I. Intellectual Assets

In this chapter we will cover a key element of media management: how to create, protect, and manage Intellectual Assets. IAs are also referred to as Intellectual Property Rights (IPs or IPRs), a more legal-oriented perspective.

Characteristic of information products is that they are expensive to create but easy to duplicate. It is difficult to exclude others from copying them. Technology makes it easier for a producer to create, distribute, and copy creations, but it also makes them more difficult to protect from unauthorized copying and distribution by rivals and users. This applies to content, a device, or network technology itself.

Due to the difficulty in excluding others from access and use, the ability to collect payments is reduced and this diminishes the return and the incentives to create new information and innovation.

These fundamental characteristics have lead to the creation of legal and business responses of intellectual property and of intellectual asset management.
“Property” is a tangible and intangible item owned by someone and whose ownership is protected by the state. Property owners possess a “bundle of rights,”\(^1\) which may include rights of control over use, rights to benefits, rights to sell, and rights to exclude. “Property” is a central feature of the economic system. It controls who has what rights over what. Under Feudalism, land was the main resource and real property (i.e. land) was central to law and the economy, and defined the social and political order. In the industrial age, machinery and financial resources became central and personal and financial property became the legal and managerial focus. In the information age, information is the key resource, and intellectual property has seen a vast economic activity calling for managerial attention.

Intellectual property, however, is an area that has been left primarily to lawyers. It has been under-analyzed by economists and business researchers.

Property, i.e., the concept of ownership, is alien to some cultures. Most Native American tribes before European colonization, for example, exercised a collective to the then individual ownership of land.\(^2\) Even in Western cultures, not everything is property – i.e., owned by someone. The oceans, which constitute two-thirds of the earth, are not owned by anybody, including by states, aside coastal zones. Space is another example.

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Many places or things are not owned privately, but collectively, such as parks, roads, national forests, and military installations. Approximately 40 percent of the US land area is privately owned.\(^3\)

Even more so “Intellectual property” is an alien concept to many cultures. Here, too, in Western cultures there are areas outside of “ownership,” such as first names, dance steps, weather predictions, a great scientific idea, or a business strategy. But even here, for each of these examples, the realm of private ownership has expanded, and private ownership has been claimed in some instances.

**I.2. History**

“Intellectual Property” is not a new concept; it has been around for over 500 years. In 1469, the Venetian Senate granted John of Speyer the exclusive right to print the letters of Pliny and Cicero for a period of five years. This extraordinary exclusivity ended soon with his death and was not renewed. Partly as a result, Venice printing flourished and dominated Europe for decades. In 1788, the drafters of the US Constitution made special provisions for IP protection in Article I of the document: “Congress shall have 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.” The rationale, as Abraham Lincoln later said succinctly, was that “…the patent system added the fuel of interest to the fire of genius…”4 Lincoln himself had received a patent for an invention to enable riverboats to cross sandbars.

In contrast, Thomas Jefferson, a noted mechanical and scientific tinkerer, was concerned with the potential abuse of IPRs in restricting discourse: “If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself in to the possession of every one, and the receiver cannot dispossess himself of it . . . . That ideas should freely spread from one to another over the globe . . . .”5

No survey of major icons of American history would be complete without Benjamin Franklin. Franklin never sought patents on his scientific inventions such as the lightning rod. But he was very attentive to his copyrights as a publisher and author.

The question has always been the balance of legal monopoly and incentives to innovation. Though intellectual property rights create incentives to innovate, they also encourage monopolies and monopoly pricing. For example, AZT, the first

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antiretroviral effective against AIDS, sold for $10,000, while production costs were about $2,000. Many patients – or health systems -- could not afford such expensive drugs. Intellectual property rights can also create petty restrictions. For example, in 1996, the American Society of Composers, Authors and Publishers (ASCAP) threatened to sue the Girl Scouts for singing campfire songs like “This Land is Your Land” without obtaining a license and paying for it.

IPRs can also suppress innovation and the free flow of information. Established firms can challenge small businesses based on value patents, and companies block each other through respective patents.

Opponents argue that patents often reward very little innovation and stifle progress. Furthermore, critics state that patents and copyrights rights have become too broad, keeping out competitors, and that IPRs give excessive rights to first movers further shutting out competition.

Every change in the system is a change in ownership of assets and resources, and is hence a fight over wealth, income, and distribution in society. Therefore, it is not

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surprising that intellectual property is an area whose growth has been accompanied by increasing controversy, both economic and political.

Critics of the current IP system believe that the IP concept should be a balance between producers and users, and that it has tilted towards restrictions on users and away from an openness that encourages innovation.

One critic, an early founder of the Electronic Frontier Foundation and lyricist for the Grateful Dead, John Perry Barlow, argued that information is not static but evolves like oral narratives in retelling, and that copyright law seeks to arrest this dynamic by allowing someone to own a creative work. Thus, in periods of rapid progress an abandonment of IP law in favor of “Wild West” frontier ethics is necessary.

However, historically speaking, how long was the “Wild West” without property rights? Would farms, railroads, and mines have emerged without property rights? And what ever happened to the Native Americans without the protection of a property rights system?

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Another noted critic is Umberto Eco, the author of such books as *The Name of the Rose*. Eco advocates the concept of “The Open Work” which challenges the principle that creators of an idea or expression must retain rights to preserve control over his “property.”¹³ Instead of a rigid form, the open work is merely “suggestive.” It is a work in movement and continuous change, “characterized by the invitation to make the work together with the author.”¹⁴ But does Eco practice what he preaches when it comes to his own bestselling books? Is anybody free to alter, copy, and resell them?

Such inconsistencies aside, Eco’s concept of a sprawling and inherently evolutionary work can provide a fertile framework for innovation. The “Open Source Movement” in software is an example. It is a loose community of volunteer developers who collaboratively develop software (“freeware”). They challenge the notion that people will not invent without profit incentive patents and copyrights. Further examples include internet protocols and the Linux operating system.

Contrasting with “open source,” the “droid morale” model challenges standard-fare IP rights from the other direction. This mostly French-derived arrangement gives creators inherent and inalienable rights against any subsequent changes by

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subsequent owners and outsiders. For example, a film cannot be altered without the permission of the original director and the original creator should receive a benefit every time the work gets re-sold or re-licensed. These moral rights cannot be sold – and a company cannot force an employee to give up the rights to their own creative output.\textsuperscript{15}

Despite appearing diametrically opposed, many critics of IAs simultaneously favor the “droid morale” and the “open work” concept. In the former, no one except the originator can make changes. In the latter, everyone can. The common denominator is that both are non-traditional, and both are opposed by mainstream media companies.

Whatever one thinks of these approaches, they show that IAs are not a “natural” or “obvious” arrangement.

In the media and IT sector, intellectual assets are the key assets. IAs can drive the market value of a company. In 1997, Microsoft bought WebTV, a television internet company without revenues, for $425 million, largely for what it considered (incorrectly, as it turned out) the value of its patents.\textsuperscript{16}

\textbf{Columbia University Intellectual Asset Management}


Another example is the licensing income from patents by Columbia University, which increased from $39 million in 1996 to $134 million in 2008.¹⁷

According to the American University Technology Managers, Columbia was the top university in patent licensing revenue, and this benefitted its students and faculty. But at the same time, according to the film industry, the same Columbia students also topped the list of film piracy at universities in the U.S. in 2007 with 1,198 “unauthorized uses of copyrighted material.”¹⁸ (followed by University of Pennsylvania with 934, Boston University with 891, University of California – Los

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Angeles with 889, and Purdue University with 873) unauthorized users over the survey period.\textsuperscript{19}

Despite the importance of patents and copyrights most firms do not have effective IA strategies. A 1998 survey of 360 U.S. companies found 71\% admitting to wasting patents through mismanagement,\textsuperscript{20} Another that more than 35\% of U.S. patents go unused by their owners, though they are potentially of value to others.\textsuperscript{21} 2000, the estimated value of wasted patents was $150 billion. The value of under-utilized copyrights is also significant, although more difficult to estimate.

The questions for this chapter are 1) what are the options for a media firm to protect and exploit its innovations? And 2) how does a firm optimize the benefits from its intellectual assets?

\textbf{I.3. Tools to Analyze Intellectual Assets}

One way for a firm to analyze its intellectual assets in the technology field is a tool to survey existing patent claims and their importance. Patents, grants and applications are public, and they require specific references to “prior art.” This

\begin{itemize}
  \item \textsuperscript{19} Columbia University was followed by the University of Pennsylvania with 934, Boston University with 891, University of California – Los Angeles with 889, and Purdue University with 873)
\end{itemize}
permits an online check on which patents are out there and which seem to be important to subsequent inventors. This information can be used to survey technology trends and the firms and inventors associated with them. This information should be used as part of a business strategy, not just for purposes of legal paperwork.

The free U.S. government PTO website for patent searches is http://patents.uspto.gov.

Other websites for U.S. patents include Delphion (http://delphion.com), Micropatent (http://micropat.com).

This chart shows the “parents” and “children” of patent no. 5133830 (“Method of pretreatment and anisotropic dry etching of thin film semiconductors”)

“Parents” (or backward citations) show the influences, whether innovation a potential threat to someone, if it potentially infringing on a patent, and if a firm should acquire a license before using the technology. One can also trace an invention’s “Children” (or forward citation): Who has been influenced? Where did it lead? Are there potential infringements? Does it provide clues to technology competitors and to potential licensees? Of course, some patents are much more

22 Source: Aurigin Systems, Inc. 1999
important than others. These are likely then to be cited in more frequently in subsequent patents as ‘prior art’.

In patent valuation, the more other patents cite a patent as “prior art,” the more fundamental and valuable it is likely to be. This increased value is known as “citation impact,” or the frequency that a firm’s patents are cited for other firms later on. Citation impact is positively related to a firm’s profitability.²⁴

²³ Source: Aurigin Systems, Inc. 1999
Furthermore, the more a patent cites scientific papers as “prior art”, the more science-based it is likely to be; this generally yields a higher-value patent.

Conversely, the more prior are patents cited in an application as “prior art,” the more likely it is to be a less-valuable variation. It is also more likely to be challenged.

Patent application patterns reveal development trends in various technology sub-fields. An upward trend in patent filings in a sub field indicates an active technology development and its relative importance. Some trends end abruptly.\(^{28}\)

These trends can be used to forecast areas where firms are likely to conduct research and development, where larger firms are likely to acquire smaller firms with new patents, where firms have found a more efficient substitute for a certain technology and are likely to become stronger competitors and even from which new products are likely to enter the market.\(^{29}\)

The graph below shows for a sample year, the patent grants for technology sub-fields such as 178, 179, 209, etc. The chart orders these patents by company (the y-axis) and number (the vertical bars).

\(^{28}\) Aurigin Systems, Inc. 1999 [CAN’T LOCATE]

Looking at patent fields gives a more accurate view of a company’s true competitors. For example, the Nippon Electric Co., Ltd. has many direct competitors in almost all of its patent classes. These correspond with companies who are primarily in the IT and computer business. The number of documents in a class can demonstrate the intensity of a company’s direct competition. Also, ascertaining the number of similar patents that a competitor owns can identify specific competitors. In class 364, NEC’s closest competition is Digital Equipment, although both companies face competition by seven other companies.
A patent’s citation frequency also reveals opportunities for licensing for the company. Likely candidates have cited its patents the most often.
Individual inventors can also be identified, even when they work for a company.\textsuperscript{36}

**Internal IA Audits**

A second tool for Internal IA Assessment is the Internal IA Audit. The aim is for a company to systematically review what it owns, what it needs, and what it could sell or otherwise dispose of.

The graph below shows an audit map, which is a visual representation of which IAs are most valuable to the firms’ business strategy. The most valuable patents

\textsuperscript{35} Aurigin Systems, Inc. 1999
\textsuperscript{36} Aurigin Systems, Inc. 1999
are in the northwest quadrant. The X-axis is for IAs’ use in current and future plans and the Y-axis is the rate of growth of business line or units as a ratio to GDP growth.

The graph shows in broad terms which IAs have the most commercial value for the business. The map also shows which IAs should be supplemented, licensed, sold, or abandoned. The audit helps differentiate between Core and Noncore Patents. Core patents are technologies embodied in current or future products, and are not

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39 Rivette, Kevin G., and David Kline, Remembrants in the Attic, p. 68.
usually licensed. Noncore patents are technologies not being used in current or planned products, and these are usually licensed.40

Dow Chemical audited its 29,000 patents and after identifying and valuing, assigned each to one of the 15 major Dow business units, which thereafter assumed responsibility for its use.42 Dow then abandoned or donated the unused patents to universities or nonprofit groups, yielding a savings of $50 million in taxes and maintenance on unneeded patents. At the same time, patent licensing revenues rose from $25 million in 1994 to $125 million in 1999.43

An example of good IA management following such an audit is the case of the defense contractor Lockheed Martin: It had developed a flight simulator technology, “Real 3D”. After review, it spun it off as Real 3D and was able to achieve a market value of several hundred million dollars.

Another approach is a “Royalty Audit.” After firms license a patent or copyright to others, many lose strategic track of their licenses, the revenues generated for the licensee, and the use to which they are being put. Thus, it is necessary to establish a licensee accounting and tracking system and to frequently check on licensees.

Any license given must include audit provisions that allow the licensor to review and inspect the licensee’s books that are relevant to a license.\(^{44}\)

There are software programs to organize information about a firm’s IA, status, maintenance dates and costs, and licenses given, as well as information about conflicts, license royalty collections, and invoicing.\(^{45}\)

Intellectual asset management software standardizes information collected about every single piece of intellectual property and provides a more concise view of what the company is doing and its intellectual output.\(^{46}\)

SAP’s intellectual asset management system is an example of software that handles the entire value chain of acquiring and creating intellectual property.\(^{47}\)

Another example is Skandia, a Swedish company that has developed a financial measurement architecture for IP, which determines and reports the value of intangible assets.

Anaqua is another intellectual asset management software company. It was created in 2002 by Ford Motors and British American Tobacco. Anaqua lets IP owners and


service providers share information, access data and maintain accurate IP records, and enables businesses to combine intellectual assets with strategic business goals. Anaqua consults a rules engine that understands IP laws in more than 170 countries, as well as the simpler tasks such as filing, registration, and renewals.

### I.4. How Companies Organize Their IA Management

Inside companies, IA is often delegated to the Legal Department. Intellectual asset management, however, is more than a legal issue. Other firms give this responsibility to the R&D department, at least for patents. In other cases, different types of IPR are managed by different departments. The Legal Department may handle infringements, negotiating contracts, etc., HR handles trade secrets, and the R&D department deals with patents. For valuation, on the other hand, the corporate finance department is responsible. Trademarks and copyrights are handled by product development and marketing teams. At Unilever, the trademark

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team alone consists of 54 people based in three locations. Nestlé has 16 regional IP advisers around the world.55

Collaboration by various departments within a company is necessary in managing IA. This could be accomplished by establishing an IA review team with representatives from the groups dealing with R&D, marketing, operations, legal, and accounting.56

**Outside Counsel**

Specialized legal IP work may be outsourced to external law firms.59 But this can be expensive. In 2003, the approximate cost for in-house lawyers was approximately $100 per hour for a senior lawyer and $90 per hour for staff attorneys, plus overhead at 30%.60 In contrast, in 2006, the most expensive outside lawyers were counsel at the L.A. entertainment law firm, Bertram Fields, costing $850 per hour. Rates for partners were as high as $600-$700, but usually ranged from $300-$600. Rates for associate lawyers ranged from $100-$350.61 Fee

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arrangements for outside counsel are typically based on hourly charges, contingency fees, flat fees, and alternative fee arrangements.\textsuperscript{62}

**The Different Types of Intellectual Assets**

One can distinguish five basic types of intellectual assets: trade secret protections, contract-created rights, patents, trademarks, and copyrights. The pyramid below ranks them in terms of frequency and difficulty in creation.

![Pyramid Diagram]

Copyrights are created frequently but have limited protection; trademarks are more difficult to obtain but offer more protection. Patents, relative to the others, are rare and difficult to obtain. Patents are at the top of the legal IA protection hierarchy. It is very difficult to secure the greatest level of legal protection without a patent.\textsuperscript{64}


Trade secrets are plentiful but have greater uncertainty and less protection than patents.

II.1. Trade Secret Protections

By one estimate, 90% of commercial value in IAs is found in trade secrets. A trade secret is information which benefits a business commercially and which the owner has taken reasonable measures to keep secret. For example, the fast food chain KFC keeps its Kentucky fried chicken recipes secret. Only a handful of people are told the recipe and those who are must sign strict confidentiality agreements. KFC goes so far as to use different companies to blend the spices together so that no company has the complete recipe.

Firms or individuals may use trade secrets when it is not feasible to obtain a patent. Some creations are not patentable, for example, David Copperfield’s magic tricks, or Coca Cola’s syrup formula. But many patentable inventions are in fact not patented.

Keeping innovations as trade secrets avoids the costs and disclosure of applying for patents. But it also requires additional costs of its own associated with protecting the secret.

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Theft of trade secrets is estimated to have a value of $5 to $10 billion dollars annually,\(^7\) just in the US. The more valuable the trade secret, the more a firm should spend to prevent loss from trade secret exposure.\(^7\) This spending should be aimed at deterring theft, inadvertent disclosure, and reducing the chances of independent discovery or reverse engineering.\(^7\)

To remedy some trade secret breaches, a firm can use its lawyers to obtain a court order stopping the beneficiary or perpetrators of the breach. However, it would usually have to post a substantial bond to discourage frivolous applications for a temporary or permanent injunction. Firms whose trade secrets were violated can also sue for damages, both actual and punitive. Proving injury for actual damages requires that trade secret owners show that another firm enjoyed “unjust enrichment,” that the owner suffered “actual loss,” and/or that the owner is entitled to “reasonable royalty” from the trade secret.\(^7\)

The four managerial principles for protecting trade secrets are

- **Inventory** – knowing what to protect;
- **simplicity** – knowing where leaks likely occur;
- **responsibility** – appointing someone in charge;


There are a few business considerations to keep in mind while deciding whether to keep a trade secret, including the cost of protecting secrecy, the value of information to the firm, and the difficulty with which the information could be acquired and utilized by others. Particular attention is paid to electronic leaks such as hacker access, which can facilitate a breach of trade secrets. Giving notice is an important aspect of trade secrecy. Companies should stamp all their documents before releasing them to a partner. The confidentiality stamp warns the partner – and the employees -- that the technology is confidential.\textsuperscript{76}

Trade secrets are protected by law—the theft of trade secrets is often a criminal offense with substantial penalties. In the U.S., the Uniform Trade Secrets Act was adopted by most states after 1985. There is also, the Economic Espionage Act of 1996 that makes it a crime to steal or knowingly acquire trade secrets. Violators could face a maximum $500,000 fine, up to ten years in prison, and firms can obtain an injunction to stop violations of their trade secrets. Other countries have similar laws.

A major case in trade secret law is \textit{DuPont v. Christopher} (1970). The Christophers, professional photographers, were hired by a competitor to fly a plane

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over a DuPont chemical plant to obtain pictures that would reveal DuPont methanol manufacturing secrets. While the flight itself was legal, in aviation terms, the court found that it was conducting “improper means of discovery,” and economic “espionage” in violation of DuPont’s right to its trade secrets.\footnote{DuPont v. Christopher, 431 F.2d 1012 (5th Circuit 1970).}

Laws and precedent establish a system of trade secret protection in the U.S. and many other countries, but there is no universal definition of trade secrets, and in some countries they do not exist as legally protected rights. Trade secrets are also not included in treaties that protect patents and copyrights.

Another disadvantage is that trade secrets and their laws and precedents do not prohibit reverse engineering, i.e., analyzing a final product and working backwards to identify its components and workings.\footnote{“What Is Reverse Engineering?” New Product Development Solutions. Last accessed June 14, 2010. \textless http://www.npd-solutions.com/reoverview.html\textgreater .} Reverse engineering is used to analyze how a competitor's product works, or is made, and to develop interoperable products. This is common in software, games, consumer electronics, and microchips. The copycat product is legal since it does not violate any patent. Even where a patent exists companies use reverse engineering to assist in the development of a competing product that bypass a patent.

An example of reverse engineering is RealNetworks’ release of special music files that could be read by Apple iPods, and could be bought by iPod users directly from
RealNetworks’ Rhapsody music service rather than being limited to buying from Apple’s iStore. Reverse engineering is perfectly legal, but was a competitive challenge to Apple’s domination of music to its hardware, which had a huge market share. Apple released press statements attacking RealNetworks for “using the tactics and [having] the ethics… of a hacker.” It threatened legal action, and to release new iPod software updates that would disable Rhapsody interoperability. RealNetworks unsuccessfully tried to generate an online petition campaign and then gave up and disabled iPod interoperability in 2005.

**Contract-Created Intellectual Assets**

Contractual agreements are a major practical way of protecting many trade secrets since most cannot be copyrighted or patented, and reside in their employees’ know-how. Employees are expected by the law to be loyal to their employers, and this includes not disclosing trade secrets to competitors, even without any particular signed agreements. However, specific agreements can be made to

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toughen confidentiality and nondisclosure requirements by employees, and to put them on notice that they must not disclose sensitive information.

Companies thus attempt to create contract intellectual assets by: Non-Disclosure Agreements (NDAs) and Covenants to Non-Compete (CNCs), also known as “confidentiality agreements.” These contracts require employees to refrain from competitive activities with their employer after their employment ends, and for other involved, such as potential investor or partners not to make use of the information gained.\textsuperscript{81} However, many NDAs and CNCs are invalid and unenforceable. They must be limited in duration and to specified and relevant information. Unreasonable parts of a contract, as determined by juries, could be voided by courts. For example, CNCs are typically valid only up to three years. In addition, confidentiality agreements do not cover third parties like taxi drivers overhearing privileged information.

Non-disclosure agreements also create obligations for employers. One survey found that 35% of companies remind departing employees of their NDA trade secret obligation; but only 7% of companies ask new employees to sign agreements preventing them from bringing in competitors’ trade secrets.\textsuperscript{82} Former employees of a competitor may even offer up trade secrets as a selling point in a


job interview. As the above mentioned case of Dow vs. GE shows, a company must be cautious not to open itself up to allegations of stealing a competitor’s trade secret by hiring one of its former employees.

Contract-created IAs have become also popular as an alternative to copyright. For example, a common form of contract-created IPRs is the viewing of electronic publications online. Upon accessing the publication on the internet, a user is considered to have entered into a contract, or “user agreement.” Users are usually unaware that by clicking on a “terms of usage” button they have entered into a licensing contract and have often abrogated their rights of “fair use.”

An example of a common type of contract for IP (mainly software) is the “shrink-wrap” contract. In it, a software user is bound to the terms of the license contained in the shrink-wrapped box of software. Software manufacturers consider users to be bound by the terms of the license once the shrink-wrap on the package has been removed. Early in the history of IP contracts, most such shrink-wrap contracts

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90 Olson, Kathleen K. “Preserving the Copyright Balance: Statutory and Constitutional Preemption of Contract-
were not held valid. In 1996, however, the National Conference of Commissioners on Uniform State Laws drafted a model legislation to deal with the enforceability of IP contracts. The model statute, named the Uniform Computer Information Transactions Act (UCITA) exempts shrink-wrap licenses and similar types of agreements from existing contract law. The UCITA has been passed in most U.S. states.

Ideas can also be the subject of intellectual property protections. A writer who pitches a story idea to a producer or publisher is vulnerable to theft, since ideas are not protected under copyright law. However, a story idea can be protected by making it the subject of a contract. But realistically, a struggling writer is often in no position to demand an agreement from an influential producer. (A less-threatening approach is to make the producer orally agree to compensation and confidentiality, in the presence of other participants who could be witnesses.)

Also, it is not easy to define what constitutes the theft of an idea. Story elements are often very similar and not everyone who writes a play about two lovers from

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hostile families has stolen from Shakespeare. Some parallelism can be quite innocent. Media firms have been subject to legal challenges from authors, who believe rightly (Art Buchwold) with the film *Coming to America*) and or wrongly to have been plagiarized. Media firms therefore will often not even open unsolicited manuscripts unless submitted through a reputable agent, in order to avoid such lawsuits.

**Patents**

The term “patent” is derived from Latin -- “open letter” -- was applied to many rights conferred to by the monarch, often in return for payments to the crown. In modern meaning, a patent is the exclusive right to make, use, sell, import, or offer to sell an invention. The grantee of a patent has the exclusivity for the production and use of the product, or process, in return he must disclose details of the invention.

For example, Colgate has a patent for a three-stripe toothpaste which protects its method from being used by other manufacturers. Colgate’s patent, like the vast
majority of patents, is a “utility patent.” There are also plant patents (on genetic plant development) and design patents (on a particular “look” that is not functional—these are valid for 14 years). There are several ways to make money from a patent. Companies can use it, sell it (re-assign it), rent it (license it), or not use it but prevent rivals from using it.

After a government agency grants a patent, the product is protected typically for twenty years. This protection period used to last 14 years in the U.S. after the patent was granted; in Europe and Japan, protection lasted 20 years after initial application. But since patented technology tends to become quickly outdated in many fields, the average economic life of a patent is five years. After the patent expires, anyone can use the innovation without permission.

For inventors who obtain patents there are several positive aspects. First, they have a monopoly on the exploitation of their innovation which helps recoup research and development costs. The patent also adds credibility to a start-up venture. However, the downsides of patenting are that inventors must disclose details of the invention, and the high cost of obtaining and protecting the patent.

A patentable invention can be a product, a process, or a method, composition of matter, a design, or plants. Innovations that cannot be patented include ideas (“sail

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westward to reach India”), laws of nature (E=mc²), mathematical formulas, unsafe drugs (also, in Scandinavia, there are no patents for medical drugs), and surgical techniques. Thus, though Albert Einstein could not patent his scientific discoveries, but he obtained eight patents with noted fellow physicist Leo Szilard for a refrigerator pump. (Einstein knew the patent system well; he wrote several of his seminal papers while a lowly clerk at the Swiss patent office.) Other things that cannot be patented include inventions for illegal purposes (e.g. devices to counterfeit money) and naturally occurring substances, plants and animals. However, the recent patentability of “business methods” edges towards patents for ideas.

The conditions for patent approval require “novelty,” “non-obviousness,” and “usefulness.” Novelty means that the invention must be something new, not previously available, and not obvious to a person who has ordinary skill in the relevant field. Novelty can be an assembly of known elements, as long as no one has combined them before. Non-obviousness means that it is not a trivial innovation, such as a beer can painted blue for the first time. An example of non-obviousness is the pencil with an eraser. Both of these elements were well-known for centuries, but their combination necessitated a patent, though it took the US Supreme Court to say so.
A product is not novel if it is already for sale, or it has already been described in the scientific literature. Inventors must file for a patent less than one year after a publication by themselves that describes the invention. Thus, the lesson for inventors is that if they have published, sold or publicly offered an invention for sale, they risk losing patentability.

A trade secret holder will be ineligible for patents on an innovation he or she has used or commercially marketed for a year or more.98

The third condition for a patent is “usefulness.” In other words, the product must work in a practical sense, but not necessarily economically. There is no requirement that an innovation be “important.” Thus, patents were granted for a device that holds big toes together to prevent sunburned inner thighs.

One need not construct the invention or demonstrate that it actually works to obtain a patent.

**How to Get a Patent**

Patents are granted by the government through a patent and trademark office (PTO). It typically takes two to four years for a Patent Office to grant a patent.

Examiners search the databanks to determine if an invention is new, but patents are often complex and hard to find. The description must allow a skilled person to make and use the invention. In the U.S., the Patent Office had to keep patent applications confidential until a patent was issued. After 2003, the rules were changed, and the patent application is kept confidential only for the first two years of process. In Europe and Japan, sometimes after a brief period, patent applications were always open to public. This means that in Europe, patent applications can be studied by competitors and challenged long before a patent is granted. This has pluses and minuses. Patents may possibly not be granted for undeserving application. On the other hand, it enables rivals to delay or prevent innovative technology because the rivals will provide the PTO with adverse information from getting a patent. In the U.S., only the patent examiner challenges an application, not third parties with expertise and interest.

How does one apply for a patent? The inventor must describe the “prior art” that came before her invention and discuss its flaws; then she broadly describes the “projects and advantages” of the invention. To apply for a patent, the inventor must clearly describe the invention and how it works, including thorough drawings where appropriate. The person applying for the patent must list formal “claims” and recite the elements of invention; for example, “I claim an electric device for back-scratching, consisting of a handle, a scratcher, and a power source.” Claims
define the bounds of the claimed invention. During the patent approval process, the inventor can use a “Patent Pending” label to inform the public that the product is innovative and to discourage potential infringers.

In the normal patent application process, the PTO responds to the application 12-18 months after the application. Typically, they reject most of the claims. Then the inventor and patent lawyer dispute the ruling, resulting in give-and-take between the inventor and the PTO.99

Due to this complex interplay, only one-fifth of U.S. patents were filed without the assistance of a patent attorney. A U.S. patent typically costs between $10,000 and $25,000. To obtain additional patents in other countries cost another $10,000 to $20,000 per country.100 A study by one advocacy group estimated that European Patent Office filing in 13 EU countries, including renewals and based on the 2008 fee structure, could an average €30,000 per patent.101 International Patent Protection is governed by the “Paris Convention” for the Protection of Industrial Property in 1883. Signatory countries committed the to a non-discrimination of foreign patents, industrial designs, and trademarks.

100 “Overview of Intellectual Property.” 13 Jan. 2005. Office for Technology and Trademark Licensing, Harvard University. 6 June 2005. [ZG: I can’t locate the source or the information therein]
Thus, one might ask: Is it worth trying to get a patent, spending much money and
time, and in the process disclose the invented technology and risk imitation,
particularly from abroad? Or is it better, faster, and cheaper to use trade secrets?
Does the accelerating pace of innovation makes patents less important.102

- A patent in China offers less protection than a patent in Japan, for example, and
therefore the discount rate is higher.

Patents have become much more common. Courts used to be more stringent and
rejected many patents. This trend reversed in the 1980s after several U.S. Supreme
Court rulings, and now patents are granted move freely.103 A new Appeals Court
for Patent Appeals was established. Before, on third of patent holders won cases.
After the establishment of the court, two thirds did.104

The number of patent applications in the U.S. has increased significantly from
about 100,000 in 1979 to almost 500,000 in 2007. The number of patents granted
has also increased from about 50,000 to almost 160,000, about equally to US
citizens and foreigners.

102 Anton, James J., “Little Patents and Big Secrets: Managing Intellectual Property,”
Given this volume, the Patent and Trademark Office often grants patents with insufficient research to establish that the invention is new and useful, and not “prior art.”

In 2009, top U.S. patent grantees in 2009 were IBM with 4387, followed by Samsung (3592), Microsoft (2901), and Canon (2200). Intel was number eight with 1534, and HP was number ten with 1269. Top 10 applicants in 2009 in Europe were Philips with 2556 applications and Siemens (1708).

On a per capita basis, patents in telecom and IT obtained between 1994 and 1998, show Japan leading with 435 per million, followed by the US with 345, and Finland with 130. Germany had 85, France 70 and the UK 60.

Frontiers of Patents

A. Patents for Genetic Life Forms

In 2000, Harvard won a U.S. patent on a genetically modified mouse used in medical research, but lost an appeal to obtain a patent on the same mouse in Canada.\footnote{Harvard College v. Canada (Commissioner of Patents), 4 Supreme Court of Canada, 2002.} Patents on genetic life forms are controversial – especially genetically engineered life forms beyond plants. The genetic alteration of life forms provokes ethical quandaries, and fears that human, animal, and environmental safety may be
compromised. However, gene-based compounds have long been patented. For example, adrenaline was patented in 1907. In 1923 insulin was patented, and then in the late 1970s, cloned human insulin was patented as well. As the burgeoning field of biotechnology continues to push the boundaries of biological possibility, the scope and frequency of patent controversy is likely to increase.

B. Patents for Software.

Controversy has also arisen over software patenting. Since a software algorithm is mathematical law, computer software programs historically were not considered patentable. However, in the 1981 *Diamond v. Diehr* case, the U.S. Supreme Court opened the way for patent protection for some computer software when their algorithms can be incorporated into a useful process. Software patents issued by USPTO steadily increased after this court decision, from 200 in 1981 to over 40,000 in 2006. The business logic here is that a patent offers a stronger protection than a copyright which can be circumvented by using a different coding to obtain the same performance. A copyright is thus much longer, but that is rarely a problem for software. In Europe, only some countries grant software patents. A proposed E.U. software directive to clarify the EU position stated that software per

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111 [http://www2.piperpat.co.nz/resource/life.html](http://www2.piperpat.co.nz/resource/life.html)
se cannot be patented. However, due to protest and political pressure, the directive has stalled.\textsuperscript{113}

**Business Process Patents**

Historically, one could not get a patent on a method of doing business. Thus, the ideas of selling newspapers in the street, delivering packages overnight, selling goods through mail-order catalogues, or payments through credit cards were not patentable business methods. But in the 1998 case *State Street Bank & Trust Co. vs. Signature Financial Group Inc.*,\textsuperscript{116} a U.S. federal court opened the door to patenting business methods. In 1998, the Signature Financial Group patented a computerized system for managing mutual funds. The product (hub-and-spoke data processing system) allowed managers to pool and calculate mutual fund investments. The court ruled that business models can be considered patentable ‘processes’ as a transformation of data.

In 2005, the USPTO issued a precedent eliminating the application of a technological arts test for the examination of a patent application.\textsuperscript{117} This decision

essentially allowed any non-technological process to be patented, including business processes and models, financial services and financial products. ¹¹⁸

Only a few countries allow business process patents, for example the U.S.-, Australia, Japan and Korea. Most European countries and Canada do not.¹¹⁹ The industries which most commonly use business process patents are computer systems, telecommunications systems and the Internet.¹²⁰

These decisions triggered an avalanche of applications to grant rights to business models. For example, Amazon.com patented its “one click” sales system, Priceline.com patented “reverse auctions.” Dell patented its “build-to-order” method.¹²¹ An obscure company called Sightsound.com has a patent on the concept of sending movies into consumer’s homes over the Internet. It claims the exclusive right to downloading films over the Internet without having developed any piece of software or technology. The idea of paying consumers to view Internet ads is owned by Cybergold.

However, the backlash came soon. In 2007, the federal courts cut business process patents back. In In re Stephen W. Comiskey, it was decided that patents cannot be issued in business systems that depend entirely on “mental processes or processes

of human thinking.”128 This greatly reduced the number of business process patent applications and made technology processes the key factor in patents.129

**Patent Infringements**

A patent infringement occurs if another person uses all the elements of the “claims” of a granted patent. To stop them, the original inventor can obtain a court injunction (cease-and-desist order), file for damages, or demand the return of up to three times the infringer’s profits (“treble damages”). The patent holder need not physically produce the invented product or process to claim infringement. Companies can just use their patents to block others. Patent holders who do not use the patent can threaten to shut down the operations of other companies. They can receive large settlements from these companies if the companies violate their patents.130

Many companies apply defensively for patents to prevent others from obtaining a blocking patent. Offensive patenting is also frequent, in order to block others or force them to buy a license.131

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Patent infringement suits have become increasingly common as well. Patent lawsuits grew in the U.S. from an annual 1,500 in the 1990s to more than 3,000 in the 2000s. Complex patent trials can easily cost over $5 million, though most suits are settled before the trial. In 95% of lawsuits, the patentee wins a settlement against challenges.

Patent owners win 58% of copyright infringement trials and 68% of jury trials.\textsuperscript{132}

Small companies are usually disadvantaged in patent suits, but large companies can be held up.\textsuperscript{133} Protecting patents is relatively more costly for small firms than for large firms. Small companies, even with solid patents, can be overwhelmed by legal challenges by deep-pocket firms who tie them up while catching up in their R&D. Firms with large patent portfolios often cross-license with each other or negotiate instead of pursuing litigation.\textsuperscript{134} The average cost to challenge a patent is $1.2 million; thus, it is often cheaper and faster to pay royalties than to challenge a patent.


The risk of a challenge to a vital patent has led to the emergence of intellectual property insurance. IP insurance strengthens a small firm’s bargaining position in licensing deals, since the license is more secure.112

Incentives

Are patents essential? One study (Kanwar and Evenson, 2003) concludes that patents create positive economic incentives: Intellectual property rights encourage technological change, provided that IP protection has a strong, positive correlation to R&D investment.135

But much of empirical economic research sheds doubt on the patent system’s contribution to innovation. One study found that patents provide incentives to research and to disclose information, but that they reduced the invention's use during the patent life (Nordhaus, 1969).136 Another study found that stronger patent protection did not stimulate R&D expenditures by a firm, but that, the increased danger from infringing on another firm's patents exerted the opposite, a negative influence.138

Other empirical research performed on patents by Schankerman and Lanjouw found that the value of patent protection is only about 25% of related R & D expenditures. In another study, Schankerman’s concludes that most industries do not look to the patent system as the main source for invention protection. It is crucial for a few industries only, e.g., pharmaceuticals.\(^\text{140}\) Other studies show that inventors rely on other ways to appropriate returns from their investment (see Cohen, Nelson and Walsh, 2000).\(^\text{141}\) Joshua Lerner studied the impact of policy shifts in 60 countries over 150 years. He found support for the impact of patent length on innovation if patent protection was initially low, but a negative impact on innovation if it was high. He conjectures that market incentives were adequate to spur these innovations without additional protection.\(^\text{142}\)

Many studies conclude that patenting does not significantly affect firms’ ability to acquire monopoly power, or that it may indeed reduce them. Zvi Griliches and Ariel Pakes studied the increase in patent applications, and whether patent length, friendly courts, or an expansion of scope play a causal role in this expansion.\(^\text{146}\)

Patent protection is found, on average, to be relatively unimportant compared to

the three other first mover advantages – “technological leadership,” “preemption of scarce assets,” and “switching costs and buyer choice under uncertainty.”\textsuperscript{147}

Furthermore, extensions on long-held patents may reduce research incentives. Contrary to policy makers’ assumptions, some researchers have posited that patents’ length may, at some times, have an inverse relationship to their value.\textsuperscript{148} Per Gallini: “While an increase in patent life induces the researcher to develop larger inventions, inventions occur less frequently. For patents sufficiently long, the frequency effect dominates the size effect, and so the rate of innovation declines for increases in patent life.”\textsuperscript{149} In empirical research by Waterson,\textsuperscript{150} Kitch,\textsuperscript{151} Cockburn,\textsuperscript{152} and Henderson,\textsuperscript{153} patents do not necessarily create monopoly power as seen in prices. In other words, companies with a patent may charge a price somewhere between competitive and monopolistic. Therefore, the benefit (and incentive) of a patent is lower than postulated.

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For other reasons as well (some depicted in the graphic above), firms should consider whether the total economic benefit of obtaining a patent exceeds direct and indirect costs. Firms may instead consider a trade secret, or to issue a defense publication, which would prevent others from obtaining a patent. “Patent first” is not always the best approach.

II.4 Trademarks and Trade Dress

II.4.A. Trademark Overview

A trademark is a word, name, phrase, sound, logo or symbol used to identify a company and distinguish its products and services. The aim of a trademark is to protect the investment in a name or logo to build reputation and brand, avoid confusion by consumers, or create brand awareness. Examples of trademarked terms include “Windows 95” and “Disney World.”

According to George Eastman, a good trademark should be short, vigorous, easily spelled, and mean nothing, like “Kodak” when he introduced the name. Trademark names to avoid, because they are hard to protect, are personal names (such as nicknames, first names, surnames, initials), and marks that describe a product’s characteristics or geographical location. Other trademark names to avoid are

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names with unintended homonyms, such as the French soft drink Pschitt. Also to avoid names similar to existing famous trademarks. They may be considered as infringement (unless confusing buyers is intended.) 119

To create trademark names, there are name consultants, websites, and software programs such as NameStormers. NameStormers, for example, offers software tools such as that screens for meaning in many languages. 120

Beyond names, there are trademarks for unique symbols, for phrases such as, “Don’t leave home without it,” For musical jingles, and even for smells and odors. Ordinary names can get protection once they become distinct, like “Ben & Jerry’s” ice cream. One can trademark a film or book title if it has acquired a distinct secondary meaning. 156

Some names started out or distinct products by a company, but were not registered. They became generic over time, and lost protectability. Examples are aspirin, cellophane, escalator, kerosene, yo-yo, zipper, and trampoline. In consequence, companies made major efforts to clarify that Xerox, Coke, Kleenex or Band Aid are distinctive trademark. Lawyers recommend that to protect trademarks, one

should use the trademark as an adjective, not as a noun or verb, to avoid it becoming part of common parlance. For example, a “Xerox copier” or a “Kleenex tissue.” Trademarks should also be used distinctively, and should be capitalized, underlined, and/or italicized, with the trademark symbol.

“Cyber squatting” may also be a concern. Cyber squatting is the registering of celebrity or individual company names as a domain name by an unauthorized person. To protect against this, the U.S. Congress passed the laws that prohibit the intentional registration of a trademark or a famous name as a domain name.

In trademark violation dispute, a company should frame its private interests as a consumer interest -- to prevent that consumers are misled by the alleged violator of the trademark. In one case, the studio Tri-Star sued another producer over the use of the film title “Return from the River Kwai,” which misled audiences to believe that the film was a sequel to the award-winning film The Bridge on the River Kwai.158

Internationally, trademarks are covered by the Singapore Treaty passed in 2006. This treaty established a regulatory framework of common standards.160 An earlier

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common framework was the “Madrid Protocol,” which offered a trademark owner in one country the ability to obtain registration in many foreign countries.

How does one obtain a trademark? Typically trademark registration goes through a Patent and Trademark Office (PTO). In Europe, a trademark regulation was passed in 1993 that made the trademark valid all throughout the EU and established the European trademark office in Alicanté, Spain. PTOs which grant the use of the registration symbol (R in a circle). But there are also “common-law” trademarks, for which no registration is required. The symbol “TM” is used for unregistered trademarks. This also prevents others from using the same or similar marks. However, this offers less protection than an officially registered trademark. It also may cover only a limited geographical location.121 In the U.S., Europe and Japan, official trademark registration lasts ten years and can be renewed forever. But, if a trademark is not used for two years (five years in the EU), a presumption of abandonment is created.

”Trade dress” is related to trademarks. It protects distinctive packaging and more -- It is the totality of elements: color, shape, texture, design, themes, and labels. Similarity, of course, is in the eye of the beholder. Various factors are considered, with the common focus on whether a reasonable consumer would be misled.

Left: An Australian customs agent confiscates copycat “Duracell” batteries. Right: Real Duracell batteries.

II.4.A. Rights of Publicity

“Rights of publicity” prevents the unauthorized use of a person’s name and picture. Partly this is to protect privacy, and partly it deals with the issue of who can commercialize a person’s likeness. For example, the film stars Michael Douglas and Catherine Zeta-Jones sold the rights to photograph their 2000 wedding for $1.55 million to OK! Magazine. OK! successfully sued a rival magazine which

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162 Image Sources: Australia Customs Service (left) and http://www.aolecdn.com/channels/0b/07/47acddbb-002d7-01712-400cb8e1 (right).
took and published unauthorized photographs of the ceremony. Lawsuits have arisen from legal uncertainty over what constitutes a celebrity’s persona, and how completely the celebrity can control it. California Governor Arnold Schwarzenegger sued lobbyist John Edgell for marketing a “Governator” bobble-head doll of Schwarzenegger in a business suit holding a machine gun.

But these “rights of publicity” can easily conflict with the First Amendment free speech rights, since they can provide a legal means to block biographers, photographers, and filmmakers from covering a person’s life.

Authors do not need permission to write an article or an “unauthorized” biography about someone.

In the US, Consent must be given to use another’s name or likeness for some type of gain, financial or otherwise. For example, Elvis Presley’s heirs have the rights to control and sell Elvis’ identity. Similarly, the Martin Luther King Jr. estate has rights to King’s “I Have a Dream” speech. These heirs are known to be highly litigious and outside media are reluctant to be sued by the families of these revered

figures. In one case that went to trial, the heirs of civil rights icon Rosa Parks sued the hip-hop group OutKast and record company for $5 billion, over their 1998 song entitled “Rosa Parks.” The case went to the U.S. Supreme Court and lasted for years, and in the end, the Parks heirs had to accept a minor settlement and largely lost the case.

Courts in other jurisdictions do not necessarily provide celebrities with the same protection. In 2000, Hong Kong pop star Andy Lau lost his case against a bank which offered credit cards with the singer’s image without a direct license from Lau. A court ruled that merely affixing an image to a credit card did not constitute an endorsement, and that the bank had therefore not violated Lau’s right of publicity.

**II.5. Copyrights**

Copyright is a bundle of separate property rights to creative expressions. In music, for example, these rights include reproducing copies or phonorecords (a legal term meaning all objects from which sounds are produced), making derivative works based upon the copyrighted work, performing publicly,

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distributing copies or phonorecords, displaying, and performing sound recordings by digital audio transmission.

Copyright gives the owner exclusive rights to use (and not use) or to transfer ownership of the work for a certain period. Also that, the work moves into the “public domain.”

In 1709, the first copyright law was passed in England, known as the “Statute of Anne” after the contemporary English queen. In 1788, the U.S. Constitution listed the protection of authors as one of the specific powers of federal government, and the first U.S. copyright law was passed in 1790, among the first pieces of legislation on the federal level. One of the key elements of copyright law is the length of the period of protection. In 1998, the Sonny Bono Act, introduced by and named after the Congressman and pop singer (Sonny and Cher) who died in a skiing accident, added another 20 years to copyright protection to the previous period of 50 years.

For an individual, a copyright can has a duration of the copyright holder’s life plus 70 years because corporations do not die a natural death. A corporate copyright lasts for 95 years after publication, or 120 years from the year of creation, whichever expires first. Though these are very long periods, the economic value of most copyrighted works is far shorter than the period of protection.
To obtain a copyright, no formal registration is necessary. A copyright notice contains three elements: the symbol or word copyright, the year, and the name of copyright owner. In practice, however, registration provides evidence of the creation and is a notice to others that they cannot use the work. To register for a formal copyright, the owner sends a copy of the work to the Copyright Office of the Library of Congress, files a copyright registration application, and pays a registration fee. Even if the copyrighted work is registered, use of the © mark is not necessary. How much notice is given may affect the size of damages for infringement, however.

**II.4.D. What Can be Copyrighted?**

Many things can be copyrighted. Literary and dramatic works, sound recordings, choreographic works, pictures, graphics and sculptural works, motion pictures, and computer software, names (and logos) of programs, or program format, – set designs can all be protected by copyright trademark.\(^{182}\)

What cannot be copyrighted? An idea or a fact, by themselves cannot get a copyright, though the actual expression of the idea or fact are protected. But if a different wording is used for the idea, there is no copyright violation. For that reason, lists are not copyrighted—for example, phone directories arranged

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\(^{182}\) *Advertising Age*, Jan 20, 2003 v74 i3 p24.
alphabetically are not copyrightable. They are considered a list of facts. The US Supreme Court in 1991 denied copyright protection for databases that did not involve some original ‘creative’ selection and/or organization of data (such as phone books). Until then, the legal theory was that ‘sweat of the brow’ created copyright for databases of pre-published facts.

It is possible to obtain a copyright (and not only a patent) for semiconductor design. In 1984, protection was provided for mask works (the original etching) of chips, providing protection for 10 years.

The U.S. government cannot copyright its documents. They are in the public domain unless formally classified as secret.

A copyrighting dispute arose over the rights to stage direction by a director or producer. To produce the Broadway show *Love! Valour! Compassion!* in Boca Raton, Florida, the director travelled to New York and measured the Broadway stage and settings to replicate the original stage direction. [A lawsuit ensued, and the court found that stage directions are not copyrightable.]


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House, his publisher, for allegedly stealing ideas from their own book. They claimed that Brown copied the “architecture” of the book (i.e., the steps they took to reach their conclusions). The court ruled that merely receiving inspiration from another work does not qualify as copyright infringement, because an idea cannot be copyrighted.

Facts and ideas can be borrowed from other sources but one cannot borrow another writer's direct expression. On the other hand, creating a work that is derivative of a character could infringe upon copyright (unless it is “fair use” or a parody.) Similarly, creating unauthorized derivative works, such as sequels, are copyright infringements, even when every word is original and even if changing the names of the characters.

Creators seeking IP protection for items such as character names or titles of their work – which cannot be copyrighted -- may opt for a trademark. A trademark, unlike copyrights, can last indefinitely, if it is used and renewed.

But the two overlap and can be used alternatively or in parallel.

Patent protection deals with industrial property, whereas copyright protection is mainly concerned with literary and artistic property. Patent or Copyright?

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Computer software or semiconductor designs (as mentioned) qualify for either. Which then to choose?

A patent offers a relatively short period (17-20 years) of strong protection that must satisfy strict standards, such as novelty. Obtaining a patent can be long and expensive, and the inventor has no enforceable rights until a patent is issued. Until the patent is (which can take years) the creator’s rights are limited against an imitator. But a copyright offers relatively soft protection against direct copying for a long period (creator’s life plus 70 years).

If a similar work exists, a copyright is the best choice. For long-term protection, copyright is the better choice, as well as for art work. But, a patent is the best choice. A patent is also the best choice if one needs the exclusive right to prevent another from using the invention.

Copyrights for TV shows have been a contentious issue. In 2003, the TV network CBS brought a lawsuit against its rival ABC, claiming that ABC’s reality TV program, *I'm A Celebrity . . . Get Me Out of Here*, was a copy of CBS’ *Survivor*, But ABC won the suit, since it could show that its show was an original format.  

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In the U.K., the basic plot of a theatrical play has been held to be protected by copyright, but such protection does not exist for TV formats. Brazil and the Netherlands, in contrast, have given TV formats a copyright protection, perhaps because these countries are successful exporters of TV shows and formats. Two TV companies, the Dutch firm Endemol and the UK firm Castaway, got into a dispute over the originality of Endemol’s *Big Brother* program. Castaway TV argued that the *Survivor* format was a copyright work by virtue of its unique combination of 12 elements. But a Dutch court ruled that the format of *Big Brother* is not an infringing copy of the *Survivor* format.\(^{188}\)

Format similarities can occur by coincidence. For reality shows especially, there is a very fine line between an original and a copied format.\(^{189}\) For example, best-selling author Barbara Taylor Bradford sued an Indian “Bollywood” production company, Sahara Television, in an Indian court for copyright infringement, claiming that the company plagiarized the plot of her book, *A Woman of Substance*.\(^{190}\) The author claimed that Sahara stole her plot and turned it into a 260-episode television series, *Karishma: A Miracle of Destinies* (2003), the most

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expensive production in Bollywood history at the time. But she eventually lost the case before the Indian Supreme Court.

It is difficult to get and protect exclusive copyrights for a format because a format is, after all, an idea or concept, and these cannot be protected by copyright law. Format creators can register a trademark that shows titles, catchphrases and other identifiable elements. They can also register designs, sets, props and graphics. In 2000, the industry created a Format Recognition and Protection Association to clarify rules on format copyright and to arbitrate claims.

11.5.B. International Copyright Protection

Copyright laws differ somewhat in every country. In some jurisdiction such as France, the “moral rights” of creators against alteration of work gives them the right to participate in the future profits of resale. In contrast, in the U.S. and the U.K. such rights barely exist. (In 1990, the U.S. Congress enacted the Visual Artists Rights Act, to include limited moral rights for new works of visual art.) Moral rights in a work refer, in particular to the right to be known as the author of a work, and to the right of an author to prevent others from doing things to her work which can hurt her reputation. Moral rights are retained by an author even if

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all of the other rights are assigned to another. Moral rights cannot be assigned to anyone else by the author.

The U.S. was pro-piracy in its early years—in fact, the first U.S. copyright law of 1790 explicitly limits the protection of foreign works (typically British ones) This attitude towards foreigners’ IP rights encouraged the widespread legal piracy of English books. Only in 1891 did the U.S. begin to recognize international copyrights.

Landmark international treaties on copyright protection include the 1886 Berne Convention and the 1961 Rome Convention. The Berne Convention for the Protection of Literary and Artistic Works aimed to help non-national authors and publishers receive payment wherever their works are sold. The United States did not join this convention until 1989. The Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations, which the U.S. has not signed, extended such protections to musical and audio media.195

II.45.C. World Intellectual Property Organization (WIPO)

The World Intellectual Property Organization (WIPO) was established in 1970 and evolved out of a secretariat of the Berne Convention. Today, it is a specialized agency of the U.N. in Geneva, with over 150 member-nations.

The WIPO’s principles are “national treatment” and “material reciprocity.” A government is obligated to protect the IP rights of foreign owners in the same way that it protects the rights of national holders, as long as the foreign country grants reciprocal rights. WIPO has also created an arbitration and mediation system.

Another major international organization dealing with IP violations is INTERPOL and its Global Congress on Combating Counterfeiting and Piracy.

**II.5.E. Copyright Infringement**

Infringement of a copyright is not always easy to recognize. One test for infringement is the likelihood of confusion by a user. This can refer to objective similarity, or to subjective perceptions. Use of even a small part of the work may be considered infringement if it uses a significant part of the protected work (especially in music).

Most users do not realize that they may infringe on copyrights by engaging in distributing articles, or reports electronically to others without permission. Employees at the investment firm Legg Mason forwarded electronic copies of a newsletter among the office staff. In court, they claimed they did not know that
they were infringing on a copyright. The court, unpersuaded, required Legg Mason to pay $20 million to the newsletter publisher.\textsuperscript{205}

The cost of getting permission from a copyright license holder is not just the payment. It is time-consuming to determine what copyright permissions applies to what content/documents, and by whom. There is a Copyright Clearance Center in Washington (CCC) established Rightsphere, a computer database which stores all of a company’s copyright, licensing, and per-use permissions information in one place.\textsuperscript{207}

In 2006, major TV networks and film studios filed suit against Cablevision, which wanted to incorporate a personal video recording (PVR) into its cable network.\textsuperscript{210} This would allow users to record every TV show, with the technology built directly into Cablevision’s network.\textsuperscript{211} According to the studios, the companies had only licensed Cablevision for simultaneous broadcast, not for, in effect, a video-on-demand system.\textsuperscript{212}

In a similar law suit, music companies sued the XM satellite radio company for copyright infringement. XM’s Inno device enabled users to pick songs from the

\textsuperscript{205} Brynko, Barbara. “Life, Liberty, and the Pursuit of Copyright.” \textit{Information Today} 23, Iss. 6 (June 2006)
\textsuperscript{207} Brynko, Barbara. “Life, Liberty, and the Pursuit of Copyright.” \textit{Information Today} 23, Iss. 6 (June 2006)
radio and to store them in lengthy playlists. Record companies claimed that this made XM a into music distributor, not just a broadcaster, which required much higher licensing fees. XM eventually settled with the music labels.

The “Fair Use” Exception

The “Fair use” execution permits making and distributing copies for research, teaching, parody, journalism, and library activities. Media firms hate fair use, but universities love it. Factors that determine fair use are its purpose (i.e., non-profit educational purpose). Secondly, the amount (only a small or non-central part of the total work may be used) and thirdly, the market, (the use has no big effect on the market for the work).

“Fair use” was at issue in 2005 when book publishers sued Google for copyright infringement. Google had started to scan books and make them available through its search engine when they were out of copyright, but also intended to expand the project to copyrighted works. Developing an electronic library, as many university and public libraries have done, falls under the terms of “fair use.”

However, creating such a digital library for commercial purposes requires permission of the copyright holders. Publishers argued that Google, while not charging for access to the books, was using the digital library to increase the number of visitors to its site, and therefore raising its advertising revenue.

Cases involving bloggers have also concerned fair use policies. For example, the blogger “Spocko” posted links to audio clips of radio station, KSFO. KSFO’s parent company, ABC, sent a “cease and desist” letter to Spocko’s internet server. But Spocko, represented by the Electronic Frontier Foundation, insisted that his postings fell squarely under fair use, specifically fair use for criticism and commentary.

In another case, Harry Potter author J.K. Rowling argued that she could forbid the publication of a critical companion book. Rowling and her U.S. publisher, the film studio Warner Brothers, successfully sued RDR Books, which was attempting to publish a companion guide to the books based on a non-profit website.

While copyright holders tend to be critical of fair use, others argue that it has significant economic benefits. According to the Computer and Communications

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Industry Association (CCIA), fair use exceptions are responsible for more than $4,500 billion in annual revenue for the US economy, representing 1/6 of the total U.S. GDP.\textsuperscript{229}

Another legal limitation to copyright is the “first-sale” doctrine, which exists in the U.S. since the Supreme Court established it in 1968. Once a copyrighted work is sold, the purchaser is free to resell, rent, and use the work in other ways, to a third party, though she is not free to make copies and resell them. A video store’s traditional business model, buying a movie cassette or DVD and renting it, is a good example of the first sale doctrine. Blockbuster purchases and rents copies of movies, but it cannot copy the copies it purchases from distributors. Limitations to “first-sale” include sound recordings and computer software, neither of which can be rented out in the U.S. Additionally, “first-sale” does not apply to works distributed by digital transmission, like MP3s.

\textbf{III. Commercialization of Intellectual Assets}

Now that we have defined Intellectual Assets, we will look at how one creates value from them. The first question: what is an intellectual asset worth?

\textit{III.1. How to Value IPRs?}

When valuating intellectual property, conventional accounting methods are not particularly useful. In general, today’s accounting systems are still based on transactions, such as sales. But in the current, knowledge-based economy, much of value creation or destruction precedes, sometimes by years, the occurrence of transactions, often by a long time. For example, the successful development of a game console creates considerable value, but actual sales may take years to materialize. Intellectual assets do not appear on balance sheets (unless acquired from another firm). Efforts to create IAs only appear as costs on balance sheets. If a company develops, for example a new software product, the costs (salaries of a product’s creators, overhead, etc.) are written off as expenses against current revenues before the product is ever sold. The IP rights to the software’s code are not assets on a balance sheet, and they cannot be depreciated. The book value of the company is then understated. No depreciation can be taken on an item that is not an asset on the balance sheet. In contrast, for a machine, the depreciation of the value of the machine would be written off against revenues. As a result, most investors and media companies have no confidence in balance sheets and rarely use them for valuation and evaluating performance.

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231 Litan, Robert E. and Peter Wallison “Beyond GAAP,” Regulation, Fall 2003, p.51
In 2001, the Financial Accounting Standards Board (FASB) in the U.S. issued Statement 142, which clarified the accounting procedures for intangible assets, including patents, goodwill, brands, and franchises. It also stated that patents with finite lives should be amortized over their useful lives.\textsuperscript{232} IAs’ values usually depreciate long before their legal protection period expires. A patent with a \textit{legal} life of 20 years is likely to have a much shorter \textit{economic} life span due to evolving consumer tastes.

If purchased, a patent is becomes as an asset with the purchase price as the basis. It is then capitalized over the remaining legal or estimated “useful” life. Although a copyright is granted for the life of the creator plus 70 years, the cost of a copyright must be amortized over the expected period of the benefit, not to exceed 40 years.

So how does one value intellectual assets for managerial purposes? The accepted valuation methodologies for intangibles are (1) cost (or replacement), (2) market, (3) income, (4) real options, (5) The residual approach.

\textbf{III.1.A. Cost Approach}

The first IA valuation technique, the \textit{cost approach}, defines the value of the IA to be the cost that it took to create it. It is relatively straight-forward to measure such costs. The problem with this approach is that the cost expended for an invention or

creation is not necessarily related to their eventual economic value. Many developments do not lead to successful inventions or products, i.e., are worthless. Should the costs of unsuccessful inventions be counted as an asset?\textsuperscript{238} Conversely, would one value an invention conceived in a flash of insight be valued at the cost of that brief effort, rather than at their much greater worth as an asset?

Related to the cost-based approach is replacement cost. It, too, does not measure value. Replacement costs are more useful in valuing trade secrets, as they put an upper value on a trade secret. The upper value of a trade secret in turn is the minimum value of a patent of an invention covered by the trade secret.\textsuperscript{214}

III.1.B. Market Valuation

The second technique, market valuation, assigns the value of the IA as the value given to it by the market. This is fine in theory, but for this approach to work, this market must be active, comprised of exchanges of comparable products, and incorporate only arms-length transactions (i.e. transactions in which both sides are independent of each other), and lastly, it must provide readily available transaction statistics. Because those conditions are rarely met, the market approach is rarely used for intangible assets, except where a firm has recently bought the IA in an

\textsuperscript{238} WIPO National Workshops on Assessment and Valuation of Inventions and Research Results for Technology Transfer and Commercialization (1997).
arms-length transaction. In the media sector, the market approach is the most effective for TV series like game shows. Computerized multi-factor models try to simulate markets. These valuation models use various formulas to crunch data about the markets, forecasts, and assumptions, and then comes up with a value. The data requirements may make this method time-consuming and costly to utilize. Computerized models assume that all technology in a given field is of equal value except for two factors: the investment required to bring the technology to market (i.e., cost) and the time remaining until market introduction (i.e., impact on income stream). The developers of the TRRU metrics system, for example, divided the technological spectrum into several hundred categories that reflect industries and businesses and determined the average value of a single piece of technology in each category by observing market values assigned to companies.

III.1.C. Income Approach

The third technique, the income approach, states that the value of the IA is the net present value (NPV) of the income stream it generates. This method identifies the value of income flows related to IA, in each hire period, and then capitalizes cash

\(^{240}\) WIPO National Workshops on Assessment and Valuation of Inventions and Research Results for Technology Transfer and Commercialization (1997).


flows, by discounting them to the present.\textsuperscript{243} But this approach, too, is flawed because it does not distinguish between the value of the IP and the value of the technology.\textsuperscript{244} The newly invented technology or new film produced would have a value even without the patent or copyright. The patent or copyright’s value is the extra value due to the monopoly in commercializing the patent or copyright.

For example, the value of Intel’s IAs are difficult to determine because of its comparative advantages in chip production. Intel would have significant revenues from its chips even without patent protection, so it would be incorrect to attribute all of Intel’s revenues to patents.

The value created by the IP is the forecasted annual profit of the firm under monopoly conditions (MRn) minus the corresponding profit of the firm employing the same technology under competitive (non-monopoly) conditions (CRn).\textsuperscript{245} The industry rule-of-thumb is that a patent is typically worth four times the incremental revenue of monopoly.

\begin{footnotesize}
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\end{itemize}
\end{footnotesize}
The true value of the IP is the present value of these profit differentials over the life of the IP, adjusted by a discount rate reflecting perceived risk. This is reflected in the following equation:

\[ V = \sum_{i=1}^{n} \frac{MR_i - CR_i}{(1 + I)^i} \]

In a simplified case, where the incremental value and the discount rate remain constant through the life of the patent, the previous formula can be rewritten:\[246\]

The incremental value attributable to intangible assets can come in many forms, including future cost savings, price increments, royalty payments, and licensing fees. It is difficult to pick the proper discount rate of intangible assets. They are riskier than tangible capital assets.\[247\] Furthermore, they are not easy to liquidate and can carry legal risks (like costs stemming from infringement litigation), piracy risks, technology risks (e.g. another new invention is more useful than yours), and other business risks. They can also vary. For example, a

The best practice in the income approach is to identify the price obtainable from IA over and above the price of a comparative generic, unbranded product (or, compare the rate of return for a business with IA with the rate of return for a business

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without the IA), then deduct corporate overhead and support costs associated with IA, as well as deduct the incremental costs associated with IA, and taxes on the IA.\textsuperscript{248}

The income approach is best suited for the appraisal of contracts, licenses, royalty agreements, patents, trademarks, copyrights, and franchises.\textsuperscript{252} The present value of future cash flows is best for trade secrets because trade secrets are designed to anticipate future cash flows.\textsuperscript{253}

A calculation of the value of a license, based on income, uses several steps. It tries to predict the size of the market for the innovation that the company might capture through the IPR; it then assesses a royalty on the sales, and uses such income to determine the total value of the IPR by using discounted cash flow valuation.\textsuperscript{218} The risk is reflected by the discount rate.\textsuperscript{221}


\textsuperscript{252} WIPO National Workshops on Assessment and Valuation of Inventions and Research Results for Technology Transfer and Commercialization (1997).

(The income-based valuation should also incorporate a “Terminal Value” of the IA at year n. The equation would be:

\[ V_{IA} = DPV + T \]

### III.1.E. Real Options

The fourth IA valuation technique, the “Real Options” approach, is a variation of the discounted cash flow method. It analyzes investment opportunities as “options” and addresses risk. Real Options Valuation takes into account the IA holder’s opportunities to make follow-on investments, abandon a project, or expand production based on IP’s market viability.²⁵⁶

A simple discounted cash flow calculation will fail to capture the value of all of the potential applications for the IA.

To calculate an IA’s value based on a real options valuation, (1) do a DCF model, (2) model the uncertainties underlying the IA, (3) identify managerial choices

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(flexibility), (4) use the Black-Scholes option pricing model, and (5) calculate the value of IA as the DCF value plus the options value.\textsuperscript{257}

Example: The Value of Qualcomm is patent. This example is mostly hypothetical. The Real Options value of a patent of the wireless technology company Qualcomm includes the current value of Qualcomm’s existing patent, based on existing license agreements. Qualcomm’s existing licenses for that patent are assumed to generate $50 million in after-tax cash flows each year for the next 12 years. These cash flows are assured contractually, and involve solid and dependable parties. The discount rate is the riskless rate of 6.7%. The value of Qualcomm’s existing license is the present value of license fees

\[
\sum_{t=1}^{12} \frac{\text{License Fee}}{(1 + r)^t}
\]

where \( r = 6.7\% \) (risk-free rate), license fees = $50 million per year, and \( t=12 \), yielding the total of $403.56 million.

This is the classic DCF method. On top of it, the ability to make business decisions and strategies directly affects a firm’s bottom line. Therefore, the patent has an additional options value. This “real option” reflects Qualcomm’s right, but not the obligation, to further develop the patent. The value of Qualcomm’s undeveloped

patent is calculated by using an option pricing model. The Black-Scholes option pricing formula, the standard for calculating stock options pricing, consists of two sections: the first describes the expected benefit to investor of acquiring the stock outright, while the second is the PV of option exercise price.

Mathematically, the formula is:

\[ C = S \times N(d_1) - Ke^{-rt} \times N(d_2) \]

\[ d_1 = \frac{\ln \left( \frac{S}{K} \right) + \left( r + \frac{\sigma^2}{2} \right) t}{\sigma \sqrt{t}} \]

\[ d_2 = d_1 - \sigma \sqrt{t} \]

Where \( C \) = Theoretical call premium, the difference of the two sections described above; the value of the option to pursue further development of the patent. \( S \) = the current value of the patent. The NPV will be the best estimate for \( S \); it is the net present value of $50 million a year for the next 12 years, which, as shown above, is $403.56 million.

\( t \) = the time to maturity of the option, that is, the legal life of the patent or the investment horizon, 12 years in this case.

\( K \) indicates the present value of the cost to continue developing the patent until the point of maturity; it is assumed to be $200 million.

\( r \) is the risk-free interest rate; it is assumed to be 6.7%. 


N is the cumulative standard normal distribution, that is, a distribution with a mean equal to 0 and a standard deviation of 1;

σ is the volatility of the value of the patent. A major factor that determines the volatility of licensing fees is the expected demand for the product enabled by the patent. This will raise and lower annual income from a license based on sales of units. Variance (σ²) measures the volatility from an average. Because volatility measures risk, variance can be used in this case to determine the risk a company (or investor) is taking when purchasing (or holding) a particular patent. σ, the volatility of licensing fees, is 47.33%, based on historical data. Plugging the values above into the Black Scholes equation $338.71 million as the value of the call option:

$$C = 403.56 * N\left(\frac{\ln\left(\frac{403.56}{200}\right) + \left(6.7 + \frac{47.33^2}{2}\right) * 12}{47.33\sqrt{12}}\right) - 200e^{-6.7*12}$$

$$N\left(\frac{\ln\left(\frac{403.56}{200}\right) + \left(6.7 + \frac{47.33^2}{2}\right) * 12}{47.33\sqrt{12}} - 47.33\sqrt{12}\right) = 338.71$$

This is, relative to NPV, a high number. It shows that the added potential of the patent substantially augments the value of existing licenses.
The full value of the patent then is $742.27 million, which is the sum of the realized IA, expressed as the net present value of the licensing fees ($403.56 million) and the value of further developing the patent, the call option ($338.71).

**The Residual Approach**

Baruch Lev at NYU proposed a solution: to capitalize residual earnings as assets: what is left over after deducting expected return from a business’s financial and physical assets. These residual earnings are then attributed to intangibles. Lev’s approach makes it possible for outside investors who are not privy to accounting and management system details to determine the relative differences in intangibles across competing firms.233 One can further decompose residual earnings to determine what proportion is attributable to different types of intangibles—people, brands, patents.234 Profits attributable to IP can be calculated by subtracting from the firm’s total profits from the profits attributable to tangible assets. The profits from tangible assets are calculated by applying an industry average return rate to the actual amount of the firm’s tangible assets.258

Example: IA Income-Based Valuation\textsuperscript{259}

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of the firm’s tangible assets</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>Average rate of return in the industry</td>
<td>10%</td>
</tr>
<tr>
<td>Earnings attributable to tangible assets</td>
<td>$100,000</td>
</tr>
<tr>
<td>Total earnings of the firm</td>
<td>$700,000</td>
</tr>
<tr>
<td>Less: earnings attributable to tangible assets</td>
<td>(100,000)</td>
</tr>
<tr>
<td>Earnings attributable to IP</td>
<td>$600,000</td>
</tr>
<tr>
<td>Capitalization rate reflecting business risk</td>
<td>15%</td>
</tr>
<tr>
<td>Value of IP</td>
<td>$4,000,000</td>
</tr>
</tbody>
</table>

There are some flaws to this model. It takes no notice to the demise of any IP (patent expiration, etc.), and it assumes that the IP pool will be replenished at the same rate it is lost.\textsuperscript{260}

**IA Management**

So now you’ve set up an IA department with the necessary tools. You understand the legal issues of IPRs. You know how to value IAs. The next step is to develop IA management strategies.


A major way for profiting from IP is licensing. Licensing is an allocation of rights to a product or property among parties. It is helpful to think of it as somewhat analogous to a rental in real estate. Licensing can take place at any place of the value chain of media, from creators to producers to packagers, re-transmitters, distributors, retailers, and end users.

The Flow of Rights and License Fees

The above chart shows the flow of rights and license fees. The rights flow from the creators to the producers to the packagers to the distributors to the retailers to the retransmitters. The license fees flow in the opposite direction from the retransmitters to the creators.
Licensing can be profitable. In 2005, IBM earned $1.5 billion in licensing revenues on its 25,000 patents.\textsuperscript{261} Columbia University earned hundreds of millions in 2000 from licensing, as previously mentioned.

There are three main types of licenses: exclusive, partial, and compulsory. Some licenses are given ("carrot licenses.")\textsuperscript{263}. Some are taken involuntarily ("stick licenses,") usually as a result of as a settlement of a lawsuit, and Some are given others are given involuntarily as part of a commercial deal.

Licensees can be found by searching for backwards citations using the patent reports mentioned in . Most patents are not used directly by their inventors.

\textit{III.2.B. IP License Intermediaries}

There are three types of license intermediaries: IP brokers, IP consolidators, and venture financiers. IP brokers, who market and arrange IA sales between firms with unwanted patents or inventors, and firms who can use these patents typically

\textsuperscript{261} “How to Create Value on a Repeatable Basis,” \textit{Managing Intellectual Property}, (March 2006).
receive 10-30% of the transaction price for sales. IP consolidators purchase IP from multiple parties, assembling “packages” of multiple IAs that can be used to start a new business or product. Some of the leading IP consolidators include the IP division of several large law firm. Venture financiers act as lead investors, with patents acquired as part of a deal package for outside inventors.  

IAs may also be licensed through auctions to all comers. Literary agents hold auctions for publication rights of especially promising manuscripts among publishers. Super-agent Scott Meredith started this practice in 1966 as a vehicle to simultaneously submit manuscripts to multiple book publishers. Similarly, the film rights of a book or script may be actioned off. In 2003, Sony Pictures paid $6 million for the rights to Dan Brown’s “The Da Vinci Code.” The movie made over $750 million worldwide. In 2007, DreamWorks acquired the rights to the film adaptation of “The Lovely Bones,” surpassing bids by Sony, Universal, and Warner Bros. It should be noted that in these auctions, the highest bidder may not necessarily win the manuscript.

**III.2.C. Strategic Licensing**

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Strategic licensing by a firm can part of a wider strategy to shape the market. A firm can use licensing can be used to deter the entrance of strong competitors, or to select the preferred competitors for the time after the patent protection expires, by giving them a head start through a license. For example, pharmaceutical firms are often reluctant to license firms considered tough rivals, and prefer licensing friendlier firms with whom they collaborate on other matters.\textsuperscript{269} If a firm issues an exclusive license, excluding competitors, it may receive more in license fees upfront. But this advantage often does not last long as excluded competitors come up with a similar or better technology or idea. An exclusive license therefore often is not the most profitable over the long term. With a non-exclusive license, a firm’s competitors become its technology followers. Thus, licensing can be used to create industry standards. This shifts the competitive advantage from exclusivity to cost.\textsuperscript{270}

For example, Matsushita licensed to other companies the VHS system used in videocassettes, and it which became industry standard. In contrast, the rival Sony Betamax videorecorder was hardly licensed, and was a failure.


\textsuperscript{270} “How to Create Value on a Repeatable Basis.” \textit{Managing Intellectual Property}, (March 2006).
Providing licenses to patents also gives the licensor an edge to develop complementary products. But it also carries risks. Core-technology licensing can undermine competitive advantages. Joint-ventures and licensing may be perceived as collusion and raise antitrust concerns.

Cross-licensing has become frequent with cross licensing, entire fields are often cross-licensed by companies rather than single patents. This reduces transaction costs. If the patent portfolios of the firms are not equal in value, some balancing payments even out the score. Firms create a “Proud List” of its strongest patents for a valuation. Cross-licensing negotiations are affected by the probability that firms will need to work together again in the future, and the firms will therefore engage in cooperative discussion.

Cross-licensing is often necessary to get a new technology moving. The early development of the radio before World War I required the application of many earlier inventions. Edwin Howard Armstrong a Columbia engineering professor, pioneer of radio, and inventor of FM radio, said that “It was absolutely impossible to manufacture any kind of workable apparatus without using practically of the inventions…” At first, radio development was deadlocked. Only under massive pressure by the US Navy did three major companies (AT&T, Westinghouse and

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American Marconi) join and form the Radio Corporation of America, in 1919 which acquired over 2000 radio-related patents. This provided the basis for cross-licensing with still other firms.\textsuperscript{245}

Payments from IA licensing are called “royalties.” Royalties can be paid in two ways: (1) in lump sum, called a “paid up” license and (2) based on sales or other measures of the licensed products, called a “running royalty.”\textsuperscript{273} The base of the running license is either a percentage of gross revenues (sales), percentage of profit, or per unit. “Profits” are often difficult to define and measure.

Sales reviews are easier to track, but are also not easy to define and measure. Counting units sold, on the other hand, may not differentiate between different products grades.

Royalty rates for tech licenses depend on the state of development of technology. For fully commercialized technology, rates are often a 50% profit share. For less developed technology, the licensor will receive less (e.g. 25%) profit share.\textsuperscript{274}

Thus, application software can have royalties of up to 25% of profits. Firmware (sold with hardware) have low royalties, $.50 - $1.00 per firmware copy.\textsuperscript{275}

For royalties based on sales revenues, typical rates for patent licensing range from 1% - 5% of the gross sales related to the patents, typically near 5%. For important technologies, rates are 3-5% of gross sales. In patent litigation, court-ordered infringement payments are usually in this range.

For computer hardware, typical royalty rates range from 1-5%. In-licensing rates range from 0-2% while out-licensing rates range from 2-5%.

**III.2.D. Music Licensing**

The ownership of music copyrights is heavily concentrated. 65% of music copyrights are owned by 4-5 music publishers. In 2004, EMI owned 19% -- the largest portion of all the publishers, followed by Warner Chappell, Universal, Sony and BMG. Only 35% of music copyrights were owned by others – mostly self-publishers.

These copyright owners typically pay a royalty percentage to performing artists. A typical royalty rate ranges from 7 to 12 percent of the published price to dealers (PPD).

Royalty rates to new artists are usually lower than royalties given to established artists. This is one reason record labels continually recruit new acts: the label gets a greater share of revenue.

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Typically, music licenses are valued at five to eight times (or sometimes even twelve to thirteen or more times) the revenues. The revenues are the sum of the annual averages of earnings from musical performances, publisher’s share of mechanical (i.e., recording) earnings, and foreign income.

In 2007, digital music downloads overtook CD sales as the primary mode of music distribution by sales volume in the US. Typically, music download services pay $.70-.75 for $.99 downloads to content owners. In 2009, the largest music download service, iTunes, switched from a “one size fits all” pricing strategy – wherein all songs were priced $.99 – to a three-tiered strategy with songs priced at $.69, $.99, and $1.29. iTunes downloads songs priced at $.99 result in $.70 of revenue for owners; A, $1.29 download price generates in about $.90 of revenue.

In selling CD albums or singles, the record label collects payments on wholesale sales. A record labels get paid whenever a CD is shipped to Wal-Mart or Best Buy (the two largest retailers of CDs). If the CD does not sell, the retailer absorbs the loss. But in online distribution, the record labels earn only on tracks and records actually sold to users i.e., its revenues are based on retail sales, typically a smaller

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figure than wholesale sales. For films, a music license must be obtained to use an artist’s music in the film. A “Synchronization License” is a license to use music in a film. A “Mechanical license” is when the movie company wants to include the music on a soundtrack album; the company must pay royalties to the artists to use their music on a soundtrack.282

III.2.D.(1) Music Licensing By Performing Rights Organizations

Large media companies have law departments that monitor copyright violations and file legal complaints accordingly, but small copyright holders in the music field must resort to joint collection agencies known as performing rights organizations (PROs). Once a song is registered with a PRO, it is available to all users who pay for a “blanket license” for all PRO-registered music.283

PROs were first established in France in 1851. They license and collect royalties for the public performances of members’ copyrighted works. Members include composers and authors, but not artists or record companies. PROs grant licenses to all types of venues and broadcasters, including TV and radio stations, networks, bars, etc. Major PROs in the U.S. are the American Society of Composers, Publishers (ASCAP); SESAC, a nonprofit membership association of composers, lyricists and music publishers with over 80,000 members; and Broadcast Music,  

282 http://www.wallacecollins.com/5.html.  
Inc. (BMI), which is owned by; the Harry Fox Agency, a licensing clearinghouse (the largest in the US) established by the National Music Publishers’ Association in 1927; and Sound Exchange, a non-profit, Library of Congress-appointed performance rights organization that collects royalties from digital broadcasting media, like Cable TV music channels and satellite radio. The price of and rights conferred by music licensing differs among distribution mediums. Music labels set different licensing rates for one-time transmissions of content (as in radio broadcasting) and distribution that allows consumers to permanently own copies of content (as in MP3 downloads). The industry uses a variety of legal and technological mechanisms for protecting its content from copyright infringement, piracy, and other unauthorized uses or delivery.

PROs calculate songwriters’ revenues from royalties based on the type of media, size of anticipated listenership, popularity of the song, and other considerations. Songwriters are paid 12 cents each time a popular song is played on the radio by one of the stations in the top quartile. Songwriters receive 6 cents each time a song

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is played on smaller stations.\textsuperscript{286} For classical music, composers earn 32 cents per radio performance for stations in the top quartile and 1 cent for all other stations.\textsuperscript{287} ASCAP gives radio stations a blanket license for all of the music of its members. The fee for such a blanket license is about 1.6\% of the radio station’s net revenues. Alternatively, stations may purchase a “per-program” radio license, must keep track of all music used, and pay periodically for those songs used.\textsuperscript{289} To determine the usage by radio and live venues of licenses, the PRO uses a variety of techniques, including radio station logs, surveys, and spot checks at venues such as bars. The PRO distributes the license fees it collects less administrative costs of about 20\%. ASCAP determines performance credits based on the number of uses, the type of use, and the estimated audience. There are various formulas for the distribution of revenues. For example, for a musical, 5/12 might go to the composer, 3/12 might go to the author, and 4/12 might go to the publisher.

PROs use different methods to calculate performance royalties. ASCAP gives different weights to different performance types. For example, a song that is featured on TV or on the radio is weighted more than background music in a radio

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\end{thebibliography
commercial. The time of day a song is played is a factor. The total number of credits of a song is multiplied by the “credit value,” which equals the total credits for all writers and publishers divided by the total collected money for that quarter. Royalties are paid out quarterly.⁶

To calculate royalties Sound eExchange, a PRO, uses electronic play logs are used from cable and satellite subscription services, webcasters, and satellite radio stations. Royalties are paid out directly to artists and copyright owners.

There are various ways in which PROs distribute music royalties in the U.S. BMI, uses two systems to allocate music royalty bonuses called the Hit Song Bonus and the Standards Bonus.

Works that are eligible for the Hit Song Bonus must have been performed more than 95,000 times during a quarter. Bonuses are allocated proportionally from the pool of available funds. Each eligible hit song is given a bonus proportional to the number of rotations such as radio play of the song compared to other hit songs.

As of 2004, in the U.S., BMI has four bonus levels for music royalties Super (S) Bonus Payment Rates; Upper Level (U); Mid-Level (M); and Entry-Level (E). The Super (S) Bonus Payment Rates level represents the highest cumulative history of a song. The song’s current quarter’s performances together constitute

approximately 10% of the radio feature performances of all BMI works. The Upper-level (U) bonus is four times the base, and its cumulative history constitutes 15% of radio performances. The Mid-level (M) bonus is two times the base and is the next lower 25% layer. The Entry-level (E) is 1.5 times the base, and represents all other works with a cumulative history of 25,000 or more performances.³

The second bonus classification is the Standards Bonus. For a song to qualify for the Standards Bonus, it must have been performed on commercial radio at least 2.5 million times since its release and is performed at least 15,000 times in a quarter. Songs are divided proportionally according to the actual number of commercial radio performances and its performance in the quarter. Thus, the higher the combination of historical and current plays, the higher the bonus royalties for the quarter.²⁹⁰

Concert royalties are typically calculated using set lists (listing songs played), which are typically provided by concert promoters and artists. Restaurants and bars pay a flat rate based on local radio stations; they are not surveyed.²⁹¹


Surprisingly, in the US no radio-play royalties are paid to the performers or to the labels. Royalties are only given to composers, lyricists, and publishers. In contrast, the rest of the world compensates these performers for radio play. Due to lack of reciprocity by the United States, American artists are not therefore compensated for radio play abroad either. But it must be understood that music labels are not paid, either, by radio stations. Being played is considered a form of promotion for the song. In fact, music companies have often paid the radio station for the exposure ("payola"), which is illegal under US law.

**III.2.D.(2) Licensing for Online Distribution**

Licensing in the internet distribution of content, such as webcasting, are in flux. Content owners often license feature films and audio content through unique deals with licensing agencies wherein distributors share a percentage of their profits.\(^{292}\)

Licenses for online content distribution vary between types of media. Online feature film download services typically pay about 50 to 60% of revenue to content owners. This percentage is slightly reduced for subscription services. With audio book content, some publishers have exclusive three to five year contracts with the website Audible.com now owned by Amazon.com. Audible.com also has In the U.S., performance rights over internet radio stations are divided into three

\(^{292}\) Munster, Gene, Olson, Michael J., “Online Content Distribution: Are We There Yet?” Piper Jaffray, Apr. 2005.
categories. “Tier one” digital broadcasters are interactive subscription services, and they receive the most regulation. The law requires these services to negotiate with copyright owners for licenses. The “Tier two” digital broadcasters are non-interactive subscription services, and they need not licenses each song, but such broadcasters may be subject to other statutory licenses. “Tier three” broadcasters are exempted from digital performance rights, and pay royalty through statutory licenses.293

This three-tiered system resulted from a recommendation by a Copyright Arbitration Royalty Panel (CARP). The CARP set its rates at $.0014 per performance and per listener for Internet-only transmitters, $.0007, and half as much, per performance for webcaster who rebroadcast terrestrial radio programs. This was based on a settlement reached between Yahoo!, then the largest webcaster, and the music industry. However, smaller webcasters protested the rates, and, as a result of the political pressure, the Librarian of Congress and Congress intervened and lowered rates to $.0007 per song per listener and $.0002 for non-commercial programming.

Thus, so, if a station has on average 2,000 listeners and plays 15 songs per hour, then the royalty payment is $.0105 per listener per hour (15 x $.0007), or $21 for

2,000 listeners. This translates into $184,086 per year, which all-web or simulcast stations cannot afford.\(^{294}\)

Free internet radio was harshly challenged in 2007 by new federal copyright standards. In 2004, Congress passed the Copyright Royalty and Distribution Reform Act, which replaced the CARP system with the Copyright Royalty Board (CRB), a federally-mandated three-member adjudication panel.\(^{295}\) The CRB issued a decision in 2007 which would have raised all commercial webcasting royalty rates to $.0019 by 2010.\(^{296}\) This would nearly triple the dollar figures above to half a million. Using typical listenership statistics, it was estimated that this would raise licensing payments to approximately 100% of revenue for the average internet radio station).\(^{297}\) Following a public outcry led by Pandora, a popular webcasting site, SoundExchange reached an agreement with webcasters in 2009 for a new revenue sharing system and lower per-stream costs to replace the CRB-mandated plan.\(^{298}\)

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This was particularly a problem because as in broadcast radio, web radio has a mutual-benefits relationship with the record industry. Webcasting offers free promotion for songs and may generate great sales. On the other hand, the value of this benefit is for the music industry to determine for itself, and the imposition of mandated payment rate by a government agency is a political response to deal with perceived excessive and

**III.2.E. Licensing of Written Material**

In book contracts and royalties, acquisition editors sign authors to book contracts. Subsidy publishers—in other words, “vanity press”—like iUniverse and Xlibris have their own publishing contracts.

A contract gives the publisher the rights to publish books, usually worldwide, and may include rights to all derivative works as well, such as TV shows, toys, t-shirts, etc. A contract typically covers the grant of rights, copyright, publication, royalties, advances, foreign sales, deep discounts and book clubs, sale of rights, payments, and reserve against returns.  

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Book royalties to authors range from five to fifteen percent of gross sales revenues, often varying greatly. But, publishers have moved the maximum to fifteen percent of the publisher’s net, which is about half of fifteen percent of the gross sales revenues.\(^8\) Authors typically receive more for hardcover books and less for book royalties are lower for paperbacks and books of the romance genre and, romances whereas they are higher for trade hardcover books to compare the prose. Variable royalty rates depend on unit sales, and the contract will specify also specify which books count towards sales.\(^{14}\) Publishers may even own the rights to the pen name under which a romance book is published, and hire a changing cast of writers Advances against royalties may be split into installments, which publishers pay at certain stages of the contract’s requirements.\(^{15}\) Book advances typically count towards royalties. In other words, a book must sell enough to earn back an advance. Cross-accounting advances are payments from one title that count against


debits from other book deals. This means that the royalties from the unit sales are less than the advance.

For foreign sales, publishers usually assign different (mostly lower) royalty rates. Since a publisher’s net on foreign sales is easy to manipulate, royalties should be based on gross sales. Deep discount and book clubs may also lower royalties for sales by discount outlets.16

When publishers license internationally, the royalty schedule is typically 50/50 with the author on net receipts. In other cases, the sale of foreign or translation rights can be sold for a lump sum, often as low as a few hundred dollars.

The payment schedule by publishers to authors operates on a quarterly or semiannual. There is a lag between actual sales and royalty payments.17

When a book is out of print, i.e. the publisher isn’t selling it anymore, the rights may return to the author by contract. But electronic print-on-demand permits publishers to now claim that a book is never out of print, enabling them to

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permanently maintain the rights to it. This leads authors to seek contracts that specify out-of-print tests besides availability, such as minimum sales.\textsuperscript{18}

A the literary option valuation and purchase agreement typically means that a producer, or studio, in return for a payment. (normally 10\% of the literary property’s later purchase price) gets the exclusive right to purchase by a specified time. The work can be purchased by anyone.\textsuperscript{19}

An option is the exclusive right to purchase property at a future date. The determinants of an option fee are the demand for literary property, the relationship between the parties, the duration of the option, the type of project (movie, television, etc.), the purchaser’s resources, and the seller’s eagerness. An option period can range from three months to two years, but is typically 12-18 months.\textsuperscript{20}

The option fee will typically go toward the overall purchase price later, if the option is exercised. There may be a “set-up bonus.” -- an additional fee when the buyer makes a production deal with a studio, TV network, etc. 21

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The purchase price is freely negotiated, but agreement with the writers union (WGA) sets the minimum purchase price for an original screenplays at $30,000 to $70,000, depending on the production budget. The WGA agreement, however, does not cover books, articles, or plays or the basis for a film. The copyright holder may ask that the purchase price by a percentage of the production budget, and may also ask for a percentage of the net profit of production (typically five percent).

The copyright owners may try to keep certain rights in the options agreement, such as the publication rights, If the purchaser of the work does not use it for production after a given period of time, it may return (“revert”) to the author’s control, if so agreed, so that she can solicit another option deal. The author has creative control over the use of her work, but such approval rights usually go only to well-established writers.

**Royalties to Producers for Video and DVD Sales**

To calculate “gross” revenues for DVD sales, the studios use a special royalty system. The distributors (the studios’ distribution arms) pay the producers (typically an independent entity) a flat twenty percent of the DVD wholesale price (regardless of how many DVDs videos are returned). This payment is the “gross” revenue of the producer for calculating payments to the artists or other participants,

This can leave most profits and revenues with the distributor (which can be the same as the producer).20

An example of such an outcome is video sales for the film *Gone in 60 Seconds* resulted in such a scenario. Buena Vista Home Entertainment International (BVHEI) the international distribution arm of Disney, earned 198 million dollars from sales and rentals of videos and DVDs of this film. Buena Vista paid another Disney subsidiary, Walt Disney Pictures, a 20% royalty, which was $39.6 million dollars.21 This was considered the video’s gross rentals. $12.6 million and $7 million were deducted for the video-distribution fee and for expenses, respectively. This left $18.4 million credited to the film, which were divided among participants for profit distribution.22 The actor Nicholas Cage received, by his contract, ten percent of the video gross, i.e., $3.96 million. If the actual gross receipts of $198 million had been used to calculate his share, he would have been due $19.8 million instead of $3.9 million.

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Film royalties to performers and participants can have two components: either flat or contingent. The flat royalties are governed by a union contract as a floor; above it they are governed by negotiation and contracts.  

Contingent royalties come in “gross” and “net” varieties. In “gross” participation, the recipients are entitled to a share of the total revenues received by the studio in specified markets.

“Dollar one” participants are most privileged, entitled to a share of all the revenue received by the studio’s distribution arm right after trade dues. In other words, they get some payment even if the film loses money.

For the film Saving Private Ryan, the actor Tom Hanks and director Steven Spielberg each received 16.75% of the revenues from the first dollar received (dollar one). This formula got them each $30 million from the theatrical distribution alone.

But in most other cases, gross participants are entitled to a share of the film’s revenues only after the film has earned a specified amount or other criteria are met.

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“Net” participants are entitled to a share of the profit, only after numerous deductions from the “gross.”\(^{29}\)

**III.2.F.(5) “Residual” Royalty Payments**

A problem that emerges regularly is whether the creator who sells the rights to his creation has given the rights to future forms of distribution. In the 1990s, Tasini and fellow freelance journalists, sued the New York Times for copyright infringement after it republished print-licensed articles in digital form. In 1997, the US Supreme Court agreed and ruled that the publishers must explicitly purchase electronic rights from an author before reproducing the material in an electronic format. A publisher cannot simply “repurpose” the original material into other forms of media without permission. The case sent a shockwave through the industry, and from that time on contracts included an “all-rights” clause.

Similarly, the licensing of TV residuals have become the source of controversy. A “residual” is a sum paid to actors and writers every time a commercial an episode airs, or a copy is sold.

In 1992, the actors’ union (SAG) negotiated a contract, which established a residuals compensation of twelve percent of a minimum of 761 dollars for the first

rerun of a program, and one percent of the minimum for the thirteenth rerun and beyond.\textsuperscript{31} Subsequently, in 2006, the SAG succeeded in raising the residual to seventeen percent for the first rerun and to 1.5 percent for the thirteenth and subsequent reruns.

When the contract expired in 2008, a lengthy dispute ensued.\textsuperscript{305}

Disagreements over residuals compensation also resulted in the prolonged and costly Writers’ strike in 2007-2008.

\textit{III.2.F.6 License by Producers of Wholesale Distributors (Networks and Exhibitors)}

\textit{III.2.F. Licensing of Films and Video}

A film or show can be sold to a distributor in terms of either language rights (foreign), geographical rights (i.e. territory), media rights (PPV, VOD, TV, or in-flight movies), or format rights (for reality shows). A license should be as specific and narrow as possible to preserve the asset in order to license same product to other licensees.\textsuperscript{34}

\textsuperscript{31} McNary, Dave. “SAG’s Keeping Cable on the Table,” Daily Variety, March 16, 2006 p.1


Films are licensed to programming wholesalers such as HBO, Showtime, and the Disney Channel. Each of these programming wholesalers buys licenses for more than three hundred titles a year. These channels are willing to spend hundreds of millions of dollars to get a slate of hit films, usually licensed for three to five years. Licensing films to programming wholesalers provides studios and producers with a solid base of financing. The major Hollywood studios earned 1.35 billion dollars from licensing films to pay television channels in Europe’s top five markets in 2003.35

**III.2.G. Licensing of TV Programming**

Production studios and networks can both license programming. Most commonly and profitably, production studios directly license their products to networks. In 2004 season, NBC paid Warner Brothers TV and Bright/Kauffman Productions a licensing fee of ten million dollars of licensing fees per episode during the last season of “Friends”. During that same year, NBC paid Paramount Pictures and Grub Street Productions a licensing fee of 5.2 million dollars of licensing fees dollars per episode for two showings of “Frasier.”36 In 2006, NBC paid Warner

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Brothers two million dollars for “Studio 60,” which was about one-third higher than the program licensing fee for a typical network drama (1.5 million dollars) in 2006, which was about 1.5 million dollars.

Additionally, networks as producers may license – or “syndicate” – their program licenses to non-affiliated broadcasters. In 2010, NBC sold exclusive syndication rights to its hit sitcom, *Modern Family*, to the USA channel for a reported $1.4 million per episode and *Glee* to Oxygen for $500 thousand. Sony Pictures, which owns, over 350 television series, (“Fantasy Island,” “Starsky and Hutch,” “Charlie’s Angels,” “Maude,” “All in the Family,” “Designing Women,” etc). Sony Pictures made over two thirds of its money in the 1990s from licensing such programs to television stations throughout the world.

The standard United States network licensing fee for regular television shows is about one to two million dollars per episode, with one re-run. The fee is about seven to eight hundred thousand dollars per episode for reality shows. Shows that are exclusive and unique, such as award shows, have high licensing fees. For example, networks pay a fee of between 5.5 and 7.5 million dollars annually for the Emmy Awards. CBS pays twenty-five million dollars annually for five-year

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exclusive rights to the Grammy Awards. ABC has a seven-year contract for the
Oscars for a total of 350 million dollars (fifty million dollars per year).\textsuperscript{41}

\textbf{III.2.G.(1) Licensing by Cable TV Channels of Retailers: Cable TV Operators (MSOs)}

Cable operators generally pay a licensing fee to most basic cable program
networks. Pay-cable operators share Pay-TV revenues, typically half and half with
the cable (known as multiple system operators (MSOs). Some program networks
may even pay an up-front fee to the MSO in order to be initially carried. These
numbers add up. A typical cable system might pay $s from ten to twelve dollars per
subscriber per month for basic content. Most other non-subscription channels get
paid a licensing fee that varies from a few cents per subscriber per month to over
$2. The following chart shows Programming Networks and License Fees in 2004.\textsuperscript{42}

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\item \textsuperscript{41} Albinia, Paige. “The Emmy goes…nowhere.” \textit{Broadcasting & Cable.} New York:
Nov 18, 2002. Vol.132, Iss. 47
\item \textsuperscript{42} Broadcasting & Cable 2006, Crain Communications 2006, Electronic Media 2002, Multichannel News 2006,
Variety 2005/06
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<td>CNN</td>
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<td>Disney Channel</td>
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<td>ESPNews</td>
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<td>Fox News</td>
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<td>Lifetime</td>
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On average, The Big Ten Network was paid $1.00 per subscriber per month as a license fee; the CBS network paid $0.50 per subscriber per month, and so on.

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Not all retail distributors pay the same amount for licensing, the same channels.

For television licensing fees, satellite broadcast companies such as DirecTV and EchoStar pay ten percent more in licensing fees than cable providers to networks to
broadcast their shows to broadcast network shows. In 2004, this amounted to a total annual cost of up to an extra four billion dollars for direct satellite broadcasting providers.\textsuperscript{47}

TV shows are often licensed for syndication at major TV trade fairs such as that of the North American Association of TV Program Executives (NATPE) and the MIPCOM in Cannes, France. NATPE and MIPCOM are the primary marketplaces for buying and selling syndication licenses.\textsuperscript{48}

**III.2.G.(2) Licensing by Syndicators to Retailers**

Two FCC rulings have legally advantaged syndicators over TV networks: the Prime Time Access Rule (PTAR) and the Financial Interest and Syndication Rule (“Fin-syn”). PTAR, a The Prime Time Access Rule was an FCC regulation established in 1971 decision, that restricted network stations’ Primetime programming hours to to three hours of prime-time network programming from the hours of 8-11 P.M. This regulation was designed as an incentive for local shows, although it was largely ineffective in getting more local programming. Instead, local stations showed picked cheap first-ran syndicated shows – mostly game


shows — in non-prime slots to air. The FCC rescinded PTAR in 1995, but similar industry practices continued.\textsuperscript{53}

The “Fin-Syn” regulation affected “off-network syndication.” It ruled that television networks could not produce their own primetime entertainment shows, could only air a television show twice, and could not actually own a television show. Thus, syndication primarily became the business of producers, not the main networks. Subsequent syndication therefore remained with the producers, not with the networks.

“First Run” Syndications are programs directly sold to non-“major network” channels is when a program is first broadcasted as a syndicated show, not on network television. “Programming strips,” shows slotted at the same time daily (like \textit{Entertainment Tonight}), are often broadcasted in “first run” syndication, especially game shows and cartoons. Shows can be “first run” syndicated to cable networks when they fail to garner an audience on the major networks. Sometimes, “First Run” syndication proves more successful than broadcasting on network television. For example, “\textit{Baywatch}” tanked during its first season on NBC in 1989, but was extremely popular as a hit as a “First Run” syndicated show.\textsuperscript{54}


The process of developing a “First Run” syndicated show usually begins almost two years before the scheduled airing of the show. The majority of the first year is spent on acquiring rights, negotiations, and refining the show’s concept. Pilots are produced for business pitches intended to be made in the fall to stations and channels. The show is usually officially unveiled at NATPE in January, although deals are typically made beforehand. Producers continue to market the show until the spring, and, in the fall, syndicators decide whether to cancel or proceed with the show. If approved to proceed, production then begins.  

Examples of cable off-network syndication include The Sopranos, for which A&E paid HBO $2.5 million per episode in 2006; CSI: New York, for which Spike TV paid CBS $1.9 million per episode also in 2006; and House, for which NBC paid Fox $1.4 million per episode in 2008 to broadcast the show on its cable subsidiaries, USA and Bravo. Non-NBC networks keen broadcasting the entire series of “Friends”. Warner Brothers, the production company for “Friends,”

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made over four million dollars per episode from syndicating the series in revenues from licensing the broadcasting rights to the series.60

In “Barter Syndication,” a program is sold to other programmers with all or some of the commercial slots already sold to advertisers by the syndicators.61 For example, in cash-barter syndication, a station might pay $200,000 a for the syndication rights to “Friends,” and will sacrifices three thirty-second commercial slots to the syndicator. The syndicator typically must sell the show in over half of the US, at or near the mostly with the target price, to break even in “barter syndication.”63

Owing to barter syndication’s profitability, all major syndicators also have a subsidiary barter advertising company. A barter advertising sales company sells


advertising slots for syndicators. For example, Camelot Entertainment Sales is the barter advertising arm of KingWorld.\(^{65}\)

**III.2.G.(3) Compulsory Licenses for Re-Transmission**

Some countries have compulsory licenses created by law. In the U.S., the Copyright Royalty Tribunal distributes the royalty fees deposited with the Copyright Office by cable operators and satellite carriers to the proper copyright owners.\(^{66}\) However, if the parties are unable to agree on the license fee, a special tribunal has the authority to set the license’s rates. The Tribunal uses the same process for jukeboxes and satellite retransmission of broadcast signals to satellite home dish owners.\(^{67}\)

The rather complex formula for ascertaining the licensing fee is based on the “gross program receipts” from the number of “distant signal equivalents” on the cable system. Twice a year, the cable operator files a statement of account about the system revenue and signal carriage as well as the royalty fee payment. Royalty rates are typically 89 percent of the gross receipts (“GR”) for non-network programming; 89 percent of the GR for the first distant signal equivalent; 56


\(^{67}\) http://www.cni.org/docs/infopols/US.Copyright.Royalty.Trib.html
percent of the GR for the second, third, and fourth distant signal equivalents; and 27 percent of the GR for each additional distant signal. If the GR paid by the subscribers is less than $146,001, then the GR equals:

Actual GR – (Actual GR - $146,000), but the GR cannot be reduced to less than $5,600. The royalty fee is therefore fifty percent.

If the GR paid by the subscribers is greater than $146,000 but less than $292,000, then the royalty fee is fifty percent of any GR up to $146,000 plus one percent of any GR in excess of $146,000 (but less than $292,000).

Royalty rates for cable systems within the top-50 television markets are calculated differently. For the first distant signal equivalent, the royalty rate is 60% of the GR for the first distant signal equivalent. For the second, third, and fourth distant signal equivalents, the royalty rate is 38% of the GR. The royalty rate is 18% of the GR for each additional distant signal equivalents. In the second Television market the royalty rate is 30% of the GR for the first distant signal equivalent; 19% of the GR for the second, third, and fourth distant signal equivalents; and 89% of the GR for each subsequent distant signal equivalents.

To regulate compulsory licensing for recordings, Congress established in the Copyright Act of 1976 that any person who records and distributes recordings of a
work must pay a statutory royalty rate on each record made and distributed. The rate for this in 2000 was 7.55% per composition for up to five minutes, or 1.45 cents per minute.

The Copyright Royalty Tribunal also determines the royalties payable to broadcasters, which is usually over 7.1 cents per phono record or 1.35 cents per minute of playing time for a radio station.

### III.2.1. Licensing Video Games

In game licensing, IP owners receive a percentage of the sales based on the number of titles and expected unit sales. They can also receive an advance and a guarantee regardless of sales success. The figure may be downwardly adjusted for increasing sales volume.

Licensing content from films for large titles (greater than 1 MM) will usually cost five to seven percent of sales, and twelve to fifteen percent for blockbuster titles (greater than 5 MM). Licenses can run between $1-5 MM and top at $20-30 MM.\(^79\)

From game producers’ perspectives, paying for licensing cuts into margins with variable costs; but, on the other hand, associating games with the emotional experience of films can boost sales. Movie companies and game developers can also engage in joint-development deals. This requires that game companies become

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involved in the earlier stages of the film’s development (as opposed to finished-product licensing). With sufficient sales volume, licensing and joint-development can offer higher operating margins.

Creating Tradable Securities From Intellectual Asset Income Streams:

Securitization:

Intellectual property assets are often illiquid. Traditional lenders do not consider intellectual property as collateral. Securitization allows the owner to keep 100% ownership of the assets being financed. It is not a sale, and no taxable event. An example of this is the “Bowie Bond” of the 1990s. The singers David Bowie, Elton John, Sting, and others have issued publicly traded bonds using future album revenues to back the debt issuance. David Bowie received $55 million, repaid by subsequent royalty payments. James Brown, similarly made $30 million through the Bowie Bonds. Rod Stewart and Michael Jackson were also involved. The securitization of IP includes books, films, sports teams, and games.

For securitization, banks/investors lend against a future stream of cash flows rather than collateral assets. This may include music royalties, projected movie revenues, and long term telecom traffic agreements.

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81 Thill, Brent, Menge, Reid, “Entertainment Software Industry Overview,” Prudential Equity Group, June 2005.
The securitization of IP converts erratic cash flows into an immediate lump sum payment by selling the asset to a holding company and securitizing the revenue. For securitization, the IP is valued and then sold. If licensing is chosen over selling IP, licensing revenue is taxed as ordinary income.\textsuperscript{83} Securitization offers several advantages\textsuperscript{84}, such as greater liquidity, diminished risk to the artist, and tax-advantages to the investor. For details, see the “Financing Media” Chapter.

**Sports Licensing**

Traditionally, major sport rights have been controlled by industry cartels (“leagues”) of companies (“teams,”) through 3 legal mechanisms:\textsuperscript{85}

- Control of access to private geographical area (i.e. stadium)
- Control of intellectual property
- Control of event partners (sponsors, TV networks)

The laws favorable to sports firms, and then the product is perishable which reduces piracy.

In sports licensing, there are four principal types of sports copyrights:\textsuperscript{86}:

\textsuperscript{84} Yago Amerlinck-Huerta. JP Morgan Intellectual Property Group.
• Media rights

• Sponsorship rights

• Official supplier rights

• Merchandising rights

Media rights are typically sold to networks, local television, and/or radio. Successful teams in large media markets command the best deals. Sports rights are differentiated by time, territory, medium, etc.

For the pricing of sports licenses, the economic elasticity of each market plays an essential role for the price of tickets, merchandising, and media licensing. For franchise licensing, licensing programs are administered by a branch of a League known as the Properties Division. The Properties Division approves licenses for products, polices the trademarks infringement, distributes licensing revenues among league franchises, and handles marketing and sponsorship efforts. The following are statistics from some properties divisions in 2000:

NFL: 275+ licensees; retail sales: $3 billion

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MLB: 400+ licensees, retail sales: $2.1 billion

NHL: 250+ licenses; retail sales: $1 billion

NBA: 150+ licensees;

For licenses by players, players’ unions administer such programs for their members, or a player’s personal business representatives do. For example, the NFL Players Association issues annually about 100 licensees, for is about $30 million. They may include the right to use the player’s name, likeness, voice, facsimile signature, photographs, and biographical information.  

IV. Challenges to Intellectual Assets

IV.1. Piracy Problems

The 18th century German Immanuel Kant once asked: “Why does unauthorized publishing, which strikes one even at first glance as unjust, still have an appearance of being rightful?” Digital technologies’ inception has not rendered Kant’s inquiry irrelevant; indeed, it has created unique and perhaps unprecedented problems for copyright holders and media distributors. In addition to reproduction and distribution costs, copyright owners now face new tools for unauthorized copying

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and distribution and thus new profit constraints. They have seen declining sales revenues through this digital-age piracy, and have sought to prevent such losses through new digital rights management (DRM) technologies and legal actions. Music, movies, television shows, software, and other media are pirated via streaming, peer-to-peer networks, and other means. In 2005, the music industry claimed that 37 percent – or 1.2 billion – of all CDs were purchased globally were pirated.\textsuperscript{91} The movie industry too saw a quick rise in piracy. In a 2003 study, 183 out of 312 popular movies were found on file-sharing networks.\textsuperscript{92} In France, 31 million films were downloaded each month in 2004 from non-commercial sites. At the time, nineteen percent of French internet users had downloaded films, but only four percent had paid for them. In 2010, the US Immigration and Customs Enforcement (ICE) shut down nine websites offering free downloads of \textit{Toy Story 3} and \textit{Iron Man 2} and drew a combined 6.7 million users per month.\textsuperscript{93}

The software industry claims over $50 billion in annual software piracy costs.\textsuperscript{332} A study released in 2009 by the Business Software Alliance (BSA) and the Interactive Data Corporation (IDC) found that piracy rates were highest in,  

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\textsuperscript{332} BSA and IDC. \textit{08 Piracy Study}. BSA and IDC, May 2009.
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Armenia, Georgia, Bangladesh, and Zimbabwe. It stood at 95% for Georgia.

Losses were largest in the US, China, Russia, India, and France (about $9.1, $6.7, $4.2, $2.8, and $2.8 billion respectively). The report estimated that “for every $1 of PC software sold in a country, there is another $3 to $4 of revenues for local IT service and distribution firms.” The industry claims that an additional jobs 400,000 could have been created by reducing piracy, and over 12 million could have been created.

However, bloggers and commentators disputed the report, citing 2008 US Government Accountability Office (GAO) report which cautioned that it is difficult, if not impossible, to quantify the economy-wide impacts” of software piracy, though it noted that economic losses due to piracy are “sizeable.”

As in patents, developing and emerging countries have disputed IP rights to copyrighted materials or patented technology. Developing countries complain that IP rights inhibit development.

Estimating losses from piracy is difficult and imprecise. Clearly, potential sales are lost because cheaply available, high-quality illegal copies that reduce the demand

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92 PriceWaterhouseCoopers
for legal ones. Losses also include legally sold copies as well, as the massive extent of piracy forced their prices down. But this means that prices would rise without piracy, even to lawful buyers. If price-sensitive consumers would switch to illegal copies while most price-insensitive consumers would not. Piracy thus makes demand for legal copies more price elastic.

**IV.1.A. File-Sharing of Unlicensed Music**

Music software enables peer-to-peer storage and location of MP3 files. It creates a chain of participating users who share their MP3 libraries. Even the earliest MP3-sharing networks, like Napster, had very little centralized infrastructure, and international legal action has forced such networks to become even less centralized.

The first major file-sharing website, Napster, was shut down in the courts by the music industry in 2001 after a suit by the major record labels. In 2005, the Supreme Court introduced a new standard by finding StreamCast and Grokster liable for inducing and encouraging copyright infringement.\(^{95}\) The U.S. Supreme Court ruled that unlicensed music file sharing violated copyright laws because it allowed for the making of unauthorized copies.\(^{96}\)

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Universities are a major source of copyright violations. The top 25 universities identified in movie piracy incidents according to the MPAA in 2007 were\(^97\)

1. Columbia University - 1,198

2. University of Pennsylvania - 934

3. Boston University - 891

4. University of California at Los Angeles - 889

The cost of piracy is significant. The MPAA reports that the major studios lost 6.1 billion dollars in 2005 due to such activities (2.4 billion dollars was lost to bootlegging, 1.4 billion dollars was lost to illegal copying, and 2.3 billion dollars was lost to internet piracy\(^99\)). But these MPAA numbers has been the subject of controversy. In 2010, the government accounting office asked the MPAA to reveal information about this report (which came from survey data). When the MPAA did not provide this information, the GAO wrote: "It is difficult based on the


\(^99\) [http://www.hollywoodreporter.com/hr/search/article_display.jsp?vnu_content_id=1002426602](http://www.hollywoodreporter.com/hr/search/article_display.jsp?vnu_content_id=1002426602)
information provided in the study to determine how the authors handled key assumptions.”

**Copying technology:**

Just about every new media technology, whether the phonograph, the camera, the radio or the computer brought about new issues in piracy. In 1938, patent attorney Chester Carlson made the first “electrophotographic” image. In 1947, Carlson licensed the technology to the Haloid company to develop the machine. By 1960, the Haloid machine was a huge success, and renamed itself Xerox.

Outside of the U.S., countries had different approaches to managing the new technology of photocopying. In France, there is a tax on all copying machines and revenues are paid to copyright owners. Similarly, there is a tax on blank tapes in Austria, and a tax on recording equipment in Germany. All of this leads to the establishment of Reproduction Rights Organizations to create a mechanism to pay participating publishers for copies. For example, the Copyright Clearance Center (CCC) was established in the United States in 1977. It manages the rights of over 1.75 million works and represents more than 10,000 publishers and hundreds of thousands of creators. By the year 2000, the CCC generated $50 million to give to copyright owners.

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The CCC has bilateral contracts with 20 counterpart organizations in other countries. It deals with about 2 million individual licensing transactions each year. The CCC collects $100 million in royalties per year. On average, the CCC grew about 15% per year over the last 5 years.\textsuperscript{100} The CCC is the largest licensor of rights for academic paper course packs in the U.S. through its Academic Permissions Service. This education service is provided through its Electronic Course Content Service (30% growth every year). The CCC is also the largest third-party licensor in the U.S. of electronic access to coursepack-types materials for educations in colleges.\textsuperscript{101}

Similar Reproduction Rights Organizations exist around the world:

- Cancopy (Canada)
- Union des Ecrivain Quebecois (Canada)
- Kopiosto (Finland)
- Centre Francais du Copyright (France)
- VG Wort (Germany)
- KOPIKEN (Kenya)

\textsuperscript{100} \url{http://www.copyright.com/News/PressRelease2004August3.asp}
\textsuperscript{101} \url{http://www.uspto.gov/web/offices/dcom/olia/teachcomments/copyrightcc.pdf}
Internet and Compression

The new technologies of Internet and compression also led to new copyright issues. The online distribution of music was changed when compression techniques increased the amount of music on the Internet. In the late 1980s, WAV and .AU files emerged. At this time, a 3 minute-song took hours to send as a WAV file. Once MPEG (Moving Picture Experts Group), the name of a family of standards used for coding audio and video data, emerged, the group created the MP3 (Moving Picture Experts) compression software. Upload and download times were drastically reduced through the audio format without sacrificing sound quality. This allowed users to compress and send high quality music files over the Internet more quickly.

MPEG Audio Layer 3 is a type of audio codec. Codec (short for compression /decompression) is software that compresses video or audio from down to a smaller size. The compression for an MP3 can go up to 12:1. The content can be

102 http://www.mp3.com/
broken up into pieces, and each piece is still playable. This means that MP3 files can be made to stream across the net real-time. AAC, which stands for “Advanced Audio Coding” is the latest MPEG standard on audio coding. It is more efficient than MP3, resulting in smaller file sizes, and better quality sound. Apple uses AAC format to protect copyright holders with DRM software (FairPlay DRM). Apple’s FairPlay DRM allows users to play their purchases on five computers using Apple’s iTunes software, and any playlist of purchased songs can be burned to CD seven times.  

Many artists support MP3 and put their whole album online for greater distribution. Listeners like it because it is free and relatively fast to obtain. Another option consumers have is pay-to-purchase sites such as emusic.com, although copyright owners often do not get paid through these kinds of sites. An artist could do better selling their music online than on conventional CD sales, because at $1 a track, with 30 cents in cost, this means 70 cents in profit. Artists are then offered 50% of that. 

With the MP3 technology came the portable digital music players. The first was the Diamond Multimedia Rio in 1998. It was a portable Walkman-like device that

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103 CNN.com, Your music, differing formats, August 18, 2004 Wednesday
could play back MP3 files. It had quality sound and was skip-free. Additionally, it could synchronize music from the PC’s hard drive.108

As more internet users downloaded media content, the question of who bears responsibility if a copyright is violated by a use of a website run by an ISP became a hotly contested issue. A content owner could try to make ISPs liable, but ISPs’ defense is that they are not “copyright police.” One example of this is the *Playboy vs. Frena* case in 1993, where an internet bulletin board had Playboy images posted. The court applied strict liability, and Frena, the owner of the bulletin board, was found responsible although he did not upload the images.338 Also, there was the *Rel. Tech. Ctr. vs. Netcom* case in 1995, in which contributory involvement was held to be necessary.109 In Europe, online liability led to the EU E-Commerce Directive in 1999, which said that providing facilities by an ISP that enable a message or transaction is not unfair use.

V. Protection Strategies

It is difficult for media companies to protect IAs against internet piracy is difficult. An effective IA protection strategy against the constantly changing challenges requires a wide array of measures. These strategies have included technological

108 http://www.smartcomputing.com/editorial/article
338 http://www.loundy.com/CASES/Playboy_v_Frena.html
countermeasures, enlisting government engaging in litigation, executing “counter-attacks” and shifting business strategies.

**V.1. Enlisting Government**

Firms seeking protection from piracy lobby for stronger laws, better enforcement, and diplomatic pressure on other governments. At one point, U.S. government representatives tried to restrict the doctrine of first sale internationally, even though it is legal in the U.S.

Congress enacted many laws to enforce IP rights domestically, or to sanction other countries that protected American IPs insufficiently. 440

Perhaps the most important law is the Digital Millennium Copyright Act (DMCA) of 199X. The DMCA prohibits circumventing the protection of technological measures such as encryption used by copyright owners to control access to their work. It also outlaws the manufacture, sale, distribution, or trafficking of the tools and technologies that make circumvention possible. 442

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ISPs are expected to remove material from users' web sites that violates copyright or face liability. The law also requires that webcasters pay licensing fees to record companies and prohibits individuals from knowingly trafficking in counterfeit or illicit labels.\textsuperscript{447}

The DMCA has been severely criticized as being over-protective and in the process claiming that it is jeopardizing fair use, competition, and innovation. For example, critics allege that the DMCA has been used to block aftermarket competition in laser printer toner cartridges, garage door openers, and computer maintenance services. Similarly, that Apple has used the DMCA to tie its iPhone and iPod devices to Apple's own software and services.\textsuperscript{449}

First-time violators of the DMCA can face up to five years in prison, subsequent offenders up to ten.\textsuperscript{451} This is far stricter than copyright statutes in other countries. In contrast, the French government once legalized unlimited “peer-to-peer” sharing of music and film files. The French plan, rushed though a half-empty Parliament, would have enabled internet subscribers to pay seven Euros for a monthly “global license” to download unlimited music for personal use through peer-to-peer


\textsuperscript{449} Electronic Frontier Foundation. Whitepaper: Unintended Consequences: Twelve Years under the DMCA. EFF: March 2010.

websites. The money raised through the “global license” would be shared between copyright holders, reimbursing musicians and record companies that receive nothing from illegal downloading. In 2006, one billion music tracks were downloaded in France but only 20 million were bought legitimately.\textsuperscript{453}

\textbf{V.2. Litigation}

Another strategy for media companies is to sue violators of its copyrights. This is done, in particular, by the music industry. The record industry uses the threat of civil penalties to deter illegal downloading, though the industry actually sues relatively few of the millions of downloaders or sharers. This strategy has not proven wholly successful. The Recording Industry Association of America (RIAA) has sent 1.8 million notifications of file-sharing violations to individual users as of 2010, and sued [ ] of them.\textsuperscript{454}

The RIAA documents illegal file usage by logging peer-to-peer users’ IP addresses.\textsuperscript{455} This information is obtained from ISPs and others. As interpreted in a 2003 case against Verizon, the DMCA compels ISPs, universities, and other networks to reveal the identities of those suspected of illicit file-swapping without court order.

In addition to filing lawsuits against individual users, The RIAA has also filed suit against file-sharing networks themselves, both in the US and abroad. Music companies won important cases against Napster in 2000 and against Grokster in 2005. The CEO of the largest music company UMG, Doug Morris, called MP3 players “repositories for stolen music” and brought legal claims against YouTube, MySpace, Yahoo, and others. Many cases against peer-to-peer networks have also been brought in non-US legal venues, often by local music companies. A Japanese court found the file-sharing company, MMO, guilty of copyright infringement and ordered it to pay fines of $350,000. There have also been lawsuits against the Taiwanese companies Kuro and EzPeer, injunctions against Weblisten, a Spanish company, and legal actions against Kazaa and related Australian services. A 2010 legal action against the founders and host server-owners of Sweden’s The Pirate Bay involved an unprecedented criminal complaint. The Swedish court found the four defendants guilty, sentencing each to a year in prison and a $4.2 million fine. The music companies have also sued telecommunications providers to block access to file-sharing sites in an effort to combat overseas piracy.

12/mf_morris?currentPage=all.
The RIAA also sent waves of “pre-lawsuit” settlement demands students demanding thousands of dollars in settlement payments to avoid a lawsuit. This moved universities to take some actions to prevent illegal downloading. By 2010, over 270 thousand such letters had been sent to students and 1.8 million to members of the general public. UCLA imposed a one-semester suspension for repeat piracy offenders, and Ohio University banned access to peer-to-peer networks

Not all in the music industry believe that such litigation – “suing one’s customers”\(^\text{464}\) -- is a good business practice. On the other hand, music label UMG has been a vocal supporter in enforcing copyright infringements.

**V.3. Counter-Attacks**

Record companies have also distributed decoy copies of songs on file-sharing networks with altered or no content. These “counter-attacks” are intended to frustrate users and encourage them to purchase legal copies. Users may spend several hours to download a file hoping to get a movie or songs, only to get a bogus or corrupted file. For some songs, more than 50% of all files were polluted on the KaZaA platform. (By one test, 76.8% of copies of the song “My Band,” and 68.9% of “Naughty Girl.”) Like a virus, the “bad file” spreads from user to user,
impeding download speeds and degrading user experience. There are service providers who provide such blocking, such as MediaDefender, find computers requesting files of song titles by their media company clients and interrupt their download. Such counter-attacks by media companies raised legal questions since they could also negatively affect innocents. A bill was introduced which would have insulated music firms who “attack” file shares electronically from liability for disabling or blocking P2P by altering or deleting programs at the media company’s decision

V.4. Technology Fixes

“Technology fixes” include a large array of technical anti-piracy measures designed to make unauthorized copying of copyrightable material difficult or impossible. Together, these measures are known as DRM (digital rights management.) An example is the “broadcast flag,” inserted into an audio-video file instructing devices not to redistribute files. Other techniques include:

- file access restrictions
- DRM technologies,
- encryption,

_Young gun, Financial Times 2006._
• watermarking,
• access control,
• marking and monitoring
• sniffer technologies,
• copying function alerts,
• non-copying embedded passwords,
• source identification (SID) codes,
• virus seeding,
• graphics that do not photocopy well,
• documents printed on colored paper,
• microdots for secret identification, and more.

The key to successful anti-piracy programs is to use a diverse mix of measures, and to vary protection measures from product to product and from release to release. For example, film distributors try to prevent DVDs released in the United States from being sold in other countries in which the movie had not yet been released by using regional encryptions on DVDs that are read by regionally-specific DVD
players.\textsuperscript{482} The SDMI has been on hiatus since 2001 due to “lack of consensus on proposed technologies.”\textsuperscript{396}

In another activity, the five major record companies jointly devised in 1998 a technology fix of “SDMI-compliant” (“Secure Digital Music Initiative) music players which outlines how manufacturers’ players should and should not read digital music files. These players were supposed to refuse to play songs that have been converted to MP3 without authorization, and limited copying to a few copies. For example, a DVD released in the United States (region 1) would not play on equipment sold in Japan (region 2).\textsuperscript{398}

Other software allows users to make a specified number of copies of purchased MP3 tracks and not more. For example, Apple allows 7 copies of a song to be burned in FairPlay DRM.\textsuperscript{395} DRM for CD gaming developed a technology called “Fade.” If “fade” detects that a game has been pirated (i.e. copied onto a hard drive), it initially allows users to play the game normally, but gradually disables game features over time.\textsuperscript{397} These technology strategies may not ultimately prove effective, because they tend to challenge hackers to break them for sport.

\textsuperscript{397} http://www.giantstepsmts.com/DRM%20Watch/tech.htm
Protection technologies can also become too cumbersome for consumers and reduce legitimate use.

Early online book media tried encryption. In 2000, the best-selling author Stephen King released the new book *Riding the Bullet* online in a protected format. Within days, the format was cracked.\textsuperscript{484} Apple’s iPad was the target of hackers in 2010.

Digital Rights Management (DRM) tries to control media access, and the sharing, saving, printing, and altering of content. It can be in the operative, the program software, or the hardware itself.\textsuperscript{386} DRM prevents also legal, fair-use copying. It can also be used for other negative purposes by governments, such as to block content that is politically undesirable.\textsuperscript{387} The main types of DRM are “containment,” which uses encryption to exclude unauthorized users, and “marking,” which uses watermarks or tags to inform devices a material is copy-protected.\textsuperscript{388}

DRM techniques include watermarking; fingerprinting; digital signatures; rights languages; and ID and metadata processes.\textsuperscript{389} For digital signatures, encrypted hash

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is added to content file. The verifier of the content then uses the hash software and signatory key.\footnote{“Digital Signatures.” Europe4DRM. 22 June 2005. <http://www.europe4drm.com/DRMexplained/ds.htm>}

Watermarking is when a pattern of bits is added to a file to identify the file’s copyright status. Digital watermarks are like embedding an electronic identification on CDs. ASCAP, BMI, and SESAC put watermarks on music to enable tracking of use. “Robust” watermark identifies that the CD is protected music that can only be played on devices compliant with the Secure Digital Music Initiative.

Also, watermarks cannot be used for small-sized files, such as logos and text. They can be tampered with.\footnote{“Watermarking.” Europe4DRM. 22 June 2005. <http://www.europe4drm.com/DRMexplained/watermarking.htm>}

In contrast, encryption uses an algorithm to scramble the content and requires a key to unlock or lock the content. There are two main types of encryption: symmetric and asymmetric. Symmetric encryption is like a physical key to a door, opening a “virtual door.” One example of symmetric encryption is Data Encryption Standard algorithm.\footnote{“Encryption Technologies.” Europe4DRM. 22 June 2005. <http://www.europe4drm.com/DRMexplained/encryption.htm>}

The problem is that the key needs to be changed periodically, this asymmetric encryption operates by using 2 keys, one to lock (public) and one to unlock (private). Some examples are the RSA (Rivest, Shamir, and Adelman) System. But requires direct communication and transfer of
information. If millions of users are involved, it is hard to contain this information. In contrast, asymmetric encryption requires much computing power. DRM often uses both symmetric and asymmetric encryption. For example, asymmetric encryption locks up the symmetric key, which controls access to content.

Philips CD burners add a digital serial number to every CD they copy, making it possible to trace the CD back to an individual machine. Sony Memory Stick Walkman uses the copy-protection chip MagicGate, which is embedded in players and recorders. It encrypts and authenticates. All content is transmitted and stored in encrypted format. Decryption uses a public-key system.

Other techniques use “acoustic-magnetic” security strips within the CD jewel case spine and holograms to authenticate the product.

Over-zealous DRM can backfire painfully. In 2004, Sony added the DRM to its music CDs to prevent copying and theft. When attempting to play the Sony music CDs on Windows PCs, a Sony rootkit software is being automatically installed on the PC without the permission of the user. A rootkit is a type of spyware that goes undetected in normal scans and is hidden in the computer operating system. This spyware then delivers information from the user’s computer to Sony without the knowledge of the user. If the hidden directory in which the rootkit was installed is found manually, it cannot be safely removed without computer crashes and loss of
memory. This made the software impossible to uninstall. What made it worse is that some hackers took advantage of the hidden aspect of the Sony software which created a vulnerability to certain attacks, and they installed malware on the computers and spread viruses etc.

Even if it was possible and safe for the computer to uninstall the Sony software, it was likely that this would be illegal under the DMCA law! A public outcry resulted from Sony’s methods of altering of its customers’ computers without their knowledge or consent. Sony had sold around 3 million of the CDs containing the software. Because of the bad publicity, Sony agreed to stop using this system and released software and security patches to uninstall it from infected computers.

As compensation, customers could choose between $7.50 cash payment and one free album download or three free album downloads.

**V.5. Business Responses**

The prevalence of these legal and technological strategies against illicit copying and file-sharing may obscure that the best response is by media companies through new business strategies. Seen that way, a company one can view video file sharing
as potentially enhancing its business rather than disrupting it, though users creating a new active distribution platform.

Possible new business models abound. Perhaps most obviously, content providers can lower the price. The incentives to piracy drop if the legitimate price of the content is lowered. For example, magazines and paperback book are rarely pirated. A response is that “one can’t compete with free,” i.e., that even a low price is too high. But many commercially-marketed goods and services disprove this: bottled water, pay-TV, and commercially-purchased music, in the presence of radio. Pay products win when they provide a value added.

Companies can also quicken the pace at which they release new versions of their products, staying a step ahead from mass piracy.⁴⁸⁷

Another approach is to link users with each other. Video games may come with online multi-player gaming features. Another strategy is to connect the online content with the physical product and human interaction.⁴⁹¹ such manuals and tech support. The goal is to make the product into a service, with users connected to content providers.

Companies can create additional incentives by offering access enhancements periodically. This improves the quality of service, a benefit which rarely exists for

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illegally pirated goods. Another approach is customization, which reduces mass copying.

Differentiating individuals from organizations through site licensing is another new strategy. It is easier to monitor such site’s license compliance and detect and go after organizations instead of individuals. This leads some companies to provide licenses mostly to organizations instead of individuals. These organizations will pay for valuable products and are in a position to comply with IP laws and license agreements. For example, most universities have site licenses that allow any user on their network to access online libraries.

Usage Fee Models

Fee payment models have emerged as a business strategy. One type is “pay-per-use.” In 2000, Stephen King became the first major author to sell a new and original work completely online. King’s Riding the Bullet was offered pay-per-use. It was not a success, perhaps because it was ahead of its time: few e-book readers existed.

Pay-per-use payment models exist for music, TV shows, films, books, newspapers, magazines, and games. An alternative approach is a subscription service like Rhapsody, Rdio, and Netflix. These are also advertising-based content services.

There are intermediate approaches based on the quality of the content. This has traditionally been the case for television, where some content was premium – paid and on-demand, other was based on a channel subscription, still other was on the basis of a subscription to a large bundle of channels, and still other was to be “free” and advertising-based.

“Versioning quality” pay models offer a free, lower-end product that encourages add-on purchases. Pandora allows users to listen to a certain number of hours of free, ad-supported music per month and charges users to listen to unlimited additional songs. Hulu’s HuluPlus service offers a library of previous seasons of certain shows or entire current seasons, high definition content, and content viewable on iPads, gaming devices, etc. for $9.99 per month.

*The Wall Street Journal* and *The Economist* offer free full-text searching of archives but charge a fee to download articles. Some print-media companies offer complementary products, such as Elsevier, which provides free tables of contents for each of its journals on the Web as well as a push service called Contents Alert.\(^{495}\) In the pay usage fee models, success depends on the producer’s ability to control post-sale copying.

Differentiated pricing

Differentiated pricing offers another business model approach to fend off piracy. There are several potential pricing schemes, like digital entertainment with an expiration date as in on-line movie rentals or limited sessions. Products could be sent as online gifts, and songs could be offered for a limited number of plays at a low price before re-purchasing. Repeat or long-term customers could receive incentives less than those charged to the general market.

Will consumers pay for content? Surveys indicate that the majority of students will pay for compelling content at a good technical quality and without “annoying” limitations. For movies, price has to compare able to or be lower than a DVD rental ($3-$5). TV episodes must be less than 99 cents and $5 for series bundle. Students say they would pay more for canceled TV shows or content that is difficult to obtain.

Free distribution

Some companies even give away their products, seeking widespread distribution. This creates a community with network externalities, creates high switching costs for users that might consider another product, enables companies to introduce a complementary, non-free product as part of a loss leader strategy, and prevents potential rival entry.
In free distribution, firms depend on upgrades and auxiliary products and services for revenues. Examples might include free access to online newspapers in exchange for demographic and personal data. Free distribution of some music enhances the sales of the goods and services associated with the artist.

Companies may give away free samples. This free advertising method also allows users to experience the product before making a purchase. Companies can break up products into components, some given away and others sold. Some companies give away initial products and then sell upgrades. One example is antivirus software: the revenue-generating product is the subsequent updates and support service. Also common, companies give away complements to the original product. The availability of books’ texts and reports online often increases the sales of hard-copy versions. Another form of free distribution is tying and bundling, or, giving away one product to create a market for another. For example, Adobe’s Flash Player and Acrobat Reader are free to download, creating a market for Flash and Acrobat.

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Offering incomplete or time-limited “demo” versions of products, called “shareware” in the software market, is another common free distribution model. “Shareware” is particularly popular in internet-distributed software and smartphone apps, such as AOL’s AIM products for Apple’s mobile devices and video game “demos.” Companies offering such services position their products for low-priced, mass-market distribution from consumers upgrading to non-free versions.

Similar to shareware, “freeware” allows for free distribution but requests payment from users. US public broadcasting (though not all of its apps) uses such a model. Wikipedia in the US is following a similar model by soliciting donations. Freeware may also be supported by advertising, like YouTube, or charge to use certain features, like Skype.

**Shift to Physical Products**

Shifting to physical products and distribution – like concert tours rather than sales of recording – is another approach. In the past, a band’s tour promoted its record. Now, the record may promote the tour. Since 1998, annual concert touring revenues have more than doubled. In 2004, 30 artists grossed more than $40
million each at the concert venue box office while CD sales stagnated or
dropped.\textsuperscript{504}

Apple changed the music industry’s business model with another physical
product: the iPod. Apple offered drastically discounted media content in order to
sell its mobile devices (the iPod, then the iPhone, and then the iPad). Rather than
utilizing the then-contemporary media content retailer model (e.g. Tower Records),
Apple shifted revenue streams from the piracy-troubled area of audio and video
sales to the more profitable area of physical media players. Its players were built to
be able to download music preferentially from Apple’s site.

\textbf{Accept File Sharing as a Precursor to Commercial Activity}

Media companies can also view file-sharing not only as disrupting markets but also
an enabler of new types of commercial markets.

P2P is part of a larger family of economically valuable media activities which
emerged from “grassroots,” Commercial radio emerged in the 1920s, on the basis
of the radio amateur community that laid the groundwork. Citizens’ Band radio
was the precursor of cellular telephones in cars and trucks, widespread in the
1970s. Amateur micro computers builders in the 1970s led to the PC. The Internet
and world wide web originated in non-profit research organizations. Today we

\textsuperscript{504} Surowiecki, James, “Hello, Cleveland,” \textit{The New Yorker} 81, Iss. 13, May 2005.
have an open software movement which generated the operative software Linux, and Wikipedia as a community effort. Why do such “grassroots” activities exist?

![Diagram of Av. Benefit and Av. Cost curves]

P1 is the take-off point. Below P, costs are higher than revenues, and activity cannot support itself. However, how does one get to the take-off point? New activities may not have the “critical mass” needed for user benefits to be higher than system cost.

To reach this “critical mass,” products may need, either government subsidies, or regulations to force a price below cost to raise demand as a business which underwrites the deficit. The latter is unlikely where competitive entry is probable once the product is viable. A faster alternative is the community approach.
Within the other, traditional commercial alternatives, the business model moves from the take-off point of complementarily to the take-off point of competition, then to the take-off point in an oligopoly. Joseph Schumpeter’s “creative destruction of capitalism” details this process, focusing the undermining of oligopoly by competitive innovators. People tend to lionize the business-based disrupters as creative entrepreneurs; however, we ignore or vilify community-based disrupters like file-sharers.

Community can play a legitimate and useful role as an entrepreneurial element in the innovation process. Suppressing sharing because it facilitates piracy is short-term thinking and causes business and policy complications, for once a user base is large enough, it will provide the foundation for market-based transactions. If established media business firms take the long view, they would value the community efforts that create the user base for their own subsequent expansion.

**V.6. Reform Proposals for IP**

Existing intellectual property laws do not adequately respond to challenges such as piracy, prompting calls for reform.

Harvard Law professor William Fisher advocates that companies should be able to tax internet access and give the revenue to content providers, who then provide
consumers with “free content” for which they had paid through taxes. Fisher also proposes to replace patents by offering a one-time monetary reward for innovative inventions from a government fund. However, how would one determine the value or differentiate it from other innovations?505

Another Harvard Law professor, Lawrence Lessig suggests a return to registering copyright, instead of granting it immediately. He champions a shortening of copying to 5 years. If a copyrighted content is not offered to public, it must be licensed to someone who will.506 Many others have similarly advocated a shortening of copyrights and patents.

New York Law professor Beth Noveck believes in letting the “community” determine innovativeness of a patent application. This may seem impractical, given the huge number of applications, and it would permit rivals to interfere with commercial by joining the “community.”

Other people propose to eliminate the business method and software patents or reduce them to 3 to 5 years.

505 Fisher, William W. “Property and Contract on the Internet.” Chicago-Kent Law Review 73, 1997-1998, 1203-1256. [ZG: The other source cited was “The Economist, “A Fine Balance,” January 5, 2003.” … but there was no issue of the Economist published on that date and I can’t find any articles that match that date and title. It could have been an online feature that was taken down.]

V.6.A. The Open Source Movement

The Open Source Movement is a loose community of volunteer developers who collaboratively develop software also known as “freeware.” The movement challenges the notion that people will not invent without profit incentive patents and copyrights. But, despite that the software is created without profit incentives, it can still create large economic benefits and positive externalities. One advantage of Open Source is that open source projects may attract more talented programmers than a commercial venture.\footnote{Von Krogh, Georg, “Open Source Software Development,” 
\textit{MIT Sloan Management Review}, Spring 2003, Vol.44 No.3.}

Users of the software “pay,” but in software improvements, not in money. This creates a higher-quality product than anyone could afford to develop on their own.

A General Public License was developed by Richard Stallman, founder of the Free Software Foundation. It uses developers’ copyrights to issue licenses that guarantee rights to all future users. These rights include copying the free software, the right to study and modify the source code, and the right to freely distribute versions to others.\footnote{Von Krogh, Georg, “Open Source Software Development,” \textit{MIT Sloan Management Review}, Spring 2003, Vol.44 No.3.}
Some prominent open-source projects include the Linux operating system, the internet protocols, Mozilla Firefox and Thunderbird, and various developer tools (e.g. WinSCP).

Linux, invented by Linus Torvalds at the University of Helsinki in 1991, was one of the most prominent, early open-source programs. It is a free computer operating system that encouraged the development of compatible software as an alternative to Microsoft’s Windows operating systems.

Making money in Open Source supports sellers because they give away the software product, but sell distribution, branding, and after-sale service, such as by Red Hat and Cygnus. There is a loss for the leader. In widget frosting, the core product is the same for sellers; the profit is in add-on’s. There is money in accessorizing also; one can sell accessories such as books, compatible hardware, and complete systems with open-source software pre-installed.

An alternative copyright arrangement is called a “copyleft.” “Copylefting” allows users to redistribute, modify, and use the software freely, but allows creators some of the legal protections of copyright over their own and derivative works. “Copyleft” says that anyone who redistributes the software, with or without changes, must pass along the freedom to further copy and change it. Public domain
is uncopyrighted and lets users make changes and distribute the result as a proprietary product. Copyleft guarantees that every subsequent user has freedom.

In the wake of Linux, “copylefting” became an increasingly popular method of partially-protecting inventions (from unauthorized uses, per se) or preventing commercial copyrights of derived variants, first with the “Unix-like” GNU operating system, and later with Mozilla’s popular Firefox and Thunderbird, a free, open-source web browser and e-mail program that programmers worldwide created and continue to modify.511

V.6.B. The Creative Commons

In 2002, inspired by the GNU “copyleft” license, an organization called Creative Commons (CC) created a set of boilerplate templates in the form of identifiable and readable license statements that make it easy for a creator to release particular rights under clearly specified conditions.512 Creative Commons is the licensing system which in its broadest sense allows users to access digital files and use them as long as proper credit to the originator is given.412

512 Kay, Russell, “Creative Commons,” Computerworld, May 26, 2006; 40, 21; ABI/INFORM Global, pg. 34.
A variety of Creative Commons licenses exist which creators of works can choose and mix to find an option that suits their exclusivity preferences, offering “some rights reserved.” The creator retains ownership, allowing users to use the work but not steal it. CC licenses could be a good way to build a fan base for a relatively unknown artist.413

Each of the six Creative Commons licenses contains a combination of four license conditions: “attribution” (abbreviated “by”), “Share Alike” (“sa”), “non-commercial” (“nc”), and “no derivative works” (“nd”). “Attribution,” the most common condition among the CC licenses, states that works can only be used if credit is given to its original creator; “noncommercial” that works can be used only for noncommercial purposes; “no derivative works” that works can only be used in “verbatim” form (i.e. new works based on the CC original are not allowed); and “Share Alike” that others can only distribute an original work if the subsequent work has an identical license.516

VI. Conclusions

Intellectual property was once the domain of lawyers. Now, it has become an essential input into its management and output. It is a vital component in strategy, M&A, operations and investment.

Protection and exploration of IA is a critical management task. What is the point of developing and producing creatively and efficiently, if the follow-up licensing and protections are ineffective?

For firms in the media and information sector, IAs are the main assets core of value. Examples:

- For content: Disney, Bertelsmann
- For technology: Qualcomm, Intel, Alcatel
- For process: Amazon.com

Protection of these assets from infringement is important, but their exploitation and commercialization is still more valuable. Yet the markets for IA transactions are still fairly imperfect—there are information problems and arbitrage.

The future of IP management will be defined by several conflicting forces:

1. In an Information society intellectual assets more valuable
2. But IA legal restrictions slow everyone down
3. More information are produced with shorter shelf-life, and with more commodity characteristics

The management of intellectual assets is more important than the legal protection. It is also more complex and is a key profit activity for successful information and media firms.

**VI.1. Tools Covered**

The tools covered include the following:

- Patent Search
- IP Audit
- Tracing competing patents
- Technology velocity
- IAM software
- Valuation Techniques for IPRs
- Real Option valuation of MP
- Optimal license rates
- Licensing strategies

Should companies patent? They can expand their market share by utilizing P2P networks.

**Issues Covered**
Some of the issues covered in this chapter include:

- Organization of IP management
- Performing Rights Organization
- Compulsory license formula
- Accounting for IPRs
- Valuation methodologies
- Trade Secrets and NDAs
- Patentability requirements
- Infringements

**Slide 1137:**

- International Treaties
- Business Method Patents
- Trademarks
- Trade Press
- Copyright creation and protection
- WIPO
- Digital rights
- Compression, File Sharing & piracy
- Protection strategies— legal, technological, business
- Open Source movement
Copy-protection systems aim, with mixed success, to make it impossible to play a CD in a computer or to copy it.