Intellectual Property and Digital Content
Volume II

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CRITICAL CONCEPTS IN INTELLECTUAL PROPERTY LAW

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INFORMATION MAY WANT TO BE FREE, BUT INFORMATION PRODUCTS DO NOT: PROTECTING AND FACILITATING TRANSACTIONS IN INFORMATION PRODUCTS

Kristen Osenga[*]

ABSTRACT

Information products—products that are used to organize, provide context, and distribute information—have gone largely unprotected by intellectual property regimes. As a result, producers of information products, such as databases and software, have resorted to alternative mechanisms to protect their investments. These mechanisms have resulted in both over-protection and under-protection of the information products. Further, the uncertainty in the boundaries of coverage, coupled with the resort to self-help mechanisms, may well inhibit, rather than facilitate, information flow. What is needed is a sui generis protection scheme for information products that clearly defines the boundaries and protection requirements for these works and that provides an appropriate level of protection, based in part on a liability-type regime, to both promote creation of information products and encourage transactions in these works. By protecting the investments of information product creators, while still allowing or even facilitating the free flow of information, it is possible to take a nuanced approach that capitalizes on the best of both intellectual property and alternative regimes. Information may want to be free, but information products do not.

[*] Associate Professor, University of Richmond School of Law. I would like to specifically thank Justin Hughes, Tom Cotter, Jay Kesan, Jim Gibson, and Corinna Lain for their thoughtful and detailed comments on this paper. I am also grateful to the participants at the George Washington/Software & Information Industry Association conference "Feist, Facts, and Function: IP Protection for Works Beyond Entertainment;" the Intellectual Property Scholars Conference at DePaul University College of Law; the Intellectual Property & Communications Law and Policy Scholars Roundtable at Michigan State University College of Law; the Southeastern Association of Law Schools annual meeting; and Faculty Colloquia at the University of Emory School of Law and the University of Richmond School of Law for their comments at the earlier stages of this Article. Finally, I appreciate the excellent research assistance provided by Jennifer Jones. Comments are welcome at kosenga@richmond.edu.

INTRODUCTION

Information is "the oxygen of the modern age."[1] Despite its importance, or perhaps because of it, conventional wisdom has long been of the view that information wants to, or even needs to, be free. This idea has been extended to encompass not just raw data, but also information products such as databases and software. These products—products whose primary value lies in organizing, providing context, and distributing information content[2]—have often been the subject of debate over whether and to what extent they should be protected. The tension between information being free and information products being protected is particularly acute in our technological society, where computers and the internet have made the collection, storage, management, delivery, reproduction, and transfer of enormous quantities of data as simple as clicking a mouse button or typing a keystroke.[3] Even print compilations of information can be easily transformed into digital format using today's technology.[4]

Yet while the combination of ever-improving technology and ever-increasing access to and availability of information creates low barriers to entry into the information product market, it also facilitates misappropriation of these works. It is natural for creators of these goods to seek some form of protection to inhibit misappropriation and allow recoupment of investments made in the creation of these information products.[5] For the most part though, traditional intellectual

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[1] Harold Jackson, *Eyewitness: The Medium Is Massaged*, GUARDIAN, June 14, 1989 (quoting Ronald Reagan). In less dramatic fashion, information has also been called "one of the nation's most critical economic resources." Peter K. Yu, *The Political Economy of Data Protection*, 83 CHI.-KENT L. REV. (forthcoming 2008), *available at* www.ssrn.com/abstract=1046781 (quoting INFORMATION INFRASTRUCTURE TASK FORCE, NATIONAL INFORMATION INFRASTRUCTURE AGENDA FOR ACTION 7 (1993)). *See also* JAMES BOYLE, SHAMANS, SOFTWARE, AND SPLEENS: LAW AND THE CONSTRUCTION OF THE INFORMATION SOCIETY 2 (1996).

[2] *See* Rochelle Cooper Dreyfuss, *Information Products: A Challenge to Intellectual Property Theory*, 20 N.Y.U. J. INT'L L. & POL. 897, 897 (1988) (defining "information products" as "items like computer technology (including software programs and computerized databases), 'designer genes' and semiconductors: products whose information content vastly exceeds in value the cost of the products on which that information is stored" (footnote omitted)).

[3] *See* J.H. Reichman & Pamela Samuelson, *Intellectual Property Rights in Data?*, 50 VAND. L. REV. 51, 64-65 (1997).

[4] *See id.* at 67. As true as this statement was in 1997, in the decade that has passed since Reichman and Samuelson published their article, the advances in technology have increased exponentially.

[5] *See, e.g.*, SOFTWARE & INFO. INDUS. ASS'N, SOFTWARE AND INFORMATION: DRIVING THE GLOBAL KNOWLEDGE ECONOMY 11 (2008), *available at* http://www.siia.net/estore/globecon-08.pdf. The Software & Information Industry Association (SIIA), the "principal trade association for the software and digital content industry," states that "[t]he U.S. software and information sectors depend on a meaningful international framework for the protection of [its] industry's

free for anyone to access and use, and further considered to be "the building block of knowledge" and "a cardinal element in securing competition in a free market economy."[9] As to the second, commentators opposed to protection for information products argue that it is speculative, at best, to presume that creators of these works require such incentive.[10]

Regardless of the merits of the debate, up to now, the decision has been seen as binary—either there should be protection or there should not be. This simplistic view, however, neglects an important facet of reality: the absence of protection does not guarantee that information will be free. In fact, evidence suggests that information products are routinely covered by other, more onerous, protection mechanisms that prohibit uses of information that traditional intellectual property protection would permit.[11] The fact that producers of these works are relying on alternative protection schemes removes much credibility from the second oppositional argument discussed above; that information products may be flourishing in the absence of intellectual property protection is not the same as flourishing in the absence of *any* protection. The incentive to produce these works is instead found in whatever other protective means the creators can wrangle to obtain at least the perception of exclusivity, but these alternate means lack the oversight and safety valves that can be implemented in an intellectual property scheme.[12]

This scheme of incomplete protection under intellectual property laws and potential over-reaching protection under a patchwork quilt of alternate means leads to a system with unclearly defined coverage and rights. In turn, this further hampers the flow of information because the increased protection obtained by the creator comes at the expense of

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have not been granted unfettered freedom—blackmail, fraud, perjury, espionage, and the like.

9 *See* Miriam Bitton, *A New Outlook on the Economic Dimension of the Database Protection Debate*, 47 IDEA 93, 100-01 (2006).

10 *See* Rebecca S. Eisenberg, *Patents on DNA Sequences: Molecules and Information*, *in* THE COMMODIFICATION OF INFORMATION 417, 430 (Niva Elkin-Koren & Neil Weinstock Netanel, eds. 2002); *see also*, Bitton, *supra* note 9, at 119 (noting that those opposed to protection point to the great number of information products, and specifically databases, being produced between the 1980s and today in the general absence of protection). However, this point may be overstated, particularly with respect to databases. Because many databases have been traditionally produced by single sources and the markets for these databases will not support multiple sources, it is unlikely the effects of market failure due to lack of protection will be seen. *See id.* at 121.

11 *See, e.g.*, Bowers v. Baystate Techs., Inc., 320 F.3d 1317 (Fed. Cir. 2003); ProCD, Inc. v. Zeidenberg, 86 F.3d 1447 (7th Cir. 1996); Jacqueline Lipton, *Information Property: Rights and Responsibilities*, 56 FLA. L. REV. 135, 144 (2004).

12 *See* Justin Hughes, *How Extra-Copyright Protection of Databases Can be Constitutional*, 28 U. DAYTON L. REV. 159, 202 (2002) (noting that "it is possible that promulgation of a database protection law will actually retard the rise of legal and technological self-help" and that "the exceptions and exemptions from a database protection law could prove more important than the protection itself"). *See generally* Jacqueline Lipton, *Balancing Private Rights and Public Policies: Reconceptualizing Property in Databases*, 18 BERKELEY TECH. L.J. 773 (2003).

increased transaction costs for disseminating the work[13] and difficulties in negotiating access and use of the information products.[14]

What is needed is a different approach, one that appreciates the value added to raw information when it is included in an information product while preserving, and perhaps enhancing, the free flow of the information itself. This scheme needs to provide a well-defined system of rights in information products to both encourage creation of these works and facilitate transactions related to access and use of the products, and yet be flexible enough to ensure that innovation is not stifled because the necessary information has become propertized. The proposal outlined below considers information products that have both information components that typically remove these works from protection and structural components that add value to the information components by organizing the data, providing context to the data, and facilitating distribution of the data in a useful fashion.[15] The proposed scheme uses these components to clearly define the boundaries of the works and protection, as well as requirements for and appropriate levels of protection for these works.

Part I discusses the current state of protection available for information products under the traditional intellectual property regimes of patent and copyright law. I conclude that neither of these systems sufficiently covers information products; indeed, these laws expressly exclude most of these works from protection. Part II describes alternative protection schemes that have been applied to information products in the absence of intellectual property protection, ranging from non-intellectual-property legal schemes to alternative non-legal mechanisms, as well as a number of legislative and academic proposals directed towards the protection of information products. I critique the inability of these means to provide adequate protection without over-reaching. Part III explains the advantages of providing protection for information products and proposes a sui generis protection scheme that addresses the concerns previously discussed while still permitting a

[13] *See* Norman Siebrasse, *A Property Rights Theory of the Limits of Copyright*, 51 U. TORONTO L.J. 1, 10-11 (2001) ("Since creators have an incentive to use the most efficient form of protection available, and denying copyright protection reduces the available options, the licensing costs of the alternatives [such as contract or trade secret] will be equal to or higher than those associated with the copyright protection they replace.").

[14] *See id.* at 56-57 ("Objective uncertainty in the law implies a greater likelihood in large differences between subjective valuations of the [right the creator can assign] and a concomitant increase in the probability of bargaining breakdown.").

[15] It needs to be clear at the outset that the structural component of the information products covered by the proposed scheme is integral to the product itself. For example, an audio CD or a video DVD is arguably an information product, consisting of the information component (the audio or video itself) and the structural component (the media). However, the structural component is not integral to the information product, but is simply the delivery mechanism; contrast a database, where the field structures and other components themselves fundamentally add value to the information component.

creator of information products to reap some benefits for his investment in the works. The resulting scheme avoids over-reaching and allows for inclusion of safety valves and oversight. Further, by clarifying the boundaries of protection and implementing a liability-type regime, the scheme facilitates transactions in information products and may actually promote the free flow of information.

I. INTELLECTUAL PROPERTY COVERAGE FOR INFORMATION PRODUCTS IS INSUFFICIENT

Although the debate about whether information products should be protected remains, reviewing the current state of protection for these works demonstrates that a new scheme is required to avoid over-protection and prevent the inhibition of information flow. Quite naturally, the first sources to examine for the protection for new, innovative, or creative works are the traditional intellectual property regimes—namely patent law and copyright law.[16] Neither of these regimes, however, provides adequate coverage for information products and, in fact, they actually exclude many of these works from protection in whole or in part.

A. *Patent Law*

A patent provides an inventor an exclusive right over his invention for a period of twenty years from the filing of an application for patent.[17] For a patent to be granted, the patent application must describe a new, useful, and non-obvious invention in sufficient detail to permit a person of ordinary skill in the art to practice the invention based on that description.[18] Patents are granted on a wide range of inventions, and statutory subject matter for patenting includes processes, machines,

[16] Trademark law, although a traditional intellectual property regime, is not a viable source of protection for information products for at least two reasons. First, trademarks are an unusual type of intellectual property because the express purpose of a trademark is to convey information. *See, e.g.*, Stacy L. Dogan & Mark A. Lemley, *The Merchandising Right: Fragile Theory or Fait Accompli?*, 54 EMORY L.J. 461, 467 (2005) ("Trademark law . . . aims to promote more competitive markets by improving the quality of information in those markets."). Second, the information products contemplated by this Article are unlikely to qualify for trademark protection, as a trademark is defined as "any word, name, symbol, or device" that is used "to identify and distinguish" goods and "to indicate the source of the goods." 15 U.S.C. § 1127 (2006).

[17] 35 U.S.C. § 154(a) (2006).

[18] The requirements for patentability of an invention are provided by 35 U.S.C. §§ 101, 102, 103, and 112 (2006).

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or device" that is used "to
goods." 15 U.S.C. § 1127

d by 35 U.S.C. §§ 101, 102,

manufactures, and compositions of matter.[19] While these categories are generally broad enough to cover nearly every imaginable invention, there are three judicially-created exceptions to works that otherwise fall into these categories.[20] Specifically, abstract ideas, laws of nature, and natural phenomena, the collection of which has been referred to as "fundamental principles," may not be patented.[21] Although neither the statutory provisions nor the interpreting case law explicitly excludes information,[22] information products have been barred from protection under patent law based on a number of theories.

First, some information products, such as databases, do not fit comfortably within any of the enumerated statutory categories (process, machine, manufacture, or article of composition). While the machine and composition of matter categories are clearly inapplicable, the process and manufacture categories seem at least plausible for information products. However, the Court of Appeals for the Federal Circuit has recently reinterpreted the statutory category "process" to require the method to be tied to a particular machine or to transform a particular article from one state or thing to another.[23] This redefinition has two potential impacts on information products. The first impact is that the court specifically left open the issue of whether the recitation of a computer is sufficient to tie a computer-based method to a particular machine to satisfy the first prong, calling into question the patentability of software.[24] The second impact is that the court reigned in what sort of data is eligible for transformation in the second prong. Here, the court grappled with the idea of transformation of non-physical objects, which may be implicated in information products.[25] The inputs and outputs of information products are often electronic data or abstract concepts, which the court indicates may fail the transformation prong of the test for subject matter eligibility unless the data is representative of a physical object.[26] With respect to the manufacture category, information products may encounter another hurdle. Case law has long excepted information products from patent protection under the "printed

19 35 U.S.C. § 101.

20 *See, e.g.*, Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980).

21 *See id.*

22 *See* Eisenberg, *supra* note 10, at 419.

23 *See* In re Bilski, 545 F.3d 943, 956 (Fed. Cir. 2008) (en banc).

24 The *Bilski* opinion was specifically directed to a business method that did not require a computer, as opposed to software. However, numerous amici urged the court to consider software at the same time. The court declined to address the issue, but did indicate that simply reciting that the process be performed by a computer will not necessarily yield a statutorily protectable process. *See id.* at 962 (leaving to future cases to elaborate "whether or when recitation of a computer suffices" to tie a method to a particular machine).

25 *See id.* at 962-63.

26 *See id.* The court indicates that the transformation "must be central to the purpose of the claimed process" and that the transformation must be of a physical object or substance, or of an electronic signal representative of any physical object or substance. *See id.* at 962.

matter doctrine," which excludes printed articles from patent eligibility.[27] The printed matter doctrine has been updated for today's technology to prohibit patenting of storage media including information (where the stored information represents the only new or inventive portion).[28]

Second, even if the information product falls within one of the four statutory categories, it may fall within one of the judicially-created exceptions to patent eligible subject matter—abstract idea, law of nature, and natural phenomena. For example, in early case law, software was denied patent protection because courts considered the invention to be simply an abstract idea.[29] At other times, because the software included an algorithm or equation that described the natural world, the work was held to be unpatentable because it fell within the law of nature exception.[30] In the last few decades, it had been understood that software inventions were eligible for patenting, but recent administrative and legal decisions indicate that these works may again be considered to fall within the judicial exceptions of fundamental principles.[31]

Third, there is a policy argument against the patenting of information. Patents are granted on the basis of a bargain between the patentee and the public, granting the inventor a limited-time exclusionary right in a tangible application of an invention in exchange for free disclosure of information to the public about the invention.[32] In the case of information products, because the work often does not provide any new disclosure to the public, the patent bargain is one-

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[27] *See, e.g.*, In re Sterling, 70 F.2d 910, 912 (C.C.P.A. 1934) (holding that a checkbook including both checking and savings stubs was not patentable because "the mere arrangement of printed matter on a sheet or sheets of paper does not constitute patentable subject matter").

[28] *See, e.g.*, In re Nuijten, 500 F.3d 1346, 1365 (Fed. Cir. 2007) (Linn, J., dissenting in part) (noting that "if the only distinction between a prior art storage medium and a claimed storage medium is the information stored thereon . . . then the claimed storage medium (with associated information) is" not patentable, either under 35 U.S.C. § 101 or 35 U.S.C. § 103 (citing In re Gulack, 703 F.2d 1381, 1387 (Fed. Cir. 1983))).

[29] *See, e.g.*, Gottschalk v. Benson, 409 U.S. 63 (1972).

[30] *See, e.g.*, Parker v. Flook, 437 U.S. 584 (1978).

[31] I have written elsewhere about the unfortunate revival of abstract idea rejections of software inventions. *See* Kristen Osenga, *Ants, Elephant Guns, and Statutory Subject Matter*, 39 ARIZ. ST. L.J. 1087 (2007). The recent *Bilski* case, discussed above, confirms my concern. There, the court reiterates the applicability of the fundamental principles exclusion from statutory subject matter, which is not troublesome, but seems to tie it to the machine-or-transformation test for a statutory process, which is troublesome. *In re* Bilski, 545 F.3d 943, 960-61 (Fed. Cir. 2008) ("[W]e . . . recognized that the Supreme Court has held that mental processes, like fundamental principles, are excluded by § 101 because phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts . . . are the basic tools of scientific and technological work. . . . Because [the claims at issue] failed the machine-or-transformation test, we held that they were drawn solely to a fundamental principle . . . and were thus not patent-eligible under § 101." (internal citations omitted) (internal quotation marks omitted)).

[32] *See* Eisenberg, *supra* note 10, at 425.

sided; the patentee gets the exclusionary right but the public does not get additional disclosure.[33] Thus, at best, patent protection for information products is incomplete and uncertain; at worst, patent protection for information products simply does not exist and is considered inappropriate.

B. *Copyright Law*

Protection under copyright law grants exclusive rights to creators of original expressive works.[34] The rights generally attach when the work is created and last for a period of the life of the author plus seventy years.[35] Prior to the early 1990s, information products were presumed to be covered by copyright law; however, copyright protection is now generally unavailable for information products for many reasons.[36] First, although the list of statutory categories of works for which copyright protection is available is fairly extensive and quite inclusive, bare information or data has been explicitly excluded from copyright protection under the idea/expression dichotomy, codified at § 102(b) of the Copyright Act: "In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery . . . ."[37]

Second, information on its own typically fails to qualify for protection under the originality doctrine, which states only original works of authorship are eligible for protection, where originality is found in a work that is independently created by its author and demonstrates a minimal level of creativity.[38] The threshold of originality is quite low. Courts have largely defined the requirement in the negative, describing what will not suffice to obtain protection, but facts and data generally have been found deficient.[39]

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33 *See* Eisenberg, *supra* note 10, at 427.

34 17 U.S.C. §§ 102(a), 106 (2006). Copyright protection is available for a wide range of expressive creations, including literary works, musical works, dramatic works, choreographic works, graphic or sculptural works, motion pictures and other audiovisual works, sound recordings, and architectural works. *See* §§ 102(a), 106.

35 17 U.S.C. § 302(a) (2006).

36 *See* Hughes, *supra* note 12, at 162 (noting that databases were perceived to have at least some protection in copyright prior to 1991, although the amount of coverage was ambiguous and varied by jurisdiction).

37 17 U.S.C. § 102(b) (2006).

38 *See* Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 358 (1991) (noting that "[f]acts are never original"); *see also id.* at 347 ("[F]acts do not owe their origin to an act of authorship. The distinction is one between creation and discovery: The first person to find and report a particular fact has not created the fact; he or she has merely discovered its existence.").

39 David E. Shipley, *Thin But Not Anorexic: Copyright Protection for Compilations and Other Fact Works*, 15 J. INTELL. PROP. L. 91, 93 (2007). At least one commentator has argued that not all facts are created equal and that "created facts" may be sufficiently original to satisfy

Third, information products are often considered "compilations"[40] and are likely to fail the special originality requirement associated with that type of work. Although the compilation may include preexisting materials or data, the originality requirement is met only when the selection, coordination, or arrangement of the information meets the threshold of originality.[41] Even if a particular information product meets this requirement, the protection is quite weak; for compilations of existing works, the underlying data "may be freely copied because copyright protects only the elements that owe their origin to the compiler—the selection, coordination, and arrangement of facts."[42] Further, computer-implemented databases often lack any sort of "arrangement" that the originality requirement seeks, because technology has made this arrangement irrelevant.[43]

Both the idea/expression dichotomy and the originality requirement (generally and with respect to compilations) serve to facilitate a balance between encouraging creativity on one hand, and permitting access to information and ideas on the other.[44] To reach this sense of balance, copyright law even grants partial property rights, extending protection to the "form in which an author has chosen to cast her thoughts or concepts and not to the thoughts or concepts themselves,"[45] thereby leaving the information free from protection. The idea/expression dichotomy also ensures that copyright, generally, is completely consistent with the First Amendment's requirement that information be generally free.[46]

A primary difficulty in applying the doctrines of idea/expression and originality, however, comes in determining how to categorize information products. Which portion of a work is unprotectable idea and which portion is protectable expression? What portion of a compilation represents originality of selection, coordination, or

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the originality requirement. *See* Justin Hughes, *Created Facts and the Flawed Ontology of Copyright Law*, 83 NOTRE DAME L. REV. 43, 59 (2007).

[40] 17 U.S.C. § 101 (2006) ("A 'compilation' is a work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship.").

[41] *See id.*

[42] *See Feist*, 499 U.S. at 359.

[43] *See* Jane C. Ginsburg, *No "Sweat"? Copyright and Other Protection of Works of Information After* Feist v. Rural Telephone, 92 COLUM. L. REV. 338, 345 (1992). Computer technology and the ability to store and retrieve seemingly infinite amounts of data have also skewed the "selection" requirement.

[44] *See* BOYLE, *supra* note 1, at 56-57.

[45] *See* Zimmerman, *supra* note 8, at 666.

[46] *See id.* at 669 ("Efforts to control the use of information or ideas by others will generally be doomed from the outset if the claim is classified as an attempt to interfere with freedom of speech. If, however, a claimant can march the same basic dispute onto the field and successfully raise the standard of property rights, her likelihood of success will improve markedly.").

arrangement?[47] For works other than information products, the line between idea and expression is often easier to draw, either because the nature of the work makes it simple to demarcate, such as a household ornament, or because we have clear rules as to how to distinguish, as in the case of a fiction novel.[48] Information products, however, typically reside at some point at or near the division between idea and expression, or may even encompass both in a non-severable fashion.[49]

While copyright law may have initially, albeit superficially, seemed hospitable to protecting information products, courts have squarely addressed both the idea/expression dichotomy and the originality requirement for the two primary types of information products—databases and software—and have concluded that any protection under copyright is quite limited. The originality requirement as applied to compilations, such as databases, is set forth in the Supreme Court's *Feist Publications v. Rural Telephone Service Co.*[50] opinion; the dividing line between idea and expression in software works is explored by the Second Circuit in *Computer Associates International v. Altai, Inc.*[51] Because of the impact these cases have had on the potential protection available for information products, they will be discussed briefly below.

In the *Feist* case, the Supreme Court clarified the level of originality required for a database to receive protection under copyright law. The databases at issue in *Feist* were published telephone directories. Rural had a monopoly franchise to provide telephone service to a number of communities and, pursuant to state law, was required to update and publish annually a standard white pages listing of its customers.[52] Feist wished to publish area-wide telephone books, some portions overlapping with areas serviced by Rural.[53] When Rural refused to license its listings, Feist simply took the necessary portions of the directories and incorporated them into its area directories. In a copyright infringement suit brought by Rural, both the district court and the Tenth Circuit found Rural's directories were protected by copyright law and held Feist liable for infringement.[54]

Feist appealed to the Supreme Court, which granted certiorari to resolve a circuit split about the viability of the sweat-of-the-brow doctrine—that is, whether copyright protection could be granted for industrious collection or whether protection was reserved for works of

47 *See id.* at 668-69.
48 *See* Dreyfuss, *supra* note 2, at 903.
49 *See id.* at 904.
50 499 U.S. 340 (1991).
51 982 F.2d 693 (2d Cir. 1992).
52 *Feist*, 499 U.S. at 342.
53 *Id.* at 342-43.
54 *Id.* at 344.

creative expression only.[55] Based on its analysis of the history of the Copyright Act, the Court concluded that Congress, in the 1976 Copyright Act, specifically overruled the sweat-of-the-brow doctrine by requiring originality for the protection of compilations.[56] On the facts of *Feist*, the Court determined Rural's directory was not protected under copyright because the selection of listings was obvious and the arrangement was "not only unoriginal, [but] practically inevitable" and "devoid of even the slightest trace of creativity."[57]

From the *Feist* case, the following analysis constrains the extent of copyright protection available for databases: 1) facts are not independently eligible for copyright; 2) that facts are compiled by industrious collection or sweat of the brow does not alter the non-copyrightable nature of the facts; and 3) collections of facts (and databases generally) become eligible for copyright protection only through a showing of creativity in the unique or original selection, coordination, or arrangement of the facts.[58] Court opinions subsequent to *Feist* demonstrate that this burden of originality often keeps factual compilations from copyright protection.[59] Various, seemingly useful, databases, such as specialized yellow pages, catalog numbers for parts, data about collectibles or car values, and classifications and taxonomies, have all been denied protection.[60] To avoid falling outside the scope of copyright protection, database owners have sought to qualify for copyright protection by injecting arbitrary creativity into the selection and arrangement of facts in their databases.[61] Unfortunately, in doing so, the database creator is often decreasing the product's utility, which derives value from having a comprehensive (albeit obvious) selection of facts provided in an easy to use (but unoriginal) arrangement.[62] Thus, for many databases, an important category of information products, copyright protection is simply not available.

The scope of protection for computer programs has similarly provided the courts with the opportunity to clarify the application of the idea/expression dichotomy. Much software appears to encompass expressive features (for example, in the visual portions or graphical user

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55 *Id.* at 345-46.

56 *Id.* at 354-56; *see also* 17 U.S.C. § 101 (2006) (defining a compilation as "a work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an *original work of authorship*" (emphasis added)).

57 *Feist*, 499 U.S. at 362-63.

58 *Id.* at 358.

59 *See* Shipley, *supra* note 39, at 99.

60 *See id.* at 99-130.

61 *See* James Gibson, *Re-Reifying Data*, 80 NOTRE DAME L. REV. 163, 181 (2004).

62 *See* Shipley, *supra* note 39, at 130 ("[A] comprehensive compilation that includes all the facts, data, or information from a defined class will rarely exhibit sufficient creativity in selection.").

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interfaces)[63] as well as idea or functional features (for example, the working algorithms that drive the program's behavior). Underlying both of these outwardly visible features is the code itself, the computer language that instantiates both the expressive and functional aspects that are apparent to a user of the program. Computer code itself has been found to include both idea and expression components as well.[64] Thus, the answer to the question of whether software is a copyrightable expression or a non-copyrightable (and potentially patentable)[65] functional idea is that it is both.[66] It is determining the placement of this line between functional ideas and creative expression that creates difficulty in obtaining copyright protection for software, as explained in the *Altai* case.

In the *Altai* case, the Second Circuit attempted to solve this difficulty and determine what portion of software is covered by copyright protection; the result of this attempt is the widely adopted, yet difficult to apply, "abstraction-filtration-comparison" test.[67] The dispute between Computer Associates and Altai arose because both companies had offered software that organized and efficiently scheduled a set of tasks for a computer.[68] The Computer Associates program was adapted to run on multiple IBM operating systems, while Altai's program ran on only one operating system.[69] Computer Associate's program was more successful; Altai's customers were predictably displeased.[70] In an attempt to compete, Altai hired a former employee of Computer Associates, who proceeded to copy a significant portion of Computer Associate's adapter code and incorporate it into Altai's scheduling program.[71] Computer Associates filed suit against Altai, claiming both misappropriation of trade secrets and copyright infringement of the adapter computer code.[72]

Both the district court and the Second Circuit struggled to apply traditional copyright law to computer programs. The district court recognized computer software has two aspects—a static structure,

63 Courts have, however, denied copyright protection for some user interfaces of software, reasoning that the interface functions as a method for operating a computer program. *See, e.g.*, Lotus Dev. Corp. v. Borland Int'l, Inc., 49 F.3d 807, 816 (1st Cir. 1995).

64 *See* Pamela Samuelson, et al., *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2308, 2310 (1994).

65 Patent protection for the functional aspects of software, however, is in a state of flux and coverage is uncertain. *See supra* note 24 and accompanying text.

66 *See* Michael J. Madison, *Law as Design: Objects, Concepts, and Digital Things*, 56 CASE W. RES. L. REV. 381, 414 (2005).

67 *See, e.g.*, Lateef Mtima, *So Dark the CON(TU) of Man: The Quest for a Software Derivative Work Right in Section 117*, 69 U. PITT. L. REV. 23, 95 n.226 (2007).

68 Computer Assocs. Int'l, Inc. v. Altai, Inc., 982 F.2d at 698-99 (2d Cir. 1992).

69 *Id.*

70 *Id.*

71 *Id.* at 700.

72 *Id.*

which is the text of the code and the arrangement of the instructions, and a dynamic structure, which is the way the program runs and reacts to user inputs.[73] Because the court determined that the dynamic component is simply a process or idea and thus cannot be protected by copyright law, the court analyzed only the static, source code, portion of the software at issue, and found no infringement.[74] On appeal, the Second Circuit did not limit its review to only the static portion of the software, but held instead that some non-literal structures of computer programs may be protected by copyright to prevent the clever infringer from merely rewriting the code to avoid liability;[75] the difficulty is in deciding which elements are eligible for protection, leading the court to develop the abstraction-filtration-comparison test. In applying the test, a court is to first "dissect the allegedly copied program's structure and isolate each level of abstraction contained within it."[76] Next, the court determines whether the inclusion of each level of abstraction "was 'idea' or dictated by considerations of efficiency, so as to be necessarily incidental to that idea; required by factors external to the program itself; or taken from the public domain."[77] The components required by idea or efficiency are not eligible for copyright protection; the remaining, expressive portions are protectable and, at the last step of the *Altai* test, are compared with the corresponding portion of the allegedly infringing product to determine infringement.[78]

The first step, isolating levels of abstraction, represented an important acknowledgement that software exists on many levels and that the idea/expression dichotomy may be relevant at each of these levels.[79] However, the second step of filtering out idea and expression at each level is much more difficult to apply and has been quite controversial.[80] In any case, it is clear that copyright protection does not extend to many of the more important, functional aspects of computer programs. Thus, as with databases, the more useful portions or embodiments of software lie beyond the protection of copyright law.

Even if an information product, such as a database or software program, were found to meet both the requirements of originality and

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[73] Computer Assocs. Int'l, Inc. v. Altai, Inc., 775 F. Supp. 544, 559-60 (E.D.N.Y. 1991) [hereinafter *Altai I*].

[74] *Id.* at 560.

[75] *Altai*, 982 F.2d at 706.

[76] *Id.* at 707.

[77] *Id.*

[78] *Id.* at 710.

[79] *See, e.g.*, Andrew G. Isztwan, Computer Associates International v. Altai, Inc.: *Protecting the Structure of Computer Software in the Second Circuit*, 59 BROOK. L. REV. 423, 448-49 (1993).

[80] *See, e.g.*, Margaret Chon, *Postmodern "Progress": Reconsidering the Copyright and Patent Power*, 43 DEPAUL L. REV. 97, 112 (1993); Mark D. Perdue & Robert A. Felsman, *Recent Developments in Copyright Law*, 4 TEX. INTELL. PROP. L.J. 459, 469 (1996).

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expressiveness discussed above, there is a third doctrine in copyright law—fair use—that could easily decimate any protection obtained. Fair use is a defense to copyright infringement that essentially allows, in certain circumstances, unauthorized use by someone other than the copyright owner.[81] Although it began as a judicially created doctrine, fair use has been codified and applies to all copyrighted works.[82] The fair use analysis is based on four non-determinative factors: 1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; 2) the nature of the copyrighted work; 3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and 4) the effect of the use upon the potential market for or value of the copyrighted work.[83] The second factor, the nature of the work, nearly always weighs against the creators of databases and computer programs because these works already reside at the margin of copyright coverage due to their information content.[84] Because of this particular applicability to databases and software, fair use likely eviscerates any protection that might otherwise be available.

II. WHY ALTERNATIVE LEGAL AND NON-LEGAL MECHANISMS DO NOT WORK

In the absence of traditional intellectual property protection under either patent law or copyright law, creators of information products have sought various alternative legal and non-legal mechanisms to provide some manner of exclusivity in which to reap a benefit from their development investments. Legal theories advanced include quasi-intellectual property doctrines, such as liability under trade secret and misappropriation, as well as non-intellectual property claims in contract and trespass, among others. Non-legal options have included using technological or operational mechanisms that provide some measure of exclusivity, or at least some sort of artificial lead-time, to the creator of

81 *See* Robert C. Denicola, *Copyright in Collections of Facts: A Theory for the Protection of Nonfiction Literary Works*, 81 COLUM. L. REV. 516, 524 (1981) (defining fair use as a "privilege in others than the owner of a copyright to use the copyrighted material in a reasonable manner without his consent, notwithstanding the monopoly granted to the owner by the copyright." (citation omitted)).

82 *See* 17 U.S.C. § 107 (2006); Folsom v. Marsh, 9 F. Cas. 342 (D. Mass. 1841).

83 *See* 17 U.S.C. § 107; *see also* Harper & Row Publishers v. Nation Enters., 471 U.S. 539, 560-69 (1985) (explaining the fair use factors).

84 *See* Harper & Row, 471 U.S. at 563 (explaining that information products are favored as subjects of the fair use defense and that the importance of disseminating factual works to the public also weighs in favor of fair use). It should be noted, however, that the second factor has little significant effect on the fair use inquiry. Barton Beebe, *An Empirical Study of U.S. Copyright Fair Use Opinions, 1978-2005*, 156 U. PA. L. REV. 549, 586 (2008).

the information product. As appealing as these options may seem, they each have one or more significant flaws—most yield incomplete coverage, some are unlikely to withstand judicial scrutiny, some are difficult to apply on a large scale, and all fail to provide the oversight and safety valves that are essential in traditional intellectual property regimes. As a result, resort to these mechanisms leads to both overprotection and under-protection of information products.

A. *Trade Secret Protection*

Trade secret protection is often considered an auxiliary to the traditional intellectual property regimes and so would seem to be a natural next choice for an information product's creator seeking to protect his investment. Trade secret protection, a state law mechanism, generally covers valuable or commercial information to the extent that information is kept secret.[85] However, many information products derive some or all of their value from the fact that the information can be used publicly, and thus these works are not eligible for trade secret protection.[86] Also, because trade secret protection arises from state law, there may be variations from state to state that make enforcement more costly or difficult.[87] Finally, as a matter of policy, trade secret law is typically disfavored because it actually inhibits, rather than promotes, the flow of information via the disclosure or dissemination encouraged by the traditional intellectual property regimes.[88] As such, even if trade secret coverage is available for information products and the differences in the laws across the various states are insignificant, trade secret

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[85] *See, e.g.*, Ruckelshaus v. Monsanto Co., 467 U.S. 986, 1001-02 (1984) (defining a trade secret as "information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it . . . the extent of the property right therein is defined by the extent to which the owner of the secret protects his interest from disclosure to others" (citation omitted)); Constance E. Bagley & Gavin Clarkson, *Adverse Possession for Intellectual Property: Adapting an Ancient Concept to Resolve Conflicts Between Antitrust and Intellectual Property Laws in the Information Age*, 16 HARV. J.L. & TECH. 327, 332 (2003). Know-how protection, a contractual agreement to share information, is similar in that it too relies on the secrecy value of the information and is governed by state law. *See, e.g.*, J.H. Reichman, *Legal Hybrids Between the Patent and Copyright Paradigms*, 94 COLUM. L. REV. 2432, 2438-39 (1994).

[86] An alternative way to look at this is that trade secret protection is available if the creator of the information product forgoes the value corresponding to the public use of the information and keeps the work secret instead. This is analogous to the database creator devaluing his information product by being less than exhaustive in his content or less than logical in his arrangement. *See supra* note 61 and accompanying text.

[87] Many states (specifically, 42 states and the District of Columbia by 1999) however, have based their trade secret laws around the Uniform Trade Secrets Act, so the variations may be insignificant. *See* Bagley & Clarkson, *supra* note 85, at 332.

[88] *See, e.g.*, Chris J. Katopis, *Patients v. Patents?: Policy Implications of Recent Patent Legislation*, 71 ST. JOHN'S L. REV. 329, 377 (1997).

protection is inappropriate because it lacks the safety valve of disclosure.

B. *Misappropriation*

The misappropriation doctrine, which prohibits the unauthorized taking of another's works, has also been used as a mechanism for protecting products where other intellectual property regimes do not seem to apply,[89] as is the case with many information products. It was in precisely this circumstance that the Supreme Court gave life to the doctrine in *International News Service v. The Associated Press* case.[90] International News Service (INS) obtained over wire service many news stories that had been gathered and prepared by the Associated Press (AP).[91] Before AP could publish the stories itself, INS published the same stories in its own publications.[92] The news stories prepared by AP were not eligible for copyright protection because the works failed to meet the originality and expression requirements.[93] Further, the news stories were not subject to trade secret protection because the stories had not been kept secret.[94] Yet, the Court upheld an injunction against INS, prohibiting it from using AP's news bulletins in this way.[95] The Court based the liability of INS on misappropriation.[96] This expanded liability for misappropriation, however, was limited to "hot news" and may have signaled the Court's discomfort with the result.[97] More recent cases applying the misappropriation doctrine have reinforced and heightened the "hot news" limitation.[98] Although the "hot news" requirement serves as a safety valve to limit the scope of misappropriation coverage, it also limits the ability of the doctrine to provide adequate protection for the majority of information products, which often include information beyond merely "hot news."

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89 *See* Charles Brill, *Legal Protection of Collections of Facts*, 1998 COMP. L. REV. & TECH. J. 1, 20 (1998).

90 284 U.S. 215 (1918).

91 *Id.* at 231.

92 *Id.*

93 In particular, the Court would not credit AP with ownership of the news simply because AP happened to report it, nor could AP claim copyright infringement because INS was not simply taking AP's expression, but rather using the unprotectable facts. *Id.* at 234-37.

94 *Id.* at 235.

95 *Id.* at 245-46.

96 *Id.*

97 *See* Zimmerman, *supra* note 8, at 721.

98 *See, e.g.*, Nat'l Basketball Ass'n. v. Motorola Inc., 105 F.3d 841 (1997) (applying an *INS v. AP* analysis and requiring a quite narrow "hot news" component to avoid preemption by copyright laws).

C. *Contract*

Because traditional intellectual property regimes, as well as schemes like trade secret and misappropriation that have developed at the margins of intellectual property, fail to provide sufficient protection for information products, creators of these works often turn to other legal means, like contract, to limit the use (or misuse) of the products. Databases and software in particular have often found protection via contract and have been subject to both negotiated and shrink-wrap licenses.[99] Where a negotiated contract involves the usual agreement between the two participating parties, shrinkwrap licenses typically go into force when the customer opens the packaging that encloses the product, even though the customer may not actually get to review the terms of the license until after it has already been entered and the customer certainly did not take part in negotiating the terms.[100] Although the validity of shrinkwrap licenses has been questioned, they have uniformly been found valid and enforceable.[101]

One well-known case where a shrinkwrap license was held valid and enforceable against a user of an information product is the *ProCD v. Zeidenberg* case.[102] In *ProCD*, the information product was a single electronic database consisting of the combination of digitized phone books from across the United States.[103] This type of database, because of its lack of originality in selection or arrangement, was not eligible for copyright protection after *Feist*; ProCD, the database creator, instead used contracts to license use of the product and to limit the use of the data included in the database by specifically prohibiting the reposting of the contents of the database on the Internet.[104] In determining whether Zeidenberg had breached the contract, the district court held that the shrinkwrap license was preempted by the Copyright Act and not enforceable.[105] ProCD appealed this issue to the Seventh Circuit, which held that enforcement of shrinkwrap licenses where the contract terms are not contrary to regular contract rules does not run afoul of the Copyright Act, is not preempted, and can be a valid mechanism for protecting information products.[106]

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99 *See* Brill, *supra* note 89, at 24.

100 *See* Jacqueline D. Lipton, *IP's Problem Child: Shifting the Paradigms for Software Protection*, 58 HASTINGS L.J. 205, 221 n.96 (2006). *See generally* Mark A. Lemley, *Intellectual*

Contract law certainly provides an appealing alternative to traditional intellectual property protection. Like intellectual property regimes, contracts carry the force of law. Businesses are comfortable and familiar with contracts, probably even more so than intellectual property. Further, after *ProCD*, contracts can be written to restrict virtually any legal behavior. And above all, shrinkwrap licenses, which are common in the information product industry, permit a one-sided determination by the creator of what types of access and use are permissible.

Despite this allure, however, there are disadvantages to using contract law to protect information products. The first disadvantage is that effective use of contract law may be difficult in practice for a number of reasons. While contractual protection may be useful for information products used by a small number of consumers, it may become unwieldy to actually police and enforce as the number of users grows.[107] Also, because of the easily transferable nature of information products, the enforceability of the contractual provisions may be compromised because contract terms can only be enforced against parties in privity; once the information product is released to a non-associated third party, there is no recourse against that third party who was not privy to the contract.[108] Further, because contract law is a state law creation, it is not uniform domestically, and contracts are difficult, if not impossible, to enforce globally.[109] The second disadvantage is that contract law provides little or no oversight or safety valves and thus allows protection of information beyond the scope that may be deemed acceptable by the public. Because of the importance of freely flowing information, a protection scheme such as contract that permits the creator great latitude in keeping information from being used is not an acceptable protection scheme.

D. *Trespass to Chattels*

Although trade secret, misappropriation, and contract law have been the primary non-intellectual property legal sources used to protect information products, some courts have taken far more creative approaches to craft what they consider a fair resolution in cases of misappropriation of information products. One such approach is

107 *See* Brill, *supra* note 89, at 25.

108 *See ProCD*, 86 F.3d at 1454 ("Contracts . . . generally affect only their parties."); Brill, *supra* note 89, at 25; Sharon K. Sandeen, *A Contract by Any Other Name Is Still a Contract: Examining the Effectiveness of Trade Secret Clauses to Protect Databases*, 45 IDEA 119, 147 (2005).

109 *See* Bitton, *supra* note 9, at 160.

trespass to chattels, notably applied in the *eBay v. Bidder's Edge* case.[110] Generally speaking, this tort involves the unauthorized interference with or use of another's personal property that results in damage.[111] The *eBay* court stretched this doctrine to apply to a situation where a "web crawler" program was systematically obtaining auction information from websites.[112] Although the unauthorized interference or use was clear, the requisite damage was not; rather, the court based its reasoning on the potential damage that would (or could) result after the computer system crashed under the aggregate effects of many of these web crawler programs.[113] Despite the novelty and creativity of the application of this doctrine, there are significant limitations to its widespread use. First, the doctrine provides incomplete coverage because it is of little use to creators of information products that do not reside on servers (such as printed or CD-ROM databases or software distributed on disk media) because there can be no damage, even considering the low threshold level of "potential crashing" that the *eBay* court found. The coverage is also incomplete because the tort will only apply to infringing activities that may, in the aggregate, cause server or network damage.[114] While web crawling may be resource consuming and present a chance of crashing a server in the presence of multiple intrusions, a simple single copy may not have that potential for causing damage, even if the information product resides on a server. Second, this claim has been tested in very few circumstances; it may be unlikely to withstand judicial scrutiny were it to be used more frequently. Finally, even though the trespass to chattels claim is unlikely to create a viable level of protection for most information products, it is disfavored because it too lacks any sort of oversight or safety valve: essentially, if there is damage to the creator based on access to the information product, liability may be found, but there is no effort to protect and facilitate the use of information generally.

E. *Other Legal Protection*

In certain limited circumstances, other legal theories may provide

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[110] 100 F. Supp. 2d 1058 (N.D. Cal. 2000); *see also* Margaret Jane Radin, *Incomplete Commodification in a Computerized World*, *in* THE COMMODIFICATION OF INFORMATION 3 (Niva Elkin-Koren & Neil Weinstock Netanel, eds. 2002).

[111] *See* Thrifty-Tel, Inc. v. Bezenek, 54 Cal. Rptr. 2d 468, 473 (Cal. App. 1996); Bitton, *supra* note 9, at 166.

[112] *eBay*, 100 F. Supp. 2d at 1069-70.

[113] *Id.* at 1069-72.

[114] *See Intel Corp. v. Hamidi*, 71 P.3d 296, 306-07 (Cal. 2003) (finding no trespass to chattels where there was no physical harm to the computer system); *see also* Radin, *supra* note 110, at 403-05; Bitton, *supra* note 9, at 167.

potential protection for information products. For example, criminal law may be used to protect many features of electronic databases and software, based on computer crime and anti-hacking statutes.[115] Privacy and confidentiality laws may provide a level of protection for databases that contain certain types of personal data.[116] However, these theories are available only in specialized circumstances and do not provide broad or certain coverage. Further, none of these theories have the built-in safety valves or oversight necessary for appropriate coverage of information products.

F. *Partial Legal Coverage*

Although legal protection, either via intellectual property regimes or otherwise, is generally incomplete in its coverage of information products, it can potentially be used to provide at least partial coverage or coverage of certain aspects of the work, especially where these aspects are added with the purpose of deterring copying and enhancing legal protection. One good example of this is a legal database, such as those maintained by LEXIS and Westlaw.[117] The underlying data in these databases, namely the opinions of courts, are not protected by copyright; however, the database provider adds copyrightable elements, in the form of case summaries and head notes, as well as proprietary searching means and graphical interfaces.[118] These elements can be, and are, protected then by copyright law. Further, LEXIS and Westlaw also limit access through contract and licensing provisions. Using multiple methods of coverage in conjunction may provide the creator of an information product with a more adequate level of protection for his work; however, the combination of protection schemes also makes it difficult to access and legally copy that data that is within the public domain and should be free for use. Therefore, the wider scope of protection actually ends up creating a greater inhibition to the free flow of information, and this method is not favorable.

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115 *See* Jane C. Ginsburg, *A Marriage of Convenience? A Comment on the Protection of Databases*, 82 CHI.-KENT L. REV. 1171, 1172-73 (2007) (noting that the Computer Fraud and Abuse Act, 18 U.S.C. § 1030(a) (2006), which prohibits unauthorized, damaging access to computers for the purpose of obtaining information, may be useful against competitors who "copy frequently updated information from a 'dynamic' database"); Bitton, *supra* note 9, at 148.

116 *See* Bitton, *supra* note 9, at 149.

117 *See id.* at 136. The LexisNexis database is available at http://www.lexis.com, while the Westlaw database is available at http://www.westlaw.com.

118 *See* Bitton, *supra* note 9, at 136.

G. *Non-Legal Mechanisms*

Despite the wide variety of legal means that have been applied to protect information products, the extent of coverage available for these works and the ease of obtaining that coverage remains quite uncertain, both for practical and doctrinal reasons. Thus, creators of information products have also explored non-legal mechanisms, such as technological measures and creative business plans, to obtain the artificial lead-time or measure of exclusivity required to protect some of their investment in the creation of these works.

1. Technological Mechanisms

The most common non-legal mechanism for protecting information products is the use of technological safeguards to prevent against unauthorized access, uses and appropriation of these products.[119] Digital rights management (DRM) tools may be used, for example, to limit who may access the work, the duration for which access is allowed, and the ability to reproduce or retransmit the work.[120] Anti-circumvention laws, which prohibit the disabling or hacking of DRM tools, provide a layer of legal protection on top of the technological layer.[121] For example, the Digital Millennium Copyright Act (DMCA) makes illegal the circumvention of DRM tools that control access to a work if done with the intent to violate any rights under copyright law.[122] Beyond DRM technology, the way some information products are naturally configured provides additional options for technological safeguards. For example, many database management systems are set up so that access to the entirety (or even a substantial portion) of the contained database is difficult, if not impossible.[123]

While not perfect, DRM technology and limited access rights have been used with some success to protect investments in information products. The most significant disadvantage with DRM technology (and taking advantage of the natural configurations of these products) is that it can be, and often is, used to limit access to information content that should not be so limited and thus inhibit information flow.[124] The

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119 *See* Peter K. Yu, *Anticircumvention and Anti-anticircumvention*, 84 DENV. U. L. REV. 13, 14 (2006).

120 *See* Dan L. Burk, *DNA Rules: Legal and Conceptual Implications of Biological "Lock-Out" Systems*, 92 CAL. L. REV. 1553, 1563 (2004).

121 *See* Yu, *supra* note 119, at 32.

122 *See* 17 U.S.C. § 1201 (2006).

123 *See* Bitton, *supra* note 9, at 142.

124 *See* Dan L. Burk & Tarleton Gillespie, *Autonomy and Morality in DRM and Anti-*

creator can use these means to include and obtain protection over more content than he might be able to get under a legal scheme. For example, the creator might use DRM to prohibit any copying of a computer disk containing an information product, even though a purchaser of a computer disk is typically permitted to make a back up copy for personal use. While this may encourage the creators of these works by providing enhanced protection, this method is not favorable because the over-inclusion of content being protected will likely inhibit, not facilitate, information flow, especially in the absence of associated oversight and safety valves.

2. Business Schemes

One of the main justifications for providing a protection scheme for information products is to give the creator of the work an artificial lead-time to receive some level of compensation for his efforts. As discussed above, this is particularly critical for information products, as the cost of development is front-end loaded and the end-product is easily duplicable and transferable. While legal schemes and technological measures provide an artificial lead-time in order for the creator to recoup his investment, business schemes have been used to give the creator a different sort of advantage over his competitors and a means to obtain compensation for the development costs associated with the information product. Although it is often necessary to use one of these other means in conjunction with the business scheme, the below-described options may decrease the amount of artificial lead-time or exclusivity that a creator needs to reap the desired reward. Two of these potential business schemes are the provision of complementary services or bundling of products and differentiated market pricing.

The provision of auxiliary services or bundling of related products is particularly useful in the information products industry. Although the information product itself may be unprotectable, the creator uses the additional service or product to distinguish himself and develop a consumer base that gives him the market advantage necessary to recoup the resources invested in creating the information product. In contrast, a party that merely appropriates (or misappropriates) the developed information product will likely be uninterested in or incapable of providing this panel of complementary goods and services, and thus will be less attractive to consumers.[125] There are a number of successful examples of this business model, particularly in the open source

Circumvention Law, 4 TRIPLE C 239, 244 (2006), *available at* http://triplec.uti.at/files/tripleC4(2)/Burk-Gillespie.pdf.

[125] *See* Bitton, *supra* note 9, at 127.

software industry.[126] One such company is Red Hat,[127] which has been built around the model of providing services to accompany Linux,[128] an open source software product that specifically cannot be protected by typical protection schemes.[129] In the absence of being able to protect the software product, Red Hat has developed value and a consumer following for its particular accompanying services, which gives it an advantage over other companies that can also distribute Linux products. Database providers may provide similar valuable services such as possession of the infrastructure for service, ongoing enhancement, and maintenance.[130] Database providers may also bundle the actual database with powerful proprietary search engines or management systems.[131] These complementary products and services are not likely to be available from a party who merely appropriates the database, and such add-ons give the creator of the information product an advantage, in the absence of exclusivity, to allow him to benefit over other providers.

Another business scheme that allows an information product creator to recoup the resources he invested into the development of the work is differentiated pricing, although this system often does require at least some level of exclusivity to be successful.[132] However, if differentiated pricing can be used, the period of exclusivity required to reap an adequate return may be decreased. Differentiated pricing involves charging different segments of the consumer market different prices, based on each segment's need and ability to pay.[133] For example, if the information product creator:

> is able to segment the market into commercial and academic sectors successfully, and *if the demand in the academic sector is more price-sensitive than in the commercial sector*, we will obtain the outcome which prevails in several disciplines: provision of the good at two

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126 In the open source software industry, participants specifically eschew intellectual property protection for their products. Instead, the open source movement is based on a protocol of openness and sharing. Yet, even with their works being unprotected, some companies have created businesses around these products. *See* ERIC S. RAYMOND, THE CATHEDRAL AND THE BAZAAR (2001). Although open source creators opt for a lack of protection, the business models that have been used in this industry are applicable to the information product arena as well.

127 *See* Red Hat, http://www.redhat.com.

128 *See* Linux Online, http://www.linux.org.

129 *See* RAYMOND, *supra* note 126, at 137.

130 *See* Bitton, *supra* note 9, at 127.

131 *See* Dov S. Greenbaum, *The Database Debate: In Support of an Inequitable Solution*, 13 ALB. L.J. SCI. & TECH. 431, 483-84 (2003).

132 *See* Bitton, *supra* note 9, at 136.

133 *See* Bronwyn H. Hall, *On Copyright and Patent Protection for Software and Databases: A Tale of Two Worlds*, *in* ECONOMICS, LAW & INTELLECTUAL PROPERTY: SEEKING STRATEGIES FOR RESEARCH AND TEACHING IN A DEVELOPING FIELD 259, 270 (Ove Granstrand, ed. 2003). Although Hall is focused on software and databases, there is no reason that the reasoning would not apply to information products generally, as these works are defined by the characteristic of high fixed development costs and low duplication and transfer costs.

> widely differing prices, often differentiated in a variety of ways to ensure that the markets remain segmented."[134]

Bronwyn Hall explains this is a matter of simple economic theory:

> [I]f society benefits from researchers having access to some forms of information at low cost, and there exists private sector willingness to pay for that information, then subsidies to researchers so that they can acquire the information would be socially beneficial, and at the same time, would leave the incentives to produce the information intact."[135]

In the absence of protection, however, price differentiation is not likely to succeed; this tool works best in conjunction with one of the other legal or technical mechanisms discussed above.

Neither of these business schemes—provision of accompanying goods or services nor price differentiation—solves the problem of giving the creators of information products the protection desired while still facilitating and encouraging the flow of information. For this reason, these means of providing an information product creator with a market advantage using business means are not favorable.

H. *International and Proposed Schemes*

The lack of protection for information products is not new, nor is it unique to the United States. In the international arena, improved protection systems for information products have been implemented, although it is unclear whether the schemes have been successful. In this

proposals over the years aimed at providing improved protection for information products in this country that none have been implemented. In any case, both the international schemes and the proposed systems are fairly similar to the legal and alternative means described above, and thus suffer from the same shortcomings.

1. International Protection

The most visible international protection for any form of information product is found in the European Union (EU) Directive on the protection of databases (Database Directive).[136] The Database

[134] *Id.*

[135] *See id.* at 273.

[136] Council Directive 96/9 1996 O.J. (L077) 20 (EC). Other countries have examined protection for databases as well; these analyses often turn on a review of "originality," like the *Feist* decision in the United States, and so will not be independently reviewed in this paper. For a

Directive was developed in "response to perceived needs to harmonize protection for databases within the EU and to provide greater protection for the investment in the creation and maintenance of databases."[137] The Database Directive sought to achieve this greater protection in two ways: harmonizing the standard for granting copyright protection in databases and implementing a sui generis protection scheme for databases that failed to qualify for copyright protection.

First, the Database Directive harmonizes copyright protection for databases in member countries, basing protection on the original selection or arrangement of the data.[138] This provision, requiring members to grant copyright protection in databases that, "by reason of their selection or arrangement of their contents, constitute the author's own intellectual creation,"[139] is not unlike the *Feist* standard in the United States. As discussed above with respect to protection for information products under copyright law, this provision of the Directive fails to adequately protect most useful databases.[140]

Second, the Database Directive creates a sui generis right for the protection of databases that do not qualify under the originality requirement for copyright protection, so long as a substantial investment, either qualitative or quantitative, has been made in obtaining, verifying, or presenting the contents of a database.[141] The sui generis right lasts for fifteen years, but can be extended (theoretically, into perpetuity) if the database is updated and maintained. This right is infringed where a qualitatively or quantitatively substantial portion of the database is taken, either via extraction or reutilization, without authorization.[142] Although the sui generis right facially appears to grant

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detailed treatment of protection available for databases in countries such as Australia, Canada, China, and Russia, see Daniel J. Gervais, *The Protection of Databases*, 82 CHI.-KENT L. REV. 1109, 1148-57 (2007).

137 *See* Mark Davison, *Database Protection: The Commodification of Information*, *in* THE FUTURE OF THE PUBLIC DOMAIN: IDENTIFYING THE COMMONS IN INFORMATION LAW 167, 168 (Lucie Guibault & P. Bernt Hugenholz eds., 2006).

138 *See* Council Directive, *supra* note 136, art. 3(1).

139 *Id.*

140 *See supra* Part I.B.

141 *See* Council Directive, *supra* note 136, art. 7(1).

142 Extraction refers to the transfer of the contents of a database to another medium by any means. *See* Council Directive, *supra* note 136, art. 7(2)(a). Reutilization refers to making available to the public the contents of a database by distribution, renting, or putting online. *See* Council Directive, *supra* note 136, art. 7(2)(b).

The sui generis right also permits member states to allow an exception to infringement by unauthorized taking of portions of the database in three circumstances: 1) where the reproduction of a non-electronic database is for private purposes; 2) where the sole purpose is illustration for teaching and scientific research, as long as the source is indicated, and only to the extent justified; and 3) where the use is for purposes of public security or for administrative or judicial procedures. *See* Council Directive, *supra* note 136, art. 9; Lipton, *supra* note 11, at 154-56. Although the fair use exception in the United States weighs heavily against creators of information products, the exception provided by the Directive is more fairly applicable and does

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sufficient, but not overreaching, rights to creators of information products, the European Court of Justice (ECJ) has substantially limited the right in practice. In *British Horseracing Board v. William Hill Organization*, the ECJ held that "created" data was not protectable by the sui generis right.[143] In the *William Hill* case, the data in question was horse racing information, such as race times and locations, maintained in a database by the British Horseracing Board. Although Britain's High Court of Justice had determined that the database was protected by the sui generis right, based on the resources expended in keeping it current, and that William Hill had infringed the right by systematically extracting information from the database for profit, the ECJ overturned the decision, reasoning that since the British Horseracing Board had created the factual data content of the database (rather than obtained the data), it was not the type of investment required to be eligible for the sui generis right.[144] Because many useful information products include both "obtained" data and "created" data, the sui generis right does not provide sufficient protection for these works.

Finally, the impact of the Database Directive on the information product industry and the future of the Database Directive are unclear. In December 2005, a working paper evaluating the Database Directive was released, concluding that "[t]he economic impact of the 'sui generis' right on database protection is unproven. Introduced to stimulate the production of databases in Europe, the new instrument has had no proven impact on the production of database."[145] However, the database industries were also surveyed for the report; these business concerns indicated their belief that the sui generis protection was critical for their continued success.[146] Although the effect, if any, is unclear and there are critics calling for repeal of or at least change to the sui generis protection scheme, the EU has not yet changed course and, given the perception of the database industry, may never.

not eviscerate the protection granted as extensively as the fair use provision in the United States.

[143] Case C-203/02 British Horseracing Bd. Ltd. v. William Hill Org. Ltd., *available at* http://europa.eu.int/comm/internal_market/copyright/prot-databases/jurisprudence_en.htm.

[144] *See id.*; *see also* Mark J. Davison & P. Bernt Hugenholtz, *Football Fixtures, Horse Races and Spin-offs: The ECJ Domesticates the Database Right*, 27 EUR. INTELL. PROP. REV. 113 (2005).

[145] *See* Commission of the European Communities, DG Internal Market and Services Working Paper: First Evaluation of Directive 96/9/EC on the legal protection of databases, at 5 (Dec. 12, 2005) [Hereinafter, Working Paper], *available at* http://ec.europa.eu/internal_market/copyright/docs/databases/evaluation_report_en.pdf; *see also* Davison, *supra* note 137, at 188, citing Working Paper at 1.4. Davison also offers reports on litigation stemming from the Directive. *Id.*

[146] *See* Working Paper, *supra* note 145; Bitton, *supra* note 9, at 113.

2. Proposed Legislation

In this country, lawmakers have debated some form of protection for databases for at least the last decade.[147] In the mid-1990s, the United States submitted a database protection treaty proposal to the World Intellectual Property Organization (WIPO) that was similar in scope to the European Union Database Directive.[148] In fact, the proposed treaty arguably provided stronger protection to database compilers, with a renewable term of 25 years and a DRM provision that prohibited circumvention of technology limiting access.[149] WIPO has studied database protection, but little has been done because there is much opposition, including from the United States.[150]

A bill parallel to the WIPO proposal was simultaneously introduced in Congress, but was widely opposed and failed to move out of the Judiciary Committee.[151] Two years later, database protection was once again introduced in Congress, this time drawing from misappropriation doctrine; while the initiative passed the floor of the House twice, once on its own[152] and once as part of the Digital Millennium Copyright Act,[153] it never made it to the Senate Floor. The drama played out in the same way the very next year.[154] However, the failure to enact these proposed bills seems to have less to do with the substantive merits of the rights provisions and more to do with politics: each of these proposals was met with significant and "well-orchestrated" opposition by key United States' companies, such as AOL and AT&T, and academics.[155]

Taking a different tactic and with the aim of appeasing the

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147 *See* Davison, *supra* note 137, at 174.

148 *See* Committee of Experts on a Possible Protocol to the Berne Convention, *Proposal of the United States of America on Sui Generis Protection of Databases*, WIPO Doc. BCP/CE/VII/2-INR/CE/VI/2 (May 1996); WIPO had also proposed an independent database treaty. *See* Brill, *supra* note 89, at 41.

149 *See* Brill, *supra* note 89, at 36-40.

150 *See, e.g.*, Justin Hughes, *Political Economies of Harmonization: Database Protection and Information Patents* 10-51 (Cardozo Law School, Public Research Paper No. 47, July 8, 2002), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=318486.

151 *See* Brill, *supra* note 89, at 41; Database Investment and Intellectual Property Act of 1996, H.R. 3531, 104th Congress (1996).

152 *See* Collections of Information Antipiracy Act, H.R. 2652, 105th Congress (1998); 144 Cong. Rec. 9,681 (1998).

153 *See* 144 Cong. Rec. 18,783 (1998).

154 Collections of Information Antipiracy Act, H.R. 354, 106th Cong. (1999). This bill reached the floor of the full House, but went no further.

155 *See* Justin Hughes, *Of World Music and Sovereign States, Professors and the Formation of Legal Norms*, 35 LOY. U. CHI. L.J. 155, 186-87 (2003); *see also*, Yu, *supra* note 1 at 4-5 (noting that the proposals failed because the biggest database producers at the time were not American corporations and that the domestic companies were most concerned about their ability to use others' databases if the legislation had passed).

domestic business concerns, the 108th Congress next took up the issue by proposing liability-type protection for databases, hoping to garner more enthusiastic support.[156] Unfortunately, these proposals fared much the same as the bills that preceded them and never even reached the full House. Very little action has been seen in this area since 2004 and there has been no indication that protection for information products will be taken up by Congress in the near future.

3. Commentator Proposals

Given the disadvantages and failures of existing and proposed legal mechanisms to cover information products, it is not surprising that commentators have embraced the task of either proposing new solutions or, if not providing a solution, at least discussing the factors of a successful proposal.[157] Unfortunately, most of the academic proposals approach the problem of protection for information products by only addressing one type of work; for example, only software or only databases. Further, even in their limited scope, the proposals still embody many of the disadvantages noted above for the existing schemes, and thus none represent a favorable solution for protecting information products.

Some commentators propose implementing protection through modifications to existing intellectual property regimes or utilization of alternate areas of current law. For example, Michael Steven Green argues that by reexamining how we think about copyright, and particularly the originality requirement and the idea/expression dichotomy, there is room to cover "collective facts" or compiled data.[158]

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156 The 108th Congress actually proposed two bills: the Database and Collections of Information Misappropriation Act, H.R. 3261, 108th Cong. (2003), and the Consumer Access to Information Act of 2004, H.R. 3872, 108th Cong. (2004). The key feature of House Bill 3261 was its basis in misappropriation law. Infringement would have consisted of making available in commerce a quantitatively substantial portion of the information contained in a database, if "1) the database was generated, gathered, or maintained through a substantial expenditure of financial resources or time, 2) the unauthorized making available in commerce occurs in a time sensitive manner and inflicts injury on the database or [related products or services]," and 3) the ability to free ride would lessen the incentive to create the database initially. These elements are not unlike the elements created in the *INS v. AP* case described above—again with the focus on the time-sensitive nature of the included data. The bill also included significant exceptions, similar to fair use. House Bill 3872 was also based on misappropriation and followed a "hot news" type model.

157 This list is merely exemplary; there are far too many articles on this topic, with new pieces being added frequently, to list them all here. *See, e.g.*, Gibson, *supra* note 61; Greenbaum, *supra* note 131; Reichman & Samuelson, *supra* note 3; Gervais, *supra* note 136; Jane C. Ginsburg, *Copyright, Common Law, and Sui Generis Protection of Databases in the United States and Abroad*, 66 U. CIN. L. REV. 151 (1997); Amol Pachnanda, *Scientific Databases Should Be Protected Under a Sui Generis Regime*, 51 BUFF. L. REV. 219 (2003).

158 Michael Steven Green, *Copyrighting Facts*, 78 IND. L.J. 919, 957-63 (2003).

Stacey Dogan and Joseph Liu argue that courts can, and indeed have, been applying copyright law in a manner that allows protection of software information products.[159] Dov Greenbaum suggests an alternate structure to aid in protecting databases—the databank.[160] A databank would be a simple depository of information to be used for scientific research and ineligible for protection; a database, by comparison, is a highly organized data structure that provides tools for analyzing the data and should be eligible for protection under a modified copyright protection scheme.[161] Daryl Lim suggests that antitrust law can be used to limit access to and use of databases without altering the current intellectual property regimes.[162]

Many influential commentators have proposed sui generis protection schemes for different sorts of information products. Jane Ginsburg, Pamela Samuelson, and Jerome Reichman have all proposed a new right of protection for database-type information products.[163] Pamela Samuelson and Peter Menell have proposed sui generis protection for software-type information products.[164] Other commentators, such as Dan Burk and Charles McManis, have argued for sui generis protection for alternative information products like genetic sequences and traditional knowledge.[165]

Still other commentators, although avoiding proposing a solution to the problem of protection for information products, have provided suggestions for shaping a new regime or altering an existing regime to cover these works. For example, Jim Gibson argues that any workable solution should exploit the technological architecture surrounding databases, regulating the extent to which developers can impose architectural restraints that limit access, which can further be buttressed by "technolegical" measures.[166] Jacqueline Lipton proposes

159 *See* Stacey L. Dogan & Joseph P. Liu, *Copyright Law & Subject Matter Specificity: The Case of Computer Software*, 61 N.Y.U. ANN. SURV. AM. L. 203, 206 (2005) ("Courts have, on the whole, successfully adapted copyright doctrines in a way that respects the underlying copyright policies, as applied to the unique aspects of computer software.").

160 *See* Greenbaum, *supra* note 131, at 500.

161 *See id.*

162 *See* Daryl Lim Tze Wei, *Regulating Access to Databases Through Antitrust Law: A Missing Perspective in the Database Debate*, 2006 STAN. TECH. L. REV. 7, 8, 30-60 (2006).

163 *See* Ginsburg, *supra* note 157, at 171-76 (proposing sui generis protection for databases); Reichman & Samuelson, *supra* note 3, at 64-109 (1997) (same).

164 *See* Peter S. Menell, *Tailoring Legal Protection for Computer Software*, 39 STAN. L. REV. 1329 (1987) (proposing sui generis protection for software); Samuelson et al., *supra* note 64, at 2332-2431 (1994) (same).

165 *See* Dan L. Burk, *Copyrightability of Recombinant DNA Sequences*, 29 JURIMETRICS J. 469 (1989) (proposing a copyright-like protection scheme for biotechnology inventions); Charles R. McManis, *Thinking Globally, Acting Locally*, 11 CARDOZO J. INT'L & COMP. L. 547, 563 (2003) (discussing sui generis protection for traditional knowledge); *see also* S. Benjamin Pleune, *Trouble with the Guidelines: On Urging the PTO to Properly Evolve with Novel Technologies*, 2001 J.L. TECH. & POL'Y 365 (2001) (proposing DNA-specific sui generis legislation).

166 *See* Gibson, *supra* note 61, at 189-90.

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reconceptualizing the protection of information products as a system of property rights and responsibilities.[167] Her system envisions balancing the competing interests of information products creators and the public through the imposition of significant legal duties on information property rights holders, including obligations such as facilitating scientific, technical, or educational use of the information; ensuring the accuracy and accessibility of personal information; and protecting cultural rights.[168]

As discussed above, current means available for protecting information products either result in under-protection, depriving the creator of the work the opportunity to recoup the resources invested in the development of the product, or over-protection, keeping information that would otherwise be available to the public from being accessed or used. In the very worst cases, both under-protection and over-protection may occur. For example, in the case of a database consisting mostly of facts that the creator has attempted to cover by contract law, his level of protection may be insufficient if a third-party obtains a copy of the database because of privity issues in contract. Yet, through the use of this very same contract, the creator may limit access to and use of mere facts that would otherwise be unprotectable. While the numerous articles and proposals for new or improved protection for information products clearly demonstrates the need, none address the dual concern of providing adequate protection while maintaining a free flow of information.

III. PROTECTING AND FACILITATING TRANSACTIONS IN INFORMATION PRODUCTS

Despite the best intentions to keep information "free" by denying protection under traditional intellectual property regimes, the reality is that an improved protection scheme is necessary to truly facilitate information flow. I propose a sui generis protection scheme for information products that defines clear rights and boundaries, aimed at clarifying the rights of the creator of the work while also facilitating transactions in the information, both with an eye towards encouraging the free flow of information. My proposal focuses on the overall work (both the information and structural components) and, unlike many academic and legislative proposals, is applicable to multiple types of information products. Many of the objections to the protection of information are based on the idea that we do not want "information"

167 *See* Lipton, *supra* note 11, at 165.
168 *See id.* at 172-73.

itself to be protected; that is, we are against the protection of the information as the "thing." This is the essence of propertization or commodification of information. My proposal instead seeks to provide the protection necessary to encourage the development of information products while being conscious of the concerns that are raised when information is propertized. The main tenet of my proposal is that information should be protected not as the "thing," but rather as a component of the "thing." Thus, the "thing" being protected is the information product as a whole, which consists of both a structural component and an information component. In doing so, I aim to provide a better definition of precisely when information qua information products will be protected. I also center this proposal largely on a liability-type regime, which, along with the clarified boundaries of protection, should encourage transactions in information and information products and, at bottom, the flow of information.

In this Part, I will explain the essential features of how my proposed system of protection works. Next, I will explore the hallmarks of any viable protection scheme and explain why my system fits within this rubric. Finally, I will explain how my system is different from the previously discussed available protection schemes and proposals and how my system avoids the pitfalls in which those schemes and proposals squarely fall.

A. *Proposed System of Protection for Information Products*

In order to provide improved protection for information products while still facilitating the free flow of information, I propose a system that better defines the scope of coverage for a wide range of information products and incorporates liability-type rules; these two improvements—clarifying the boundaries of protection and altering the remedies available—should, when taken together, ease the concerns about enclosure and even facilitate the flow of information. The coverage is tailored to protect not simply data, which offends the notion that information should be free; rather the system covers only data that has enhanced value based on the added structural component.

1. Components

The information products contemplated to be covered by this proposal are those that include both an information component and a structural component. A component is commonly defined as "a

constituent part."[169] In the technical arts, such as software, componentization is defined as breaking a system into interchangeable parts, each of which encapsulate a portion of functionality.[170] Applying this idea of componentization to information products, consider a work where the information component can be interchanged and where the structural component organizes the information component, gives the information component context and meaning, and facilitates distribution of the information component. A simple example of this idea is a database of telephone listings. One information component may consist of telephone listings from Richmond, Virginia, housed within a structural component of a database that has fields for full name, address, and phone numbers. I can easily interchange the above information component of listings from Richmond with those from, for example, Marion, Illinois. The same structural component still provides the context, but the information component that provides the real functional data is interchangeable. However, it is possible too to conceive of a different structural component, perhaps with fields for only last names and phone numbers, in which the same information components may be used. The components of the information component are interchangeable in this respect as well. This notion of components and interchangeability can be extrapolated to cover every type of information product for which this system may be used.

Although the composition of information components may vary across the spectrum of information products, there is some information that would not fit within this scheme. Simple information about a tangible (or even intangible) item or information resulting from a process would be unlikely to fall into the category of information product to be protected under this scheme. For example, the census population of Richmond would not be an information component. However, information that would not, by itself, constitute an information component can, in relation to other pieces of information and within a viable structural component, become an information component.[171] If I were instead to create an information component comprising all of the cities and towns in Virginia, along with their census populations, and put it in a structural component with relevant fields, the census population of Richmond might then become one portion or entry of the information component. This introduces the further notion of the information component as combinable—that is, the

169 Microsoft Corp. v. AT&T Corp., 550 U.S. 437, 449 n.11 (2007) (citing WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE 466 (1981)).

170 *See, e.g.*, DEFINE MEANING OF COMPONENTIZATION, http://looselycoupled.com/glossary/componentization (last visited Mar. 10, 2008).

171 This idea is not dissimilar from Michael Steven Green's idea of protection for "collective facts." *See* Green, *supra* note 158. However, I do not believe, as Green does, that copyright law is the best avenue for covering collective facts, and thus propose a sui generis system.

information should be able to be combined with other information or components.[172] It is not simply because it is a bare fact that the census population of Richmond is not an information component; on its own, it is also not combinable with other components. Even information that is quite detailed (unlike a census number) can fall outside the notion of an information component. For example, instructions for building a device would not likely be an information component, because even though detailed, it could not be combined with other components nor could it be interchangeable with other components.[173]

Many types of information products may include both an information component and a structural component and thus will be eligible for coverage under the proposed scheme. Two information products for which the system has immediately recognizable applicability are databases and software; however, the system is also potentially applicable to the protection of other existing information products.

a. Databases

Databases are the most natural type of information products to envision in the proposed protection scheme. Originally a military term, databases were defined as "collections of data shared by end-users of [a] . . . computer system."[174] Now the term has been expanded to refer to any compilation of data that is typically organized and utilized via a database management system, providing a bridge between the data and the end user.[175] The information component of the database, literally the data, is organized by the structural component, the fields of the database, which also give context and meaning to the information component. The structural component further facilitates distribution of the data, or information component, in a useful fashion.

b. Software

Software is slightly more difficult to envision as an information

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[172] *See Microsoft Corp.*, 550 U.S. at 740 (discussing the difference between simple information, such as a blueprint, and information which can be combined with other components, such as software).

[173] *See id.*

[174] *See* Greenbaum, *supra* note 131, at 441 (alteration in original) (citation omitted).

[175] *See id.* Although most databases today are electronic, printed databases could also be covered by this proposal. "[A] database is [simply] an organized and indexed collection of information that allows users to access and organize heterogeneous data in an efficient fashion." *Id.*

product, in part because software is difficult to define or classify.[176] One definition of software is "a set of instructions: not mere knowledge, but a certain arrangement of matter that makes a computer perform."[177] Working from this definition, the information component of software is the set of instructions. The structural component is then the particular arrangement of those instructions that organizes the instructions, provides context and meaning to the instructions as the organization or arrangement is the basis for the instructions to cause the computer to behave in a certain fashion,[178] and facilitates the distribution of the instructions or information component.

c. Additional Information Products

While databases and software provide the simplest examples of information products that would be eligible for protection under this proposal, there are other works that both have an information component and a structural component. Some examples include genetic sequence inventions, geo-spatial data, real estate appraisal systems, and certain types of indigenous knowledge. Many of these works have been likened to specialized forms of databases, where the information component is given value by virtue of the organization provided by the structural component.[179] These products can be characterized in this

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176 One of the difficulties in classifying software as an information product may be that, unlike databases, software can be and has been viewed in multiple ways. Although not a perfect analogy, the Supreme Court recently observed:

> Software, the 'set of instructions, known as code, that directs a computer to perform specified functions or operations,' can be conceptualized in (at least) two ways. One can speak of software in the abstract: the instructions themselves detached from any medium. (An analogy: The notes of Beethoven's Ninth Symphony.) One can alternatively envision a tangible 'copy' of software, the instructions encoded on a medium such as a CD-ROM. (Sheet music for Beethoven's Ninth.)

Microsoft Corp., 550 U.S. at 447 (quoting *Fantasy Sports Props., Inc. v. Sportsline.com, Inc.*, 287 F.3d 1108, 1118 (Fed. Cir. 2002)).

177 *See* Margaret Jane Radin, *Information Tangibility*, *in* ECONOMICS, LAW & INTELLECTUAL PROPERTY: SEEKING STRATEGIES FOR RESEARCH AND TEACHING IN A DEVELOPING FIELD 395, 402-03 (2003).

178 *See* Pamela Samuelson et al., *supra* note 64, at 2316.

179 *See, e.g.*, Reichman & Samuelson, *supra* note 3, at 135 ("Conceivably, . . . genetically engineered life forms could also fall within the broad definition of database in that they are 'assemblies . . . of . . . materials arranged in a methodical or systematic way.'"); Eisenberg, *supra* note 10 (likening genetic sequence inventions to scientific information, rather than chemical entities); Katleen Janssen & Jos Dumortier, *The Protection of Maps and Spatial Databases in Europe and the United States by Copyright and the Sui Generis Right*, 24 J. MARSHALL J. COMPUTER & INFO. L. 195 (2006); Bradford S. Simon, *Intellectual Property and Traditional Knowledge: A Psychological Approach to Conflicting Claims of Creativity in International Law*, 20 BERKELEY TECH. L.J. 1613 (2005); Posting of Eric Goldman to Concurring Opinions, http://www.concurringopinions.com/archives/2007/01/real_estate_app.html (Jan. 8, 2007, 23:59 EST).

manner, and so long as they have identifiable information and structural components as defined above, they too would fall within the proposed scheme.

2. How Does the Proposed Scheme Work?

The two most important aspects of the proposed scheme are that a creator's rights in the information product are clearly defined and that the system is based largely on liability, rather than property type rules.[180] First, clearly defined rights are important to encourage creators of information products to make the necessary investment in developing their product, but also to facilitate transactions in information and information products. As economists note, the purpose of a property regime is to "ensure that resources are allocated to their highest valued use" in order to increase monetary reward and, to achieve this goal, the system must clearly define property rights.[181] The clearly defined rights then facilitate for private bargaining,[182] permitting parties to effectively negotiate for use of and access to the information product on the basis of perceived value. As the law currently stands, it is unclear what rights, if any, a creator has in any given information product, which makes bargaining impossible and thereby inhibits transactions in information products and the underlying information.

Second, a key feature of the proposed system is that much infringing behavior is viewed from a liability-type perspective. It may seem counterintuitive, after advocating above for clearly defined property rights, to propose that a system that relies, at least in part, on liability rules. However, that rights are available for information products has been clarified by this system. Also, there are regularly substitutions of fuzzy, ambiguous rules for clear entitlements, even in property-type systems.[183] In fact, at least one commentator has argued that "muddy rules" will encourage bargaining where transaction costs are high, for example on the Internet.[184] The proposed system defines

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[180] The difference between "property rules" and "liability rules" was elucidated by Guido Calabresi and A. Douglas Melamed in their seminal work on this topic, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972). Under a property rule, the owner has the right to exclude others; under a liability rule, the owner has no right to exclude but can demand compensation or damages. *See id.* at 1105-06.

[181] Christine D. Galbraith, *A Panoptic Approach to Information Policy: Utilizing a More Balanced Theory of Property in Order to Ensure the Existence of a Prodigious Public Domain*, 15 J. INTELL. PROP. L. 1, 33 (2007) (citation omitted).

[182] *See id.*; Siebrasse, *supra* note 13, at 56-57.

[183] *See, e.g.*, Carol M. Rose, *Crystals and Mud in Property Law*, 40 STAN. L. REV. 577, 578 (1988).

[184] *See* Dan L. Burk, *Muddy Rules for Cyberspace*, 21 CARDOZO L. REV. 121, 138 (1999). Other commentators have also noted that property rules may be more efficient where borders are

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the outer extents of protection available, but leaves the details to a "muddy," liability-type analysis in order to facilitate transactions and allow for the flexibility required to avoid concerns about propertizing information.[185]

One way to view the liability-type regime is to consider that potentially infringing behavior resides on a spectrum. In property law, the inquiry is typically binary: Is there trespass or not?[186] Instead, for the protection of information products, the real analysis should question how bad the offending behavior was. At one end of the spectrum, there is no protection for the information component separate from the structural component. This means that there is no liability for simply possessing the information. There is also no liability where the information component has been reverse engineered or independently created. At the other end of the spectrum, there is full coverage for infringement via unauthorized access or appropriation of the entire information product, consisting of both the information component and the structural component. Because the information product as a whole has been taken, this is better treated under a property-type regime and the system contemplates injunction as a potential remedy for this.

The more difficult inquiry occurs when something less than the whole is taken, and this is where the liability-type rules will be used. For a concrete example, consider a database that includes the names of all of the law professors that teach at law schools in the United States, their contact information, and their areas of teaching and research.[187] This database would most likely fail to be protected under copyright law, because its selection of data is not unique (all law professors are included) and because its arrangement is obvious (for example, by law

fuzzy. *See* Richard Epstein, *Transaction Costs and Property Rights: Or, Do Good Fences Make Good Neighbors?* 6-7 (Chicago Working Papers in Law & Economics, 2d Series) (March 1996).

185 *See* Calabresi & Melamed, *supra* note 180 (suggesting that liability rules may be preferable where transaction costs are high, such that a party who places high value on the work can simply take it and compensate the owner for the loss); Burk, *supra* note 184, at 140 ("More often, the uncertainty created by the muddy standard tends to channel buyers and sellers into less costly informal structures."). This idea is controversial and has won both supporters and detractors. *Compare* Ian Ayres & Eric Talley, *Solomonic Bargaining: Dividing a Legal Entitlement to Facilitate Coasean Trade*, 104 YALE L.J. 1027 (1995) *with* Louis Kaplow & Steven Shavell, *Do Liability Rules Facilitate Bargaining? A Reply to Ayres and Talley*, 105 YALE L.J. 221 (1995); *and* Louis Kaplow & Steven Shavell, *Property Rules versus Liability Rules: An Economic Analysis*, 109 HARV. L. REV. 713 (1996).

186 To be sure, there is some "muddiness" even in this simple inquiry. Dan Burk explains this using the common idea of tying a boat up to a dock. Normally, permission from the dock owner is required and the dock owner is free to exclude others from tying up their boats. However, in the case of a deadly storm or other exigent circumstances, a sailor may tie up to a dock without permission and will simply be liable for any damages incurred, thus turning the simple question of trespass into a liability inquiry. *See* Burk, *supra* note 184, at 127-28.

187 Such a database is maintained by the American Association of Law Schools (AALS) and is generally protected via contract law. *See* AALS Directory of Law Teachers DLT, http://www.aals.org/services_directory.php (last visited Mar. 2, 2009).

school or by subject matter taught). Under the proposed protection scheme, however, this database would fare better. Because the information component is not independently protectable and reverse-engineering is permitted, I can—should I wish—go to every law school's website and gather up this information on my own, without incurring any liability for possessing or using the information thereafter. On the flipside, I can not copy wholesale the database (either in print or electronic form), as this would be taking the whole information product, both the information component and the structural component. In that case, I would be subject to traditional property remedies, including an injunction if appropriate.

What is the result, however, if I merely take a portion of the database—if I copy only the information component related to intellectual property professors in the structural framework? Or if I only take a portion of the structural framework, such as only some of the fields, and all of the information contained therein—for example, if I take only the names and e-mail addresses of all of the professors in the database? What if I am merely using the database to verify a single fact?[188] These situations are where a liability-type regime provides the appropriate response. Where portions of the information component and framework have been taken, the remedy will not be an injunction, but rather a system of damages to compensate the creator of the information product. As with many liability regimes, the amount of damages will be determined by looking at a number of factors, such as how much of the information product was taken, the reason the information product was taken, the relationship between the creator of the information product and the party who took the information without consent, and the effect of the taking on the market for the original information product.[189] The effect of this inquiry will be to permit free or cheap access to portions of an information component within one of these works subject to the value the information has to the user, permit access to the information components in cases of good reason (such as educational investigation or research), and permit the creation of new inventions (both traditional and information products) so long as the effect is not to take away from the market for the original information

[188] *See* NATIONAL RESEARCH COUNCIL COMMITTEE FOR A STUDY ON PROMOTING ACCESS TO SCIENTIFIC AND TECHNICAL DATA FOR THE PUBLIC INTEREST, A QUESTION OF BALANCE: PRIVATE RIGHTS AND THE PUBLIC INTEREST IN SCIENTIFIC AND TECHNICAL DATABASES 34 (1999) (distinguishing using a database as an end user—to verify a fact or perform a personal task—versus using a database for a derivative use, which "builds on a preexisting database and includes at least one, and frequently many more, extractions from one or more databases to create a new database").

[189] In these instances, where portions of an information product are taken, it is important to remember that the value of information is not simply related to the quantity of information taken, but the value in being able to obtain the necessary information quickly, without having to do the searching and gathering. *See* Gervais, *supra* note 136, at 1159-60.

product.

The benefits of this scheme are clear. The creator of the information product benefits from an artificial lead-time in which to try to recover his development investment, but others can effectively make a decision about what and whether it is worth for them to use the information. Thus, if the information is necessary for innovation in another field, it will be available for some cost; if the information product is simply being taken to compete with the original information product, it will be unavailable or available at an inflated cost. Because of the factors that are considered in determining the cost for the transactions (liability damages), there is an element of fair use that protects innocent and de minimis users, as well as educational and research users. The scheme is dynamic, is not tied to any one information product, is not tied to any particular technology, and most importantly, encourages bargaining outside of the legal system. The owner of the information product has the incentive to bargain, because only in the face of complete, wholesale infringement is there going to be injunctive relief—there is no benefit to acting as a hold-out. Further, the user wishing to access and use the information product has an incentive to bargain, because the boundaries of the protection covering the information product are going to be more clearly defined than those that exist today. Most uses of the information component and information product are going to result simply in monetary remedies and thus a priori negotiations are in all parties' best interests.

One criticism raised with respect to this proposal is that all information is currently available for a cost, so it is unlikely that this proposal will result in increased bargaining or negotiation between the information product creator and the user desiring access. However, at least anecdotally, there is evidence that information product creators do not always behave in a rational manner and readily deny access to information, even when a reasonable price has been offered.[190] This proposal addresses this problem by prohibiting the creator of information products to hold-out against an offer; if the creator chooses to deny access, a party wanting to use the information product can always simply misappropriate the product and pay damages later.

B. *What Makes a Good Protection Scheme and Why This Proposal Is One*

In addition to the benefits explained above that largely relate to the

[190] *See, e.g.*, Burk, *supra* note 184, at 158 ("One might expect serious 'holdout' problems to arise in [the informational goods] environment, as every copyright holder attempts to capture the full value of every use of his works.").

incentives and behaviors of the creators and users of information products, there are advantages to this scheme that go beyond simply the involved parties. First, the proposal provides more complete and robust protection for both existing and future developed information products, because the system approaches and protects these works categorically, rather than individually. Second, because the proposal is a sui generis proposal and is shaped from scratch with the specified goals of providing coverage while encouraging information flow, the scheme also permits more robust coverage than simply stretching and straining existing law to provide an ill-fit quick fix. Third, this proposal uses liability-type rules that not only may improve negotiation between creators and users, but may generally provide greater flexibility and robustness, more access to information, and greater potential for information flow for all.

First, this proposal covers multiple types of information products that have received short shrift by existing intellectual property regimes. Rather than excluding these works from coverage (either partially or completely), this proposal embraces these works, particularly because of their information component and the value added by the structural component. The system then provides an appropriate level of protection that advances both of the stated goals—providing the creator of the work with an artificial lead-time to compensate the creator for his investment in developing the information product, and facilitating transactions in information products by providing a clear and uniform boundary of coverage across these works while denying injunctive relief that may inhibit information flow. This scheme is attractive in its breadth and flexibility to cover a wide range of information products, such as databases, software, genetic sequence information, geo-spatial data sets, and others, including those not yet developed, rather than reacting in a knee-jerk fashion to problems with coverage of one type of information product or another, as has been the case previously. The robustness of protection for yet developed information products further provides an a priori level of coverage that may encourage creation of many new types of information products and will facilitate transactions because the parties will not need to go through the primary stage of determining whether protection is available before negotiations ensue.

Second, some overarching benefits arise from the fact that the scheme is a sui generis proposal, not a mere alteration of existing regimes to allow information products to fit. To be sure, sui generis systems are not ideal; implementing these systems may cause increased transaction and information costs and are further difficult to address on the international scale.[191] However, as noted above, the existing

[191] *See* Davison, *supra* note 137, at 179; Dreyfuss, *supra* note 2, at 912-13.

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regimes are simply ill-equipped to cover information products, even with modifications. If these systems were adapted to cover information products, there would likely be too much legislative and judicial baggage accompanying the new right and it is unlikely that an actual advantage would be realized.

In an article written by then-Representative Robert Kastenmeier and then-House Counsel Michael Remington, the authors explained when sui generis protection is appropriate.[192] The test is fourfold, and asks 1) whether the new right will fit harmoniously within the existing legal framework without violating any basic tenets of law, 2) whether the new right can be defined in a reasonably clear manner, 3) whether there is a cost-benefit advantage to implementing the new right, and 4) whether the new right will "enrich or enhance the aggregate public domain."[193] The protection of information products proposed by this article meets all four prongs of this test. The proposed protection fits harmoniously within existing law, because currently there is little protection for information products under intellectual property laws. One of the main purposes of this proposal is to clearly define that there is a right in information products. The cost-benefit advantage and the enrichment of the public domain have been discussed above in explaining how the proposal will actually facilitate the flow of information beyond what is currently occurring under the various self-help remedies.

Sui generis legislation has been used in precisely these situations, where there is a new technology that resides on the margins of traditional technology and does not fit comfortably within traditional intellectual property regimes. The most prominent of the sui generis intellectual property-type regimes is the Semiconductor Chip Protection Act of 1984 (Chip Act).[194] The Chip Act blended elements of patent law and copyright law in an effort to more fully cover semiconductor advances, while also being cognizant of some of the major concerns about protecting innovation, such as protecting the public domain and permitting reverse-engineering.[195] The Chip Act also rejects compulsory licensing and protects innocent infringers.[196] Similarly, other special purpose intellectual property laws have been enacted to protect industrial designs and plant varieties, as well as other creations that do not fit well within either the patent or copyright regime.[197] One constant criticism of sui generis protection is that by the time the new

192 *See* Robert W. Kastenmeier & Michael J. Remington, *The Semiconductor Chip Protection Act of 1984: A Swamp or Firm Ground?*, 70 MINN. L. REV. 417 (1985).

193 *See id.* at 440-42.

194 17 U.S.C. §§ 901-914 (2006).

195 *See* Dreyfuss, *supra* note 2, at 906-07.

196 *See id.* at 911.

197 *See* Reichman & Samuelson, *supra* note 3, at 53.

rights come to fruition, technology has advanced past the point of being protected.[198] However, by addressing information products as a broad category with similar features, this proposal seeks to avoid premature obsolescence and should cover yet-developed information products with no alteration to the system.

Third, the proposed protection scheme achieves many advantages because it is not entirely founded on property rules, but rather a mixture of property and liability rules depending on the extent of infringing behavior. There are essentially two ways in which information can be protected—either under a property rule or under a liability rule.[199] Generally, as noted above, property rules provide for the creation of exclusive rights and the possibility of injunctive relief, while liability rules do not create definitive exclusion and instead provide for payment of money damages for non-consensual or unauthorized access.[200] Mark Lemley and Philip Weiser have provided a framework to determine which remedial scheme (property or liability) is appropriate based on whether injunctive relief against an infringer would over-compensate the plaintiff and over-deter the defendants.[201] When such over-compensation and over-deterrence occur, the protection should follow a liability scheme.[202] Clearly this is analogous to the problematic situation that arises with most self-help means taken by information product creators—the creator is able to appropriate more than he is entitled to and, because of this, potential users of the information are unnecessarily inhibited. As Lemley and Weiser explain, at the remedial stage, over-compensation of the plaintiff and over-deterrence of the defendant often arises when a court cannot easily tailor an injunction to forbid only the prohibited conduct.[203] In the case of information products, this difficulty in crafting relief of appropriate scope nearly always arises; denominating a clear scope of a property right is virtually impossible in the information products arena.[204] The proposed system,

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[198] *See* Arti K. Rai, *Engaging Facts and Policy: A Multi-institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035, 1128 (2003) ("The Semiconductor Chip Protection Act, which sets up a sui generis regime of intellectual property protection for chips, was superseded by new technology soon after its creation."); A. Samuel Oddi, *An Uneasier Case for Copyright than for Patent Protection of Computer Programs*, 72 NEB. L. REV. 351, 450-51 (1993) (noting that the Semiconductor Chip Protection Act was made obsolete by advances in technology even before it was enacted); Suzanna Sherry, *Haste Makes Waste: Congress and the Common Law in Cyberspace*, 55 VAND. L. REV. 309, 310-17 (2002) (making the same argument with respect to the Electronic Signatures in Global and National Commerce Act and the Anticybersquatting Consumer Protection Act).

[199] Mark A. Lemley & Philip J. Weiser, *Should Property or Liability Rules Govern Information?*, 85 TEX. L. REV. 783, 783-84 (2007).

[200] *Id.* at 786.

[201] *See id.* at 784.

[202] *See id.*

[203] *See id.* at 785.

[204] *See id.* at 794. This should not be confused with the clarification that a property right

in embracing a largely liability-type regime, avoids this systematic overcompensation but still encourages the creation of these works by providing more certain protection than is currently offered.

There are additional benefits of applying a liability regime to the protection of information products. One main reason is that information simply does not have the attributes that generally characterize property; information is a public, not private, good.[205] Information is both non-rivalrous, meaning one can enjoy the good without depleting another's ability to also do so, and non-excludable, meaning that once the good is made public, the creator can no longer easily control its use.[206] If we were to award a property right in an information product, we would be artificially creating a rivalry and excludability that did not previously exist. These artificial limitations drive some of the arguments against protecting information products, as information should not be made scarce or inaccessible; we want to encourage the flow of information, as well as the creation of information products. A liability regime avoids these property issues by acknowledging that many can use information products without causing depletion. Further, liability regimes allow for greater flexibility, and so may be more palatable than property regimes when we are concerned with permitting access to information to avoid stifling innovation. Finally, regarding feasibility, Congress has already approved limited use of liability rules in intellectual property, for example, with the use of compulsory licenses in copyright law.[207] Thus, because liability rules are appropriate for covering information products because of their nature, because of the flexibility in application, and because of familiarity with this type of remedy, the proposed system rests on firm ground.

Of course, adopting a liability-type regime does not come without difficulties. The effectiveness of any liability rule will depend on the complexity of that rule, which in turn is going to require an inquiry into the extent to which the good is non-rivalrous and enjoyed by many without depletion, as well as the ability of a court or regulatory body to access information necessary to make determinations.[208] The liability rules must be clearly defined and appropriately limited so that the underlying incentives are not undermined;[209] the precise liability rules to implement this system are fact dependent and outside the scope of this paper. However, so long as the rules implemented minimize opportunistic rent-seeking, avoid distorting the marketplace based on

exists in information products, which is the certainty that is required to encourage transactions in information.

205 *See* Lipton, *supra* note 11, at 140-41.

206 *See* Gibson, *supra* note 61, at 173.

207 *See* Lemley & Weiser, *supra* note 199, at 825.

208 *See id.* at 809.

209 *See id.* at 813.

technological differences, and encourage private bargaining,[210] the goals of this proposed system should be realized. For these reasons, the advantages of this proposed scheme for protecting information products should extend far beyond just providing better coverage for information product creators and better bargaining between creators and potential users of the works.

C. *How the Proposed System Avoids the Pitfalls of Current Schemes and Earlier Proposals*

The insufficiencies of the earlier proposed schemes to address protection of information products, as well as the currently used alternative legal and non-legal mechanisms, can likely be attributed to a few related notions that this proposal seeks to avoid. First, those schemes are primarily based on property notions, which may not be the best fit for information products. Second, those schemes were not designed with the aim of facilitating transactions in information, which must be a key constituent of any scheme that runs the risk of propertizing information. Third, none of these schemes recognize the commonalities inherent in the variety of potential information products that would make a uniform scheme a better, more robust option, and thus do not avoid a usual concern with sui generis protection.

First, many of the proposed and implemented protection mechanisms developed for information products fail, in part, because they are typically centered on a property-based scheme. Because information is not tangible, applying traditional property rules often results in an uneasy fit.[211] In fact, the problem is not just that information products are not properly categorized as property, rather "these new information products present difficult conceptual problems that render them unamenable to intellectual property protection under traditional regimes . . . ."[212] Moving from a property regime to more of a liability regime would provide greater flexibility and likely be less offensive, and thus represent an improvement over existing and proposed protection schemes.[213]

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[210] *See id.* at 829 (discussing the hallmarks of a good liability rule, based on copyright's compulsory license provision). See also Davison, *supra* note 137, at 181-184, for additional features required for effective database protection, and Samuelson, et al., *supra* note 64, at 2412, for essential components of effective software protection.

[211] Dreyfuss, *supra* note 2, at 898.

[212] *Id.*

[213] To be sure, there have been some liability-type regimes proposed, such as the bills raised by the 108th Congress, *see supra* note 156 and accompanying text, and a modified liability regime offered by Jerome Reichman and Pamela Samuelson for the protection of databases. *See* Reichman & Samuelson, *supra* note 3, at 145. However, the vast majority of schemes rely on

Second, these schemes are not designed with the goal of facilitating transactions in information. Although the importance of information flow is of general concern in today's society, one of the biggest objections to protecting information products is the perceived effect of protection on scientific and educational access to information products. These users:

> would arguably fare better either under a simple unfair competition law that prohibited gross copying or under a sui generis regime built on more refined liability principles than under the regimes based on exclusive property rights. A liability model would create no legal barriers to entry in its own right, nor need it significantly strengthen the sole-source data provider's market power. On the contrary, a properly crafted liability regime stimulates competition both through lead-time incentives to invest and through an automatic license . . . .[214]

Thus, any protection system that combines these first two concerns—that is, any property-based scheme with no thought given to facilitating transactions—is doomed to fail.

Third, none of the above schemes recognize just how similar many types of information products are, and importantly, that the areas of concern in protecting each are the same. Despite the efforts of legislators and commentators to propose amendments to existing regimes, these too fail because they are isolated to a particular type of information product, do not focus on the aspects associated with the facilitation of transactions, and do not address the information component, where the work's primary value lies. In developing a scheme that is flexible enough to cover the existing information products (as well as any future information products that include an information component), the resulting system will be more robust and less reactionary. Further a scheme that is centered on the idea of an information component will both ease transactions in information and secure the valuable portion of the work.

Finally, despite all of the advantages, I do acknowledge that there are some questions that have not been fully resolved by the analysis in this Article. One common concern with sui generis protection proposals, particularly those that abut the coverage provided by patent and copyright laws, is whether these schemes are constitutional. Although scholars have come out on both sides of this issue,[215] the

property-type enclosures of information, which is not favorable.

214 Reichman & Samuelson, *supra* note 3, at 154.

215 *See, e.g.*, Hughes, *supra* note 12; Yochai Benkler, *The Role of Judicial Review in the Creation and Definition of Private Rights in Information*, 15 BERKELEY TECH. L.J. 535 (2000); Malla Pollack, *The Right to Know?: Delimiting Database Protection at the Juncture of the Commerce Clause, the Intellectual Property Clause, and the First Amendment*, 17 CARDOZO ARTS & ENT. L.J. 47 (1999); Reichman & Samuelson, *supra* note 3.

debate is beyond the scope of this paper and I rely on Justin Hughes' article that concludes that, indeed, protection for information products outside of the constitutionally scripted protections are permissible.[216] In particular, Hughes suggests that protection for information products (and specifically databases) can pass constitutional muster if the true focus is on competitors, if there is fair use co-extensive with copyright law, if the problems associated with sole source products are avoided, if the rights actually expire, and if liability is limited to civil liability (among other provisions).[217] The proposal provided above meets these criteria.

Another concern is the interaction between the proposed system and existing alternative legal and non-legal mechanisms. Based on how this same question is treated with respect to current intellectual property regimes, there seem to be two approaches. Patent law forbids a patent holder from attempting to expand his monopoly beyond that granted by the patent under the doctrine of patent misuse.[218] Copyright, on the other hand, appears to permit the copyright owner to extend the scope of his rights, as is true when digital rights technology is used in conjunction with copyrighted works.[219] Given the primary concern of facilitating information flow, a misuse theory may prove useful in the information products protection arena to prohibit the rights holder from attempting to expand his rights using these alternative means. However, the details of such a misuse provision are also beyond the scope of this paper.

CONCLUSION

While legislators and commentators debate whether information products should be protected, creators of these works are seeking self-help coverage for the information products under a panoply of alternative legal and non-legal mechanisms. This results in the simultaneous under-protection of information products, to the detriment of the creator, and over-protection of these products, which inhibits

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[216] *See* Hughes, *supra* note 12; *see also* Gervais, *supra* note 136, at 1146 ("[So long as it were anchored in the commerce clause], it remains unclear whether a federal misappropriation tort for databases would necessarily be wholly unconstitutional.").

[217] *See* Hughes, *supra* note 12, at 209-13.

[218] The doctrine of patent misuse was first clearly defined in *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488 (1942). The *Morton Salt* case based its reasoning on the policy behind patent law. *Id.* at 492. The doctrine of patent misuse has been narrowed in recent years and may not prove as useful in reining in patent holders. *See* Illinois Tool Works Inc. v. Indep. Ink, Inc., 547 U.S. 28, 42-43 (2006).

[219] Copyright law has also entertained a misuse theory, although it is not well known and is less developed than patent misuse. *See, e.g.*, Lasercomb Am., Inc. v. Reynolds, 911 F.2d 970, 976 (4th Cir. 1990).