

• **What is “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 (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.

Visionary → Integrated → Profit-centred → Defensive

The easiest ‘competencies’ for prospective rivals to imitate tend to be those based on possession of tangible resources, such as buildings, plant, and equipment. They are visible to competitors and can often be purchased on the open market. Although Ford gained a competitive advantage over General Motors in the 1920s by being the first to adopt an assembly line manufacturing technology to produce automobiles, General Motors quickly imitated that innovation, surpassing Ford’s distinctive competence in the process. A similar process has occurred in the auto industry as companies have successfully imitated Toyota’s production system, which gave it the competitive advantage during the 1970s and 1980s. Intangible resources, on the other hand, are more difficult to imitate. One crucial way of doing so is by legally protecting intangible assets and also acquiring and maintaining IP rights in particular for the following categories of intangible assets

Before addressing how companies can capitalize on Intellectual Property (IP), first we must discern what IP is and how they encapsulate knowledge as a core competency. IP concerns knowledge-based assets from the commercialization of “creations of the mind”, categorized into ‘Industrial Property’ and ‘Copyrights’, with inventions falling into the first category and literary and artistic works, symbols, names and images falling into the latter (WIPO, 2015). It is, subsequently, the transfiguration of intellectual knowledge into private property.

For entrepreneurs to effectuate and internalize their innovation through a startup venture, or if a DJIA-listed, Blue Chip Company is to invest a great sum of capital in their R&D function, the legal protection of the commercialized knowledge-based asset is of paramount importance as an enticement to do so. If IPR did not exist, only the welfare state would benefit and so no private firm would commercialize the IP. These ideas, however, are not sources of intellectual property, but it is the perceptible outcome of these ideas (gov.uk, 2015). These outcomes are treated as IP and legal protection of these through Intellectual Property Rights (IPR) are formalized through patents, trade secrets, trademarks, copyrights and design to ensure that these knowledge-based assets are treated as private property. Faberberg et al (2005) also state that breeding rights and database rights are more recent forms of IPR. However, the implications of the aforementioned forms banded together when analyzing IPR in this essay.

IPR enable companies to capitalize on their IP in an increasingly globally connected, knowledge- intensive economy. Demands and market pull are becoming ubiquitous internationally and so companies must protect their knowledge-based assets from infringement from competition beyond their national borders. Adding to that, business leaders before the new millennium perceived the importance the strategic management of IPR as a matter concerning a company’s legal function, not as a strategic issue (HBR.org, 2000). However, recent decades have given rise to IPR as a mandatory strategic apparatus for multinational blue chips as well as SMEs. IPR offer lucrative opportunities when exploited but drive consequences when sub-optimal IPR strategic positioning is implemented. Sectors that are most likely to possess value-driven intellectual property are the design, mechanical engineering and electronics sectors (Blackburn & Kitching, 1998).

Davis & Harrison (2002) introduce the notion that there is a hierarchical, pyramidal approach to analyzing how companies approach their IP strategic management. They suggest that at the top is the “**visionary**” approach, whereby companies have a lengthier time horizon in the industry and exploit their IP to extract and “craft” commercial value from it (Davis & Harrison, 2002). At the bottom is the “**defensive**” approach, whereby companies possess more risk-averse idiosyncrasies, treating IP as a protective legal tool to protect their own assets and avoiding or managing disputes through litigation charges. These merely treat their IP as a legal tool. High-tech companies such as Apple Inc. and Samsung Electronics Co. treat their IP as their main strategic asset to extract revenue and value. They also treat their IP as defensive legal tools, using litigation to protect their IP, as made evident when Samsung Inc. were held liable for patent infringements in 2014. Apple Inc. was awarded \$119million due to smartphone design infringements (telegraph.co.uk, 2014). This illustrates that a company can take a visionary approach, as well as a defensive one.

IPRs consequently grant monopoly rights for the exploitation of these knowledge-based innovations. This grants a first-mover advantage and consequent **IPR-centred incumbency** (Reitzig, 2004) and innovation proactivity (Dodgson et al, 2008). These companies consequently possess the ‘visionary’ IP management strategy; at the top of the pyramid (Davis & Harrison, 2002) and high-tech startups are typical examples of companies adopting this strategy. This does not, however, imply competitive advantage sustainment. Nevertheless, it does inevitably maximize early profit margins from market demand and even allows early vertical supply chain partnership exclusivity to the best suppliers and distributors and early access to complementary assets before active, fast-following rivals. **An initial niche market is created not with reduced competition, but an absence of competition.** If the first-mover maintains alertness to opportunities and actualizes these knowledge-based opportunities with high responsiveness, they avoid Schumpeter’s ‘creative destruction’ notion and maintain their IP-based competitive advantage.

IP is now used as a strategic value source and revenue-generating asset and not just a legal tool. **Companies’ IP portfolio is being used in mergers & acquisition deals, joint ventures, horizontal industry collaboration in R&D and in licensing agreements the same manner that a product portfolio is** (Idrisis, 2003). These companies are placed within the “**integrated**” and “**profit-centered**” level on the Davis & Harrison’s aforementioned pyramid. **With an increasing proximity of interconnectedness of a company’s corporate strategy and its IPR management strategy, the incentive for inter-firm collaboration has increased.** Licensing, first of all, is when a licensor gives the licensee permission to use their IP, within agreed limits, in return for compensation. David & Harrison (2002) suggest that companies that engage in IP licensing are at the middle of the IP strategic management sophistication. Unrelated to any product manufacturing, IBM receives over \$1billion annually from licensing agreements alone (Davis & Harrison, 2002). The prominence of cross-licensing agreements of IP in is a key emergence, enabling intellectual knowledge collaboration. **Rather than for monetary compensation, cross-licensing agreement is the mutual trade in IP, with mutually agreed conditions regarding the limitations of IP use. Another similar form of IP collaboration is represented in the form of strategic alliances in the German industrial sectors** (Backe-Gellner et al, 2005). This exemplifies cost-saving measures.

We have learnt that a company’s IP management strategy can have a profound impact on its market positioning. Examples of IP in cost saving and revenue generation purposed have been cited. IP as a tool for technological leadership into niche markets and early value and revenue extraction have also been discussed as well as more defensive IP management approach whereby IPR instruments are treated as a legal tool.

TYPES OF INTELLECTUAL PROPERTY

IP as an asset category can be divided into four distinct types—copyrights, trademarks, patents, and trade secrets.

Copyrights

Copyrights, among the most widely used types of IP, are a form of protection granted to the authors of original works of authorship, both published and unpublished. A copyright protects a tangible form of expression (i.e. a book, work of art, or music), rather than the idea or subject matter itself. **In the United States, under the original Copyright Act of 1909, publication was generally the key to obtaining a federal copyright. However, the Copyright Act of 1976 changed this requirement, and copyright protection now applies to any original work of authorship immediately from the time that it is created in a tangible form.**

Trademarks

Trademarks are another common type of IP. A trademark, as defined by the U.S. Patent and Trademark Office (PTO), is any word, name, symbol, or device, or any combination, used, or intended to be used, in commerce to identify and distinguish the goods of one manufacturer or seller from goods manufactured or sold by others.” While it is not as robust as the international protection regime for copyrights, the Trademark Law Treaty Implementation Act provides some international protection for U.S.-registered trademarks.

Patents

As compared to other types of intellectual property, patents are among the most valuable, costly, and difficult to obtain. A patent is defined by the PTO as “the grant of a property right to the inventor,” providing the owner “the right to exclude others from making, using, offering for sale, selling, or importing the invention.”

Patentable items may include objects or processes such as new technology or business methods, but excludes more abstract items such as web sites or ideas. Sufficient documentation from the applicant coupled with verification of originality by the PTO is required before the grant can occur, and is then typically valid for 20 years from the date of application.

Once received, a patent owner may grant licenses to others for use of the invention or its design and may charge a fee for such usage. Patents are valid only within the United States, including territories and possessions; however, 130 countries have agreed to honor patents across borders through instruments such as the **Patent Cooperation Treaty** (PCT).

Trade Secrets

Any idea or fact that is not disclosed by a business comprises the fourth type of intellectual property: trade secrets. A trade secret is a unique form of IP in that it does not have a defined time horizon—an issue could remain secret simply while filing for a patent, or it could remain closely guarded for the lifetime of the firm (i.e. Coca-Cola’s recipe).

A trade secret, by definition, is proprietary or business-related information that a company or individual uses or to which they possess exclusive rights. To be deemed a trade secret, the information must meet several requirements: that it is genuine and not obvious, provides the owner with competitive or economic advantage and thus has value, and is reasonably protected against disclosure. Examples of trade secrets include the aforementioned recipes, business methods, strategies, tactics, or any other piece of information that gives the business a competitive advantage.

WHY VALUE INTELLECTUAL PROPERTY?

Changes in the global economic environment have influenced the development of business models where IP is a central element establishing value and potential growth. In addition to these systemic changes, U.S. and international accounting practices place pressure on firms to recognize and value all identifiable intangible assets of a firm as part of a transaction (in a merger or acquisition, for example).

As a result of these trends, proper valuation of IP, followed by measures to protect that value, have become a key element of the success and viability of a modern firm. Federal Reserve Chairman Ben Bernanke recently validated this notion during the “New Building Blocks for Jobs and Economic Growth” conference, where he discussed the importance of intangible capital and that its accumulation has accounted for more than half of the increase in U.S. output-per-hour during the past several decades.

VALUING INTELLECTUAL PROPERTY—METHODOLOGY

There are three methods of valuing intellectual property: cost-based, market-based, and income-based valuations.

- **Cost-based valuation** takes into consideration both how much it cost to create the asset historically and how much it would cost to recreate it given current rates.
- **Market-based valuation** looks at comparable market transactions, whether sale or purchase, of similar assets to arrive at conclusions of value.
- **Income-based valuation** looks at the stream of income attributable to the intellectual property based on the historical earnings and expected future earnings.

These methods can be applied concurrently in a combined approach to arrive at a final valuation.

There are several important factors to establish and take into consideration when performing an IP valuation. These include:

- clear identification of the IP;
- unambiguous title to the asset;
- qualitative and quantitative characteristics of the IP;
- earnings capacity and profitability relating to the IP;
- market share supported by, or as a result of, the IP;
- legal rights and restrictions, competition, barriers to entry, and risks associated with the IP;
- product life cycles and positioning; and
- historical growth and prospects for the future.

WHAT SHOULD BE VALUED AND WHEN

Different types of IP assets are treated differently when it comes to the frequency, focus, and organizational level where the valuation will occur. The table below outlines exactly when IP should be valued.

When Should Assets be Valued?	Goodwill	Indefinite-lived Intangible Assets	Amortizable Intangible Assets and Other Long Lived Assets	In addition to annual testing, many asset classes have guidance requiring impairment testing to be performed when a triggering event—defined as an event or change in circumstance indicating that the carrying amount of an asset may not be recoverable—occurs.
Frequency	Annual test/ trigger-based	Annual test/ trigger-based	Trigger-based	
Level at Which Impairment Test is Performed	Reporting unit	Individual asset/ combined unit of accounting	Asset group	
Focus	Implied fair value of goodwill	Individual asset fair value	Recoverability of carrying amount of the asset group	

A disaster such as the Japan earthquake can impair assets. In some cases, buildings or other assets have been severely damaged or destroyed. In other cases, a company’s operations or financial performance may be significantly affected by the loss of an essential supplier or customer.

Assets potentially affected and in need of review include goodwill, intangibles, other long-lived assets, investments, inventories, and receivables. Due to the complexities involved in an IP valuation, it is important to engage a qualified, independent valuation specialist. Auditors are unable to perform these services for their audit clients as it constitutes a conflict of interest under the Sarbanes-Oxley Act of 2002.

RISK TRANSFER FOR INTELLECTUAL PROPERTY

There are four basic types of policies for risk transfer of intellectual property.

IP Infringement Coverage

IP infringement coverage, also known as intellectual property liability coverage, defends from patent infringement claims against the insured and defends the insured’s ownership rights in the IP. It also provides insurance to indemnify customers and distributors for allegations that the insured’s IP is in violation of another’s IP rights and indemnifies against damages the insured is legally liable for as a result of a verdict or settlement. This is the most typical type of coverage purchased when customers think of or ask for IP liability insurance. This is also the most elusive as insurers have historically experienced substantial losses with this type of coverage due to the self selection of purchasers, who tend to be those who are more litigious or subject to more frequent litigation.

IP Enforcement Coverage

IP enforcement coverage is a fund provided by insurers to indemnify the insured for its legal expenses in seeking to enforce or protect its IP rights against infringement. It provides IP owners with the financial resources to fund professional fees and expenses when pursuing infringers. This coverage does not insure against counterclaims or against any loss. It can be expanded with optional extensions to include contractual disputes and action against a third party for non-payment, enforcement of an agreement to indemnify the insured, and action against the insured for breach of a declared agreement. This extension can also include investigation costs to determine if there are grounds for pursuit.

IP Representations and Warranties

One of the least known and most used types of coverage is IP representations and warranties infringement liability insurance, which is generally associated with mergers and acquisitions or a purchase agreement. It certifies that the IP involved in the transaction is valid, similar to the function of title insurance in home purchases. This type of coverage defends against infringement/misappropriation liability and provides reimbursement for defense expenses and/or loss (awards or settlements). It is designed specifically for the representations and warranties applying to intangible assets, whether the sale or purchase of a single asset, a portfolio of assets, or as part of a corporate sale or merger.

IP Value Insurance

The last type of risk transfer product is IP value insurance, which is a direct loss cover rather than a defense cover. It is triggered by legal claims against the IP that result in loss of revenue or value associated with invalidity of findings or other legal claims against patents in an insured’s portfolio. This type of coverage is generally associated with IP-rich products’ future revenue streams, licensing revenues, royalty receipts, valuation by IP experts of patent portfolios, research and development expenditures, and financial arrangements involving IP such as IP loans, securitization, monetization, and investments in IP-rich companies.

INTELLECTUAL PROPERTY RISK MANAGEMENT

Another important element in the discussion of intellectual property valuations and protection in the modern economy involves the strategic management and mitigation of IP risks.

Firms of all sizes and purpose are motivated by similar goals in the creation of such programs:

- to identify what constitutes a risk sensitive intangible asset;
- to address new and emerging threats to IP;
- to properly allocate available risk resources given limited funds; and
- to achieve compliance within the legal and regulatory environment in which they operate.

In this context, there are several trends emerging within the space.

First, IP is transitioning from exclusively a legal matter to that of a business/strategic issue; this is evidenced by the increasing number of organizations trying to leverage the value of their intellectual property, launch joint ventures utilizing IP, gain from the value of their patents, and utilize IP as a central tenant of a M&A strategy.

Second, IP risk management is migrating from a defensive to an offensive effort, which will have significant implications for firms’ overall risk management strategies.

Third, a “collective relationship” model for managing risks is developing and its maturity is being accelerated through technological advancements. Enabling technologies, such as cloud computing, will allow for greater sharing of intellectual property in defined ways as firms look for heightened efficiencies. Concurrent to this trend, the increased sharing of proprietary material creates complex questions that will be central to defining risk management strategies. Namely, who is the custodian for maintaining the integrity/security around the IP while in electronic, sharable form?

While IP risk represents, at times, an opaque and ambiguous topic, developing risk management strategies to address the issue involves the implementation of several programmatic fundamentals—defining the value of its IP, and then identifying, assessing, and evaluating risk impacts. With this foundation established, organizations are better positioned to focus on properly executing mitigation programs by ensuring necessary levels of leadership commitment, aligning the program with strategic goals, creating the program framework through publication of policies and standards, reviewing network architecture, and education and training.

While such measures can prove challenging, the realities of the contemporary business environment require a robust valuation and risk mitigation effort to realize the upside potential of an organization’s intellectual property.

Motorola’s patent filing strategy through the 1990’s was focused on becoming high volume, low cost of filings in order to propel them onto the Top-10 US issuance list for patent filings.

Dow Chemical’s filing strategy was historically driven by R&D, with patents reflected in promotion rates within the company and not necessarily the technical direction the company was moving.

Their nonbusiness oriented filing strategy was reflected in 1992 when they moved to align the patent ownership with the business direction, which resulted in \$40M in future annuities being saved through abandoning irrelevant patents.

It can most likely be inferred that with the realignment of the filing strategy for both Motorola and Dow Chemical, that the value of their patent portfolio was highly skewed due to filtration with irrelevant innovations. Based on an informal patenting Patenting Decisions and their Influence on Firm Patent Valuation (2005) Page 20 of 30 based business studies I have done, two other well known firms in the electrical industry, General Electric and Asea Brown Boveri (ABB), appear to have polar opposite strategies.

One has filings that focus on incremental innovations on existing technology while the other moves towards filing broad and innovative provisional applications very early on in development phase.

These large companies illustrate the wide range of patent filing strategies that have been taken, with only one of them aligned with the direction of the research results. As a small firm it is important to realize the initial strategic patenting decisions that are made can have a large influence on the future strength and direction of their portfolio. From a business context this research gives small firms the potential to focus on more relevant and valuable patents before poor patenting decisions become magnified as they grow into larger firms.

→ Over ten years ago Philip Morris in the US bought out Kraft for \$12.9 billion. This was considered a fair price for this acquisition. But the tangible assets in this purchase were only \$1.3 billion. 13/129, just 10 percent! The “other” assets were valued at \$11.6 billion. We can variously call these intangible assets brand equity, goodwill or the creativity of an organisation’s people (in this case Kraft). This is a tough concept for many managers who devote most of their efforts in managing 13/129th of their businesses.

Beginning with the bottom of the pyramid and working up:

Defensive level. Companies at this level use their IP for defensive purposes only. Their goals are to protect their own innovations, to ensure that they don’t infringe the IP of others, and to obtain more IP. The costs in filing fees, enforcement and other legal expenses can be high.

Cost control level Companies at this level still have a defensive approach, but now focus on finding ways to obtain protection while simultaneously minimizing the costs of creating and maintaining their IP.

Profit center level Companies reach this level once they begin to license out their IP, or otherwise to use it in support of their company business activity.

Integrated level. Here the company’s business units have grasped the power of using IP for a range of business roles. IP use for business becomes integrated across all of the company’s business activity.

Visionary. At this level of IP management sophistication, companies take a long-term view of the company’s role in business and in its industry. They seek to use the company’s IP to create more strategic value.

It should not be inferred from this pyramid that the highest level of sophistication equates to the “best” level of IP management. What matters is to determine which level best suits the needs and capacity of your particular company. A thorough understanding of what the company at large, as well as its executive management, expects from IP is an important first step toward determining whether, and to what degree, the firm aspires to obtain business value from its IP, or whether it wishes to obtain purely defensive value.

What business roles can IP play?

The companies participating in the ICM Gathering (Procter and Gamble, Hewlett Packard, Microsoft, Philips, Visa, Johnson, Du Pont – to name but a few) have identified over 40 different business roles that their companies have assigned to their IP. These are shown in the table below.

To determine which of these roles make sense for your company, bearing in mind the company’s expectations for its IP management, try the following: First, review the company’s strategic vision and its corporate strategic plan. Then, ask yourself what IP might do to support the company’s business strategy and hasten its journey toward the long-term vision. Thirdly, look at the table and select the IP business roles that seem most applicable to your company. (Most companies actually focus on three to six roles.)

Objective	Patents	Trademarks	Know-how	Relationships
Conflict avoidance/ resolution	• Protection (exclude others) • Design freedom • Cross-licensing (defensive) • Litigation bargaining power	• Protection (exclude others)	• Protection (trade secret)	n/a
Revenue generation	• Patents: sales, licenses, infringement policing • Increased bargaining power • Market penetration • Increased speed to market	• TM: sales, licenses, co-branding, infringement policing	• Sales, licenses, joint ventures, strategic alliances, integration, increased speed to market	
Cost reduction	• Tax donation • Litigation avoidance • Access to technology of others • Improved knowledge transfer	• Litigation avoidance • Access to technology of others	• Litigation avoidance • Improved knowledge transfer	• Reduced marketing costs
Strategic position	• Reputation / image • Competitive blocking • Barrier to competition • Consumer/ supplier control • Optimization of core technology	• Name recognition • Consumer loyalty • Barrier to competition • Joint venture • Strategic alliance	• Reputation / image • Barrier to entry	• Reputation / image • Consumer loyalty • Barrier to entry

Basic IP strategies

There are a range of IP strategies available to your company, many of them tailored specifically to unique business needs, industry position, or business tactics. Nevertheless, four basic IP strategies can act as a foundation for later refinements. These correspond broadly to the levels of expectation described in the pyramid of IP management:

A path to minimize risk. Companies following this strategy see IP as a legal asset. Programs to minimize risk are usually grounded in the legal department, and focus on process compliance, processing product clearances and protecting innovations in the marketplace. A key activity for those pursuing this strategy is portfolio building and across-licensing to avoid litigation.

A path to cost reduction. Virtually all companies above the first level of the hierarchy follow a cost reduction strategy. They look to maintain the effectiveness of their IP protection program while cutting the cost of doing so. This involves screening the portfolio to eliminate unnecessary patents, tightening the criteria for protecting innovations with patents, creating a standard country-filing list, minimizing exceptions, tightening internal review processes, and aligning the trademarks and brands with products.

A path to value. Companies following this strategy view their IP as a business asset as well as a legal asset. IP is managed centrally, with the company seeking out business opportunities for its IP (e.g. out-licensing and use in joint ventures). The companies seek to profit from direct use of the IP itself, rather than only through the products and services protected by the IP.

A path to strategic value Companies following this strategy see their IP as corporate and business assets which can produce a range of value (both revenue and strategic value) for the organization. The focus is on utilizing IP to change the nature or direction of competition, relying on strategic patenting, refocusing R&D and rethinking partnerships with customers, suppliers, or any other relevant parties.

Extracting value from IP

If you follow strategies 3 or 4 above, you will be concerned with extracting value from the firm’s IP. To do so, one option is to process the company’s protected innovations through one or more complementary assets (e.g. manufacturing or distribution) and then sell the resulting product or service. Alternatively (and simultaneously!) you may convert the IP directly into revenue. Experience has shown that there are only six ways to convert an innovation or an IP right into cash:

Sell it
License it out
Use it as the basis for a joint venture (to provide access to needed physical assets)
Use it as the basis for a strategic alliance (to gain access to markets you may otherwise be denied)
Use it to protect products and services in order to extract premium prices for them
Create and spin-out a new company based on the IP

Companies seeking to maximize the amount of value extracted from each protected innovation do their best to “turn on” as many of these six cash conversion mechanisms as possible. Few companies are capable of using more than two, but those that can are able to generate significant additional revenue.

Managing IP to extract business value is a new and still evolving field. The greatest advances have been made in North America, driven by the need to produce ever more sustainable revenue streams to satisfy the capital markets. But companies in many other parts of the world are becoming increasingly aware of the potential of IP to enhance existing revenue streams or to create new ones