Chapter 14

The Future of Intellectual Property and Valuation

The Status Today: Where Each Class of Intellectual Property Finds Itself in 2018

The previous chapters were devoted to each of the major classes of intellectual property (IP), from right of publicity to trade secrets, and trademarks to patents and copyrights. Before we take a look ahead in this last chapter, it's useful to review where we are today. Today's status of each key IP class is summarized in the following paragraphs.

Patents

In recent years, several prominent cases have altered the patent landscape in the United States by providing guidance on what is patent eligible. Further, the new America Invents Act has changed the rules, making ours an open file, first to file system. This has changed the status of patents and has lowered the value of these assets. In early 2018, the International IP Index found that the U.S. patent system had fallen to twelfth place in the world, ranking below such countries as China, Japan, and Hungary. The U.S. Chamber of Commerce attributes this decline to a growing level of uncertainty for innovators, particularly in relation to patent protection and technology licensing. We find uncertainties in the patent system that have resulted from inconsistent interpretation of Supreme Court attempts to define patent-eligible subject matter. Further, innovators face challenges in post-grant opposition proceedings such as inter partes reviews, which involve a great deal of cost and lack of predictability for those who file patents compared with other post-grant opposition systems in other countries. In other words, the value of patents is being challenged.

Trade Secrets

Trade secrets have made up a lot of ground in recent decades in terms of protection and utilization. As the business landscape continues to evolve rapidly due to increased technology

utilization and globalization, one could argue that trade secrets are now viewed as more important than patents in the IP world. Over the past decade we've seen how the value and usage of trade secrets have increased. We can state with some certainty that in the coming years, trade secrets, particularly those that involve the collection and manipulation of data, will be one of the primary forms of development of valuable IP.

Copyrights

In today's digital world, copyrights play a bigger role in the expansion of IP in our daily lives. The laws that protect copyrights in the developed world have extended the lives of creative works of all types, and protection is more rigorous today than it was a decade ago. This has resulted in higher values for copyrights as well as longer lives, and there is a greater emphasis and importance on performing accurate valuations for these assets. We don't expect these trends to change in the near future. This is particularly true due to the emergence of virtual reality and artificial intelligence technologies, which will affect copyright configurations, usage, value, and litigation over the next few decades.

Trademarks

The rate of trademark applications and registrations has been increasing for the last 25 years, and the rate of growth has increased markedly since 2009. As the number of registered trademarks continues to rise, the once static definition of a trademark is gradually adapting to the advances in technology and the creativity of the human mind. Notably, sensory trademarks such as smell, sound, texture, and color are now part of the legal landscape.

An important illustration of the increasing role of trademarks in international IP strategies is the Chinese approach. China increased its trademark applications by roughly 250% from 2008 to 2015, and this growth continues today. Clearly, the Chinese are moving from a patent-only registration strategy to a patent and trademark strategy.

Why do we see this increase in trademark registrations in the United States and in other key markets around the world? Because the useful life of most patents is significantly less than 20 years. As innovation and technology continue to accelerate, older patents often become obsolete as new technological advancements push those older patents and patent applications out of the way. Trademarks, however, have an indefinite life span (if they are continuously in use). As trademarks age, their value often increases. Thus, we see trademarks as a key area within the IP family that not only will continue to grow, but growth will outpace that of most other areas of IP.

Right of Publicity

While a specialized area of IP that is protected under a patchwork of various state protections as opposed to federal protection, right of publicity (ROP) is an area of rapid growth due to the increased use of celebrity imagery and branding rights via licensing, promotion, and endorsement. Most often, athletes, actors, celebrities, and other persons of interest exercise these rights. ROP is fueled by the three fast-growing areas of law, marketing, and valuation.

ROP is one of the fastest-changing areas in IP law, one of the fastest-changing areas of marketing and branding, and one of the fastest-growing areas of licensing and merchandising—and therefore of valuation.

ROP activities continue to grow at a relatively rapid pace. In 2017, licensing industry research estimated that retail sales for licensed products using celebrities' ROP were approximately $5.9 billion. This is up 2.2% from previous years and represents only a part of the picture; it does not include activity or revenue from endorsements, promotions, and other ROP usages.

Application-based Digital Platform Ventures

Application-based ventures (ABVs)—what does this include? The phrases "Internet companies," "social media platforms," "website companies," and "digital platform companies" are all used interchangeably along with "new age economy companies." As we discussed in chapter 11, "application-based ventures" is the umbrella term that covers all of these. An ABV finds its value primarily in its IP and intangible asset base. That value is heavily dependent on assets such as algorithm software, business method patents, technical know-how, private data, and trade secrets, to name a few.

Approximately two decades ago, the great dot.com crash occurred; the bottom fell out of prices for Internet-based stocks and many companies that resembled an ABV. At the time, little was said about either the stocks themselves or the methods to value. Much has changed. Today, valuation of an ABV has become sophisticated. Now we see that the metrics for valuing and measuring a company's worth have changed. The traditional measures of discounting cash flow remain tried and true, but a greater use of different market multiple techniques has come into play, with concepts such as unique users and page view multiples becoming more common. Most importantly, we see that values for digital platforms can be substantial, whether it's a $1.2 billion purchase of Instagram or a Snapchat public offering with an initial market valuation of $24 billion. It is obvious that a substantial market for ABV assets and investments exists as does an interest among investors to pay substantial premiums for this type of IP.

Foretelling the Future

In the case of IP, foretelling the future is a necessary evil. The very nature of IP, with its constantly changing body of assets and changing valuation requirements, means that an underlying trend—fortune telling—is a requirement of most IP valuation professionals.

What have the last 13 chapters taught us? If nothing else, two basic things. First, the nature of IP is changing. The breadth and range of trademarks is changing. The types of patents have changed, both traditional patents and business method patents. The range of copyrights has expanded. The rise in utility and value of trade secrets and an increased emphasis on rights and protection have been documented. Finally, of course, ROP and other name and likeness assets continue to increase in value.

What's the second thing that we've learned? It is that valuation techniques and methodologies are changing and adapting everywhere. As the face of IP changes to include new-and traditional IP with more apps, more chat rooms, more platforms, more social media, and more digital assets in general, new valuation methodologies and/or adaptive ones have moved to the forefront. Important among these is the so-called smallest saleable practicing patent unit (SSPPU) concept. This is a fancy phrase for simply identifying the smallest unit of value inside any larger body of IP (or any bundle of assets) and then valuing that smallest value unit (SVU). And, with increasing IP complexity and higher volumes of litigation, other valuation techniques are being refined and used:

- The Edgeworth Box
- The Nash Bargaining Solution
- Alternative Market Multiple Approaches
- Unique User Reference Multiples
- The Coarse Theorem

The Big Four Dominate: Society, Technology and IP, Value, and Valuation

According to Capital IQ and other research sources, as of early 2018, four companies—Apple, Facebook, Google, and Amazon—had a market capitalization of approximately $3.0 billion, probably the largest conglomeration of market cap value ever seen among four companies. How do we put this into perspective? Let's look at Amazon. It's market cap of roughly $670 billion is worth more than the total stock market value of its nearest retail competitors—Walmart, Costco, T.J. Maxx, Target, Kohl's, Nordstrom, Macy's, Bed Bath & Beyond, Sacks Fifth Avenue, JC Penny, and Sears/K-Mart—combined. Another financial measure is that Apple's profits, which were roughly $50 billion in 2016, are greater than the total revenue of Coca Cola. Beyond revenue, what kind of influence do the Big Four have on our society and on our IP? Here are a few examples:

- Facebook has more than 2.1 billion monthly users.
- Amazon serves 65 million households, two thirds of American households, virtually every month.
- Facebook owns four of the five top apps available on social media.
- Google controls more than 92% of the Internet search market.
- The Apple iPhone product family dominates global personal telecommunications.

These numbers tell you about the social impact and control that the Big Four have over not only the stock market and society but over the development of IP, social media, new apps, and new forms of (online and offline) technology; in turn, exerting IP domination and concentration.

We must watch these four companies over the next 10 years, along with Netflix, because their sheer size makes it virtually impossible to accurately value all of their IP as a whole. This is where the concept of the "smallest unit of value" comes into play and where, I believe, the valuation exercise for IP, particularly when it's held by an Apple or

a Google/Alphabet or a Facebook, is being challenged. It's the concept of the SVU. When valuing assets held by one of the Big Four or other social media or IP giant, the assets need to be broken down into their smallest elements, so they can be both accurately valued and comparatively valued.

Valuing these assets will also require new analytic discipline over the next decade for two reasons. First, each company generates substantial revenue per employee, but none of them generate the amount of social benefits that more traditional corporations like Proctor & Gamble, Xerox, or even Microsoft does. Instead, they create huge amounts of cash flow that doesn't necessarily benefit society or the surrounding orbit of supporting suppliers and corporate partners.

Second, these four companies pay one of the lowest effective tax rates of any group of companies (prior to the new tax law passed in early 2018). The effective tax rate among the Big Four was roughly 15%, far lower than one would find with any other representative group of four American companies. The valuation of these entities, and other large platforms/ABV entities, is going to be difficult, and so SVU will grow as a valuation tool.

Domination and Concentration of IP in Media–Content and Communications–Connectivity

In the section above, we briefly talked about the Big Four dominating society, social media, and the Internet world. There is also domination and concentration going on in two other areas that have very large components of IP embedded into their businesses. In the worlds of media–content and communications–connectivity, we have witnessed a growing concentration over the past several years and we can certainly look forward to a domination of these two areas by a handful of companies in the coming decade. However, this domination of communications–connectivity and media–content by companies such as China Mobile, AT&T, and Disney is also being challenged by the Big Four.

At first, this may sound counterintuitive. However, the Big Four and the Internet arena in which they operate do directly compete or compliment the areas of media–content and communications–connectivity. First, as to communications–connectivity, we see that the world's top five telecommunication–connectivity companies are:

- China Mobile Ltd.,
- Verizon Communications Inc.,
- AT&T Inc.,
- Vodafone Group PLC, and
- Nippon Telegraph and Telephone (T&T) Corp.

The total market capitalization of these five was approximately $800 billion at the beginning of 2018. This market cap was approximately the same as the market cap of Amazon at the same point in time. In other words, Amazon is as big as the world's top five telecommunications–connectivity companies. Perhaps more importantly is that Amazon is beginning to compete with China Mobile, AT&T, and Nippon T&T by offering Cloud

computing services and by offering content in much the same way that AT&T offers content through its DirecTV acquisition.

We see the same degree of concentration and domination of an IP-intense business in media–content. The five largest media companies at the beginning of 2018 were:

- Google/Alphabet, which dominates in search engine advertising, but is also a huge player in display advertising and video advertising through its YouTube platform.
- The Walt Disney Company. Through its subsidiaries such as the Disney Channel, ABC networks, and its affiliated ESPN networks, the company is able to offer multiple platforms including a stake in Hulu.
- Comcast, which owns media giant NBC Universal cable and broadcast divisions that include USA Network, Sci-fi, and CNBC, as well as a dozen international TV channels and networks.
- 21st Century Fox with its global holdings in the British broadcasting company, Sky, as well as Star India, Fox Broadcastings, and Fox Sports television companies. It also has film entertainment and direct broadcast satellite TV income.
- Finally, Facebook because of the company's all-encompassing mobile technology, which encourages its users to visit the site multiple times each day. Its mobile revenue is growing quickly at a double-digit rate.
- Looming over all of these is Netflix, which had 125 million users and a market cap of $185 billion in mid-2018.

The point is this—in media and content as well as in communications and connectivity, there is the obvious increased concentration of IP into a handful of dominant players. As a result, the size of the IP portfolios owned by these companies is at a point where valuation is becoming more difficult. Valuation professionals will need to be able to break down the assets of companies like these into the SVU and the smallest business unit (SBU) in order to be able to accurately value these large conglomerations of IP assets.

Contextual and Jurisdictional Knowledge Management: The Cloud Is Now

In 2006, Amazon Web Services opened its first Cloud computing service company. Fast forward to the beginning of 2018, and we find them operating at an annual revenue level that is approaching $25 billion. However, they're not the only big players to offer options in Cloud computing. Microsoft, Google, and IBM have also expanded their own Cloud computing centers at a rapid rate, as they bring big new clients into their own clouds. The consulting firm Forrester Research predicts that by 2025, 80% of America's companies will use Cloud computing services or will have built their own clouds. In other words, that old roomful of servers down on the third floor of the headquarters complex will soon no longer exist.

What does all this mean when we speak of the Cloud and IP? It means faster creation of IP, better protection, and more secure management and control of proprietary data and trade secrets. Going forward, it will also mean bigger and better codified families of IP inside corporations and perhaps bigger disputes, and more litigation, over the ownership of IP—and

not just Internet-based IP. Hopefully, however, the Cloud will bring greater security and better definition over the parameters of what each company owns and controls.

Apps and Chats–Platforms and Forums

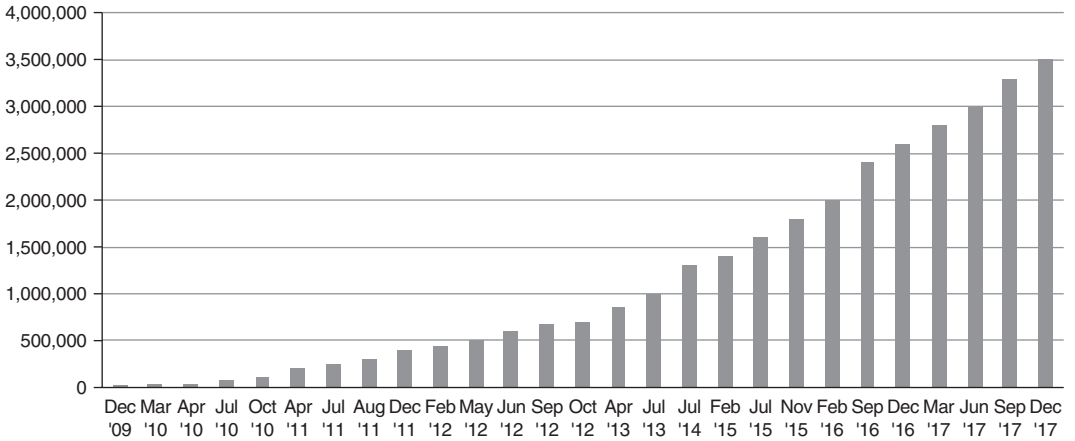
IP of all types, but particularly those related to digital assets, social media, and related assets, will continue to grow at a compound rate of greater than 5% per year. Growth will not only be in the number of apps but also in the type of assets and apps around which IP content and social media platforms will be built. This will include the technology used to drive social media, as well as in the breadth and range of apps being offered.

For example, at the beginning of 2018 there were approximately 3.5 million apps available at the Google Play Store. To give some indication of growth: Figure 14.1 shows that in May 2012 there were 500,000 apps available. Growth doubled in one year to 1 million apps in 2013. The number re-doubled over the next two years to 2 million apps in February of 2016 and reached 3.5 million at the end of 2017. Equal growth has been seen at the Apple Store where, to date, more than 2.5 million apps are available; some are free, of course, while many others are available for purchase and renewal.

When looking at these assets, the valuation issues are multiple, the most important being that with each additional app that enters the marketplace, the value of all the other apps declines (miniscule as it may be), and therein lies new valuation issues. First, how does one do an accurate valuation? Second, how does one account for this ever-decreasing size of the slice of the pie that's offered with each new app that enters the marketplace? A valuation approach must take into consideration the discrete market to which the asset is aimed. We believe that user multiplier valuation techniques or income approach techniques would be most useful here.

In addition, one must be aware of the obsolescence of apps and other digital assets as new competitors enter the ever-shifting IP content world. Another concern that immediately

Figure 14.1 Number of Available Apps at the Google Play Store



becomes an issue is the shortened effective life span for these assets. With each additional app, or each additional new social media platform, or each new messenger service, or each new technology that's showcased on the Internet, one has to assume, at least initially, that there's a shortened life for competitive apps, chats, social media, and other directly or tangentially competitive IP.

What the world of IP will face with this online development will be specialty and adaptive content in social media apps, platforms, and technology. As we see it, the ability to compete effectively against the Big Four plus Netflix in content and services is going to depend, to a great extent, on specialization, e.g., for specialty messaging services such as Snapchat (of course, on a much smaller basis) and/or special language or ethnic messaging services. Other examples might include the following:

- Specialty geographic and/or location-specific online platforms and services;
- Special needs services that are food related, health issues related, and/or private social issues related, such as sexual orientation;
- Technology related apps, such as those aimed at followers of the late Dr. Stephen Hawking;
- Content specialist or category-related specialist sites devoted to anything from the mundane, such as early American furniture, to the truly obscure, such as the collection of African beetle husks; and
- The societal specialist media platforms, apps, and technology offering insights into ethnic, religious, educational, occult, and every other interest.

The point is that this proliferation of apps, platforms, and technology-driven social media in a hundred or a thousand new areas will continue. Equally important, the methods needed to value these assets must be refined and must mature quickly as this movement toward online and Internet-based app and technology-developed IP will continue to proliferate whether we wish it to or not.

The Creation of New IP with Mechanical Means

A further unique development in this past decade has been the appearance of mechanical and non-human techniques to develop different types of intellectual property – and drawing the question "who is the owner of the IP", if in fact a machine or algorithm has created that intellectual property. Some simple examples, complex as they may seem, include the following:

- The appearance of artificial intelligence has led to the writing of music, design of art, the creation of fashion, such as tee shirts. And, this barely begins to describe all that artificial intelligence is doing and going to do. And thus, creating copyright material. But who holds the copyright? Not the artificial intelligence machinery. But what human being would be the copyright or trademark holder? That's the question that has to be answered.
- Virtual reality is another area that holds great promise, and it too creates new copyrightable material and material that can be trademarked. Again, the question becomes are

these new forms of IP attributable to a particular individual human being? That issue has to be addressed.
- In a similar vein, the advent of 3D printing, where totally new designs can either be copyrighted or registered as a trademark or even developed into a design patent, is now with us. How does this impact the ownership of intellectual property, and also how does it impact the counterfeiting of IP?
- Blockchain Technology in which we see the creation of Bitcoin and Crypto Currencies can also be used to create counterfeit currencies as well as other IP. How will this be monitored?

All these new and rapidly blooming technologies are quickly affecting the use of copyrights, trademarks and design patents; more importantly, asking questions as to ownership of the creative material. Finally, we need to think about how one values these creations. Are the valuations going to have any discounts from full market value because of issues surrounding the creation and ownership of the particular design, copyright, or trademark? These questions are not yet settled and valuation techniques and methodologies will have to be developed to answer these questions.

How Multiplying Apps, Specialty Platforms, and Expanding Social Media Will Impact IP and Its Valuation and Management

Finally, I want to share my view of what is going to happen in the next 10 years as the face of IP is impacted:

- Fourth: There will be an accelerated pace of change.
- First: There is going to be some loss of control over discrete pieces of IP as more social and digital IP is registered.
- Second: We will see infringement at a much higher rate than we are accustomed to.
- Third: New forms of IP are going to present themselves, and these new forms of IP will be a hybrid of copyrights, trademarks, and trade secrets.
- Fifth: An avalanche of new social media and Internet-based brands or IP identifiers (if not formally being identified as brands) will appear.
- Sixth: The opportunity for new distribution channels is certainly presenting itself via the Cloud and via new platforms offered by digital-based companies and the Internet.
- Seventh: We're going to be faced with more complex litigation that is going to lead to jurisdictional disputes because of the Cloud.
- Eighth: We're going to find the US Patent and Trademark Office in a bit of a shambles over the next decade as they attempt to keep up with the changes being wrought in the world of social media and IP on a global basis.

As we constantly preach in any discussion of IP and value, context is always critical. The context in which we've written the previous few pages can be summarized against the shadow of a few major thoughts:

- The impact of the Big Four, Apple, Google, Facebook, and Amazon—will continue over the next decade;

- The rise of nonsovereign wealth, best illustrated by Bitcoin and its sister currencies, as well as the issue of how one values those assets, will grow as an international issue.
- Extra-jurisdictional knowledge management will grow in importance; issues of value and valuation of assets within the Cloud including Cloud-based apps;
- There will be expanded use of new valuation techniques (e.g., SVU and SSPPU);
- Refinement and increased use of mechanical based IP via block chain, AI and other new technologies) will add a new dimension; and
- At least a cursory understanding of the climate of the "internet of everything" is a must.

These are the emerging contextual elements that we believe will have the most bearing on IP valuation over the next decade or so.

Concluding Thoughts

As my advisors at Harvard once taught me: the only constant in life is change.

In the world of IP, I learned long ago that this is absolutely true. Today, we find ourselves with an increase in value of almost all IP groups, with the possible exception of patents. We also find ourselves in a time of great social change. We find ourselves under the Cloud with the Big Four companies, plus Netflix, increasing their dominance in content, media, connectivity, and communications.

Finally, we find ourselves as valuation professionals looking at different and more appropriate ways to value these IP assets. The new focus will be on valuation techniques that make the valuation exercise more manageable by looking at one of two approaches. Either the SVU or SBU should increasingly be the focus of the valuation professional. Rather than attempting to value the entire entity, it is my opinion that much like the SSPPU concept that we discussed several times throughout this book, the SVU should be used when valuing a company with multiple pieces of IP. Alternately, with a very large entities such as Alphabet or Disney, one must look at the SBU approach in order to be able to accurately value all that these companies own in IP.

Finally, I hope that this book conveys that this is a time of great change in the world of IP and a time of even greater change in the world of IP evaluation and valuation.

As I said in the introduction of my first book, "I have attempted to strike a balance between complexity and simplicity, trying to avoid being too technical and obscure as well as too pedantic. This is a tricky balance and I hope the reader finds that I was able to maintain it."

I conclude this book as I began that first book, with that very same thought.