PRE-PROFESSIONAL INTELLECTUAL PROPERTY EDUCATION

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As society progresses towards an innovation based economy, there are numerous benefits to exposing all sectors of the public to intellectual property concepts.[1] The positive effects from comprehensive intellectual property education include a stronger national economy and a strengthened belief in intellectual property regulations.[2] Rita Hayes, the Deputy Director General of the World Intellectual Property Organization (WIPO) presents this rationale for comprehensive public knowledge of intellectual property:

> If the public at large is going to respect the body of intellectual property law, even the concept of intellectual property itself, then it must have a concrete understanding of the nature of intellectual property and the key role it plays in economic, social, and cultural development.[3]

Additionally, in explaining the changing economy the Deputy Director General stated:

> Knowledge and information - economically exploited as intellectual property - are replacing the more traditional, material elements of production as the primary engine of economic growth. This engine is fueled by the ingenuity, creativity, and innovative ability of a nation's people - truly inexhaustible resources which are increasingly the key to sustainable development. Converting these resources into tangible economic assets requires an effective and efficient intellectual property system. . . .[4]

The aforementioned rationale provides the groundwork for examining the history, current status, and proposed future of intellectual property educa-

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1 Rita Hayes, Speech, *Promoting Intellectual Property for Economic Growth,* 36 Vand. J. Transnatl. L.Vol. 793, 795 (2003).

2 *Id.* at 794.

3 *Id.*

4 *Id.*

tion. This essay serves to compile the many approaches to public intellectual property education and advocates that the role of intellectual property in the economy is increasing, thereby, it follows that education to enhance the public's intellectual property knowledge should increase.[5]

I. EXAMPLES OF PUBLIC INTELLECTUAL PROPERTY EDUCATION

The concept of educating the public regarding intellectual property is not novel. Intellectual property knowledge has been disseminated into indigenous cultures in an effort to protect indigenous assets from the effects of Bio Piracy.[6] Tribes in the Amazon have utilized knowledge that United States patent laws prohibit the patenting of items previously published.[7] The tribes used local media to display and explain their indigenous herbs, and subsequently prevented Bio Pirates from patenting in the United States.[8]

In other parts of the world, as part of an agreement with the United States, China implemented intellectual property education in their universities.[9] When China's economy and intellectual property system experienced a drastic

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5 *Id.*

6 Pollyanna E. Folkins, Student Author, *Has the Lab Coat Become the Modern Day Eye Patch? Thwarting Biopiracy of Indigenous Resources By Modifying International Patenting Systems,* 13 Transnatl. L. & Contemp. Probs. 339, 362 (2003).

> [T]he indigenous peoples of the Amazon basin successfully voided a U.S. patent entirely by securing media publication of their indigenous biological resources. Had the media not published such extensive descriptions of the ayahuasca vine, the U.S.-based patent might still be valid and the indigenous communities from which [the pirate] took it might remain victims of biopiracy. *Id.* at 363.

7 *Id.*

8 *Id.*

9 Jianyang Yu, *People's Republic of China: Protection of Intellectual Property in the P.R.C.: Progress, Problems, And Proposals*, 13 UCLA P. Basin L.J. 140, 160 (1994).

> The academic system is structured in such a way that promotion and academic honor, and therefore salary, housing, and reputation, depend on how many papers one has published and how many certificates for technological achievements one has received, rather than on how many patents one has obtained or how much know-how one possesses. Hence, it is understandable that researchers and professors find it more important to publish papers and obtain the degree certificates than to file patent applications or to maintain the secrecy of research results…. The current ownership and operating system provides no incentives for the protection of intellectual property. Thus, education is important to advise institutions that they should seek intellectual property protection for their own benefit. *Id* at 160-61.

overhaul, public intellectual property education was used to convey the incentives to research and invent that the new solid intellectual property system provided.[10]

Despite foreign examples of public intellectual property education, proposals of domestic intellectual property education have ebbed and flowed through the legislative system.[11] Currently, comprehensive intellectual property education has yet to be implemented and enforced in the United States.[12] Despite the national benefit *comprehensive* intellectual property education provides, educating future producers of intellectual property is not as strongly advocated as educating intellectual property consumers; namely potential copyright infringers.[13]

II. THE PRODUCER/CONSUMER DICHOTOMY

I suggest that the intellectual property exposures United States citizens receive is dichotomous. One exposure is consumer intellectual property education. Here, limited information is disseminated to those who purchase the intellectual property of others. Consumer intellectual property education focuses upon purchasers, or future purchasers, of software, technology, and media. Consumer intellectual property education is directed at explaining how the

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10 *Id.* at 161.

11 *See* H.R. 2517, 108th Cong. § 5 (June 19, 2003); *see also* H.R. Subcomm. on Cts. & Intell. Prop. & Sen. Comm. of the Jud., *Statement of Bruce A. Lehman Assistant Secretary of Commerce and Commissioner of Patents and Trademark on S. 1284 and H.R. 2441*, 104th Cong. (Nov. 15, 1995) (available at http://www.uspto.gov/web/offices/com/doc/ipnii/nii-hill.html) [hereinafter *Statement of Bruce A. Lehman*].

12 *See* H.R. 2517, 108th Cong. at § 5.

13 *Id.; see* Bruce A. Lehman & Ronald H. Brown, *Intellectual Property and the National Information Infrastructure: The Report of the Working Group on Intellectual Property Rights: Education* 201, 205, Sept. 1995 (available at http://www.uspto.gov/web/offices/com/doc/ipnii/ed.pdf).

> For example, the concepts of property and ownership are easily explained to children because they can relate to the underlying notions of property -- what is "mine" versus what is "not mine," just as they do for a jacket, a ball, or a pencil. At the same time that children learn basic civics, such as asking permission to use somebody else's pencil, they should also learn that works on a computer system may also be property that belongs to someone else. *Id.* at 205.

products are protected by intellectual property rights, how to abide by said rights, and proper purchasing rather than downloading or sharing.[14]

The second exposure is producer intellectual property education. Producer intellectual property education informs the public of the rights and benefits intellectual property laws bestow upon their conceptions and works of authorship. Producer intellectual property education encourages innovation and enhances a public familiarity with the basic steps in obtaining intellectual property protection.[15] Despite the recognized need of an all-encompassing public exposure to intellectual property laws,[16] intellectual property education in the

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[14] *See* Monte Reel, *Getting the Word on Intellectual Theft From the Top Attorney General Warns Students Of Consequences* The Washington Post B02 (Oct. 21, 2004) (available at http://www.washingtonpost.com/wp-dyn/articles/A50072-2004Oct20.html).

> He talked of songwriters and film production workers who suddenly found themselves jobless because of revenue stolen from their companies by Internet pirates. He told of a young man who plugged his cell phone into a charger at night, then woke to find his desk and computer in flames -- the malfunctioning battery he used was a knockoff of a name brand, which Ashcroft described as another form of intellectual property theft. *Id.*

[15] Harold Evans, *They Transformed the World,* Parade Mag. (Oct. 24, 2004) (available at http://archive.parade.com/2004/1024/1024_inventors.html).

> If you have an idea for something new and practical that will benefit society, you may seek a patent—the U.S. government's guarantee to stop anyone else from making, selling or importing your wonderful widget for up to 20 years. There are five essential steps:
> 1. Write it down in ink. Whatever it is, keep a record. Note the date. Do a sketch. Number the pages. Don't rub anything out. Explain how you think it will work. Estimate the costs of manufacture.
> 2. Sign a confidentiality agreement with two friends you can trust—not relatives—then convince them that your idea meets the three criteria for a patent: It's novel, not obvious and of real utility.
> 3. Deal with objections in notes on numbered pages. Leave all the evidence there: Don't erase what you've written before. Have your friends witness the changes.
> 4. Keep quiet and act quickly. If your big idea has appeared in print anywhere in the world one year before you try for a patent, you won't get one.
> 5. Search the patent records to make sure you are first. The online databases of the U.S. Patent Office (USPTO) can be searched free. It's best if you can afford a specialized patent attorney listed on the Patent Office register, but still ask around. The history of innovation is the history of litigation. Beginners can visit www.uspto.gov and click on "First Time Visitors" for more information. *Id.*

[16] Hayes, *supra* n. 1.

United States has a disproportionately greater emphasis on consumer intellectual property education, as opposed to producer intellectual property education.[17]

III. WHY PUBLIC INTELLECTUAL PROPERTY EDUCATION?

The following well-known scenarios demonstrate an ostensible public intellectual property ignorance and also serve to exemplify the producer/consumer dichotomy.

Embodying an ignorance of producer intellectual property education is Gordon Gould, the inventor of the laser.[18] Although Gould created an invention which has radically changed the world, he faced thirty years of litigation, where the patentability of his invention was repeatedly questioned.[19] Gould even admitted that his complete ignorance of the patent laws practically lost him the patent to his invention.[20] "I was so ignorant of the whole patent procedure that I . . . [thought] I had to build a model in order to get a patent." Gould's errors are characterized as "a 19th-century tinkerer's mistake."[21] When Gould finally filed for the patent, scientists at Bell Labs, who had a better understanding of the patent laws, had already filed a patent application for the Laser invention.[22] Luckily, Gould wrote his conception of the Laser in a notebook and took the notebook to be notarized at a local candy store. By doing so, Gould sufficiently evidenced his priority of invention.[23] Gould significantly benefited from the fact that the United States patent laws bestow protection to the first to conceive, and not the first to file a patent application.[24] Gould successfully gained intellectual property protection for his invention and was able to turn a profit.[25] Unlike Gould, history is littered with tragic inventors who never protected their innova-

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17 *See* Reel, *supra* n. 14; *see also* Laura M. Holson, *Studios Moving To Block Piracy Of Films Online,* N.Y. Times A1 Col. 1 (Sept. 25, 2003) (available at http://www.nytimes.com/2003/09/25/business/media/25STUD.html?pagewanted=2&ei=5070&en=01951c5f2c8d09f1&ex=1102050000&oref=regi).

18 John Steele Gordon & Michael Maiello, *Pioneers Die Broke*, Forbes Mag. 1, 4 (Dec. 23, 2002) (available at http://www.forbes.com/free_forbes/2002/1223/258_4.html).

19 *Id.*

20 *Id.*

21 *Id.*

22 *Id.*

23 *Id.*

24 *Id.; see* 35 U.S.C. § 102(g) (2000) (stating in interference actions, where a third party contests whether the patent applicant is the first inventor, considering the respective dates of conception is required).

25 Gordon & Maiello, *supra* n. 18, at 1-4.

tions, and *would* have benefited from producer intellectual property education.[26] Many inventors deteriorated into poverty, or even committed suicide, while their innovations remain pivotal to the country.[27]

The following example of consumer intellectual property ignorance is probably familiar to most. The Recording Industry Association of America (RIAA) has sued random citizens in intellectual property lawsuits stemming from the illegal downloading of copyrighted music.[28] The defendants included a 12-year-old, yet it was a 26-year-old defendant who responded by saying, "I didn't understand it was illegal."[29] This exemplifies the need for a better public understanding of intellectual property. The public frequently consumes the in-

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[26] *Id.* at 4.

[27] *Id.*

> In 1967 Robert Kearns invented the intermittent windshield wiper, now standard equipment on automobiles. He took the idea to the Ford Motor Co. in hopes of selling the device. After several years of inconclusive talks, Ford began offering the intermittent wipers on various models but without licensing the invention from Kearns, who sued. He finally settled with Ford for $10.2 million and also won a suit against Chrysler but lost his cases against General Motors and foreign manufacturers. The mess dragged on for more than 20 years; with legal meters ticking along steadily, the lawyers ended up as the chief beneficiaries. *Id* at 3.
>
> Edwin H. Armstrong already had two notable inventions--the regenerative and the superheterodyne circuits, which amplified radio signals--by the time he won a patent for a wide-band frequency modulation (FM) system. But he spent the rest of his life fighting the Federal Communications Commission for spectrum rights and RCA's David Sarnoff, who first ignored FM, then tried to buy out Armstrong and finally installed FM receivers in its TV sets without a license. Broke and despondent, Armstrong jumped from the window of his 13th floor New York City apartment. *Id.* at 4.
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> Edwin L. Drake (1819-90) He was crazy enough to think he could find oil by drilling down to bedrock. Drake's backers pulled the plug, but he persisted. On Aug. 30, 1859, in Titusville, Pa., he attached 20 feet of pipe to a common hand pump and brought up eight barrels of oil—the "golden flood of petroleum" that is America's principal source of energy. Fortunes were made—but not by Drake. He died penniless. *Supra* n. 15.

[28] Associated Press, *Elderly Man, Schoolgirl, Professor Among File-Swapping Defendants,* USA Today, Tech (Sept. 9, 2003) (available at http://www.usatoday.com/tech/news/techpolicy/2003-09-09-riaa-defendants_x.htm).

[29] *Id.*

tellectual property of others. However, the consumption is made in ignorance of the laws integral to the transactions. It is for the benefit of the consumers and the producers to educate the public about intellectual property.

IV. PREVIOUS INTELLECTUAL PROPERTY EDUCATION PROPOSALS IN THE U.S.

Past legislative efforts suggest some governmental interest in teaching comprehensive intellectual property concepts to the public, both as potential producers and consumers.[30] In the early 1990's there was an initiative to assimilate the public to the Internet, which also included the concept of educating the public of intellectual property concepts.[31] This proposal was written by a working group on the National Information Infrastructure composed of the Secretary of Commerce along with the Assistant Commissioner of Patents and Trademarks.[32] The working group's study addressed the lack of public knowledge regarding intellectual property, and the difficulties associated with teaching intellectual property.[33] They set out three goals suggesting how to accomplish educating the public.[34]

The first goal was raising public awareness to the existence of intellectual property.[35] This goal was considered the broadest, where people from all fields could contribute.[36] The working group aspired to make intellectual property a "household word."[37] The second goal was to develop educational curricula on intellectual property, especially with regard to its role with the Internet.[38]

> In addition to heightening public awareness, such curricula would reinforce the important role of intellectual property as an incentive to create and inno-

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30 H.R. 2517, 108th Cong. at § 5.

31 Bruce A. Lehman & Ronald H. Brown, *Intellectual Property and the National Information Infrastructure: The Report of the Working Group on Intellectual Property Rights,* 1, 1 Sept. 1995. (available at http://www.uspto.gov/web/offices/com/doc/ipnii/front.pdf); Lehman & Brown, *supra* n. 13, at 201.

32 *Id.* at 5-6.

33 Lehman & Brown, *supra* n. 13, at 201.

34 *Id* at 203.

35 *Id.*

36 *Id.* at 204.

37 *Id.*

38 *Id.*

> vate, provide guidance as to legal use of protected works, and dispel the notion that intellectual property is a barrier to the public availability of works.[39]

The second goal brings in the aforementioned producer intellectual property education by encouraging the public to understand intellectual property, and by seeking to disseminate the benefits intellectual property laws provide to producers.[40] Perhaps this was the first mention of the producer intellectual property education because this was circa the emergence of the knowledge-based economy[41] associated with the Internet?

The final goal of the working group's proposal was the establishment of a system that provides easy access to accurate and up-to-date information on copyrights, including guidance on when and how to get authorization to use copyrighted works.[42] This direct mention of copyrights demonstrates the working group's convergence on consumer intellectual property education.[43] This goal was aimed at preventing the downloading, effortless duplication, and sharing the Internet was likely to produce.[44]

The goals of the working group expressly included concern for the public as producers and consumers.[45] The working group report states:

> Users must learn enough about this topic [intellectual property] to appreciate just what respect for intellectual property laws can do for them, and why the seemingly harmless transaction on a computer network may have a great effect on the benefits they get from the intellectual property system. Users are likely creators, too. In that role they'll benefit directly from being able to decide how and under what conditions other users will be able to use their works. [46]

Thus, the concepts of consumer and producer intellectual property education have existed for almost a decade, but have yet to receive full legislative support.

When the working group presented their report, they admitted to not having addressed everything because it is impossible to know what will be needed.[47]

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39 *Id.*

40 *Id.* Users are likely creators, too. In that role they will benefit directly from being able to decide how and under what conditions other users will be able to use their works. *Id.* at 202.

41 Hayes, *supra* n. 1.

42 *Id.* at 208.

43 *Id.* at 208 (referring to the Copyright Awareness Campaign).

44 *Id.* at 208-209.

45 *Id.* at 202, 208.

46 *Id.* at 201.

47 *Statement of Bruce A. Lehman, supra* n. 11.

> The [working group proposal] does not provide all of the answers. It may not even present all of the questions, and there is a simple reason for this. There is much that we do not – and cannot – now know about how the [Internet] will develop. Technology is advancing at such an incredible pace that issues will certainly continue to arise in the future, perhaps demanding more comprehensive legislation.[48]

The legislation encompassing the working group's proposed intellectual property education stalled in the hearing process in 1995.[49] Portions of the legislation moved on under different titles, but the education portion was not pursued.[50] Consequently, three goals were presented without means of implementation.[51] Now a decade later with technology advancing, the need has grown, yet there is no apparent congressional action for consumer and producer intellectual property education.

A. Chinese Intellectual Property Education Proposed by the U.S.

The lack of action in the United States is magnified by the fact that the United States specifically asks other countries to educate their citizens about intellectual property.[52] A Memorandum of Understanding between the Government of the United States and of the Government of the People's Republic of China on the Protection of Intellectual Property (MOU) includes an agreement that China will educate its public regarding intellectual property.[53]

> A. Relevant authorities will conduct training and education on intellectual property protection across the country and take the following steps: . . .
>
> 3. Provide national training and education about intellectual property rights protection. These efforts will include: publicity campaigns through the news media on intellectual property rights and the importance of protecting them; opening or expanding special studies of intellectual property at institutes of higher learning, and providing basic education for undergraduates; and providing training courses for the management staff of enterprises and non-profit-

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48 *Id.*

49 Thomas Legislative Information for the Public, *Bill Summary & Status for the 104th Congress*, http://thomas.loc.gov/cgi-bin/bdquery/z?d104:h.r.02441: (accessed Mar. 26, 2005).

50 *Id.*

51 *Id.*

52 China – United States: Agreement Regarding Intellectual Property Rights, 34 I.L.M. 881, 905 (Feb. 26, 1995) [hereinafter *1995 Agreement*].

53 Warren Newberry, *Copyright Reform in China: A "Trips" Much Shorter and [L]ess Strange Than Imagined?* 35 Conn. L. Rev. 1425, 1441-42 (Spring 2003).

> making institutions that *make or sell* products protected by intellectual property rights. [54] (emphasis added)

In addition to requiring an intellectual property education program, which is more comprehensive than any in existence in the United States, the MOU identifies as a goal, the dissemination of consumer and producer intellectual property education simultaneously.[55] The MOU specifically asks for the education to reach "institutions that *make or sell* products protected by intellectual property rights."[56]

Comprehensive intellectual property education has been examined and recognized as beneficial by United States officials.[57] Although there was some historical deference towards consumer intellectual property education, producer intellectual property education was recognized.[58] Still, the current status of intellectual property education in the United States is less than comprehensive.[59]

V. CURRENT INTELLECTUAL PROPERTY EDUCATION PROPOSALS BY THE U.S.

Current intellectual property education efforts focus upon copyright piracy or Internet crime, without mentioning or encouraging innovation.[60] Basically, producer intellectual property education has fallen by the wayside, in the wake of attempts at curbing consumer theft of intellectual property.[61] Specifically, these programs are aimed at curbing copyright infringement attributable to the Internet, by way of education.[62]

Federal legislators proposed the Piracy Deterrence Education Act in 2003, "[t]o enhance criminal enforcement of the copyright laws, *educate the public about the application of copyright law to the Internet*, and clarify the authority to seize unauthorized copyrighted works."(emphasis added)[63] The

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54 *1995 Agreement*, *supra* n. 52, at 905.

55 *Id.*

56 *Id.*

57 Lehman & Brown, *supra* n. 13, at 201; *1995 Agreement*, *supra* n. 52, at 905.

58 *Id.*

59 H.R. 2517, 108th Cong. at § 2. The congressional findings declare that intellectual property theft is a new crime for a new society. *Id.*

60 *Id.* The Congress finds as follows: (1) The Internet, while changing the way our society communicates, has also changed the nature of many crimes, including the theft of intellectual property. *Id.*

61 *Id.; see* Reel, *supra* n. 14; *see also* Holson, *supra* n. 17.

62 H.R. 2517, 108th Cong. at § 5.

63 *Id.*

proposed legislation incorporates an Internet Use Education Program, which aims to educate members of the general public about their role as consumers of copyrighted material available via the internet. [64]

The Piracy Deterrence Education Act passed through a hearing by the Subcommittee on Courts, the Internet, and Intellectual Property.[65] No further action was taken on the bill, but portions of it were included in the "Piracy Deterrence Education Act of 2004."[66] The original 2003 act was amended to include aspects of Internet user security, but the Internet User Education Program remained intact in the 2004 Act.[67] The education program was even considered "overdue":

> Consumer education is an important part of combating illegal activity. The government has long used public education campaigns to modify consumer behavior, such as boosting the use of seat belts and reducing the underpayment of Federal income taxes. A similar campaign to educate the public about the value of copyrighted works and the risks of using the Internet to obtain illegal copies of them will have similar positive impacts on reducing illegal activity on the Internet. [68]

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64 *Id.*

> Piracy Deterrence Act 2003 stating that:
>
> (a) ESTABLISHMENT- There shall be established within the Office of the Associate Attorney General of the United States an Internet Use Education Program.
>
> (b) PURPOSE- The purpose of the Internet Use Education Program shall be to--
>
> (1) educate the general public concerning the value of copyrighted works and the effects of the theft of such works on those who create them;
>
> (2) educate the general public concerning the privacy, security, and other risks of using the Internet to obtain unauthorized copies of copyrighted works;
>
> (3) coordinate and consult with the Department of Education on compliance by educational institutions with applicable copyright laws involving Internet use; and
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> (4) coordinate and consult with the Department of Commerce on compliance by corporations with applicable copyright laws involving Internet use. *Id.*

65 Thomas Legislative Information for the Public, *Bill Summary & Status for the 108th Congress*, http://thomas.loc.gov/cgi-bin/bdquery/z?d108:h.r.02517: (accessed Mar. 26, 2005).

66 H.R. 4077, 108th Cong. (Sept., 28, 2004). ; *see* 108 H.R Rpt. 108-700 at 2 (Sept. 24, 2004).

67 *Id.*

68 108 H.R. Rpt. 108-700 at 5.

The final version of the bill was passed by the House of Representatives and sent to the Senate in late 2004.[69] The bill maintained the education section, however never accumulated any producer intellectual property concepts.[70]

Although the opportunity to promote comprehensive intellectual property education existed, congress chose to focus upon consumer intellectual property education.[71] Even without congress-initiated producer intellectual property education, the information is available to the public.[72]

VI. PUBLIC SEEKING INTELLECTUAL PROPERTY EDUCATION

The need for producer intellectual property education is not only suggested from organizations such as WIPO, the following publications do their best to inform their readers of basic producer intellectual property concepts.[73]

A recent article in Parade Magazine teaches the common Sunday newspaper audience how to navigate a conception through the patenting process.[74]

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69 H.R. 4077, 108th Cong. at § 105. Education program of Piracy Deterrence Act 2004 stating that:

> (a) Establishment. There shall be established within the Office of the Associate Attorney General of the United States an Internet Use Education Program.
> (b) Purpose. The purpose of the Internet Use Education Program shall be to
>
> (1) educate the general public concerning the value of copyrighted works and the effects of the theft of such works on those who create them; and
> (2) educate the general public concerning the privacy, security, and other risks of using the Internet to obtain illegal copies of copyrighted works.
>
> *(c) Sector Specific Materials. The Internet Use Educational Program shall, to the extent appropriate, develop materials appropriate to Internet users in different sectors of the general public where criminal copyright infringement is a concern. The Attorney General shall consult with appropriate interested parties in developing such sector-specific materials.*(emphasis added to show difference between 2003 and 2004 Acts) *Id.*

70 *See id.*

71 H.R. 4077, 108th Cong. at § 105; H.R. 2517, 108th Cong. at § 5.

72 Nolo, *Patents, Copyright, & Art,* www.nolo.com, *select* Patents, Copyright, & Art (accessed Mar. 27, 2005).

73 *Id.*

> Ultimately, the creation and exploitation of intellectual property assets are possible only when potential creators are aware of the importance of the intellectual property system, and have the means, resources, and infrastructure necessary to access it. This situation does not yet exist in much of the developing world. Hayes, *supra* n. 1.

74 Evans, *supra* n. 15.

The article breaks the process down to five steps ranging from the step of writing your idea down in ink, to the step of searching the patent records on the PTO's website.[75] The overall message incorporated the notion that the patent system exists to protect "your wonderful widget."[76] That is to say, the article addressed the entire public as potential producers and displayed the benefits of the United States patent laws.[77] The article is a basic and concise example of producer intellectual property education.[78]

For the public in search of more producer intellectual property education, an organization called Nolo provides self - serve legal information.[79] The information includes explanations of the parts of a patent, the purpose of a provisional patent application, and factors in deciding to license your art.[80] However, sources such as this do not encourage innovation to potential producers; they merely educate curious existing producers of intellectual property.[81] Educators have a great opportunity to encourage potential producers of intellectual property, along with a unique ability to disseminate both consumer and producer intellectual property education.

VII. EDUCATORS AND INTELLECTUAL PROPERTY EDUCATION

Publications are not the only source identifying the public as producers of intellectual property.[82] The education system has approached intellectual property education at various degrees with little encouragement or direction from congress.[83] Nonetheless, former Attorney General Ashcroft took time to address high school students on the dangers of downloading songs and games from the internet.[84] His address was part of the nationwide campaign discussing

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75 *Id.*

76 *Id.*

77 *Id.*

78 *Id.*

79 Nolo, *supra* n. 72.

80 *Id.*

81 *Id.*

82 Shaheen Lakhan, *Stop Piracy with Edification Intellectual Property Education in School,* http://economics.about.com/cs/mp3svsriaa/a/ip_education_3.htm (accessed Dec. 1, 2004).

83 *See* H.R. 4077, 108th Cong. at § 105; *see* Holson, *supra* n. 17.

84 Reel, *supra* n. 14.

> He talked of songwriters and film production workers who suddenly found themselves jobless because of revenue stolen from their companies by Internet pirates. He told of a young man who plugged his cell phone into a charger at night, then woke to find his desk and computer in flames – the malfunctioning

intellectual property piracy, potentially stemming from the Piracy Deterrence Education Act.[85] Much like the Act, Ashcroft's discussion demonstrated the government's singular focus on consumer intellectual property education.[86] There is no mention of the former Attorney General taking a moment to encourage the students to produce intellectual property of their own, or to utilize the nation's intellectual property system.[87] This task remains an individual endeavor.

Mr. Shaheen Lakhan[88], an academic course counselor, has proposed that elementary, middle, and high schools introduce intellectual property education into their current curricula.[89] Mr. Lakhan identifies both the consumer and producer ramifications in his proposal.[90] He states intellectual property education "would effectively and noticeably decrease copyright infringement and would promote a sense of appreciation for creation."[91]

Mr. Lakhan suggests that educators introduce the concept of intellectual property when students are of age to value their original ideas.[92] Around that age, educators could explain how artists, authors, and inventors deserve to have their ideas valued and not pirated, also how their ideas eventually become part of the public knowledge.[93] Through intellectual property education there will be "more contributions and deposits to the information age . . . , instead of mere removals and withdrawals."[94] Mr. Lakhan is an example of an educator breaching the topic of comprehensive intellectual property education.[95] His proposition includes targeting students in their roles as both consumers *and* producers,

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battery he used was a knockoff of a name brand, which Ashcroft described as another form of intellectual property theft. *Id.*

85 *Id.*; *see* H.R. 4077, 108th Cong. at § 105.

86 *Id.*

87 *Id.*

88 Lakhan, *supra* n. 82, at 1. "Shaheen Lakhan is a Lecturer and Teaching Assistant in Biotechnology at the University of California, San Diego (UCSD), the Academic Course Counselor for a private Los Angeles high school, and a Biomedical Researcher at Harvard Medical School." *Id.*

89 *Id.*

90 *Id.*

91 *Id.* at 1. Decreasing copyright infringement is and attribute of consumer intellectual property, and promoting appreciation for creation encourages potential producers of intellectual property. *Id.*

92 *Id.* at 3.

93 *Id.*

94 *Id.*

95 *Id.*

unlike the Piracy Deterrence Education Act or Attorney General Ashcroft's lecture.[96] Similar to Mr. Lakhan, England has seriously approached the concept of incorporating Intellectual Property education in its schools.[97]

A. Intellectual Property Education in the U.K.

Chris Smith, former Secretary of State for Culture, Media and Sport in the U.K, said: "Intellectual property rights are at the heart of the new knowledge economy and are of vital importance to the creative industries. Greater recognition by the public of the role and importance of intellectual property rights must be encouraged."[98] It would appear that the statement encourages comprehensive (consumer/producer) intellectual property education, however even the U.K. disproportionately focused upon consumer intellectual property education, primarily copyright infringement.[99]

The U.K's Creative Industries Task Force suggests a three-step approach to improving mainstream intellectual property education, comparable to the United States' working group proposal.[100] The first step was deciding what groups in the mainstream need additional intellectual property education.[101] This step is analogous to a clause in the Piracy Deterrence Education Act of 2004, which asks for "Sector specific materials."[102] They both seek to examine the public and identify needs.[103] The second step is identifying the education that already exists and benchmarking.[104] A similar benchmarking action does

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96 *See* Reel, *supra* n. 14.

97 Alan Docherty, Salon.com, *Why can't Johnny respect copyrights?* http://dir.salon.com/tech/feature/2001/07/16/abc_ip/index.html (accessed Dec. 1, 2004).

98 *Id.*

99 Creative Industries Intellectual Property Group, *The Report from the Intellectual Property Group of the Government's Creative Industries Task Force*, http://www.patent.gov.uk/copy/notices/pdf/ipgroup.pdf 20 (accessed Dec. 1, 2004) [hereinafter *Creative Industries*]; *see* Lehman & Brown, *supra* n. 13, at 201.

100 *Creative Industries*, *supra* n. 99, at 5.

101 *Id.* at 20.

102 H.R. 4077, 108th Cong. at § 105(c). Piracy Deterrence Education Act's Sector Specific Materials stating:

> The Internet Use Educational Program shall, to the extent appropriate, develop materials appropriate to Internet users in different sectors of the general public where criminal copyright infringement is a concern. The Attorney General shall consult with appropriate interested parties in developing such sector-specific materials. *Id.*

103 *Creative Industries, supra* n. 99, at 20; H.R. 4077, 108th Cong. at § 105.

104 *Creative Industries, supra* n. 99, at 20-1.

not appear in the working group's proposal or the Piracy Deterrence Education Act.[105] The third step is deciding how intellectual property can be taught to those identified groups in need.[106] The Task Force seeks to utilize British broadcasting, the music industry, publishers, and others with an interest in protecting copyrighted material to carry out the initiative.[107] Even though the steps are written broadly enough to encompass producer intellectual property education, the executive summary, recommendations, and general comments focus the education on curbing Internet downloading.[108]

Criticism of the U.K.'s proposed intellectual property education is largely based on the difficulties of teaching young students moral lessons.[109] In an article titled "Why Johnny Can't Respect Copyrights?," the Task Force's proposal on intellectual property education is compared to America's DARE program.[110] According to James Davison Hunter, professor of sociology and religious studies at the University of Virginia, "moral education programs have little or no positive effect upon moral behavior, achievement or anything else."[111] Interestingly, despite the fact that consumer intellectual property education is the most widely advocated,[112] here consumer intellectual property is also receiving the majority of criticism.[113]

B. Groups Sponsoring Intellectual Property Education

Film studios and media companies such as Warner Brothers have worked with an organization called Junior Achievement to create an education

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105 *See* H.R. 4077, 108th Cong. at § 105; *see* Lehman & Brown, *supra* n. 13, at 201.

106 *Creative Industries, supra* n. 99, at 22.

107 *Id.*

108 *Id.* at 5-10, 20.

109 Docherty, *supra* n. 97.

110 *Id.;* Dawn MacKeen, *Just say no to DARE,* http://dir.salon.com/mwt/feature/2001/02/16/dare/index.html (accessed Dec. 1, 2004).

> [T]he days of "Just say no" may just be over. Leaders of the nation's largest drug prevention program, Drug Abuse Resistance Education, announced on Thursday that they were changing DARE's approach, admitting that the vastly expensive program appears to be ineffective. Indeed, research has indicated that DARE may actually have contributed to greater drug use by high school students. MacKeen, *supra* n. 110.

111 Docherty, *supra* n. 97.

112 *See* H.R. 4077, 108th Cong. at § 1; *see* Lehman & Brown, *supra* n. 13, at 201; *see Creative Industries, supra* n. 99.

113 Docherty, *supra* n. 97.

program on copyrights and downloading.[114] The motivation behind the industry participation is to protect their interest in film and to prevent becoming like the music industry.[115] Junior Achievement has volunteers who present short lessons to students ranging from elementary to high school age.[116] Generally, the volunteers lecture on economics, business, or free enterprise, but have integrated "the history of copyright, the economic benefits of both the music and movie industries, and the consequences for consumers who violate copyright laws."[117]

It is not fair to say that the Junior Achievement lesson plan is limited to consumer intellectual property education, but the motivation as evidenced by the industry participation, is certainly consumer intellectual property education. Producer intellectual property education can be discerned in some of its activities, but not reinforced.

> In the role-playing activity Starving Artist, for example, groups of students are encouraged to come up with an idea for a musical act, write lyrics and design a CD cover only to be told by a volunteer teacher their work can be downloaded free. According to the lesson, the volunteer would then "ask them how they felt when they realized that their work was stolen and that they would not get anything for their efforts."[118]

The activity asks the students to act as producers of intellectual property, then, merely looks at the ramifications of the public illegally consuming the students' hard work. The activity negates any motivation to produce intellectual property. Moreover, it accentuates the notion that to enjoy the intellectual property of others, you must purchase it.

Similar to the criticism of the Creative Industries Task Force in the U.K., there is opposition to "teaching children about the moral and ethical consequences of downloading."[119] Interestingly, even the chief executive of Junior Achievement characterizes the downloading issue as a question of ethics.[120] With the strong support the movie industry is lending to the Junior Achievement program, it follows that the concentration would be on consumer intellectual property education.

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114 Holson, *supra* n. 17.

115 *Id.*

116 *Id.*

117 *Id.*

118 *Id.*

119 *Id: see* Docherty, *supra* n. 97.

120 Holson, *supra* n. 17. "David Chernow, chief executive of Junior Achievement, counters by saying the industry's message that downloading is stealing is an ethical lesson not to be ignored." *Id.*

C. Teachers and Intellectual Property Education

Educators are on the front line in disseminating intellectual property education to students. They have been called upon by the working group, and may soon be called upon with the Piracy Deterrence Education Act.[121] A group of educators in Illinois completed an assignment where they addressed intellectual property education in schools.[122] Unlike the movie industry, which is motivated by a concern that its intellectual property will be usurped through the Internet,[123] or intellectual property advocates seeking to explain the benefits of the system, these educators identify unique pieces of intellectual property which they believe to be relevant to a student's education.[124]

The group strongly advocates disseminating information by liberally training the teachers, submitting that by educating the teachers, the information will make its way into the classroom.[125] "Our proposal is a mandated class for all Illinois public school teachers on the appropriate and ethical use of Intellectual Property."[126] Unlike the aforementioned proposals which concentrated on the ends rather than the means,[127] the teachers' proposal includes a realistic plan for implementing intellectual property education.[128] The proposal includes a required in-service training on "Ethical and Responsible Use of Intellectual Property" and continuing professional development units counting towards teacher re-certification.[129] The group went so far as to outline topics for the in-service, integrating information for students in their roles as consumers.[130] The in-service would include a portion dubbed "Classroom Reality" where:

> Discussed will be what students need to know and why they can be held responsible for work they produce and/or post to the Internet. In addition,

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121 H.R. 4077, 108th Cong. at § 105; Lehman & Brown, *supra* n. 13, at 201.

122 *Intellectual Property Legal Use and Concerns,* Valarie Pozen, Heather Shore, Kathy Hickey, Elise Johnson, and Tonya Dieken, http://students.ed.uiuc.edu/dieken/eps313/index.htm (Accessed Feb. 3, 2005) [hereinafter *Intellectual property project*].

123 Holson, *supra* n. 17.

124 *Intellectual property project, supra* n. 122.

125 *Id.*

126 *Id.*

127 Lehman & Brown, *supra* n. 13, at 201.

128 *Intellectual property project, supra* n. 122.

129 *Id.*

130 *Id.*

> teachers will learn ways to monitor, enforce, and encourage responsible use of Intellectual Property.[131]

Noticeable throughout the plan is a lack of producer intellectual property education; perhaps because the main concern was responsibility and ethical issues.

There are opportunities in History lessons to incorporate the inventors of the past, such as Gould and those less fortunate.[132] When discussing the Constitution there are opportunities to introduce Article 1, Sec. 8. Furthermore, when discussing economics, there is opportunity to discuss the new economy based upon intangible assets and knowledge.[133] Educating elementary, middle, and high school students regarding intellectual property is plausible and recommended, but it will be seen as to whether it is implemented.

VIII. INTELLECTUAL PROPERTY IN HIGHER EDUCATION

Although this essay primarily deals with pre-professional intellectual property education, it is important to note that five years ago, out of 175 accredited law schools, very few schools offered more than two intellectual property classes.[134] Since then, certain undergraduate, mainly technical, universities have

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131 *Id.*

132 Gordon & Maiello, *supra* n. 18, at 1-4; *see* Lehman & Brown, *supra* n. 13, at 206.

> For example, the economic rationale for granting authors and inventors exclusive property rights in their creative efforts for a limited period of time in order to foster creativity and innovation might fit neatly in a high school economics course. Similarly, a number of topics might be explored during social studies or history classes including the constitutional roots of patent and copyright law, the nature of a governmental grant of a property right, or the role of the copyright and patent systems in fostering the present day information and communications revolution. Business courses could discuss the concepts of licensing intellectual property rights, the use of intellectual property as a marketing device, the concept of intellectual property as a corporate asset, and the trademark concept of good will. *Id.*

133 Lehman & Brown, *supra* n. 13, at 206.

134 William Hennessey, The Place of Intellectual Property Teaching in the Curricula of Universities and Technical Institutes, http://ipmall.info/hosted_resources/pubspapers/Teaching_IP_Hennessey_99.htm (accessed Dec. 1, 2004).

> In the United States, only five law schools offer the Master of Laws degree (LL.M.) in intellectual property law: Franklin Pierce Law Center, The National Law Center of The George Washington University, New York University, John Marshall Law School, and the University of Houston Law Center in Texas. While three of these programs are old and well-established, the pro-

started to offer intellectual property education.[135] Many attorneys take time out to disseminate their intellectual property knowledge to undergraduate university students.[136] Interestingly however, the American Bar Association fails to identify teaching undergraduate students as an available profession for intellectual property attorneys.[137]

The Stevens Institute of Technology has implemented "Technogenesis" in its undergraduate engineering curriculum.[138] The curriculum focuses on merging an engineering education with an entrepreneurial business education.[139]

> grams at Franklin Pierce and the University of Houston are relatively new. Furthermore, of the 175 remaining accredited law schools in the United States, only a few offer a more than one or two courses in intellectual property for J.D. students. Among the latter are Chicago-Kent Law School, Dickinson Law School, the University of Baltimore Law School, Georgetown Law School, and George Mason Law School. *Id.*

135 *Id.*

> One practical reason why colleges of engineering and technical institutes in the United States rarely offered courses in intellectual property was that there was almost never any member of the faculty who was qualified to teach the subject. A second reason was that the engineering curriculum at most schools of engineering and technical institutes is very concentrated and focused on acquisition of the knowledge professional skills needed to become licensed as engineers. Since none of the professional engineering organizations required an understanding of intellectual property as an area of knowledge within the discipline of engineering, intellectual property was not taught at such technical institutes. *Id.*

136 *Id.*

137 American Bar Association, *ABA Section of Intellectual Property Law Careers In Intellectual Property Law*, http://www.abanet.org/intelprop/opportunities.html (accessed Dec. 1, 2004).

> Universities employ intellectual property lawyers, especially those universities which are heavily involved in research and development. University intellectual property lawyers work with the university's scientists and researchers in identifying inventions with commercial potential. While some universities handle patent prosecution themselves, many rely on law firms for that purpose. The university's intellectual property lawyers then assist in the commercialization of the invention, transferring the patented technology through licensing or assignment. *Id.*

138 Keith Sheppard & Bernard Gallois, *Implementation of Technogenesis in the Undergraduate Engineering Curriculum,* 2002 ASEE/SEFI/TUB Colloquium (available at http://www.asee.org/about/events/conferences/international/papers/upload/Implementation-of-Technogenesis-in-the-Undergraduate-Engineering-Curriculum.pdf).

139 *Id.* at 2.

> Technogenesis has been officially defined as "the educational frontier wherein faculty, students and colleagues from industry jointly nurture the process of

Included is education on intellectual property law for future engineers, also known as the future producers of intellectual property.[140] In implementing this curriculum, they conducted research on pedagogical methods which encourage and equip undergraduate students with the education necessary for entrepreneurial innovation.[141] The result was a project-based curriculum to convey the knowledge.[142]

A project-based curriculum is also used to teach intellectual property in Canada.[143] The University of Ottawa has a biotechnology class entirely based upon innovation and the patenting process.[144] To receive and A+ in that class, groups need to innovate and successfully file for a patent.[145]

> There are no formal lectures, and no need for excessive note-taking. Instead, the course provides an opportunity to dream up an invention and carry it through the innovation cycle by writing it up as a professional patent. The only condition: the patent has to be submitted to the Canadian Intellectual Property Office (CIPO) before the end of the semester. And the consequence: a perfect score on our transcripts.[146]

This class is the epitome of producer intellectual property education. Here each student is not only encouraged, but required, to produce intellectual property of his or her own.[147] Additionally, students are instructed on how to reap the benefits of their national intellectual property system.[148] The class is reserved for fourth-year level students, and they consider themselves lucky for the opportunity and experience.[149] Even at their advanced education level, the innovating

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> conception, design, and marketplace realization of technology". As noted by Stevens Institute historian Dr. Geoffrey Clark, "it (Techogenesis) was inspired by the engineer-entrepreneurs of the family of John Stevens that pioneered the first successful American railroad, promoted establishment of the U.S. patent office to protect intellectual property, and founded the Institute to create "captains of industry." *Id.*

140 *Id.*

141 *Id.* at 3.

142 *Id.*

143 Shefali Davé, *Patent idea worth A+ in unusual course* U. of Ottawa Gas. May 30, 2003 (available at http://www.uottawa.ca/services/markcom/gazette/030530/030530-art10-e.html).

144 *Id.*

145 *Id.*

146 *Id.*

147 *Id.*

148 *Id.*

149 *Id.*

and patenting experience is entirely novel. Imagine if students experienced this knowledge and encouragement to innovate in elementary through high school.

IX. CONCLUSION

"Ultimately, the creation and exploitation of intellectual property assets are possible only when potential creators are aware of the importance of the intellectual property system, and have the means, resources, and infrastructure necessary to access it. This situation does not yet exist in much of the developing world."[150] Intellectual property education is advancing. However, the path and rate of its advancement do not match the need and benefits of comprehensive intellectual property education. The results of teaching someone not to download are easily recorded and analyzed. Even though it is more difficult to track the results of encouraging innovation, it should not be ignored as beneficial to the public. The preponderance of consumer intellectual property education over producer intellectual property education may result in immediate results, but must still overcome the difficulties with teaching morality. If we are on the verge of public intellectual property education, why not make the education comprehensive and widely supported?

This essay was meant to be a compilation of intellectual property education programs for readers to consider. Also, I hoped to bring to light comprehensive intellectual property education versus the producer/consumer dichotomy. I hope many will find that they have pondered the topic and are pleased with the work others have committed to intellectual property education. For those feeling like something is lacking, take this opportunity to educate those around you regarding intellectual property or the topic of your expertise.

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[150] Hayes, *supra* n. 1.