Intellectual Property Rights

Why are IP rights important?
What is the meaning of something being in the public domain?
How long do patents last?
If you invent something at your work, is it yours or the company’s?
Is reverse engineering a violation on patent protection?
Is reverse engineering legal to unveil a trade secret?

Read ASME magazine articles – for Assignment 5

**Developed to be Unique.** Marketability isn’t the whole story. Without exclusivity, a product may yield small profits in a field crowded by competitors (September 2008)

**Trade Secrets 101:** There are advantages to protecting intellectual property by keeping it under wraps. But there are some things you just can’t keep from getting out. (October 2008)

**Timing Issues Critical to New Product Development** (web exclusive, 2008)
Why is IP important? How can you protect your IP? Explain the different forms of IP: patents, copyrights, trade marks and trade secrets. Which form is the one most applicable to a product or service? Give examples.

What are the steps and timing needed to ensure protection? How to make it cost-effective?

Is there a way to protect trade secrets? Give a few examples of known trade secrets. What is reverse engineering? Is it legal?

Can you use knowledge learned in a company (former employer) in your new job?

When developing a new product, elaborate on the importance of IP intelligence and marketing-driven product development strategy? Can it lead to new applications?
Team Hoof-Hearted

Assignment 5: Intellectual Property Rights

In an age when intellectual property (IP) is of equal importance to private property, the interest in protection against idea theft is mounting. Just as repercussions exist to apprehend those who steal possessions or land, repercussions must also exist to safeguard the less tangible, but nonetheless equally important, property of ideas. A closer look at IP reveals exactly why it is important, how it can be protected, and how it affects today’s delicate political and entrepreneurial balance.

Eugene Volokh, an American legal commentator and Law professor at University of California, Los Angeles, draws the comparison between intellectual and private property concisely (Eugene Volokh, 2011). He states, “If people have the right to exclude others from their land, they’ll have more incentive to invest effort in improving the land – build homes, plant crops, and so on... The theory of intellectual property is likewise that giving people the right to exclude others from new works or inventions will give people an incentive to invest effort in creating and inventing” (Boldrin & Levine). Volokh identifies a key economic and sociological factor: incentive. Would employees work as hard without the incentive of a salary? Would students perform as well in school without the incentive of an A? Would people build, landscape, and decorate houses as effectively if they belonged to the public? Generally, the answer to these questions is no; incentive goes a long way in motivation. This truth applies directly to the creative expression, invention, production, and research.

Intellectual property can be protected in many ways, depending on what the IP actually is. Copyrights, patents, trademarks, and trade secrets are all forms of IP protection. Concisely stated, a copyright protects creative expression, a patent protects inventions, and a trademark protects logos or symbols placed on products to identify the makers (University of Maryland University College, 2002). Similarly, a trade secret is any information considered confidential by a business because it offers a competitive edge. This can include distribution or advertising methods, lists of vendors or customers, and manufacturing or industrial processes (WIPO). The one thing that all forms of IP protection have in common is that they all protect the worth of the idea. By protecting the worth of creative expression, it produces the incentive to create. And this incentive is what makes research, art, business, technology, and media so fast-paced and cut-throat. Without it, humanity may not be where it is today.

However, a look at intellectual property would not be complete without examining its effects on today’s society, particularly the ways in which it has shaped politics and entrepreneurship. While IP
protection has brilliantly served its purpose to protect worth and create incentive, it can simultaneously hinder the creation of ideas by its own nature. Examples of this intrinsic phenomenon can be seen in industries ranging from the automobile industry to human genetics. Windshield wipers were invented in 1902 in New York City by a woman named Mary Anderson. Her “window-cleaning device” was born from watching a driver struggle through poor visibility due to snow. She created sketches of the device, hired a manufacturing company to make a model, and received a patent for it in 1903. Immediately, Anderson sought to sell the rights to her invention to a large automobile company, but was turned away. No one wanted to pay for her idea. It wasn’t until a decade later that drivers’ jobs were made easier and passengers traveled safer with the addition of the windshield wiper to standard domestic cars (Harris, 2011). Ten years is a long time to delay the creation or improvement of a product, all because of the price of a patent. Perhaps one of the most controversial examples is the patenting of genetic material. In light of recent genetic breakthroughs and from the Patent Act of 1973, the US Supreme Court has reasoned that if whole organisms were patentable, then their components should also be protected. Therefore creators of isolated genetic sequences are seeking patents (Willison & MacLeod, 2002). This holds enormous significance in cancer research, where its entire basis lies on developing extremely exact DNA composition. If genetic sequences are patented, cancer research would be suppressed. While genetic patents were intended to help society by promoting innovation, it is questionable whether the intended benefits are truly taking place. In a hypothetical world where all human knowledge was shared freely, would superior intellectual and artistic achievements exist. Would cars run faster and more efficiently? Would there be a cure for cancer? The answers to these questions can only be speculated.

From the big picture, the positive consequences of IP protection seem to outweigh the negative ones. However, it is important to maintain perspective on societal impacts and keep a firm grasp of the reason behind IP protection in the first place. In the matter of intellectual property where the market is constantly and rapidly evolving, a protection system that evolves alongside it will be most effective.
References


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Notes from reader

Superbly crafted essay. All paragraphs contain important ideas/arguments that are carefully displayed to showcase/unveil the importance of IP.

The first two paragraphs detail clearly the need of IP and its ultimate goal: not to protect but to promote competition via incentives. This idea is one of the pillars of capitalism.

The essay advances to argument about ethical issues such as those related to IP in genetics research. In this century, we will see more and more on this issue, biotechnology and medical cures research. Will each one of us be able to patent our genes, our unique footprint? Is there an incentive to do so?

Thanks Team Hoofhearted!
As advancements in technology are made, intellectual property becomes an ever important issue in the life of an engineer. Now that most new discoveries and products aren’t necessarily novel, but evolutions of previous designs and inventions, the ability to accidentally infringe upon someone else’s patent or copyright is a legitimate concern. There are several forms of IP: patents, copyrights, trademarks, and trade secrets. A patent is a “set of exclusive rights granted by a sovereign state to an inventor or their assignee for a limited period of time in exchange for the public disclosure of an invention.” [1] Copyrights are usually applied to printed materials and grant the author the ability to decide who uses and copies the work. Copyrights are also used in computer software and media (movies, CD’s, etc). [2] Trademarks are used to protect logos or slogans used to promote a company’s products and services. [3] Trade secrets are confidential information related to a company’s manufacturing process that gives them an economic advantage. The most common types of intellectual property for mechanical engineers to encounter are patents and trade secrets. Often, mechanical engineers are an integral part of the design process and gain an intimate knowledge of the product and processes associated with it. This is especially true for engineers who work for chemical companies or others who have developed proprietary products and processes that contribute significantly to the company’s bottom line. For this reason, engineers are often asked to sign confidentiality agreements when joining a new company to protect the company’s assets in the event the employee’s employment ends. The reason for this is to lessen the risk of other companies hiring employees for the sole purpose of divulging the information they gained while working for their competitor. Knowledge employees gained while working at one employer is OK to use at another employer. However, the knowledge used at the new job must only be the skillset derived from performing a job at the other company, and not the end product of the work at
the previous company. An example of this would be a computer program; it would be OK to use the knowledge gained while writing the program (programming code, etc), but not the actual program.

Reverse engineering is not a violation of the other company’s trade secrets. This is because once the product is offered for sale; the trade secrets that go into producing it are sold with the product and are free for anyone in the market to discover. The only way to protect trade secrets is through the previously discussed non-disclosure agreements, which prevents employees from taking proprietary knowledge to a competitor. One way for companies to circumvent trade secrets is by reverse engineering. This is a popular practice in the automotive industry, especially for General Motors. GM buys competitors vehicles and performs a “competitive teardown” where the vehicle is completely disassembled and analyzed to determine how the vehicle is put together [4]. GM then uses the knowledge gained from this exercise to evaluate the competitor’s product and understand exactly how it was manufactured. This is considered legal because it is not protected by intellectual property laws, as long as the company is not violating a specific patent by reverse engineering the parts.

References


Notes from reader

Well crafted essay with direct application to the needs of mechanical engineers. An interesting example of reverse engineering by a major US company brings relevant to the topic. Indeed, there are hardly any ORIGINAL inventions, most are incremental, based or derived from prior art.
Intellectual property, IP, can be defined as any type of individual design such as an invention or literary work. An individual’s IP is protected through the use of intellectual property rights, which are aimed at protecting certain parts of a design. Intellectual property can be organized into different groups based on the type of innovation, including “trade secrets for business information and technology; patents for man-made utilitarian processes, machines, manufactures, and compositions of matter; copyrights for original expressions fixed in media; and trademarks for market source identity” [1]. All of these forms of intellectual property, with the exception of trade secrets, are public information. The availability of public records on copyrights, trademarks, and patents make these types of intellectual property most applicable to a product or service. Intellectual property knowledge can guide a person in developing a product, but “the hard part is interpreting and devising an intelligent strategy for developing a product from the information” [1]. Thus intellectual property research can help guide a person into developing a “strategy to emphasize proprietary features that could be withheld from competing products for exclusive market share” [1].

Trade secrets are a form of intellectual property rights that have many differences when compared to patents, trademarks, and copyrights. First, there is no time limit for keeping the information of a trade secret private. Another difference is that the trade secret does not necessarily have to be innovative (non-obvious), which is the case for patents. There are many famous trade secrets such as “the recipe for Coke, the spices in the recipe for Kentucky Fried Chicken, and the formulation of WD-40” [2]. Although it may seem that trade secrets are the best form of intellectual property, there are also ways, known as reverse engineering, that competitors can legally gain information about a design. The United States Supreme Court ruled “that it is perfectly lawful to steal a company’s trade secrets by reverse engineering” [2]. Reverse engineering has been utilized by Atari to make their game cartridges compatible with Nintendo game systems. The reverse engineering was conducted using chemicals that “peeled the layers of Nintendo’s chip sets to allow microscopic examination of the object code in an effort to figure out the key” [2]. This key, the objective of Atari engineers’ discovery, was designed by Nintendo so that only their game cartridges would work on their game systems. In addition to protecting a trade secret from being reversed engineered, it is also important to take steps to protect the actual details of the secret.

Dealing with trade secrets in a work environment can be a difficult process. To protect the details of a trade secret, a system should be set up so that “only key employees with a need to know should have access to the secrets” [2]. The reason for making the details of a trade secret available only to certain employees is due to the fact that legally “an employee upon terminating his employment may carry away and use the general skills or knowledge acquired during the course of employment” [2]. Another important step to protect trade secrets in the workplace is using confidentiality agreements with any person that was given the details of a trade secret who is not an employee.

References


Notes from reader
Well crafted concise essay focusing on trade secrets and reverse engineering. Essay has at times too long sentences. The amount of paraphrasing is adequate. Essay does not have a closure argument.

Note that not only individuals but also corporations (businesses) can file for patents. The same goes for copyrights, etc. Engineers often have to sign NDAs (Non-Disclosure Agreements) that go beyond the Confidentiality Agreements.
Intellectual Property Rights

In the area of modern technology, Intellectual Property (IP) is increasingly becoming the lifeblood of the economy. The relative abundance of raw materials and easy access to information through the Internet has placed an emphasis on creative skills and ingenuity. Because IP is so critical to a company’s economic success, it is equally critical that IP is protected. IP exists in many forms and the nature of the protection depends on the type of property. Perhaps the most well known form of IP is patents. A patent is unique claim to a tangible invention. A patent prevents competitors from using the patented materials for 20 years [1]. A patent provides the holder a monopoly on the invention, but in return the invention must be described in explicit detail. Because a patent makes the invention public knowledge, some parties choose to keep their invention a secret hoping that it cannot be reverse engineered. This is called a trade secret. The most famous and often cited trade secret is the formula for Coke. The necessity of keeping the Coke is seen by grocery stores attempts to sell a “store brand” Coke. Coca-Cola’s ability to protect its IP is the sole advantage over competitors. Coke’s IP does not just include trade secrets, but also trademarks. A trademark is a word, phrase, symbol, or design that distinguishes a company’s goods or products [2]. This is most commonly thought of as a logo. Trademarks are a very important form of IP from a marketing perspective. A trademark prevents competitors from using the good reputation of another company for economic gain. The final form of IP is a copyright. Copyrights differ from the previous forms of IP because they protect works of authorship and take effect at the instant the work is created in fixed form [3]. Copyrights protect thoughts or creative expressions such as books and songs, and last for until 70 years after the death of the author.

In the engineering and product industry, patents are the most important and applicable form of property rights. Since these products are being used by many people, anyone can take apart a product, figure out how it works, and build their own to sell. Patents keep this public knowledge protected. For example, a patent for an oilfield valve allows the company to sell the valve without having to worry about other companies buying their valve and stealing the design.

The Coke example above is the best example of how trade secrets are used. Nike is a great example of how important trademarks are. For marketing purposes, Nike has associated its “check” symbol with the “coolest” shoes and apparel around. People today seem to buy products based on public image more than their personal opinions. Therefore, Nike trademarks its symbol so they are the only company allowed to use it. This allows only Nike to benefit from the brand recognition it profits.

Books are the best example of copyrights. This method protects authors from writing a book and allowing anyone who reads it to copy the text and make profit.
from the intellectual property created. This allows those who have great ideas to share and help others, but retain the control of these ideas.

(No closure provided)

Sources


Reader appraisal
Poorly worded essay with various odd sentences and absence of connectors and punctuation. Difficult to understand. The essay offers little insight on IP in engineering practice.
Intellectual Property
Assignment 5

In this day and age of constant innovation and extreme competitiveness, it is necessary to protect the works of the individuals who created them so that they may be incentivized (not a verb) for said innovation. This is done through copyrights, trademarks, and patents. However, these legal forms of protection have certain limitations, which prohibit them from protecting works that do not meet certain criteria. For example, inventions that are submitted for patents must be novel and non-obvious. Therefore, creations which do not meet that criteria are not eligible for legal protection against copying and the invention could become non-profitable for the inventor. One way of preventing this occurrence is to have trade secrets.

Any piece of information that is valuable and is safeguarded as a secret may be considered a trade secret. As a result, the only criterion that must be met to be protected by law, as a trade secret, is that the owner must take reasonable steps to maintain secrecy. Some well know examples of this are Coca-Cola’s formula, the spices used in KFC’s recipes, and WD-40’s formula. In order to keep these trade secrets from becoming public domains, corporations take various steps to protect them.

To keep trade secrets secret companies often institute policies and procedures regarding their confidential material. These policies and procedures often involve having employees sign employment agreements and confidentiality agreements. By doing so, employees are not only acknowledging the company’s policy, but also entering a legal agreement that prohibits them from disclosing the confidential information they may have access to within the company. Said employees are also interviewed prior to leaving the company to remind them of their contract. However, there is a limitation to this; courts have ruled that an employee “upon terminating his employment may carry away and use the general skills or knowledge acquired during the course of his employment.” Hence, to avoid having a breach in security, access to confidential material is only granted to key employees. Said material is marked as confidential or proprietary and locked away. Lastly, companies must conduct trade secret audits regularly to ensure that the information is not reaching unnecessary personnel.

Despite all of a company’s efforts to keep trade secrets from going public, there are loopholes in the law, which hinder them from doing so. As soon as trade secrets are advertised they may no longer be considered secrets and are therefore no longer protected by law. Also, it is possible, and not uncommon, for products to be reverse engineered once they become public after going on sale. The US Supreme Court ruled that “it is perfectly lawful to ‘steal’ a company’s trade secrets by reverse engineering.” Reverse engineering is the process of acquiring a product and dissecting it to gain an understanding of its components and how it functions in order to replicate it. This can be done with a large spectrum of products, from machines to software to food products. But often, despite a competitor’s efforts to reverse engineer a product, the source is never duplicated. The most famous example of this could be the Coca-Cola recipe. Many generic brands try to duplicate the taste of the brand name product but end up with something similar that is subpar due to the well-kept trade secrets of the original.

Notes from reader
References missing. Several quotes given but no sources provided. Essay is concise, breezing through the various types of IP; yet copyrights are not discussed. Opening sentence is difficult to understand. Essay has no closure.
Why is IP important? How can you protect your IP? Explain the different forms of IP: patents, copyrights, trademarks and trade secrets. Which form is the one most applicable to a product or service? Give examples.

Patents, Copyrights, and Trademarks are all intellectual property (IP). All three give protection from the federal government. A copyright covers creative expression such as papers, stories, and paintings, and a patent covers inventions and designs. Finally, trademarks provide protection for symbols and logos of a company or individual, such as the beveled aTm logo for Texas A&M University. Although a patent is the most applicable to a product or service, they are all applicable. An author could be selling his novel (copyright), and a company could use their trademarked logo on any product or service they sell.

What are the steps and timing needed to ensure protection? How to make it cost-effective?

To patent a product it must be a tangible object, not an idea. You must also give a complete description of the invention. This entails how it is made, how it functions, and any prototypes or drawings. There are two patents that can be filed – provisional and regular patent application. The provisional requires less money but a smaller amount of information. A copyright can be filed online through the US Copyright Office or through the mail. Once the Copyright is filed and approved no one can infringe on your copyright. A trademark is also fairly easy to register. It can be filed online just like a copyright. Type of goods or services must be stated during the registration. A trademark must not be a generic or non-descriptive name. Patents can cost large sums of money especially if lawyers are involved or one can do it themselves. Lawyers cost a wide range of money but you get what you pay for.

Is there a way to protect trade secrets? Give a few examples of known trade secrets. What is reverse engineering? Is it legal?

A trade secret is information protected by a company that could have substantial monetary worth. Perhaps the most famous trade secret is the recipe for Coca-Cola. To this date there is said to only be a couple of people who know the recipe. The loss of the recipe for Coca-Cola could be detrimental to the company. In order to keep the recipe a secret non-disclosure agreements are signed by all employees of Coke. This is the only way to protect trade secrets because they will never expire and become
The only way to break a trade secret is by reverse engineering, which is working backwards from the final product in order to determine the secrets behind it. This is legal in most cases, however it depends on the location it took place as well as the existence of any patents.

Can you use knowledge learned in a company (former employer) in your new job?
This is where it (?) gets a little tricky and can often lead to disputes with former employers. Most employers enforce non-disclosure agreements with employees and non-competition clauses for executives. The non-disclosure agreement keeps the employee from disclosing any trade secrets or proprietary information that is learned on the job. Most companies also have a clause that grants them ownership of anything developed on or with their property (computers, laboratory, and floor). There are some things that are considered general knowledge, even if it is a particular way that a company does things, and a company has no limits to what knowledge you are unable to use outside of working for them (? not clear), unless of course it was agreed upon and signed in the original employer contract.

When developing a new product, elaborate on the importance of IP intelligence and marketing-driven product development strategy? Can it lead to new applications?

Product development driven by a competitive market almost always leads to new applications of the product. The need for one’s product to be the latest, greatest model with the most practical applications is what enables success for the company through that product. It is due to the company’s individuals and their IP intelligence that new applications arise, simply as a means to survive in an ever changing market.

Notes from reader
A short paper showcasing common knowledge. The absence of references is flagrant. The paper is not an essay, it merely replies to some questions advanced by the lecturer. There is no opening or closure; the paper is merely a reply to a number of queries.
Intellectual Property Rights

Intellectual property plays a major role in big business. The laws dealing with intellectual property have most definitely changed and evolved over the years as just exactly what intellectual property is became more and more defined. As it stands today, there are four major types of intellectual property that an individual (or corporation) is able to protect under the law. These four items include copyrights which protect creative expressions, patents which protect inventions, trademarks which protect logos and symbols, and finally trade secrets. This paper focuses specifically on trade secrets and a number of issues involved with trade secrets. What is a trade secret? How can a trade secret be protected? What is reverse engineering and is it legal? And finally, can knowledge gained from a former employer be used at a new job?

Before we progress any further, it is important to understand what exactly a trade secret is. According to dictionary.com, a trade secret is defined as “a secret formula, technique, process, etc. known and used to advantage by only one manufacturer.” Trade secrets are not required to be new and novel thoughts but can simply be pieces of information that are deemed valuable. So long as one simply tries to keep the information hidden or private it can be considered a trade secret. Protection of trade secrets is important. A trade secret can be protected forever whereas a patent for example is only protected for 20 years before it is made available to the public. Ever wonder why things that have been around seemingly forever such as Coke and WD-40 have not been duplicated? It’s because they are protected as trade secrets and not protected under patents. In that regard, trade secrets are great. But due diligence needs to be conducted in order to truly protect trade secrets. This is where the concept of reverse engineering comes into play. It is not difficult for a competitor to purchase a company’s product and tear it apart and try to figure out how it is made. Is this activity legal though? If the purchased product is patented, then a company tearing it apart and trying to figure out how it is made for the purpose of producing their own version is illegal. If it is simply protected by a trade secret though, this action is perfectly legal. To combat this loophole, a company should look into utilizing a trade secret and a patent to protect its intellectual property. To take it a step further though, companies or people often dealing with trade secrets need to establish a trade secret program. This way, employees are educated on trade secrets in general and also on specific trade secrets that they may or may not be coming into contact with through work on a day to day basis. Signed agreements should be included to protect these trade secrets.

But what if one of these employees leaves and goes to work for a competitor? This person is not allowed to directly take a previous employer’s trade secrets and use it at their new job. Here is where things can get a little difficult. A person is allowed to take general skills and knowledge acquired from previous experiences into the next job. But if part of this knowledge is considered by the previous employee to be a “trade secret” then it becomes a matter of what exactly this individual knows and
when they gained this knowledge. **Due to issues like this, it is easy to see why legal departments for big companies are able to stay in business.**

Intellectual property is important. Countless numbers of legal cases have surrounded intellectual property and the protection of it over the years. It is important as future engineers to know what intellectual property is and the policies and attitudes regarding IP of the company we will one day work for. Like so much else in our careers, we would imagine this will involve lifelong learning as intellectual property laws more than likely can be expected to evolve over the years just as they have in the past.

**References:**


**Notes from reader**

Well crafted essay focusing mainly on trade secrets. Opening sentences are odd, long and difficult to grasp. Essay flows better towards the end, providing a pearl of wisdom and a sound closure.