Legal Issues Faced by Startups

I. Introduction

What makes startups exciting, the rallying of a small team behind an idea, may also be their downfall. Often, early-age startups are made up of a small team of engineers, scientists, or business enthusiasts. A demographic less often associated with startups from the initial onset of the venture is clear: lawyers.[1]

This discrepancy is understandable, yet not unnoticed. Certainly, at the forefront of the entrepreneurs' mind is funding, growth, product or service development, and ultimately market capture.[2] However, the risks of proceeding with the initial stages of a venture without legal counsel are significant. Lawyers can help the startup protect its product or service with IP protection, ensure that every market advantage is gained, handle company formation, and navigate government laws and regulations.[3] Section II of this paper will discuss the different types of intellectual property protection available and how to appropriate value from those ventures, section III considers the legal aspects of bringing a product to market, section IV overviews some of the nuances in company formation, section V reviews governmental laws and regulations that need to be considered when moving forward with a startup, and section VI provides a final overview.

II. Legal Means for Protecting Intellectual Property

Intellectual property law broadly relates to technology, arts, and business itself. IP protections derive from the constitution which grants Congress the power "[t]o 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."[4] The commerce clause in the constitution provides the additional powers from which IP protections derive. IP law consists of *patent law, trade secret law, trademark law, and copyright law*. Each of these sectors of the law provides their own unique protections that can be used by a startup, however, a thorough

[1] Mark Goh, *Why startups need lawyers, not legal templates*, TECHINASIA (Feb 28, 2017, 2:41 AM), https://www.techinasia.com/talk/startups-lawyer-protect-business.
[2] *Id*.
[3] Daniel Doktori & Sarah Reed, Why Lawyers Make Good Early-Stage Startup Hires, Harv. Bus. Rev. (May 2, 2016), https://hbr.org/2016/05/why-lawyers-make-good-early-stage-startup-hires.
[4] Article I, Section 8, Clause 8, United States Constitution.

understanding of all four would allow the startup to avoid any conflicts in the law and maximize its overall protection.

a. Patents

Patents are the most commonly known mechanism to protect commercial and industrial products.[5] The rights granted by patent law to a patent owner are negative rights, i.e. the rights to exclude others from making, using, importing or selling the claimed invention for a period of time without the patent owner's prior consent. A patent does not provide the patent owner the affirmative right to practice the patent. This means that to practice her patent, the patent owner would have to obtain consent, such as through licensing, from other patent holders if her patent is based on technologies claimed in other patents. Nonetheless, even where a patent owner does not practice her patent with a process or product, a patent can still be very valuable to a patent owner by bringing in licensing fees.

The process of obtaining a patent can be time consuming and not every patent application can lead to a patent. To obtain a U.S. patent, the invention must 1) be appropriately disclosed, 2) comprise eligible subject matter, 3) be useful, 4) be novel, and 5) not be obvious.

Invention disclosure requires that the invention be described in writing in such exact terms as to enable any person skilled in the art to create the invention, where that disclosure is the best mode contemplated by the inventor.[6] In addition, a patent cannot be granted if it claims a non-statutory subject matter. 35 U.S.C. §101 lists four categories of patentable invention: process, machine, manufacture, or composition of matter. The courts have interpreted the categories to exclude laws of nature, natural phenomena, and abstract ideas – so called "Judicial Exceptions." The abstract idea exception has been mostly litigated recently and has caused a lot of confusion in the software industry.[7] What becomes clearer now is that inventions solving a technical problem or improving the technical field or the computer/machine itself would mostly likely be found patent eligible.[8]

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[5] Gary D. Libecap, Marie Thursby, *Technological Innovation: Generating Economic Results*, Emerald Group Publishing, 2008.
[6] 35 U.S.C. § 112.
[7] Paul J Sutton, Patent eligibility after Alice (February 27, 2017), available at https://www.worldipreview.com/contributed-article/patent-eligibility-after-alice
[8] 2014 interim guidance on patent subject matter eligibility, available at https://www.uspto.gov/patent/laws-and-regulations/examination-policy/subject-matter-eligibility.

The invention must also be considered useful, simply a question of whether the invention works and is possible.

To invention should also be novel[9] and non-obvious[10] patentable subject matter for a patent to be granted. "Novel" means the invention must not be known or used by others, and "non-obvious" means that the differences between the invention and other patented inventions must not be obvious to a person of ordinary skill in the relevant field.

The process of obtaining a patent starts with one or more inventors conceiving an idea and reducing the idea to practice, such as by building a prototype of the invention. Then a patent application can be drafted and the application should sufficiently describe the invention.[11] Before or while drafting the patent application, it is highly recommended to conduct a prior art search. The prior art search would help the patent applicant understand the landscape of the prior art in the technical area. As discussed above, only inventions that are novel and non-obvious can be patented. The prior art search would help the applicant avoid claiming subject matter that is already known by or obvious to a person skilled in the relevant field. The prior art search may also be useful in deciding whether or not to pursue a patent to cover the invention.

The next step would be to file the patent application with the U.S. Patent and Trademark Office ("USPTO"). When filing the patent application, the applicant needs to make sure that all the inventors are included in the patent application. A person is an inventor of the claimed invention if he or she has made a patentable contribution to one claim and has contributed to conception. If the correct inventorship is not filed with the patent application, the patent can be in jeopardy of being declared invalid.[12] On the other hand, the patent applicant should be careful when including inventor names because each inventor has an unseverable right to license the entire patent.

After the patent application is filed, a patent examiner will be assigned to examine the claimed invention and provide his or her opinion on the patent eligibility of the claimed invention. The patent applicant will be given the opportunity to amend the claims and/or to submit arguments to convince the patent examiner to issue a patent. The time period from filing the patent application to the patent being issued typically lasts about 2 to 3 years. The issued patent can be maintained

[9] 35 U.S.C. § 102.
[10] 35 U.S.C. § 103.
[11] 35 U.S.C. § 112
[12] Stark v. Advanced Magnetics, 119 F.3d 1551, 1553, 1556 (Fed. Cir. 1997); 35 U.S.C. § 102(f).

in force until 20 years from its filing date. However, if the patent owner fails to pay the maintenance fee, the patent will lapse before its term. The current maintenance fee and other fees associated with filing a patent application can be found at the USPTO's website.[13]

Patents are granted on a country-by-country basis and are territorial by nature.[14] A patent obtained in one country can only be enforced in that country. There are no international patents. However, an applicant may consider filing a Patent Cooperation Treaty (PCT) application to reserve his or her right to later file in other member countries, which includes most countries in the world. A PCT application is a single patent application filed with International Bureau (IB) and it provides the patent applicant 30 or 31 months from the priority date of the application to consider whether to file a patent application in selected countries. A PCT application does not itself become a patent. But the PCT application is searched and may optionally be examined. The PCT application is very similar to the U.S. utility patent application.

One important caveat is that inventors should avoid publicly disclosing his or her invention before filing the patent application. Public disclosure can include publishing an article describing the invention, selling or offering to sell a product implementing the invention, or commercial or public use of the invention. While U.S. patent law provides a one-year grace period for such disclosure, in some foreign countries a public disclosure can constitute an absolute bar to a patent. The one-year grace period allows the inventor to file a patent application in the U.S. within one year of the public disclosure of the invention. The absolute bar means that patent rights are lost immediately if no application has been filed at the time of disclosure.

The above discussion mainly focuses on utility patents and applicants should keep in mind that in the U.S. and some other countries, design patents are also available. In general terms, a "utility patent" protects the way an item is used and works,[15] while a "design patent" protects the way an item looks,[16,17] i.e. the ornamental appearance which includes its shape/configuration or surface ornamentation. Both design and utility patents may be obtained on an item if invention resides both in its utility and ornamental appearance.[18]

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[13] https://www.uspto.gov/learning-and-resources/fees-and-payment/uspto-fee-schedule
[14] Gary D. Libecap, Marie Thursby, *Technological Innovation: Generating Economic Results*, Emerald Group Publishing, 2008.
[15] 35 U.S.C. § 101.
[16] 35 U.S.C. § 171
[17] The Manual of Patent Examining Procedure (MPEP) §1502.01 (R-07, 2015).
[18] Id.

In considering whether to pursue a patent or another form of IP protection, the advantages of a patent cannot be understated. Patents are considered the strongest form of IP protection, regardless of the shorter period of protection.[19] Patents provide complete exclusion from the market, helping fend off even the largest competitors. A well-timed patent may prove to be worth millions, or even billions,[20] if appropriately enforced. While litigations are the only way to enforce a patent, more frequently a licensing model allows both parties some level of satisfaction. This form of patent monetization is indeed a business model for many businesses. Moreover, patents may provide a level of prestige in the market, helping increase the value of a business during important financial valuations.[21] Unfortunately, the high cost of obtaining a patent and the difficulty in obtaining a sufficiently broad patent is often a deterrent, especially for smaller businesses.

b. Trade Secrets

Trade secret law is recognized both under individual state law and federal law. States recognize and enforce trade secrets under the Uniform Trade Secrets Act (UTSA).[22] Recently, congress enacted the Defend Trade Secrets Act (DTSA) which provides federal protections to trade secrets.[23] Because so little is known about enforcement of trade secrets through the DTSA, the law under the UTSA majority will be considered for this section. It is imperative that a business understand the law that governs trade secrets in the state in which their business operates.

The UTSA protects as a trade secret: information, including a formula, pattern, compilation, program, device, method, technique, or process, that: (i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means, by other persons who can obtain economic value from its disclosure or use, and (ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.[24] In other words, to constitute a trade secret, the information must actually

[19] Gary D. Libecap, Marie Thursby, *Technological Innovation: Generating Economic Results*, Emerald Group Publishing, 2008, at 89.
[20] Jurors awarded $2.54 billion to a unit of Merck & Co against Gilead Sciences in 2016.
[21] *Id*. at 90.
[22] Uniform Trade Secrets Act.
[23] Defend Trade Secrets Act.
[24] Uniform Trade Secrets Act.

be a secret, that information must be valuable by itself, and reasonable efforts must have been taken to maintain the secrecy of that information.

Broadly, one can consider the following factors in making the determination of whether something is a trade secret: i) extent to which the information is known outside the claimant's business; ii) extent to which it is known by employees and others involved in the business; iii) extent of measures taken by the claimant to guard the secrecy of the information; iv) value of the information to the business and its competitors; v) amount of effort or money expended by the business in developing the information; and vi) ease or difficulty with which the information could be properly acquired or duplicated by others.[25]

To determine whether the information is secret, that information must not be generally known or readily ascertainable. Not being generally known requires that the principle person who can obtain benefit from the information is not aware of it. As an example, if a paint product were on the market, and a PhD skilled in the art of paint could not replicate that paint even though they have access to the paint product, the paint is not generally known.[26] On the other hand, where information is posted to only a small part of a relevant section of the internet for a short period of time, that information may be generally known because it is known to relevant people in the industry.[27] Readily ascertainable considers the ease with which a trade secret could have been independently discovered. A detailed customer list with customer information is an example of non-technical information that may not be readily ascertainable.[28] However, when it comes to cases involving a disclosure between two parties negotiating, that disclosure tends to be readily ascertainable more frequently because the disclosure is often more broad than what is protectable.[29]

Independent economic value requires the secret to have that value because of its secrecy. Moreover, there must be value to others, not just the business owner. Factors that may be considered include the value of the information to the plaintiff, the amount of money or effort given to develop the information, the measures used to protect the information from discovery,

[25] Restatement of Torts.
[26] Rohm & Haas Co. v. Continental Casualty Co., 781 A.2d 1172 (Pa. 2001).
[27] Religious Tech v Netcom On-Line Communication Services, 907 F. Supp. 1361 (N.D. Cal. 1995).
[28] Success based on a detailed customer list including customers, vendors, and pyrotechnic operators was not considered readily ascertainable. Pyro Spectaculars North, Inc. v. Souza, 861 F.Supp.2d 1079 (E.D. Cal. 2012).
[29] Where a method of deskinning chicken was disclosed, because that method disclosed was broadly known in the industry it was considered to be readily ascertainable. Hutchison v. KFC Corp., 51 F.3d 280, No. 93-16847 (9th Cir. 1995).

the ease or difficulty with which it takes for someone to develop the information themselves, and the degree to which third parties have placed the information in the public domain. However, just because more than one party knows some secret information does not preclude that information from maintaining economic value. If other parties may still gain a valuable share of the market with the information at hand, that information still has value.[30]

Reasonable efforts to maintain the secrecy of the information must also be taken. As a reasonableness standard, the methods can be efficient without being so overwhelming that it takes over most of the resources of the business to protect the information. In a classic trade secret example, in E.I. du Pont v. Christopher, where a misappropriator flew over a factory to get pictures of the trade secret, it would not be reasonable to expect the business to build a dome to cover the factory.

However, to constitute reasonable measures, some level of affirmative steps must be taken. This is often a difficult step to interpret. For example, an oral statement of confidentiality may suffice as reasonable[31] while an implied confidentiality agreement is not.[32] Because reasonable efforts may differ by industry, it is important to consider the nature of the industry, the nature of the trade secrets and how they were stored, the nature of the measures taken to protect the secrets, and the known risk from storage and protection.

Of course, to have a trade secret claim there must also be a misappropriation of the trade secret by a third party. Misappropriation of a trade secret occurs where the secret is acquired by improper means or the secret is used or disclosed in a breach of confidentiality. Proper means of acquiring a trade secret include independently inventing it, reverse engineering the secret, licensing the secret from the owner, observing the item in public use, or obtaining it from published literature.

Another consideration is that trade secrets are protected under state law with some Criminal Trade Secret Protection Acts and federally with the Economic Espionage Act. These laws provide possible criminal sanctions for the intentional theft of a trade secret.

Practically, businesses should take certain steps to ensure that they qualify for trade secret protection. First, the business should take inventory of what information they have that may be a

[30] Electro-Craft Corp. v. Controlled Motion, Inc. 332 N.W.2d 890 (Minn. 1983).
[31] Learning Curve Toys, Inc. v PlayWood Toys, Inc., 342 F.3d 714 (7th. Cir. 2003).
[32] Incase Inc. v. Timex Corp., 488 F.3d 46 (1st Cir. 2007).

trade secret (can be technical or non-technical like a customer list). Then, the business should determine a governance strategy for each type of information. Businesses cannot reasonably have employees believe that everything is a trade secret, and so identifying what is actually a trade secret and having frequent trainings with employees can help to mitigate these risks. This means that the business should also tell employees and any consultants what information is actually confidential. The business should next implement reasonable efforts and appropriate protections to restrict access to the trade secrets. This may include keeping the information in a locked area accessible only to management (or a checkout system so that the flow of information is monitored) and marking what information is confidential and a recognized trade secret. The business may also consider using restrictive covenants like non-competes or non-solicitation agreements, although some courts are hesitant to enforce these. Finally, upon any employee leaving the business, the employer should conduct a thorough exit interview with a review of what is trade secret in the business.

Inherent in a trade secret is the decision of whether to pursue trade secret protection. The significant advantage of a trade secret is that the protection is indefinite if used appropriately. However, if the trade secret is an invention, a patent may provide more protection if that invention can more easily be recreated. Further, in many industries the market moves too quickly to expend significant costs and energy in protecting a trade secret. If the trade secret is a non-technical item like a customer list, the decision becomes one based more around efficiency, i.e., how much is the list worth and how much should you spend protecting it. As a general matter, it is very rare for a business to choose trade secret protection over a patent. The risks of losing a trade secret if the secret becomes public is often too high. However, where a trade secret is appropriately used, it can be leveraged not only to create a superior product, but as a marketing tool that will allow for leverage for decades.[33]

c. Trademarks

A trademark is a brand name which can be any word, name, symbol, device, or any combination, used or intended to be used to identify and distinguish the goods/services of one seller from those of others and to indicate the source of the goods/services. In some cases, shapes, sounds, colors, and smells can also be trademarked. For example, the Coca-Cola bottle, the Intel

[33] Many claim that the formula for Coca-Cola is public knowledge, but because there is no way of proving it Coca-Cola has maintained the mystery behind its formula.

Inside Bong, the Tiffany "Blue," and 20th Century Fox Fanfare are all trademark protected. However, a trademark cannot be functional and, in some cases, must also have secondary meaning.

Generally speaking, there are four categories of trademarks: fanciful or arbitrary, suggestive, descriptive, and generic marks. A fanciful mark is a mark that the owner created solely for the purpose of marketing a product or service under a trademark, such as XEROX and Kodak. An arbitrary trademark is a mark having a common meaning, but the meaning is unrelated to the goods or services marketed under the mark. Apple computer is a good example of an arbitrary trademark. A suggestive mark suggests a quality or characteristic of goods and services, but it requires the consumer to make a leap in thought to connect the trademark to the goods or services being offered. Example suggestive marks include Playboy, Citibank, and Greyhound. A descriptive mark describes the goods or services which are being offered. This category of mark is protected only after it acquires a secondary meaning, i.e. consumers have come to recognize the mark as a source indicator. International Business Machines ("IBM") and Atlanta Fish Market are trademarks that are protectable only when they acquired secondary meaning after years of use. In contrast, a generic mark, which describes a category of product or service, is not protectable even after acquiring secondary meaning. For example, if a shoe manufacturer were to name their brand "Shoes," it would be generic and could not receive protection. Some registered trademarks, once protected, can become generic via genericide and thus lose their trademark protection, such as Aspirin.

To receive trademark protection, a trademark owner is not required to register the trademark. However, an owner of an unregistered trademark does not receive as much protection as the owner of a registered trademark. For example, a trademark registered with the USPTO can enforce the trademark in all states within the U.S., sue for damages, and recover attorney fees and litigation costs. A trademark registered in a state can be enforced throughout the entire state, and receive similar statutory remedies. In contrast, an unregistered trademark, also called a common law trademark, is usually enforceable only within the geographic region where the trademark owner is using it in business, and sometimes the owner cannot sue for damages or recover attorney fees. To distinguish registered and unregistered trademarks, one can look at the symbol appended to the mark. An unregistered trademark owner can append the mark with the letters "TM," whereas trademarks granted by the United States Patent and Trademark Office (USPTO) may have the ® symbol next to the trademark.

As one special type of trademark, trade dress can also be protected if it serves the same source-identifying function as a trademark. Trade dress refers to the characteristics of the visual appearance of a business, a product or its packaging. Courts have found that the décor of a chain of Mexican-style restaurants,[34] a method of displaying wine bottles in a wine shop,[35] a design concept of attaching a birth certification to each doll[36] are protectable trade dresses.

The purpose of trademarks is different than the rest of the IP protections. Trademarks are intended to protect consumers from fraud. An example of this may be buying a fake Rolex at a high cost when the consumer believed it to be real. In creating a trademark, taking this fact into consideration may aid in developing a more protectable trademark. More practically, trademarks are used by businesses to gain an advantage in the market. Because there is no time limit on trademark protection or trademark registration, the trademark will remain valid indefinitely as long as it is being properly used in the market. Therefore, consumers are more likely to recognize a business's brand over time, even when new products are developed. If a competitor ever tries to use the goodwill of the brand, trademark protection allows the business to stop the action. Moreover, trademarks also protect against others not directly competing from using the brand where it may dilute or damage the brand. Trademark protection may perhaps be the most valuable form of IP protection over a long period of time, where customers buy a product because of the faith they have in the brand rather than the product itself.

d. Copyright

Copyrights protect published or unpublished original works fixed in any tangible medium and created with at least a minimal level of creativity. Fixation in a tangible medium means that the embodiment of the work in a copy is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration.[37] The types of works that can be protected under copyright are very broad, including literary works (including computer programs), dramatic, musical, artistic, and architectural works. Under U.S. Copyright law, a copyright owner has the exclusive right to reproduce the copyrighted work, prepare derivative works, distribute copies of the copyrighted work, perform the copyrighted work publicly, or display the copyrighted work publicly. A person must obtain permission from the

[34] Two Pesos, Inc. v. Taco Cabana, Inc., 505 US 763 (1992).
[35] Best Cellars Inc. v. Grape Finds at Dupont, Inc., 90 F. Supp. 2d 431 (S.D.N.Y. 2000).
[36] Original Appalachian Artworks, Inc. v. Toy Loft, Inc., 684 F.2d 821 (11th Cir. 1982).
[37] 17 U.S.C. §101.

copyright owner before using copyrighted works in any of the above ways, unless one or more of the statutory exemptions apply. Copyright law protects the form of expression, but not the underlying subject matter. There is no protection for idea nor facts covered by the work. Therefore, permission is not required for the use the idea and facts of a copyrighted work.

U.S. Copyright law has put several limitations on copyright owner's rights. The most important limitation is the so called "first sale doctrine."[38] Under the first sale doctrine, a lawful owner of a particular copy can resell or otherwise dispose of the possession of that copy without the authority of the copyright owner. This exemption allows us to freely give or sell a copyrighted work, such as a book, to other people. It also allows libraries to lend the books to their patrons. However, the first sale doctrine only limits the distribution right of a copyright owner and does not affect other rights. For example, the first sale doctrine does not authorize a lawful owner of a copyrighted work to make copies of the work, because making those copies infringes the copyright owner's reproduction right, rather than distribution right.

Another important limitation on copyrights, or defense to copyright infringement, is fair use. Fair use is the right to use a copyrighted work for specific purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research without permission of the copyright owner.[39] 17 U.S.C. § 107 lists the factors to be considered to determine whether a use of the copyrighted work is a fair use, including, among others, whether the use is of a commercial nature or is for nonprofit educational purposes, the amount and substantiality of the portion used, and the effect of the use upon the potential market for or value of the copyrighted work. Despite the factors listed in the statute, it is still unclear what a fair use is and millions of dollars in legal fees have been spent attempting to find a definition. Generally speaking, non-commercial use of a small amount of the portion tends to qualify as a fair use.

Different from patent and trademark, copyright is obtained immediately when the work is fixed on the tangible medium and no copyright registration is required. However, it is advantageous to register the copyright with the U.S. Copyright Office. For example, a copyright owner with a registered copyright is entitled to a presumption of validity and money damages even

[38] 17 U.S.C. §109(a).
[39] 17 U.S.C. § 107.

if she cannot prove actual loss caused by the infringement. Also, the copyright owner can get attorney's fees paid by the infringer if she wins the case.

The term of a copyrighted work is generally the life of the author plus 70 years. However, depending on the type of the work, the term can be different. For example, for a "work made for hire," the term is 95 years from the time of publication or 120 years from creation, whichever expires first. Generally, the person who creates a work is considered its "author" and the automatic owner of copyright in that work. This is not the case in a work made for hire. For a work made for hire, the employer or other person for whom the work was prepared is considered the statutory author. If a work is prepared by two or more persons and they have the intention that their contributions be merged into inseparable or interdependent parts of a unitary whole, then this is a joint work. Joint authorship entitles the co-authors to equal undivided interests in the whole work. Each co-author has the right to use or to license the work as he or she wishes, subject only to the obligation to account to the other coauthors for any profits that are made.

Copyrights are an inexpensive form of protection. Because a copyright is formed as soon as it becomes a tangible medium, there are no costs to creating the copyright above that of creating the product and the immensely low registration cost (around $35). Moreover, the long duration of copyright protection is significant. Because of the ease of which copyrights are created, most companies have a large portfolio of copyrighted material. These protections may prove extremely lucrative in a highly technological age where it is easy to misappropriate video and media copyrights.

These considerations are also important when software is concerned. Because the "ideas" of software can be patented, while the software itself can be copyrighted, many in the industry choose to only copyright their software, skipping the more expensive patenting process. Of course, the limitations here are that the copyright only protects exactly the code that is written, and none of the functionality contained within. Therefore, competitors can more easily get around the copyright if they are trying to achieve the same functionality.

Another issue that may arise in the software context relates to open source. Whoever writes the code, unless for a work for hire, owns the copyright to the code. Therefore, when an open source project provides code, the copyright to each portion of that code still belongs to the creator of the code. However, when the owner provided the code she implicitly agreed to license the right to the code, at least for a single use. Many open source projects in fact require the assignment

(informally) of the copyright to a single entity who can then enforce it if necessary. Another option that some take is to dedicate the work to the public domain, where it no longer has any form of protection.

III. Legal Considerations in Bringing a Product or Service to Market

Bringing a product to market comes with its own set of legal challenges and risks. As previously discussed, intellectual property provides certain exclusionary rights. Understanding these rights, while important, is not the end of the line when moving a product to market. There also exist other legal questions regarding ownership rights and disclosure risks.

a. IP Considerations

Ensuring that one has freedom to operate in the market is an essential step in moving forward with commercialization. To do this, the startup needs to assess whether its product, service, or namesake violate any patent, copyright, trademark, or trade secret rights of others. These risks will often present themselves during a thorough market analysis, and so it follows that a freedom to operate should accompany this step. However, conducting a freedom to operate analysis is an arduous task. To appropriately assess the patent landscape of a particular industry one needs to have an understanding of both the underlying technology and what the patents protect. Moreover, a comprehensive trademark search should also be undertaken. As such, legal counsel is recommended to complete these analyses.

b. Ownership of the Invention, Work, Trademark, or Trade Secret

Before assessing the landscape of the market, the ownership of an idea needs to be confirmed. Unfortunately, the inventor of an idea does not necessarily have a right to her invention. Rather, by contract of some sort, the inventor may have assigned her right to ownership of that idea to a third party. It is crucial to understand when the inventor has maintained ownership of the idea and when she has not.

When working for a company, it is almost universal that any IP rights are assigned to the company in the capacity as an employee. As such, any work done by the employee for the employer will almost always be owned by the employer. This applies to all forms of intellectual property. In patents, the inventor will remain the official inventor on the patent. However, the inventor will be contractually obligated to assign the rights of the invention over to the company. In copyright, the work will be considered a work for hire and so the company will typically gain

ownership. The owner of a trademark is the entity or person that uses the mark. Trade secrets are a more complex analysis, as trade secret ownership generally relates more to whether a trade secret exists or whether it is simply acquired knowledge by the employee. This analysis tends to drift into considerations of public policy related to employee mobility and protection of businesses. A person may, on the other hand, hold title to an invention/work where she is employed by a company if all of the work is done at home, with her own resources and research. If that work is closely related to the work done by the company, the employee is at a greater risk of not owning the idea. Of course, the inventor or creator of the work is welcome to negotiate in good faith with the company regarding purchasing or licensing the invention.

Ownership of an idea within a University has its own complexities. Universities gained the right to own and license research results from federally funded grants via the Bayh-Doyle Act.[40] Similar to working with a company, generally, research or inventions created by employees, faculty, or students using University resources are owned by the University (interestingly, many Universities do not enforce copyright ownership rights of its students or faculty).[41] This means that any invention created off-campus without the use of University resources can still belong to the inventor. However, if a student were to create something on campus using a University-owned software license, the University may own the right to that invention, depending on each individual University policy. To aid with this process, most Universities have a technology transfer office which specializes in the ownership of ideas by the University. Fortunately, under the Bayh-Doyle Act, all inventors are entitled to a portion of any license the University obtains, regardless of whether they assisted with the commercialization of the product after invention.[42] These percentages tend to be higher for student inventors than faculty inventors.

The role of the tech-transfer office is to aid in the licensing of any invention to a third party.[43] Because of this intermediary, it is often difficult to align the wants of the inventor, the University, and the third party. Another issue with this licensing scheme is the stage at which a lot of these technologies are licensed. Approximately 85% of licensed technologies are only at

[40] Gary D. Libecap, Marie Thursby, *Technological Innovation: Generating Economic Results*, Emerald Group Publishing, 2008, at 362.
[41] *Id*.
[42] *Id*. at 367.
[43] *Id*. at 363.

the proof-of-concept stage, nowhere near ready for commercialization.[44] This creates a very anti-competitive environment in purchasing licenses as there exists a lot of risks.[45] However, most technologies will not foster in the lab where Professor incentives are to publish rather than to develop. As such, there is a very low success rate in the licensing of these concepts and their creations into viable products. Another issue in attempting to license technology to these companies is where the company licenses the technology purely to block the use of it by anyone else so that its product can thrive. In a running royalty scheme, this damages both the University and the inventor.[46]

This issue may be good news for inventors hoping to form a start-up. Unless a product can clearly be licensed to a large scale company, Universities will often give preference to the inventor in licensing the product. However, because the inventor is often a student with limited funds, the licensing agreements are frequently more complex than a typical agreement. In exchange for a minimal good faith up-front payment, the University may require checkpoint payments after having a patent granted, initial sales reaching a certain level, etc. The University will likely also negotiate for a much higher running royalty rate than it would be given when working with a larger company.

c. Mitigating Disclosure Risks in Marketing or Sale of a Product

To sell a product or service people need to know about that product or service. However, a small start-up faces substantial risks in disclosing too much about its product or service such that others can take the idea and do it themselves. To ward against this, the greatest weapon a startup can use is a non-disclosure agreement.

An NDA is a legal agreement between at least two parties outlining certain confidential information and requiring that that information not be shared with anybody. Violation of an NDA is enforceable at law. Constructing an appropriately broad NDA is something that legal counsel should be obtained to assist with. The NDA should not only outline what information will be shared by both parties, but should also detail what information is already known by either party and as such will not be subject to the limitations of the NDA.

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[44] *Id*. at 366.
[45] *Id.*
[46] *Id.* at 367.

Unfortunately, startups often lack the leverage required to get others to sign an NDA. Large companies, angel investors, and venture capitalist firms may simply refuse to hear a presentation to prevent risk of future suits. Many companies may also require the NDA to be substantially narrow, to the point that it places the technology at risk of not being protected at all. Another risk faced by startups is a company signing an NDA but simply working around the NDA to create a similar invention.

IV. Company Formation

In moving forward with a successful venture, there will come a point where a sale is made or a service is performed. However, before proceeding to this point it is important to appropriately structure the business. As such, understanding the considerations between the various forms of business structures or entities can be a make-or-break factor for the business. As for the kind of entity that can be formed, the business can function as a sole proprietor, a partnership, a corporation, a limited partnership, or a limited company.

A sole proprietor is a business with only one owner/manager/employee. A sole proprietorship is not an official business and requires no formal filings with the state. Rather, it is formed by the conduct of the party, i.e., when an individual practices some sort of business trade. A sole proprietorship is taxed directly to the individual, and so no double taxing exists. However, the sole proprietor remains liable to third parties with absolutely no protections. Practically, many businesses start as a sole proprietorship before adding others or start selling products or services that may put the individual at risk of liability.

A partnership is an association of two or more persons to carry on as co-owners of a business for profit. Partnerships also do not require any formal filing to form. Generally, anyone who receives the profits of a business are presumed to be partners in that business, excluding typical wages. Similar to a sole proprietorship, partnerships have flow-through taxation and the partners are personally liable to third-parties. Therefore, where there may be a higher risk of high-paying suits, another entity may be preferable. Although forming a partnership requires no official filings, it is a still a good idea to transact an appropriate partnership agreement. A partnership agreement allows for the consideration of contingencies suited to the business. Where there is not a partnership agreement, a standard set of rules apply that may have detrimental effects to the business. As an example, standard rules do not account for changes in

management interests, and so any change in partnership under these rules will force dissolution of the partnership.

A corporation is considered its own separate entity, as though it is its own person (with different rules). A corporation is formed by filing the appropriate documents, including the corporation's articles of incorporation, with the Secretary of State of the state in which incorporation is sought. Because each state has its own incorporation rules, larger corporations often forum shop for the rules most favorable to it, hence the large number of corporations incorporated in Delaware. However, the vast majority of corporations are indeed smaller, closely held corporations rather than public corporations, and so may choose to incorporate in the state in which they operate. The owners of a corporation are the shareholders in that corporation. The shareholders then elect a board of directors, who, as a whole, are in charge of managing the company. The board then appoints officers, where the officers are considered agents of the corporation and can bind the corporation to third party obligations. These officers then run the company and manage the employees. In a smaller corporation, one person is able to play all of these roles. However, to avoid the risk of piercing the corporate veil—a process that allows liability to pass through the corporation to the shareholders in a closely held corporation—all of the formalities required by the incorporating state must be followed, e.g., regular board meetings.

The upside of forming a corporation is clear—it largely protects the owner of the business from third-party liability related to the business. Unfortunately, this benefit is shrouded by the fact that corporations are effectively double taxed. First, the corporation is taxed on its profits. Under the newly enacted tax system that tax rate is a flat twenty percent, substantially lower than the previous top rate of thirty-five percent. Second, the shareholders are taxed on the dividends received as ordinary income. While the corporation is able to deduct its expenses, which may include wages of its employees or agents (who are each taxed individually on those wages), because deductions are subject to other taxes the corporation does not necessarily break even.

Another consideration is that there are two corporations that can be formed: a C-Corp and a S-Corp. The C-Corp is the basic corporation previously discussed while the S-Corp is an entity that does not face double taxation. Generally, an S-Corp must have less than 100 shareholders, only one class of stock, and the owners must be U.S. citizens or resident aliens—something that

many closely held corporations will qualify for. S-Corps, however, often face greater scrutiny from the IRS.

More recently, other company structures representing a good balance between the partnership and corporation have become popular. The first is a limited liability partnership (LLP). A limited liability partnership requires filing with the state and having at least one general partner and at least one limited partner. The benefits of this structure is that income taxation still flows through directly to the partners, while the limited partners are not liable for debts against the partnership. Unlike the partnership, there must be a general partner who holds management power over the other limited partners. This means that the general partner/s may be liable to third parties. Indeed, some limited partnerships overcome this by having the general partner be a corporation, where the owner of the corporation is not liable to third parties. It is still recommended that the limited partnership transact a partnership agreement.

The second limited business structure and perhaps the more popular is a limited liability company (LLC). LLC's enjoy the same benefits of being considered a separate entity where the owners do not face third party liability as a corporation, while also having the benefit of not being double taxed where the taxes flow directly through to the owners. Forming an LLC requires filing the required documents with the Secretary of State of the state in which the limited corporation hopes to incorporate. In member managed LLC's the members owe a duty of loyalty and care to the company and other members, while in manager-managed LLC's the only the manager maintains those duties.

Student entrepreneurs face further complexities, as some federally funded and state grants do not make awards to students that have formed an official entity that required filing. Therefore, in making an evaluation of what entity to form and when to form it, the student needs to carefully consider when it may face risks of liability versus when it is more imperative to receive free money in the form of grants. Otherwise, generally, forming an official entity with liability protections is not a long process, with the most important parts being drafting either the partnership agreement or articles of incorporation.

V. Navigating Governmental Laws and Regulations

Depending on the industry of the venture, government regulations certainly may limit the businesses ability to function. Businesses entering the financial market may be governed by

securities regulations while those entering the mobile technology space may face regulations by the National Transportation Agency or the Federal Aviation Administration. Whichever field the business is venturing into, understanding the regulations in place is critical to operating legally.

As an example of the differing types of regulations that may be faced by businesses, we briefly consider the Food and Drug Administration, perhaps the most highly regulated industry in the country. The FDA generally regulates foods, drugs, biologics, medical devices, electronic products that give off radiation, cosmetics, veterinary products, and tobacco products. Within each category, it has a different set of regulations.[47]

For example, if the business is proposing a biologic, or a new drug, the business must get a New Drug Application (NDA) approved for that drug.[48] However, before even filing this application the business must file an Investigational New Drug (IND) application with the FDA to gain approval for a clinical study (something that also needs to be approved by the IRB).[49] This application allows the FDA to consider whether the drug is safe enough to test on humans in a clinical trial and subsequently monitor the results of the clinical trial. Only after three separate phases of the clinical study are completed, without being put on hold by the FDA, can the business file its NDA.[50] The FDA then has 180 days to review the NDA, whereby the application may be approved or rejected pending further investigation.[51] Even once approved, the business is required to provide regular reporting's to the FDA on the therapeutic effect in the market.[52]

On the other hand, if the business were to propose a related medical device, that device would be subject to one of three class level restrictions.[53] Class I devices are basic medical devices for which only general controls like registration and record keeping are required (e.g., band-aids, tongue depressors, etc.).[54] Class II devices require greater controls than Class I, but still have sufficient information and research to provide the appropriate assurance of safety.[55]

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[47] Gary D. Libecap, Marie Thursby, *Technological Innovation: Generating Economic Results*, Emerald Group Publishing, 2008, at 210.
[48] The process for a new drug is different to that of a generic drug. Generic drugs are approved through an application called an Abbreviated New Drug Application (ANDA). *Id*. at 214.
[49] *Id*. at 209
[50] *Id*. at 210.
[51] *Id*. at 211.
[52] *Id*.
[53] *Id*. at 218
[54] *Id*.
[55] *Id*.

Some Class I (most are exempt) and Class II devices are generally cleared to enter the market through a 510(k) application process.[56] The 510(k) application process requires a showing of a substantially similar predicate device on the market that would provide reasonable assurance of the safety of the population.[57] Class III devices are those devices represented to be life supporting, implanted in the body, or presenting unreasonable risk of illness or injury.[58] Class III devices require approval via a Pre-Market Approval Application (PMA).[59] This PMA process is similar to the NDA process for drugs in that approval for clinical studies is first required (by the IRB), the FDA closely monitors those clinical studies, and then the PMA application must include all of the relevant information for assessment.[60] As if these processes are not complex enough, it may further complicate itself where the two categories are merged, such as with drug-emitting stents.

Understanding governmental regulations in the relevant industry is an incredibly necessary function in moving forward with a business. Obtaining counsel with expertise in these areas will allow the business to appropriately address the issues, perhaps saving time and substantial funds. Moreover, the faster a business moves through the approval process, the faster the product moves to market. Where the industry involves high-volume and high-cost product, every additional day on the market could mean millions of dollars.

VI. Conclusion

Certainly, startups are exciting ventures with incredible potential for resulting in financial and societal growth. However, a successful startup cannot rely solely on a superior product or service. Accumulating and enforcing strong IP protections can help the startup find and maintain a foothold in the market. Understanding disclosure risks and ownership rights can prevent costly mistakes and wasted time. Choosing the appropriate company structure can save enormous amounts of money and reduce risk long-term. Efficiently navigating governmental regulations can generate substantial sums of money. Although most startups are focused on developing and

[56] *Id*. at 219.
[57] *Id*.
[58] *Id*. at 218.
[59] *Id*. at 219.
[60] *Id*.

producing a product or service while generating business, lawyers can be a significant value add in early-stage startups.