golf clubs, was the result of a month-long investigation by the Shanghai Public Safety Bureau and resulted in three arrests along with the seizure of goods."⁶⁵

In fact, golf equipment manufacturers formed the U.S. Golf Manufacturers Anti-Counterfeiting Working Group in 2004, "dedicated top stopping production, distribution and

⁶⁵ James Tompkinson, "Fighting the battle against counterfeit clubs," NationalClubGolfer.com, June 11, 2012, at <http://www.nationalclubgolfer.com/equipment/articles/gear-features/fighting-the-battle-against-counterfeit-clubs.html>.

sale of counterfeit or ‘fake’ golf equipment across the globe.”

The Olympics

Before the start of the 2012 Olympics in London, the International Trademark Association issued a warning about counterfeit Olympic merchandise. A July 16, 2012, an AG-IP-News report noted: “Unsuspecting tourists and fans are targeted by counterfeiters looking to take advantage of the excitement over the Olympic Games. In fact, British authorities have already seized thousands of fake Olympic merchandise such as shirts, vests, bags and cigarette lighters in ports around the country... Counterfeiters use sub-par materials that leave consumers with second-rate merchandise and without any recourse to recover the money they have spent. In addition, counterfeit goods may not be manufactured in accordance with safety standards.”

Toys

In late June 2012, three individuals in Queens, NY, were charged with the distribution of counterfeit toys.

As reported by the *Queens Tribune*⁶⁶: “The seized goods allegedly contained false trademarks from toy giants such as Disney Entertainment Inc. and Rovio Entertainment Ltd, the company responsible for the Angry Birds franchise. According to Queens DA Richard Brown, ‘a private investigation service went to the warehouse and observed these items on display shelves in cardboard boxes.’” Brown also was quoted, “The defendants are

⁶⁶ Wayne Dean Doyle, “Counterfeit Toy Scheme Worth Up to \$500,000,” *Queens Tribune*, June 28, 2012, at http://www.queenstribune.com/news/News_062812_CounterfeitToyScheme.html.

accused of not running some small mom-and-pop operation, but rather, a well-organized business that catered to retailers throughout the metropolitan area.”

Clothing/Apparel

On June 14, 2012, NBC Miami reported that U.S. Customs and Border Protection on June 8 found \$11 million of counterfeit Burberry and Louis Vuitton clothing and jewelry in a shipment from China in the Port of Miami.⁶⁷

A Newsnet5.com story out of Cleveland focused on a shopper who mistakenly bought a shoddy knockoff North Face jacket.⁶⁸ The problem was explained, “The company determined the garment was a counterfeit adding, ‘It appears to be an attempt to copy the Mens Denali Jacket in Heather Grey Fleece colorway. The team reported that it is a very poor fleece fabric quality with unbranded zippers (centerfront zipper is broken with slider missing). Trim fabric, cordlocks, and cuff snaps are not our specified materials. It is lacking our standard care, content, country-of-origin, tracking, and The North Face security labels.’”

In New Jersey, a woman was arrested for selling counterfeit goods out of a fake butcher shop, according to a May 23, 2013, report on NJ.com.⁶⁹

⁶⁷ NBC 6 South Florida, “\$10.9 Million in Counterfeit Clothing, Jewelry Seized at Port of Miami,” June 14, 2012, at

<http://www.nbcmiami.com/news/109-Million-in-Counterfeit-Clothing-Jewelry-Seized-at-Port-of-Miami-159078005.html>.

⁶⁸ Jenn Strathman, “Counterfeit products are a billion dollar business,” News Channel 5, NewsNet5.com, May 15, 2012, at

http://www.newsnet5.com/dpp/money/consumer/consumer_specialist/counterfeit-products-are-a-billion-dollar-business.

⁶⁹ Dan Ivers, “Paterson woman charged with selling counterfeit purses out of Clifton butcher shop,” NJ.com, May 23, 2013, at

http://www.nj.com/bergen/index.ssf/2013/05/paterson_woman_charged_with_selling_counterfeit_purses_out_of_clifton_butcher_shop.html.

It was reported: “According to a joint statement from Passaic County Sheriff Richard Berndik and Clifton Police Chief Gary Giardina, Clifton Officer Adam Droubi was on Crooks Avenue when he noticed customers leaving the market with shopping bags full of purses... Eventually, an employee invited him inside and began to show him bags bearing the trademarks of Coach, Louis Vuitton, Michael Kors, Chanel and others. The worker also quoted him prices ‘which he immediately recognized as inconsistent with the true prices of designer women’s bags,’ Berndik and Giardina said... In all, detectives took more than 1,475 items from the shop, including sunglasses, belts, watches, suitcases, wallets and cell phone cases. Representatives of the designer brands were also called in to verify that the inventory was counterfeit, Berndik and Giardina said.”

Food

A June 17, 2012, WPRI report noted that warnings have been issued about counterfeit foods, and the risks to consumer health.⁷⁰ As noted, “According to Dr. John Spink, Associate Director of the Anti-Counterfeiting and Product Protection Program at Michigan State University, ‘The bad guys aren’t following good manufacturing practices. There’s such a risk for contamination that can be very lethal.’” According to the report, the top percentages of counterfeit food include olive oil (16%) diluted with other oils, milk (14%) watered down, and honey (7%) altered with corn syrup and sugar.

⁷⁰ WPRI.com, “Consumer warning about counterfeit food,” June 17, 2012, at http://www.wpri.com/dpp/news/12_for_action/consumer-warning-about-counterfeit-food.

Automobiles

In January 2013, a Virginia man was sentenced to jail for “selling counterfeit General Motors diagnostic equipment that mechanics use to identify problems in motor vehicles.”⁷¹

It was pointed out in the story, “Prosecutors contended that the counterfeit merchandise DeMatteo sold posed health and safety risks because drivers and mechanics relied on the accuracy of the devices’ diagnoses. ‘Intellectual property theft is a crime which hurts U.S. businesses and endangers U.S. consumers,’ prosecutors wrote in a sentencing memorandum.”⁷²

Military

On May 21, 2012, the Senate Armed Services Committee published the findings from a yearlong investigation. It was announced that it “discovered counterfeit electronic parts from China in the Air Force’s largest cargo plane, in assemblies intended for Special Operations helicopters, and in a Navy surveillance plane among 1,800 cases of bogus parts... The year-long investigation launched by Sen. Carl Levin, D-Mich., the committee’s chairman, and Ranking Member Sen. John McCain, R-Ariz., found a total number of suspect counterfeit parts involved in those 1,800 cases exceeding 1 million. ‘Our report outlines how this flood of counterfeit parts, overwhelmingly from China, threatens national security, the safety of our troops and American jobs,’ Levin said. ‘It underscores China’s failure to police the blatant

⁷¹ Naomi Jagoda, “Virginia man sentenced for selling counterfeit GM equipment,” WashingtonExaminer.com, January 12, 2013, accessed at <http://washingtonexaminer.com/virginia-man-sentenced-for-selling-counterfeit-gm-equipment/article/2518306#.UPW3R45Q00t>.

⁷² Ibid.

market in counterfeit parts – a failure China should rectify.”

Senator McCain observed, “Our committee’s report makes it abundantly clear that vulnerabilities throughout the defense supply chain allow counterfeit electronic parts to infiltrate critical U.S. military systems, risking our security and the lives of the men and women who protect it.”

The committee also noted: “While the investigation focused on the risk that counterfeit parts pose to U.S. national security and the safety of military personnel, the rampant theft of U.S. intellectual property also severely impacts the U.S. economic security. According to the Semiconductor Industry Association (SIA), counterfeits cost U.S. semiconductor companies more than \$7.5 billion annually in lost revenue, a figure SIA says results in the loss of nearly 11,000 American jobs.”

Among a variety of important facts about intellectual property, the Global Intellectual Property Center has pointed out the following on counterfeiting costs:

- “Rogue websites selling counterfeit luxury goods receive nearly 36 million visits per year. (MarkMonitor, Traffic Report: Online Piracy and Counterfeiting, January 2011.)”
- “Rogue websites selling counterfeit physical goods attract more than 87 million visits per year. (MarkMonitor, Traffic Report: Online Piracy and Counterfeiting, January 2011.)”
- “G20 governments and consumers lose \$125 billion annually, including losses in tax revenue, from counterfeiting and piracy. (Frontier Economics, Estimating the Global Economic and Social Impacts of Counterfeiting and Piracy, February 2011.)”

- “The global economic value of counterfeiting and piracy amounts to \$650 billion annually. (Frontier Economics, Estimating the Global Economic and Social Impacts of Counterfeiting and Piracy, February 2011.)”

Again, it is important to point out that the firms affected often are smaller businesses. Just consider the following on the manufacturing front (2010 Census Bureau data):

- Among sporting and athletic goods manufacturers, 98.16 percent had less than 500 employees, and 81.40 percent less than 20 workers.
- 98.31 percent of doll, toy and game manufacturers had fewer than 500 workers, and 85.83 percent less than 20.
- Among apparel manufacturers, 99.24 percent of employer firms had fewer than 500 workers, and 84.25 percent less than 20 employees.
- And as for food manufacturing, 97.41 percent of employer firms had less than 500 employees, and 72.69 percent with less than 20 workers.

Jayne O'Donnell, the “Confident Consumer” columnist for *USA Today*, looked at the rise in counterfeiting in an early June 2012 column.⁷³ She noted that the FDA recently reported that counterfeit versions of cancer drug found their way into some doctors' offices; a grand jury indicted someone selling counterfeit versions of rare wines; and counterfeit versions of Apple iPhones, iPads, and iPods

⁷³ Jayne O'Donnell, “Counterfeit products are a growing, and dangerous, problem,” *USA Today*, June 6, 2012, at <http://www.usatoday.com/money/perfi/columnist/odonnell/story/2012-06-01/confident-consumer-jayne-odonnell/55406774/1>.

were being sold in a New York City store. O'Donnell summed up, "U.S. Customs and Border Protection says agents seized 24% more shipments of counterfeit goods in the last fiscal year (ended Sept. 30, 2011) than in its previous year. And 325% more counterfeit goods were confiscated from 2002 to 2012 than in the previous decade."

16

Protecting Your IP: Patents, Copyright and Trademarks

The previous chapters have focused on the importance of intellectual property rights and protections for entrepreneurs, businesses of varying types and sizes; for invention, innovation and investment; and for economic growth and job creation.

But what about more practical questions for small businesses regarding patents, copyright and trademarks? After all, it is crucial that entrepreneurs and small firms understand how IP protections work, and how they can be used for their own ventures.

The USPTO has provided a very helpful website that answers some basic questions that small business owners might have about protecting their intellectual property. The site is at <http://www.uspto.gov/smallbusiness/>.

More specifics regarding the process for applying for patents or trademarks are available on the USPTO's main site at <http://www.uspto.gov>.

Similarly, more detail regarding copyright is available from the United States Copyright Office at <http://www.copyright.gov>.

For our purposes, let's look at a few basic points worth keeping in mind when it comes to patents, copyrights and trademarks courtesy of the USPTO and the Copyright Office.

Patents

Regarding what can and cannot be patented, one must consider the following points:

- “In the language of the statute, any person who ‘invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent,’ subject to the conditions and requirements of the law. The word ‘process’ is defined by law as a process, act or method, and primarily includes industrial or technical processes. The term ‘machine’ used in the statute needs no explanation. The term ‘manufacture’ refers to articles that are made, and includes all manufactured articles. The term ‘composition of matter’ relates to chemical compositions and may include mixtures of ingredients as well as new chemical compounds. These classes of subject matter taken together include practically everything that is made by man and the processes for making the products.”

- “In order for an invention to be patentable it must be new as defined in the patent law, which provides that an invention cannot be patented if: ‘(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent,’ or ‘(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country more than one year prior to the application for patent in the United States . . .”

- “The subject matter sought to be patented must be sufficiently different from what has been used or described before that it may be said to be nonobvious to a person having ordinary skill in the area of technology related to the invention.”
- In addition, there is the question of patents in the international marketplace. The USPTO makes clear that U.S. patents only protect an invention within the United States: “Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in other countries must apply for a patent in each of the other countries or in regional patent offices. Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country, in accordance with the requirements of that country.”
- Finally, there is the question of whether or not one needs an attorney. The USPTO points out: “The preparation of an application for patent and the conducting of the proceedings in the United States Patent and Trademark Office (USPTO or Office) to obtain the patent is an undertaking requiring the knowledge of patent law and rules and Office practice and procedures, as well as knowledge of the scientific or technical matters involved in the particular invention... While a patent may be obtained in many cases by persons not skilled in this work, there would be no assurance that the patent obtained would adequately protect the particular invention. Most inventors employ the services of registered patent attorneys or patent agents.”

Trademarks

As for trademarks, the USPTO explains that a Federal trademark registration offers assorted advantages, such as:

- “Constructive notice to the public of the registrant's claim of ownership of the mark;
- “A legal presumption of the registrant's ownership of the mark and the registrant's exclusive right to use the mark nationwide on or in connection with the goods and/or services listed in the registration;
- “The ability to bring an action concerning the mark in Federal court;
- “The use of the U.S. registration as a basis to obtain registration in foreign countries; and
- “The ability to file the U.S. registration with U.S. Customs and Border Protection to prevent importation of infringing foreign goods.”

In terms of how long a trademark lasts, “Rights in a federally-registered trademark can last indefinitely if the owner continues to use the mark on or in connection with the goods and/or services in the registration and files all necessary documentation in the USPTO at the appropriate times.”

When looking at the international marketplace, “if you are a qualified owner of a trademark application pending before the USPTO, or of a registration issued by the USPTO, you may seek registration in any of the countries that have joined the Madrid Protocol by filing a single application, called an ‘international application,’ with the International Bureau of the World Property Intellectual Organization, through the USPTO.”

Copyright

Finally, as for securing copyright, “No publication or registration or other action in the Copyright Office is required to secure copyright... Copyright is secured automatically when the work is created, and a work is ‘created’ when it is fixed in a copy or phonorecord for the first time.”

However, there are advantages to copyright registration, including:

- “Before an infringement suit may be filed in court, registration is necessary for works of U.S. origin.”
- “If made before or within five years of publication, registration will establish prima facie evidence in court of the validity of the copyright and of the facts stated in the certificate.”
- “Registration allows the owner of the copyright to record the registration with the U.S. Customs Service for protection against the importation of infringing copies.”

Finally, in international markets, “There is no such thing as an ‘international copyright’ that will automatically protect an author's writings throughout the entire world. Protection against unauthorized use in a particular country depends, basically, on the national laws of that country. However, most countries do offer protection to foreign works under certain conditions, and these conditions have been greatly simplified by international copyright treaties and conventions.”

The above information is a very basic introduction, barely scratching the surface. As noted earlier, exploring the USPTO and Copyright Office websites provide a wealth of information, and a lawyer with expertise in areas of

intellectual property is invaluable to small businesses looking for the right information about and actions needed to adequately protect intellectual property.

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IP Policymaking and Our Economic Future

By now, hopefully, the importance of intellectual property rights should be clear for innovation, for investment, for entrepreneurs, for small businesses and their employees, for consumers, for U.S. competitiveness and for our economy in general.

Indeed, the technological or digital revolution of the twenty-first century is as dependent upon intellectual property rights and protections as was the Industrial Revolution of the eighteenth and nineteenth centuries.

That being the case, the important role of government must be recognized.

But what exactly is that role?

First, let's make clear what it is not.

Government should not be in the business of using taxpayer resources to try to pick winners and losers in intellectual property industries. That is, government should not be providing handouts and subsidies to IP businesses. Elected officials and their political appointees do not possess the proper incentives or knowledge to be making resource allocation decisions in any economy, but most certainly not in a high-tech, digital economy where innovation and change come at breakneck speed.

Nor should elected officials be providing special tax treatment for certain businesses or industries. Again, this is the same situation as with subsidies and handouts. Government simply cannot know what firms will succeed, nor can it know where entire industries might be headed.

The risks and opportunities tied to investing in IP businesses and industries are best left to entrepreneurs, private investors and lenders, and the competitive marketplace, with consumers ultimately deciding what works and what does not.

So, what does government need to do?

Establish and Enforce Strong IP Rights

Government must establish, enforce and protect intellectual property rights through sound systems of patents, copyright and trademarks; strong laws protecting IP with the accompanying enforcement mechanisms; and maintaining a fair system of courts whereby creators are able to affordably protect their intellectual property and law enforcement can prosecute IP violators.

Compared to most other nations, the U.S. does a fairly good job at this. But there's still room for improvement. That's clear by sizeable, ongoing piracy in such areas as software, pharmaceuticals, music and video. For example, enhanced enforcement and education would be clear positives.

IP International

The work of policymakers regarding IP rights and protections cannot stop at the border in today's increasingly global economy. The White House, with the full support of Congress, must be advancing free trade, that is, removing barriers to economic opportunity for all entrepreneurs, innovators and businesses, and for

consumers in terms of increased choices and lower prices. That free trade agenda must include treaties and other joint efforts at improving IP rights, protections and enforcement in other nations. Not only will such improvements in other nations benefit U.S. businesses and workers competing internationally, but it also will improve economic growth in those nations.

To put this in perspective, in the 2012 edition of *Index of Economic Freedom* (published by the Heritage Foundation and *The Wall Street Journal*), 131 nations out of 179 nations scored as “mostly unfree” or “repressed” on property rights. Given that intellectual property rights usually are more prone to neglect compared to the protection of tangible property, the IP story is even worse than this indicates internationally. Much work needs to be done.

For example, at the very start of 2013, Matt Reid penned a handy article on Business Software Alliance’s TechPost blog titled “Four Trends to Watch in 2013.”⁷⁴ Highlighted were key areas where policy can help advance – or if done wrong, could hinder – the global software industry.

Reid’s first point was the need to move against trade protectionism that’s been spreading on the IT front. He noted that “a digital trade agenda that facilitates access to global markets for all the products and services that enable the information age” must be pushed ahead, with a key opportunity at hand with the “Trans-Pacific Partnership (TPP), where issues such as IP protection, cross-border data flows, and government procurement rules are all on the table.”

Second, he pointed to the need for nations to align and strengthen their policies regarding a free, global cloud-

⁷⁴ Matt Reid, “Four Trends to Watch in 2013,” BSA TechPost, January 2, 2013, accessed at <http://blog.bsa.org/2013/01/02/four-trends-to-watch-in-2013/>.

computing marketplace. Again, Reid noted the opportunity with the TPP, namely, that “negotiating parties can send a strong signal to the world by ensuring their privacy and security rules work together, extending world-class IP protections, and creating a level playing field for IT products and services to compete fairly.” It is critical that privacy be protected, that data and business be allowed to flow freely, that IP be protected, and that government preferences for particular products or firms be eliminated.

Third, Reid highlighted the need for Europe to get the policy mix right as the European Union moves ahead with various policy reviews in the areas of rules regarding data protection and cybersecurity in general, as well as modernizing its copyright framework. In each area, the key is to strengthen the foundations, that is, for example, make clear the necessary outcomes regarding security while allowing for flexibility in terms of technology and procedures for how firm’s achieve those outcomes; and clarifying and strengthening IP rights, including the prevention and punishment of IP theft.

Fourth, he noted that the U.S. must maintain and strengthen its global leadership in terms of the foundations of the digital economy, including on the cybersecurity and IP fronts. Reid also pointed to the need to move ahead with immigration reform that would “increase the number of highly skilled, foreign-born technology workers in the United States.”

The digital economy does not play by a different set of principles than the rest of the economy. And that means that free trade, the rule of law, limited regulation, and strong property rights are essential ingredients for opportunity and prosperity.

Pro-Entrepreneur, Pro-Investment Tax System

The tax system must do as little as possible to hinder innovation, entrepreneurship, and investment. Ideally, that means a low, flat-rate, simple income tax that does not punish risk taking and success. This includes eliminating multiple layers of taxation being imposed on savings and investment (such as capital gains taxes).

For the U.S., recent tax changes, unfortunately, will work against entrepreneurship, investment and innovation. Compared to 2012, in 2013, the following is imposed:

- The top personal income tax rate for individuals earning more than \$400,000 (\$450,000 for married filers) went from 35 percent to 39.6 percent. But once the ObamaCare Medicare income tax increase is included, the total top tax rate moved from 37.9 percent to 43.4 percent. For good measure, due to the “cliff” deal re-imposing phase-outs of standard exemptions and itemized deductions, the effective tax rate climbed still higher.
- The capital gains and dividends tax rate moved from 15 percent to 20 percent. But, again, the ObamaCare tax increase must be added in, moving the top rate to 23.8 percent.
- And the death tax rate climbed from 35 percent to 40 percent.

Each of those tax increases reduces the incentives and resources available for entrepreneurship, running a business, investment and innovation.

Light Regulatory Touch

As with taxes, the government's regulatory touch must be light in order to allow creativity to flourish. That includes restraint from having governmental entities imposing regulations – such as with so-called net neutrality regulation – that limit the freedom of business to try various business models and compete to best serve consumers in this incredibly dynamic twenty-first century economy.

For example, price controls – a *de facto* limit on the returns of investments made in IP – on prescription drugs will only serve to undermine the incentives for investing and innovating in new and improved medicines.

Or, on the software front, governments need to refrain from dictating what types of software should be used when it comes to doing business with government, for example, and instead, simply establish clear performance objectives.

In the end, when government gets the policy mix right on intellectual property – that is, strong IP protections at home, coupled with a pro-free trade, pro-IP international agenda, and sound tax and regulatory policies – the foundation is set for creators, entrepreneurs, investors and businesses to work to serve others in the competitive marketplace, thereby, pushing productivity, choice, income, GDP and job creation higher.

The twenty-first century already is the IP century. We just have to make sure that our policymaking keeps up with, while not attempting to direct or undermine, developments in this exciting, dynamic economy.

About the Author

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