Villanova University Charles Widger School of Law

From the SelectedWorks of Michael Risch

2010

Trade Secret Law and Information Development Incentives

Michael Risch, *Villanova University School of Law*

Available at: https://works.bepress.com/michael_risch/9/

Trade Secret Law and Information Development Incentives[*]

Michael Risch[**]

I. Introduction

Trade secrets differ from other forms of intellectual property in many subtle ways that affect incentives to invest in information development. These differences relate not only to the types of information protected, but also to the requirements one must meet to protect each type of information. The various divergences from and intersections between trade secret law and other intellectual property laws result in "differential incentives," leading to differences in the amount and types of investments companies make in developing information. This chapter explores five types of differential incentives associated with trade secret law:

- Trade secret law v. no trade secret law
- Trade secret law v. patent law
- Trade secret law v. copyright law
- Trade secret law v. trademark law
- Trade secret law v. right to privacy

As discussed in more detail throughout the chapter, these comparisons flow directly from differences in the underlying theories for providing protection to different types of information.

The theoretical framework for incentives provided by non-secret intellectual property protection is fairly well established. Copyright law and patent law are based in part on the theory that creativity and innovation, respectively, are incentivized by rewarding creators with limited

---

[*] ©2009 by Michael Risch. Forthcoming chapter in THE LAW AND THEORY OF TRADE SECRECY: A HANDBOOK OF CONTEMPORARY RESEARCH, Rochelle C. Dreyfuss and Katherine J. Strandburg, eds., Edward Elgar Publishing, 2010.

[**] Associate Professor of Law and Faculty Director – Entrepreneurship, Innovation and Law Program, West Virginia University College of Law. The author thanks Alan Hyde, Mark Lemley, Anne Lofaso, Sharon Sandeen, David Schwartz, Katherine Strandburg, and participants of the NYU Workshop on Trade Secrecy. Valuable research assistance was provided by Gabriele Wohl, Nate Griffith, and Tommy Huycke.

governmental protection that facilitates recovery of investments in creation. Furthermore, the policies of copyright and patent law favor building on prior work, as well as freedom for all to use subject matter that is outside the scope of protection.[1] The result is a consistent tension about the proper balance of protected versus public domain material.

On the other hand, trade secrets are treated in exactly the opposite way—the trade secret owner is rewarded for keeping information that may be neither new nor original away from the public for as long as possible. Thus, information that could not be copyrighted or patented is still protected for as long as the owner can keep the information secret. But trade secret law does not stop there; the overlap between regimes is such that information about some things that can be copyrighted or patented – indeed some that are already covered by copyright or patent – may also be held as a trade secret. For example, a computer software program may be simultaneously protected by copyright, patent, and trade secret law. Its source code, a particular expression of the program's functionality, is protected as a literary work. Its functionality, the process by which it achieves a result, may be protected by patent law through the use of flowcharts without disclosure of all or even any source code. Finally, most of the source code can be maintained secretly; copyright registration does not require the disclosure of trade secrets and it is possible to register the copyright by submitting a redacted form that is virtually indecipherable.

Thus, the usual tension is skewed. All trade secret information is protected and none is in the public domain, but if any information ceases to be a trade secret, it may still not be part of the public domain if it is patented or copyrighted.

---

[1] WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY 11, 115-23 (2003) (noting that the "incentive" versus "access" paradigm is important in intellectual property, but that it should not be the only analysis to consider); *see id.* at 115–123 (discussing public benefits of the fair use doctrine in copyright law). Note, however, that copyrighted works need not be published to be protected, but there is little doubt that the public benefits more when such works are published and when others can fairly use portions of them in new works.

The overlap of trade secrets and other IP regimes leads to two criticisms of trade secret law. First, critics argue that the law does not provide a social benefit when secret information is hidden from the public domain. Second, critics argue that trade secret law provides little or no incentive to innovate because trade secrets are already privatized, and thus should not be treated as public goods. This chapter primarily addresses the second of these criticisms.[2]

The incentive criticism is right for the most part: trade secret law provides little incentive to innovate as compared to a world without trade secret law for two possible reasons. First, the law provides little incentive because companies will create secret information even in the absence of the legal protection – trade secret law provides little protection that self-help protection does not. Second, the value of shared information – for example in creating complementary products – means that often companies would rather share nominal secrets than spend money protecting them, such that trade secret laws are routinely disregarded in investment decisions. This chapter explores each of these alternate theories, as well as limits and exceptions to each.

Trade secret law does, however, provide some incentives to innovate *vis á vis* other types of intellectual property, although the incentives are not always obvious, intuitive, or necessarily great. This chapter considers how trade secret law differs from other types of intellectual property laws, and uses those distinctions to show that trade secret law will have some effect on incentives to innovate when compared to other forms of protection. The goal is not to quantify such incentives, but rather to point out where the differential incentives exist so that future data gathering and empirical research can study just how much effect trade secrets have on innovation.

---

[2] For a discussion of public benefits, see Chapter ** (Lemley); Michael Risch, *Why Do We Have Trade Secrets?* 11 MARQ. INTELL. PROP. L. REV. 1 (2007).

II. Incentives: Trade Secret Law v. No Protection

One economic theory of trade secret law[3] is that trade secrets provide an incentive to create secret information by granting protection for that information, in much the same way that copyrights and patents protect certain intangible goods.[4] As discussed below, the protection of secret information that the law provides does incentivize the generation of information, but in a world without protection of trade secrets innovation would not be impacted as much as one might expect. It turns out that creating incentives to innovate is a very minor justification for trade secret law.[5]

There are two potential explanations for the law's lack of impact on incentives. First, because secret information can be protected through self-help, companies will create information whether or not there is a law to protect that information. The only question is how much companies will spend to protect the information.[6] Second, because some information is more valuable when shared, information secrecy may not necessarily maximize firm profit. As a result, in such cases, trade secret law would not incentivize the creation of information because companies would not choose to keep the information secret.[7] To be sure, each explanation has exceptions, which is why the incentive created by trade secret law is minimal, and not zero.

A. Inherent Secrecy Incentives

---

[3] For discussion of non-economic theories, see Risch, *supra* note 2.

[4] A second, better, theory is that the availability of trade secret remedies provides a disincentive to spend money protecting secret information, which counter-intuitively makes it cheaper to misappropriate information. This unusual use of moral hazard seeks to avoid an "arms race" of protection. For further discussion, see Lemley, *supra* note 2; Risch, *supra* note 2.

[5] For further discussion of trade secrecy and incentives to innovate, see Robert G. Bone, *A New Look at Trade Secret Law: Doctrine in Search of Justification*, 86 CAL. L. REV. 241, 266-70 (1998); Vincent Chiappetta, *Myth, Chameleon or Intellectual Property Olympian? A Normative Framework Supporting Trade Secret Law*, 8 GEO. MASON L. REV. 69, 69 (1999).

[6] Lemley, *supra* note 2; Risch, *supra* note 2.

[7] *See generally* Chapter **, by Eric von Hippel & Georg von Krogh.

Patents and copyrights foster an incentive to create by allowing for a period of exclusive use. The exclusivity is granted because of the "public good" nature of inventions and original works – once information is published, anyone can use it without diminishing the creator's ability to do so. If others could freely use inventions and original works, then the creator might not be able to recover the cost of creation. Thus, creators are allowed exclusive use for a period of time so they can more readily recoup costs of creation. In industries where there is no extra-legal ability to enforce exclusive use (such as book publishing), patent and copyright may be the only source of protection to encourage innovation.

Trade secrets do not fall into the "public good" category like patents and copyrights because the disclosure of secret information for public use negates both secrecy and most of the value that could come from that secrecy. Thus, in the absence of forced disclosure,[8] the marginal incentive to innovate provided by trade secret law is small because companies would still protect secret information by, obviously enough, keeping such information secret. This is true even of patentable and copyrightable information that is not publicly disclosed or easily discernable by competitors.[9]

Secret information need not be an invention: even the earliest trade secret law protected customer information.[10] However, secret information must be exploited non-publicly, or it cannot be exploited at all – at least not to competitive advantage. As a result, companies can and will use self help mechanisms – such as locked doors and non-disclosure agreements – to keep

---

[8] One would expect a forced disclosure rule to hinder incentives for innovation. The extent of such an effect would depend on the mix of potentially patentable innovations versus unpatentable innovations. For a detailed discussion of forced disclosure, see Risch (n 2).

[9] Katherine J. Strandburg, *What Does the Public Get? Experimental Use and the Patent Bargain*, 2004 Wis. L. Rev. 81, 106 (companies will develop secret inventions whenever there is a market for them, regardless of patent protection).

[10] Empire Steam Laundry v Lozier, 130 P. 1180 (Cal. 1913). Further, a primary economic question is whether a company should divulge its information in a patent application. For a thorough discussion, see LANDES & POSNER, *supra* note 1, at 294-333, 354-71.

information a secret, private good whether or not trade secret law provides a remedy for misappropriation. Even if an owner of secret information could not use it for internal purposes, then underlying contract law, and not trade secret law, would create an incentive to innovate by providing a mechanism to license secret information.[11]

Thus, if information can be kept secret through self help, then owners will spend money to do so, even in the absence of the law.[12] For example, Robert Sherwood describes the costly efforts that businesses in Brazil and Mexico exert in an attempt to keep information secret in the absence of meaningful trade secret remedies.[13] Additional anecdotal evidence suggests that companies with offices in multiple countries will spend more money protecting secrets in those countries without trade secret remedies.[14] These examples provide evidence that it is not the law that drives generation of information, but rather that information will be generated in any event, and then protected by whatever methods are available.

Because secret information can be protected and exploited without law, the "base level" of such information in a "Zero-IP" society – the level of secret information we would expect without protection – would remain high.[15]

Further, if a company cannot keep its secrets confidential through self-help, then trade secret protection will not add new ways to keep the information secret; the law requires reasonable efforts to maintain secrecy and then provides a remedy only for certain types of

---

[11] Rochelle Cooper Dreyfuss, *Dethroning Lear: Licensee Estoppel and the Incentive to Innovate*, 72 VA. L. REV. 677, 696-697 (1986); Luigi Franzoni &Vincenzo Denicolo. *Innovation, Duplication, and the Contract Theory of Patents*, *in* THE ECONOMICS OF INNOVATION: INCENTIVES, COOPERATION, AND R&D POLICY (R. Cellini & L. Lambertini eds., 2008).

[12] Bone, *supra* note 5, at 264-268; Michael P. Simpson, *The Future of Innovation: Trade Secrets, Property Rights, and Protectionism—An Age-Old Tale*, 70 BROOK. L. REV. 1121, 1144 (2005); Thomas Rønde, *Trade Secrets and Information Sharing*, 10 J. ECON. & MGMT. STRATEGY 391 (2001).

[13] ROBERT M. SHERWOOD, INTELLECTUAL PROPERTY AND ECONOMIC DEVELOPMENT, 117-119 (1990).

[14] Risch, *supra* note 2.

[15] Bruce Abramson, *Promoting Innovation in the Software Industry: A First Principles Approach to Intellectual Property Reform*, 8 B.U. SCI. & TECH. L. 75, 94-95 (2002).

misappropriation. Unlike copyright and patent law, trade secret law does not privatize what would otherwise be freely accessible and usable information. Thus, trade secret law provides no incentive to create non-secret information.

1. No Extraordinary Monopoly Rents

Another reason that trade secret law does not necessarily create an incentive to innovate is that the law (and even secrecy without the law) does not necessarily confer an opportunity for the owner to charge more for its products or services than would be available on the open market. Further, to the extent that trade secrets allow for some price control, it is the secrecy – not the law – that creates the incentive.

Many markets are slightly imperfect, such that product differentiation and barriers to entry can allow for higher prices. Thus, a trade secret might have competitive value as a product differentiator, but every company has information with competitive value. Trades secrets make it harder to copy the differentiator, but competitors can develop different secret differentiators.[16] Take customer lists, for example: knowing who to contact will reduce costs of sales *vis á vis* a company's competitors. This fact, however, does not mean that a company can extract monopoly pricing; while the company may have some advantage and even the ability to increase price for a short period, competitors eventually join the market and develop their own customer lists.

Even a secret process for making goods will not necessarily allow for monopolistic pricing. For example, assume there is a secret process for making food taste better or making a widget more cheaply. Producers compete with other food and widget makers, and they still have some price competition. Competitors will have their own methods for taste enhancement and

[16] G. B. Ramello, *Intellectual Property and the Markets of Ideas*, 4 R. NETWORK ECON. 161 (2005).

cost reduction. As a result, development of the secret process will not be motivated very substantially by the law or any exclusionary rules. Instead,, the benefits are based primarily on the ability to keep the secret. Selling food to slightly more people or at a slightly higher price provides sufficient incentives for most innovations. Unless the secret creates a unique product with no substitutes, it will not allow for pure monopoly rents.

One concrete example of both the incentive to create absent law and the lack of monopoly rents is the tax preparation software market: TurboTax and TaxCut. Each has source code that is a trade secret; having that source code gives each an advantage over the other to the extent that the code includes differentiating features, and both have an advantage over those who do not have a product and face the high cost of development as a barrier to entry. Yet, each product costs approximately the same amount; the two are in stiff competition with each other and with other tax preparation options (both software and non-software), implying somewhat competitive pricing.

Now, if an employee of Intuit, the maker of TurboTax, wants to enter the market cheaply, he or she might take the Intuit source code and call the new product "SuperTax." That employee will save development time, and can undercut the price the other two companies charge because of lower investment requirements.[17] That lower price does not mean that the original pricing was monopolistic, though market imperfections mean that the software was likely selling for more than its marginal cost, which is very low for software[18]

---

[17] In theory, the price of the product would be the marginal cost of production because Intuit's development costs are sunk. However, return on development investment would be considered part of the marginal cost – an opportunity cost, but a cost nonetheless. This is obviously true in reality, because the cost of software is not zero, even in highly competitive markets (such as the tax market).

[18] This is similar to copyright protection in the same code. The copyright gives the developer a private good to sell; without protection, the code could be copied, driving the price to zero. Software is often described as a potential natural monopoly due to the high ratio between development costs, which are substantial in some cases, and virtually zero reproduction costs.

Thus, even if trade secret law did not exist, Intuit would likely create a tax program if it saw market demand. Further, it would want to keep the TurboTax source code secret even in the absence of a law doing so. Finally, even if trade secret law gives Intuit a remedy against the misappropriating employee, that remedy does not provide monopoly rents from its secret source code. Instead, damages based on somewhat competitive pricing would have to suffice as the incentive to develop secret source code.

Note that copyrights and patents share similar pricing features where the invention is not a significant differentiator. While an invention might be incorporated into a device such as a DVD player, one cannot say that monopoly profits are available to the maker of the DVD player unless the invention creates a new product category. Indeed, in many areas innovation may occur despite the ability of others to freely imitate, precisely because of some competitive product differentiation.[19]

There are times that patents and copyrights will make a difference – primarily for inventions that are easily viewed and copied.[20] Unlike trade secrets, copyrighted and patented information may be publicly disclosed, so that the costs of creation may not be recouped. Thus, copyrights and patents provide protected product differentiators such that pricing may be slightly elevated in a mostly competitive market. Of course, competitors may create their own product differentiators, but they must do so without the benefit of the copyrighted or patented information, creating a slight barrier to entry. Furthermore, if the copyright or patent creates a new product without substitutes, pure monopoly pricing will be available.

2. Policy Effects

---

[19] Michele Boldrin & David K. Levine, *Perfectly Competitive Innovation*, 55 J. Monetary Econ. 435 (2008); Stephen N. S. Cheung, *Property Rights and Trade Secrets*, 20 Econ. Inquiry 40 (1982).

[20] Strandburg, *supra* note 9.

The revelation that trade secret law *per se* does not provide an incentive to innovate could have an effect on how trade secret law and its remedies are analyzed. Particularly, analysis that assumes trade secret law will create an inventive to innovate in all cases may not reach justified or complete conclusions. For example, Roger Blair and Thomas Cotter lump trade secret damages in with copyright law when considering the amount of damages to award in order to preserve the incentive to create works.[21] Cotter and Blair likely reach mostly sound conclusions because their analysis is based on deterrence of misappropriation/infringement, which is similar to the protection cost minimization theory of trade secrets.[22] Even so, their analysis could be enhanced by more explicit attention to the differences between the incentives created by trade secret and copyright law.

3. When Does the Law Create an Incentive?

There are a few areas, however, in which trade secret law will spur creation of secret information where such information might not have been developed in the absence of legal remedies. The following are some areas where neither self-help nor existing legal remedies would be sufficient to incentivize creation of the information.

a. Lack of Absolute Secrecy

Where absolute secrecy would be too costly (or even impossible) through self-help, trade secret law will incentivize expenditures in innovation because it provides a remedy for misappropriation even if the owner only used "reasonable means" instead of "every means" to protect information.[23] The prototypical case is *E. I. duPont de Nemours & Co. v Christopher*, in which the Fifth Circuit held that it was trade secret misappropriation to fly a plane over a

---

[21] Roger D. Blair & Thomas F. Cotter, *An Economic Analysis of Damages Rules in Intellectual Property Law*, 39 WM. & MARY L. REV. 1585, 1642 (1998).
[22] Risch, *supra* note 2, at 59.
[23] Cheung, *supra* note 19, at 44.

construction site in order to learn about the new building's manufacturing facilities, even where such flight did not violate any other laws.[24]

Trade secret law incentivized construction of the building because it would have been extremely costly (and perhaps too costly for the builder) to protect the construction site from airplane surveillance. Money spent on protection would have reduced the money available to spend on the actual building and its secret manufacturing facility.

While some have called this decision an outlier[25], this type of incentive will become more important as surveillance technology improves[26] – if all buildings required Pentagon-like construction in order to protect commercial secrets, incentives to create secret information would be much reduced.

b. Government Regulation

Where companies deal with government agencies for product approval or for other regulatory purposes, trade secret law will provide a separate incentive for innovation. It is unlikely that government agencies will negotiate separate non-disclosure agreements with each affected constituent, but many regulatory laws require state agencies to maintain the secrecy of information that qualifies as a trade secret without the need for an agreement to do so. Without trade secret laws, such information either would not be created or would have low value due to public availability, reducing the incentive for its creation. Of course, without trade secret laws, the government might be more willing to protect information by contract, but even then the costs of doing so may be prohibitive. Chapter ** (Levine) discusses trade secrets in government regulation in more detail.

---

[24] 431 F.2d 1012 (5th Cir. 1970).
[25] LANDES & POSNER, *supra* note 1.
[26] Rochelle Cooper Dreyfuss, *Trade Secrets: How Well Should We Be Allowed To Hide Them? The Economic Espionage Act of 1996*, 9 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 1, 37 (1998).

c. Multi-Stage Manufacturing

Where products are manufactured by multiple companies in a multi-stage process, each link in the manufacturing chain may have a non-disclosure agreement with the links directly on each side, but there will be no privity of contract between links that are more than once removed from earlier or later stages. Also, in some industries information sharing agreements are rare due to custom or transactions costs.[27] Non-privity and informal transactions might not pass contractual muster, but trade secret law still imposes a duty of secrecy on the entire chain, such that each link that seeks a non-disclosure agreement would be able to enforce its rights even without a contract.[28] This makes it less costly to enter into such contracts, and thus enhances the desire to innovate.[29] Without trade secret law, parties might be more likely to obtain iron-clad contracts with all parties; here trade secret law creates incentives by reducing a particular type of protection cost.

d. Employer-Owned Information

In industries where information is typically owned by the employer by operation of law rather than by contract[30] and in occupations where information is typically owned by the employer without an assignment agreement (such as sales contact information), trade secret law will provide an incentive to develop information separately from any contractual obligations. Because norms would militate against non-disclosure contracts, companies might not create or share the information as readily to avoid information loss.

---

[27] Dan L. Burk & Brett H. McDonnell, *The Goldilocks Hypothesis: Balancing Intellectual Property Rights At the Boundary of the Firm*, 2007 U. ILL. L. REV. 575, 601-602.

[28] Dan L. Burk, *Intellectual Property and the Firm*, 71 U. CHI. L. REV. 3, 8-9 (2004).

[29] *Id.* at 615; Robert P. Merges, *A Transactional View of Property Rights*, 20 BERKELEY TECH. L.J. 1477, 1507 (2005); Cheung, *supra* note 19, at 44.

[30] CAL. LAB. CODE § 2860 (West 2003); Nathan Newman, *Trade Secrets and Collective Bargaining: A Solution to Resolving Tensions in the Economics of Innovation*, 6 EMP. RTS. & EMP. POL'Y J. 1, 43 (2002).

This incentive is likely quite low. First, to the extent that such information is necessary for doing business, it might be created even without trade secret law.[31] Second, if the information were valuable enough, lack of trade secrecy protection might lead to new norms of contractual protection.

Similarly, the notion of a "company" keeping information secret simplifies the complexities associated with multi-employee development and portable work experience. Information is often developed by multiple employees and it is difficult to manage any given employee's ownership claims on information. Contract law cannot fully compensate for multi-employee development because some states bar non-competition agreements and most states frown on employers keeping employees from using their general knowledge and skills for new employers. Separating general knowledge from specific trade secrets can be difficult.

However, trade secret law will give employers an incentive to invest in innovation because even if each employee claims that his or her own knowledge comprises personal skills and experience that can be transported from job to job, the employee cannot claim to own the information developed by others.[32] Trade secret law thus creates a framework for companies to protect shared innovation as against individual employees who might claim to own pieces of the whole as general knowledge.[33]

This incentive should not be overstated. Multiple departing employees who form a competing company might claim that their combined general skills are the same as what their previous employer viewed as a trade secret. Further, employee incentives to innovate for an

---

[31] Bone, *supra* note 5, at 272.
[32] Burk & McDonnell, *supra* note 27, at 618.
[33] *Id.* at 614; Newman, *supra* note 30, at 35-36.

employer will be reduced if trade secrets cannot be separated from general experience.[34] As a result, the employer must strike a delicate balance between general knowledge and specific secrets, to jointly maximize employer investments in development of information and employee incentives to create valuable secrets for the employer. Doing so may mean relinquishing some potential trade secrets to employees.

e. Non-Disclosure Agreements

In states where non-disclosure agreements are only enforced if the information to be protected is a trade secret, then trade secret law creates an incentive that is co-extensive with contract law. This incentive, however, is illusory – in a world without trade secret law (which preempts other laws under the Uniform Trade Secrets Act in any event), courts would likely enforce secrecy contracts because no law would stop them from doing so.

The above differential incentives are all related. First, they appear in the gaps created by contract, tort, and self-help. These gaps may be due to the type of information, the type of self-help available, or even the background law.

In addition to the above categories, to the extent that trade secret laws eliminate wasteful spending or otherwise reduce the cost (or increase the value) of research, then companies may spend more on generating certain types of intellectual assets.[35] Such shifting of expenditures, however, is not the type of incentive envisioned by this chapter because the shift need not necessarily be toward information development. Indeed, *any* cost constraint or subsidization will give incentives to shift limited expenditures among different ways to make money, including

---

[34] Burk & McDonnell, *supra* note 27, at 608-609; Newman, *supra* note 30, at 33-34; Dreyfuss, *supra* note 26, at 38-39.

[35] Dreyfuss, *supra* note 26, at 39.

information development; this chapter primarily addresses whether or not the protection enhances innovation by creating a greater return on intellectual property investments.[36]

The distinction is an area of potential further research. For example, it would be interesting to know whether barring the use of high-tech surveillance creates an incentive to create information where no incentive might otherwise exist or whether barring such surveillance simply decreases the cost of hiding information that would have been created anyway. The answer likely differs by industry and information type.

B. The Value of Shared Information

An alternative reason why trade secret laws might provide little incentive to create information is that companies do not necessarily value the secrecy of information, but instead maximize profit by sharing information.[37] Alan Hyde, for example, argues that areas of high worker mobility have greater innovation due to the value of shared information.[38] Further, unclear definitions of what specific information employers consider to be trade secrets[39] increase the likelihood of knowledge sharing.[40] Ben-Atar goes so far as to argue that America's early economic development was founded on the emigration of skilled labor from Europe to the

---

[36] *See, e.g.*, Petra Moser, *How do Patent Laws Influence Innovation? Evidence from Nineteenth-Century World's Fairs*, 95 Am. Econ. Rev. 1214, 1231(2005) (in countries without patent laws, innovation shifted toward industries in which secrecy was available).

[37] *See* von Hippel & Krogh, *supra* note 7.

[38] ALAN HYDE, WORKING IN SILICON VALLEY: ECONOMIC AND LEGAL ANALYSIS OF A HIGH-VELOCITY LABOR MARKET (2003); LAWRENCE LESSIG, THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD 70-71 (2001); Paul Almeida & Bruce Kogut, *Localization of Knowledge and the Mobility of Engineers in Regional Networks*, 45(7) MGMT. SCI. 905 (1999); John Dubiansky, *The Role of Patents in Fostering Open Innovation*, 11 VA. J.L. & TECH. 7 (2006), 14; Ronald J. Gilson, *The Legal Infrastructure of High Technology Industrial Districts: Silicon Valley, Route 128, and Covenants not to Compete*, 74 N.Y.U. L. REV. 575, 600-601 (1999).

[39] James Pooley, *The Top Ten Issues in Trade Secret Law*, 70 TEMP. L. REV. 1181, 1182 (1997).

[40] Newman, *supra* note 30, at 39; Almeida & Kogut, *supra* note 38.

United States and the ensuing knowledge transfer.[41] Knowledge now flows from the U.S. to other countries as well.

Patent citations illustrate this point. Patent citation studies show that inventors are more likely to cite patents of local companies than distant companies.[42] This implies that information disseminates more readily in local regions as employees move from company to company, and by extrapolation secret information is similarly being shared. Further studies show that patent citation knowledge is shared most readily in Silicon Valley, where worker mobility is highest.[43] Also, "connectedness" may be a key factor in innovation,[44] implying that the value of shared information is strongest where there is direct sharing between people.

Assuming that sharing secret information is widespread, companies in theory do not consider the availability of trade secret laws when generating information; they either assume that they will not enforce their rights or that the law will not provide a remedy for most information leakage.[45] Studies that show high levels of innovation in spite of unused trade secret protection imply that trade secret laws do not provide any additional incentive to innovate.[46] Gilson, for example, posits that companies unhappy with information spillovers in Silicon Valley due to weak trade secret law would move out of the state, but in fact they have not done so.[47]

Whether Professor Hyde's findings in Silicon Valley can be extrapolated to all geographic regions and all trade secrets is questionable. Citation studies may push shared

---

[41] DORON S. BEN-ATAR, TRADE SECRETS (Yale University Press, New Haven 2004) 99-101.

[42] ADAM B. JAFFE & MANUEL TRAJTENBERG, PATENTS, CITATIONS & INNOVATIONS 174-75 (2002).

[43] Almeida & Kogut *supra* note 38.

[44] Lee Fleming, Charles King III & Adam I. Juda, *Small Worlds and Regional Innovation*, 18 ORG. SCI. 938 (2007).

[45] Yuval Feldman, *Experimental Approach to the Study of Normative Failures: Divulging of Secrets by Silicon Valley Employees*, 2003 U. ILL. J.L. TECH. & POL'Y 105, 119.

[46] Robert P. Merges, *The Law & Economics of Employee Inventions*, 13 HARV. J.L. TECH & POL'Y 1, 51 (1999); Lessig, *supra* note 38.

[47] Gilson, *supra* note 38, at 620-622.

information theory beyond its limit; patents that are cited in other patents are necessarily public, and reliance on patent citations to make the argument assumes that secret as well as public information is shared in the regional network. It is also unclear whether sharing increases value everywhere. For example, Sherwood's study of research parks in Brazil and Mexico shows the type of free-flowing information that Hyde posits in Silicon Valley, yet innovation in the former areas hardly mirrors that of the latter.[48]

Newman argues that extensive sharing is not desirable, even in Silicon Valley, and theorizes that free mobility of information merely transfers knowledge from lower-skilled workers to "opportunistic skilled workers" at a cost of profitability among large companies, who can no longer provide job security to lower-skilled workers.[49] Similarly, high turnover rates may hurt innovation by decreasing the incentives of companies to invest in their employees' human capital.[50] Newman argues that a better solution is governmental encouragement and mandates that facilitate protected technology collaboration, as seen in Japan, rather than relying on ex-employees and low job security to create positive network effects of information.[51]

III. Incentives to Innovate Among Different IP Frameworks

While trade secret law does not in and of itself always provide large incentives to innovate, it does provide protection different from that provided by other forms of intellectual property, and as such may provide differential incentives to create different types of intangible assets. These differences allow trade secret laws to avoid significant conflict with other intellectual property laws. That lack of conflict can shift resources toward certain types of

---

[48] SHERWOOD, *supra* note 13, at 119-122.

[49] Newman, *supra* note 30, at 46-47.

[50] Bruce Fallick, Charles A. Fleischman & James B. Rebitzer, *Job-hopping in Silicon Valley: Some Evidence Concerining the Microfoundations of a High-Technology Cluster*, 88 R ECON. & STAT. 472 (2006). The reduction in investment may be outweighed by benefits of high mobility, especially in the computer industry.

[51] Newman, *supra* note 30, at 36.

investment in intangible assets, which leads to differential incentives to innovate depending on the type of protection available and selected by the innovator.

Understanding these differential incentives first requires examination of the differential protection available. Trade secrets are both similar to and dissimilar from other areas of intellectual property in a variety of ways:

● Unlike patented inventions, trade secret information need not be unique, novel, or non-obvious to be protected.[52]

● In fact, trade secret information need not even be original, allowing for protection of information like names and phone numbers in a client list that would not be protected by copyright.[53]

● Unlike patent and trademark law, but like copyright, trade secret laws allow protection of identical information[54] if two parties independently discover it.[55] Two companies can own the same trade secret, though they arguably would never know it.

● Unlike all other forms of intellectual property, the trade secret right to exclude applies only when information is obtained by improper means, such as theft, breach of duty or confidence, or costly surveillance. This rule is arguably most like copyright's distinction between "illicit copying" and fair use, reverse engineering, or independent development;[56] however the analogy is weak because copyright does not require any wrongdoing other than the

---

[52] 35 U.S.C. §§ 101-103 (2006).

[53] Feist Publications, Inc. v Rural Telephone Service Co., 499 U.S. 340, 349 (1991); ABBA Rubber Co. v Seaquist, 286 Cal. Rptr. 518 (Cal. Ct. App. 1991).

[54] Two parties can own the same trademark, so long as the mark protects different goods and services, or if they exclusively serve different geographic regions. Such overlap is not really "identical" information as that term is used here because they actually designate different origination sources for different types of goods.

[55] CAL. CIV. CODE § 3426.1(a) (West 1997). "Reverse engineering or independent derivation alone shall not be considered improper means." The Uniform Trade Secrets Act (UTSA) does not include this sentence, though reverse engineering is commonly accepted as an exception to improper means. UNIF. TRADE SECRETS ACT § 1 (amended 1985), 14 U.L.A. 437 (West Supp. 2006).

[56] 17 U.S.C. § 107 (2006).

copying itself, whereas trade secret misappropriation requires improper means in addition to the "copying."

● Trade secret requirements resemble the patent requirement for usefulness[57] and the trademark requirement for actual use[58] because the trade secrets must have some independent economic value by being unknown to others. This threshold is relatively low, however, and minimal "sweat of the brow" is usually sufficient for protection.[59] Trade secrets only require potential value, while trademarks require actual use in commerce, which implies actual value.[60]

● With respect to registration, trade secrets are most like unregistered common law trademarks and unregistered copyrights. Unlike copyrights, there is no registration requirement prior to filing suit,[61] and unlike patents and trademarks, there is no examination.[62] The lack of registration means that trade secrets are often not clearly defined. This may justify weaker protection[63] and will certainly affect the types of innovations that are kept secret rather than copyrighted or patented.

● Finally, unlike a patent, which must meet strict novelty requirements, or a copyright, which must meet strict originality requirements, a trade secret need not meet strict secrecy requirements. All that is required are reasonable efforts to maintain secrecy, and information

---

[57] 35 U.S.C. § 101 (2006).
[58] 15 U.S.C. § 1051(a) (2006).
[59] Alex Foods, Inc. v Metcalfe, 290 P.2d 646, 654 (Cal. Ct. App. 1955) (finding that peculiar "likes and fancies" of customers are protectable).
[60] *But see* 15 U.S.C. § 1051(b) (2006) (registration for intent to use).
[61] 17 U.S.C. § 411 (2006).
[62] 35 U.S.C. § 111 (2006); *but see* CAL. CIV. PROC. CODE § 2019.210 (West 2005) (requiring a plaintiff to identify the trade secrets at issue prior to discovery). Section 2019.210 is formerly and better known as § 2019(d).
[63] Burk & McDonnell, *supra* note 27, at 608-609.

that is publicly available but obscure might still be secret, such as a posting on a single server on the internet where no index points to the information.[64]

These differences and overlaps in protection can lead to differential incentives not only to create information, but also to create certain types of information. The following discussion compares the effect of trade secret law on such incentives in light of the laws of patents, copyrights, trademarks, and privacy.

A. Trade Secret Law v. Patent Law

The differences in protection between patents and trade secrets will lead to different incentives to develop inventive information. Patent law and trade secret law cannot be co-extensive because trade secrets must be secret and patents must be publicly disclosed. This dichotomy can lead to differing investments in different types of information, but the choices are more complex than that. As discussed below, there are potentially patentable inventions that an inventor might keep secret, there are inventions that are patentable but for which related information might be kept secret, and there are inventions that can never be patentable. These and other combinations lead to complex effects on incentives to innovate.

1. Limited terms

One of the primary differences between trade secrets and patents is the protection term. U.S. Patents expire 20 years after the patent application is filed, and applications are generally published eighteen months after they are filed, giving competitors a head start in developing non-

[64] DVD Copy Control Ass'n v Bunner, 10 Cal. Rptr. 3d 185, 192-193 (Cal. Ct. App. 2004) ("Publication on the Internet does not necessarily destroy the secret if the publication is sufficiently obscure or transient or otherwise limited so that it does not become generally known to the relevant people, i.e., potential competitors or other persons to whom the information would have some economic value.").

infringing alternatives even before the patent issues.[65] Trade secrets, however, may be protected for as long as the owner can keep the information a secret.

As a result, businesses must decide whether exclusive rights for a relatively short period (offset by the commensurate disclosure) are more valuable than secrecy rights potentially exercised over the long term (offset by the risk of disclosure and independent development).[66]

A gating factor is the ability to keep the invention secret in the first place; inventions that can be easily studied make poor trade secret candidates.[67] Other factors affecting this differential incentive include the likelihood of obtaining a patent (and the commensurate loss associated with public disclosure but no patent) as well as the likelihood that others will independently develop the same innovation in the future, which would shorten the life of the trade secret.[68] Additionally, the desire to license the innovation is a concern – it is much less costly (and more common) to license patented inventions.[69] It appears that many innovations can be kept secret long enough to dissuade inventors not to file a patent; one study shows that approximately 15% of important innovations were patented, and that the patenting rate depends on secrecy.[70]

A final factor is whether part of the innovation can be patented and part can be kept secret. Firms will, if possible, choose an optimal mix of patenting conjoined with undisclosed

---

[65] Nisvan Erkal, *The Decision to Patent, Cumulative Innovation, and Optimal Policy*, 23 INT'L J. INDUS. ORG. 535 (2005); Sharon K. Sandeen, *Kewanee Revisited: Returning to First Principles of Intellectual Property Law to Determine the Issue of Federal Preemption*, 12 MARQ. INTELL. PROP. L. REV. 301, 344 (2008).

[66] Jared Earl Grusd, *Internet Business Methods: What Role Does and Should Patent Law Play?*, 4 VA. J.L. & TECH. 9, 47-49 (1999); Erkal, *supra* note 65; BRIAN C. REID, CONFIDENTIALITY AND THE LAW 62 (1986).

[67] Petra Moser, 'Why Don't Inventors Patent?' (National Bureau of Economic Research, Cambridge, Working Paper No. 13294, June 30, 2009) (inventors are less likely to patent where their inventions are more easily kept secret), *available at* <http://ssrn.com/abstract=930241>; Cheung, *supra* note 19; REID, *supra* note 66. Some have argued that in the limiting case patents and trade secrets are perfect substitutes where there is no risk of reverse engineering. Franzoni & Denicolo, *supra* note 11.

[68] Erkal, *supra* note 65. Strandburg, *supra* note 9, at 107-8 calls this the "expected trade secret return," the amount that the inventor expects to earn before the secret information is discovered.

[69] Cheung, *supra* note 19, at 46; ASHISH ARORA, ANDREA FOSFURI & ALFONSO GAMBARDELLA, MARKETS FOR TECHNOLOGY: THE ECONOMICS OF INNOVATION AND CORPORATE STRATEGY 262 (2001).

[70] *See generally*, Moser, *supra* note 67.

know-how and improvements that are maintained as trade secrets.[71] U.S. patent law currently gives inventors a year to make this determination; commercial exploitation of secret inventions will nullify any patent filed more than a year after such exploitation.

2. Non-patentable subject matter

Some inventive information cannot be patented, such as newly discovered mathematical algorithms and natural phenomena. To the extent that businesses can make money from such non-patentable ideas (and keep them secret), then trade secret law would provide a differential incentive to develop such ideas.[72] Thus, this category might be a good way to measure what the incentive effect of trade secret law might be in the absence of patent law, because patent law might as well not exist for unpatentable subject matter.

For example, in *In Re Schrader*, the patent applicant developed a purportedly new way to calculate the winners of a particular type of auction.[73] The Federal Circuit Court of Appeals ruled that such an invention, no matter how novel, could not be patented because it was essentially a mathematical algorithm. Armed with this ruling, future developers of such mathematical methods will instead rely on trade secret law to protect innovative algorithms that have no application in a broader physical process.[74]

Included in this category is the tacit know-how that trade secret law can protect but that cannot be made concrete enough to patent. Also included are incentives for market

---

[71] Elisabetta Ottoz & Franco Cugno, *Patent - Secret Mix in Complex Product Firms*, 10 AM. L. & ECON. R. 142 (2008); REID, *supra* note 66, at 64-65.

[72] REID, *supra* note 66, at 62.

[73] 22 F.3d 290 (Fed. Cir. 1994).

[74] Moser, *supra* note 36 (in countries without patent laws, innovation shifted toward industries that provided effective secrecy).

experimentation, where only trade secrets can protect information about whether a certain business plan will be successful.[75]

Like know-how, information developed by consultants might be incentivized by trade secret laws. Such knowledge providers sell pure ideas to their clients (sometimes applying such ideas to a particular problem), but they keep the storehouse of general knowledge a secret in order to offer a service that clients are willing to pay for. Trade secret law gives consultants a differential incentive to develop this knowledge because patent law provides no incentive whatsoever.

This incentive arguably applies only when the information would not have been created anyway. Indeed, one argument against patenting certain subject matter is that no incentive is needed to create such inventions in the first place,[76] and trade secret law should not be wrongly credited with creating an incentive either. The difficulty is determining whether it is trade secret law that encourages an incentive, rather than the underlying availability of secrecy through self-help mechanisms. One would expect the differential to be greatest in areas where self-help cannot fully protect secrecy but where trade secret law provides a remedy, such as where absolute secrecy cannot be assured at a reasonable cost.

On the other hand, the existence of a patent (or other intangible or even physical technology asset) may create an additional incentive to create or improve know-how on the part of manufacturers and consultants. Because patents and other technology often require additional information to be useful to the licensee (whether intended by the creator or not) a desire to

---

[75] Michael Abramowicz & John F. Duffy, *Intellectual Property for Market Experimentation*, 83 N.Y.U. L. REV. 337, 390-391 (2008); *but see* LESSIG, *supra* note 38 (arguing that market experimentation need not be (and often is not) secret in order to provide an incentive to experiment).

[76] Katherine J. Strandburg, *Users As Innovators: Implications for Patent Doctrine*, 79 U. COLO. L. REV. 467, 476-477 (2008).

license or sell the underlying asset will incentivize the creation or improvement of know-how that can be licensed as well. First, the know-how may become more valuable if it is coupled with complementary technology, such as a patent.[77] Second, including know-how in a license may allow patentees to receive royalties even if the patent is invalidated. Third, patents can make it cheaper to apply specific knowledge to "a much broader array of applications" creating an additional incentive to create know-how in different areas.[78]

Note, though, that while trade secret law may provide an incentive to create non-patentable inventions, the result may be a suboptimal incentive. It might be that allowing inventors to patent currently unpatentable subject matter would provide more returns to them than are available through trade secrecy As a result, inventors currently might not have as much incentive to invest in development as they might if patents were available.

Also, inventors may not know which investments will yield inventions that fall outside current patentable subject matter. As a result, overall investment in development might be less than it could be because of the risk that investment will lead to non-patentable subject matter. This effect is exacerbated where the information is self- revealing and the inventor is unable to keep the resulting invention secret by contract or other means; because developers may not know whether the information will be self-revealing ex ante, investment may be even further depressed by the inability to patent certain subject matter.

These tradeoffs are empirical questions, likely tied to particular industries, but even if some inventions might be developed without trade secrecy law, many potential inventions might never be pursued.

---

[77] ARORA, FOSFURI, & GAMBARDELLA, *supra* note 69, at 116.
[78] *Id.*, at 262.

3. Obvious innovations

Somewhere between easily patentable innovations and unpatentable or clearly old ideas lie marginally patentable innovations – patentable subject matter that may or may not be obvious. Here, incentives to innovate are likely a wash with respect to patent law and trade secrecy. First, to the extent that an innovation is obvious due to the requirement of little research and development, then there will likely be little need for incentive in the first place – the improvement will happen in the ordinary course of business. Second, if an innovation is obvious, then it would likely be invented by others as well, eliminating the chance for obtaining a patent and significantly diminishing the value of secrecy.

This is not to say that there is no incentive to invest in the creation of obvious innovations. In the absence of costly research projects, such innovations would almost always be driven by business needs in the ordinary course of business. Thus, neither patent nor trade secret law would provide much additional push to develop "necessary" inventions. Where the discovery is wholly unexpected, the differences between legal regimes would have almost no incentive effect as the discovery will have been complete at the time the company decides whether to file a patent or rely on trade secrecy.

If, however, ex ante investments are made in innovations that are not "obviously obvious," such that patentability is uncertain, the choice between trade secret protection and patentability might very well create differential incentives. The calculus will depend on the type of innovation and the timing of the investment decision.

At the point of the research investment decision, trade secret law may encourage expenditures in areas that might not yield patents because trade secrecy will still preserve some

value for "obvious" discoveries.[79] The amount of investment will still vary, however. Where a research program is expected to yield at least some unlikely (that is, non-obvious) results, the amount spent on that program will depend on the perceived likelihood of patentability as well as the perceived value of any discovery in the competing protection schemes.[80] Perhaps counter-intuitively, the ease of getting a patent may offset its value; as patents become easier to obtain their values may decrease.[81] Even if the patent route is selected, secrecy might be important for protecting intermediate results pending patent application and grant.[82]

In the pharmaceutical industry, for example, the availability of trade secret law will have little effect on drug incentives since the value of a secret pharmaceutical is near zero. However, where the data associated with pharmaceuticals may be kept secret, there may be an incentive to develop such complementary information. Indeed, "data exclusivity" is an important policy issue precisely because such data cannot always be kept secret.[83]

With respect to business processes, however, trade secrecy may provide a valuable alternative to an otherwise risky patent application because a rejected patent will still be published, effectively destroying the trade secret.[84] Even so, patent law penalizes the choice not to patent: if someone else patents the same invention the secret first inventor can be sued for infringement despite being the first inventor.[85] Thus, the end effect on innovation is ambiguous

---

[79] Dreyfuss, *supra* note 11, at 732; REID, *supra* note 66, at 62-63.

[80] Erkal, *supra* note 65.

[81] Robert M. Hunt, *Nonobviousness and the Incentive to Innovate: An Economic Analysis of Intellectual Property Reform* (Federal Reserve Bank of Philadelphia, Working Paper No. 99-3, April 1999), *available at* <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=160674>.

[82] Bone, *supra* note 5, at 271-272; Cheung, *supra* note 19, at 49; Hunt, *supra* note 81, at 11; Suzanne Scotchmer & Jerry Green, *Novelty and Disclosure in Patent Law*, 21 The RAND J. OF ECON. 131 (1990).

[83] *See* chapter ** (Eisenberg) for a further discussion of data exclusivity.

[84] Christopher R. Balzan, *Mandatory Publication of Patent Applications Prior to Issuance of Patents: A Desirable Change in U.S. Policy?,* 18 LOY. L.A. INT'L & COMP. L. REV. 143, 147-150 (1995).

[85] Burk & McDonnell, *supra* note 27, at 609. The law in other countries may not penalize prior secret users in the same way. REID, *supra* note 66, at 64. In the U.S., secret users of business methods cannot be sued. 35 U.S.C. § 273 (2006).

and situation specific; the likelihood that one will attempt to patent a marginal invention is not the same as the likelihood that one will expend resources to develop the invention in the first place.

4. Application costs

More practically, the cost of obtaining protection will cause differential incentives to innovate. Trade secrets are usable immediately, while the right to exclude a patented invention can take much longer to secure. The information covered by the patent application may be used immediately, but not for more than one year before filing. After that, the patent right is lost unless a filing is made. Filing an application, in turn, usually leads to a destruction of the trade secret 18 months later when the application is published. If, at the end of the process, no patent issues then the mere attempt at a patent will have left the owner with nothing. Thus, the application process places constraints on how and when information can be used and how long it will retain value as a secret. In most cases, the one year limit will not delay usage of an invention, but in those cases of costly delay, trade secret protection may be preferred since it allows immediate commercial use of the information.

For example, a company may develop a secret manufacturing process that requires extensive tweaking before the end product is available for mass production. The one year patent clock will begin to run as soon as the first test unit is produced and sold, but it might take two years of market testing before the end product is widely released. Even if the patent application were filed at the last possible moment, it would become public six months after mass production begins. The company would have to decide whether six months lead time is sufficient. If so, then patent protection will be favored over secrecy. If not, then secrecy will be favored.

Even when patents issue, they can be costly to obtain,[86] and as such may not be used for relatively low value innovations, nor will they be used for innovations that take time to generate revenue when a firm has low cash flow and is unable to obtain significant financing.[87] By implication, smaller firms might focus more on trade secrecy and focused licensing, whereas large firms can develop a diversified portfolio of research and development.[88]

Further, the ease with which a development can be described will lead to differential incentives. Patent law requires an applicant to describe how a peer can make and use the invention at issue and to definitely claim the scope of the invention. If the innovator "knows" a method of manufacturing but cannot describe it without expending significant costs, then trade secrets will provide a positive differential incentive to create such new methods.

This is not a farfetched consideration given the role of apprenticeships throughout history. Methods that are taught through practice rather than through "book learning" might be too costly or even impossible to translate into the language of a patent. Law practice is one example: firms develop information about how particular judges rule on particular matters. This information is usually a "gut feel," learned through experience and not specific or definite enough to satisfy patent claim requirements. Such information is likely not even concrete or replicable enough to write down in an instruction manual. Nonetheless, law firms would be more likely to invest in the development and oral dissemination of such information throughout

---

[86] Applications can cost from $2500 to $250,000 or more depending on the nature of the application and any challenges to it on appeal or during patent interferences. Even $2500 will be cost prohibitive for many individual or small company inventors.

[87] Josh Lerner, *Patenting in the Shadow of Competitors*, 38 J.L. & ECON. 463 (1995).

[88] Dreyfuss, *supra* note 11, at 680; Josh Lerner, *The Importance of Trade Secrecy: Evidence from Civil Litigation* (Harv. Bus. Sch., Working Paper No. 95-043, 2006), *available at*, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=6089.

the firm if they could keep it secret, even though the information is too amorphous to be patentable.

B. Trade Secret Law v. Copyright Law

At first blush, one would not expect too many differential incentives to innovate between copyright law and trade secret law. In theory, the two regimes are co-extensive. For example, one might protect computer software source code as a copyrighted work as well as a trade secret because copyright registration does not require disclosure of trade secret source code.[89] Thus, whatever incentives copyright law provides should operate independently of any incentives that trade secret law provides. Closer examination, however, reveals that there are a few exceptions.

1. Uncopyrightable Information

Certain types of information, such as ideas, facts, and processes, are uncopyrightable.[90] Abstract ideas and facts are not copyrightable because they are not written down; only expression is protected by copyright, and even then the underlying idea or fact is free for all to use. Further, non-creative expression, no matter how much "sweat of the brow" was expended gathering the information, is afforded no copyright protection. For example, unwritten business plans, written product ideas, and customer names and telephone lists may be copied without infringement liability.[91]

Trade secret law, on the other hand, is precisely designed to protect unwritten business plans, written product ideas, customer lists and other non-creative and "sweat of the brow" information. Trade secret law requires that information have some independent economic value,

---

[89] There is no requirement that a registration be filed at all in order to secure a copyright, though in the U.S. one must file a registration in order to pursue an infringement claim.

[90] 17 U.S.C. § 102 (2006).

[91] *Feist*, 499 U.S. 340, at 349.

and that value is often expressed in terms of cost of creation. Thus, trade secret law is designed to protect certain types of information that copyright law expressly disclaims.

As such, trade secret law provides a clear differential incentive to create uncopyrightable information because alternative protection is unavailable. The lack of cross-correlation with copyright incentives means that in most cases the incentive would be no different than the incentives to create the information in a world without copyright law.

2. Copyright's Effect on Trade Secret

There are also times when the incentive to develop secret uncopyrightable information does depend on the existence of copyright law. Copyright law provides an incentive to express or simply organize secret information in a creative way. In a world without copyright law, authors would still attempt to keep secret information secret; the existence of copyright law would not necessarily change the nature of that secret information.

However, because otherwise uncopyrightable information can gain copyright protection by being organized in a particular creative way, copyright law can create an incentive for trade secret owners to organize secret information in a particular way. For example, a secret pricing methodology might produce copyrightable price lists if the methodology is creative. For example, in *CDN Inc. v Capes*[92] the court affirmed copyrightability of individual coin prices where the prices were selected by a secret but creative examination of information in the public domain. It held that its prices were "compilations of data that represent its best estimate of the value of the coins."[93]

Similarly, because copyright law does not protect ideas or functionality, copyright law gives software authors an incentive to express those ideas in creative ways, such as creative

[92] 197 F.3d 1256 (9th Cir. 1999).
[93] Id. at 1260. This ruling applied to *each* price, not the organization of the list of prices. Id. at 1259.

variable names, creative "pseudo-code" in comments, and creative source code organization.[94] The practical effect of such an incentive is to make it easier to identify identical copying by someone with access to the source code, which aids in detection and proof of both copyright infringement and trade secret misappropriation.

3. Trade Secret's Effect on Copyright

Trade secret law might affect the type of copyrighted works that are created and how they are protected. Imagine a world without trade secret law: such a world would only allow for the protection of source code so long as a company can actually keep it secret. Furthermore, registration of the source code with the copyright office – a requirement to sue for infringement – would require disclosure of that source code because no legal regime would be available for authors to request a secret registration.[95]

What might software authors do to maximize profits in such a world? First, the author may choose to forego registration. It is true that copyright is created at the time the work is written down, but in the United State a registration is required to enforce the copyright. Without an enforcement mechanism, copyright law would create little or no independent incentive to create secret works,[96] or at the very least to distribute such works in a format that might be copyable. To be sure, this will not always be the case because publication of copyrighted

---

[94] Pseudo-code is a non-functional representation of computer code written in plain English rather than in a computer language. For example, the computer code $c := a+b$ might be expressed in pseudo-code as "add the values of variables a and b and assign the result to c."

[95] The discussion above explains how trade secrets might provide an independent incentive to create source code where the law provides protection from disclosure by a regulatory agency (here, the Copyright Office). Chapter ** further discusses issues associated with copyright registration of trade secrets.

[96] Of course, the Copyright Office might allow "secret" registrations without trade secret law, but in a world where trade secrets are not recognized by law, there is no reason to expect governmental agencies to protect information just because a company wants to keep it secret. In that sense, the existence of the law shifts the mindset toward protection.

material ironically makes it easier to prove that someone else copied the work.[97] However, this might not prove to be enough of a benefit to induce authors to publish their source code – if it were, then they would already be doing so even with the benefit of trade secret law.

Second, if the author desired copyright registration, it might use a computer language that is not easily discernable or a format that is not easily copyable[98], if the use of such a language or format would cost less than the potential loss due to copying – whether by undetected copying, inactionable fair use, or copying of ideas only. For example, rather than using an easily readable high level language (such as the C programming language), a company might use machine language. Similarly, a company might fragment its code, such that only a small portion is registered; this would protect against wholesale copying (by a departing employee, for example) but would not protect against partial copying of those portions that are not registered.

The above scenarios have been borne out in a related context – namely access control measures and penalties for bypassing such measures under the Digital Millennium Copyright Act (DMCA). Where content providers were unable to limit access to materials, they took steps to make those materials less readable. For example, DVD's are encrypted to make movies more difficult to copy because the movie industry was hesitant to allow for DVD distribution without copy protection. Further, Congress's passage of the DMCA makes it illegal to bypass access controls such as encryption to effectuate copyright protection where high quality copying might go easily undetected. This law does not necessarily create an incentive for the creation of more

[97] Burk & McDonnell, *supra* note 27, at 607-608.

[98] Software becomes less copyable if it is distributed with a "dongle" – a physical device that must be connected to the computer before the software will operate.

copyrighted work, but it certainly has an effect on the types of work created as well as the types and scope of distribution.[99]

In sum, trade secret law is similar to the DMCA with respect to incentives to innovate. Trade secret law provides additional remedies for the unauthorized use of secret copyrighted information and provides methods for making access to such information more difficult. This allows authors to use lower cost development methods and avoid lost revenues, making the copyrighted material more valuable. As such, trade secret law increases the incentive to create secret copyrighted material.

C. Trade Secret Law v. Trademark Law

The types of information represented by trade secrets and trademarks cannot overlap. Trade secret information has value due to its secrecy, while trademarks have value if they effectively communicate information to the public. Even so, there are times when trademarks and trade secrets will interact in order to create additional incentives to create one or the other.

As discussed above, trademarks must be used in commerce in order to be protected. Similarly, under older law, one must have used information for it to be considered a trade secret. Even under the newer Uniform Trade Secrets Act, information must provide some competitive economic value. The combination of trademark and trade secret use provides an additional incentive to create each type of information. When trade secrets are given specific names, they can convey information to the world even if the secret itself is never revealed.[100]

---

[99] Robert A. Kreiss, *Accessibility and Commercialization in Copyright Theory*, 43 UCLA L. REV. 1, 54-56 (1995). The DMCA is similar to trade secret law with respect to spending on protection; without the DMCA, more money would be spent on technology, such as better encryption or more fragmented data, which would better limit access to copyrighted work in the absence of a remedy for bypassing the control. The DMCA creates an incentive for information producers to limit over-spending on access control technology.

[100] Grusd, *supra* note 66, at 47-49.

Such trademarks show up in everyday life; indeed, the "special sauce" on a particular hamburger is so commonly associated with trade secrets[101] the two have become synonymous – trade secret defendants often attempt to discern what the plaintiffs' alleged "secret sauce" might be.[102] The Kentucky Fried Chicken ORIGINAL RECIPE® is an example of a registered trademark covering a trade secret.

Measuring this incentive may be more difficult, however. The question is whether a) such "secret formulas" and other trade secrets would have been created in the absence of the ability to obtain trademark protection, and/or b) whether additional money was spent to improve the formulas because of the importance of distinguishing the "secret" through trademark law. It is unclear whether either of these propositions is true in general; the answer will likely vary by industry and even by company.

Conversely, another consideration is whether a company would invest as much time and money commercializing a secret if it could not identify the secret separately as a trademark. Here, it is quite likely that companies would attempt to exploit the secret, even if not by name. Simply having a better formula, whether or not named (or even whether or not secret) is something that might be advertised even in the absence of trademark protection for the secret.

This last point also sheds some light on how trademarks and advertising in general might affect the creation of information in the absence of trade secret law. If trade secret law did not

---

[101] Despite its fame, the "special sauce" mark is not a registered trademark. The only registered mark associated with the "special sauce" is TWOALLBEEFPATTIESSPECIALSAUCELETTUCECHEESEPICKLESONIONSONASESAMESEEDBUN® to McDonald's Corp. Even unregistered, however, the "special sauce" mark has trademark value, as a different company attempted to obtain "special sauce" as a trademark covering a sandwich dressing and had the mark cancelled.

[102] Quite often the secret sauce claimed by trade secrets plaintiffs ends up looking a lot like Thousand Island dressing. Indeed, the trade secret status of the "special sauce" is dubious since it can be reverse engineered. One such attempt is located at http://www.topsecretrecipes.com/recipedetail.asp?id=65. Even so, the actual recipe is so closely guarded that McDonald's itself lost the recipe for a time. Wallet Pop, Closely-Guarded Trade Secrets, http://www.walletpop.com/specials/closely-guarded-trade-secrets?photo=2.

exist, potential secret products would have two states: actually unknown to others, or actually known to others. Regardless of how those two states might affect incentives to invest in the creation of such information, the ability to protect a "secret" formula by name would likely increase the incentive to create such formulas whether or not the formula was actually kept secret. Trademarks are used to protect many products that are otherwise fungible commodities (e.g. bleach), even though the product itself is easily and cheaply reproducible. Thus, strong trademark protection can substitute for trade secrecy to some extent. If trade secret law is available, stronger trademark protection will add even more incentive to create secret formulas than weaker trademark protection. Thus, the protection of both types of laws may maximize incentives.

D. Trade Secret Law v. Right to Privacy

While copyrights, patents, and trademarks all require registration in the U.S. for maximum protection, developers of such information may want to keep the work in progress private pending publication or registration. The Harry Potter books, for example, were kept under very strict secrecy prior to their general availability. That secrecy no doubt enhanced interest in the book and likely enhanced early (and overall) sales of the book.

The value of keeping intellectual property private until published was recognized at least as early as 1890 by Warren and Brandeis:

> In every case, the individual is entitled to decide whether that which is his shall be given to the public. No other has the right to publish his productions without his consent…It may exist independently of any corporeal being, as in words spoken, a song sung, a drama acted…. The right is lost only when the author himself communicates his production to the public.... The statutory right [provided for the private material] is of no value, *unless* there is a publication; the common-law right is lost *as soon as* there is a publication.[103]

---

[103] Samuel D. Warren & Louis D. Brandeis, *The Right to Privacy*, 4 HARV. L. REV. 193, 199-200 (1890) (emphasis in original).

Indeed, privacy protects not just the work itself, but also publication of a list of the private works,[104] such as the disclosure of a secret project even if the details are not disclosed. One would therefore expect the right to privacy to incentivize development of intellectual property that is not immediately published.

However, the right of privacy provides little protection for a variety of reasons. First, it does not protect information that is of public interest.[105] Second, the right is individualistic; corporate entities receive little consideration.[106] Third, the individual right disappears if the private information is disclosed to a third party.[107] Fourth, the right to privacy applies to publication, and not use.[108] Finally, in states that follow the UTSA, the right to privacy may be preempted in the economic value context.[109] Of course, in the absence of trade secret law, privacy law might have evolved differently.

The limitations of privacy law mean that the availability of trade secret protection provides a differential incentive to spend more time and money developing commercial works in progress before such intellectual property becomes publicly known.[110] Measuring the effect of trade secret law may be difficult, however, because in many cases companies would keep IP development information secret in any event, so much of such development would undoubtedly occur without trade secret laws.

---

[104] *Id.* at 202.

[105] *Id.* at 214.

[106] *Id.* at 216, Neil M. Richards & Daniel J. Solove, *Privacy's Other Path: Recovering The Law Of Confidentiality*, 96 GEO. L.J. 123, 180-1 (2007).

[107] Richards & Solove, *supra* note 106, at 180-1, Sharon K. Sandeen, *Relative Privacy: What Privacy Advocates Can Learn From Trade Secret Law*, 2006 MICH. ST. L. REV. 667, 696-8.

[108] Sandeen, *supra* note 107, at 702-3.

[109] Uniform Trade Secrets Act §7 ("Except as provided in subsection (b), this [Act] displaces conflicting tort, restitutionary, and other law of this State providing civil remedies for misappropriation of a trade secret."). Of course, private information may be excluded from the preemption if the information does not fall under the definition of trade secret. Chapter ** (Graves) further discusses preemption.

[110] Warren & Brandeis, *supra* note 103, at 212 (comparing trade secret laws to the right of privacy).

Even so, there may be areas where remedies afforded by law provide additional incentives. First, incentives provided by trade secret law generally – such as where contract law fails or where protection is extremely costly – will apply to IP under development like any other secret information. For example, where works in progress can be fully protected only by extraordinary means, trade secret law will protect the secret even if only "reasonable" methods are used. This reduces the cost of development, encouraging more investment.

Second, trade secret law provides an additional incentive where the underlying IP protection does not allow for protection prior to publication. For example, if someone misappropriates an idea and patents it, the patent is void,[111] but the original inventor cannot claim the patent because the information is now public.[112] Similarly, the Copyright Act makes clear that the unpublished nature of a work is not necessarily a bar to a finding of fair use copying.[113] In cases like this, trade secret law provides the only remedy to protect the inchoate IP right, and that remedy may provide an additional incentive to fully develop ideas rather than rush to patent inventions or publish writings before they are complete.

Thus, trade secret law will provide a differential incentive to create other forms of IP where unpublished work in progress cannot otherwise be kept secret and where such work is not otherwise protected by law.

IV. Conclusion

There are two competing traditional notions of trade secret law and its effect on innovation. The first is that the law provides an important incentive to create information. The second is that trade secret law harms society and should not protect much, if any, information.

---

[111] 35 U.S.C. § 116 (2006).
[112] 35 U.S.C. § 102 (2006).
[113] 17 U.S.C. § 107 (2006).

The truth, of course, lies somewhere in between. This chapter has identified several ways that trade secrets can provide additional incentives to innovate, but also has identified many areas where there are no such additional incentives.

Additionally, this chapter has identified areas in which the incentives to create secret information are intertwined with other types of intellectual property, and how the absence of protection in any area might affect the other areas.

This analysis is by no means complete, and much of it can be further explored by gathering evidence. However, the chapter provides several paths that empirical research might follow to determine just how much of an incentive to innovate trade secret law provides *vis à vis* other types of intellectual property.