TRANSBORDER LICENSING: NEW FRONTIER FOR JOB CREATION

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“Licensing is like a marriage. It can be a beautiful thing, but there has to be total transparency and trust between both parties and if it is not a win-win situation—you’re going down a road of ruin.”

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I. Introduction

Transborder licensing involves the creation and disposition of intellectual property (IP), such as copyright, patent, trademark, or trade secret, across geographical boundaries. Licensing is a contractual agreement in which the owner of IP, called the licensor, agrees to permit or restrict the rights, privileges or immunity of another, called the licensee, to use informational assets (“assets”). The assets can vary widely.

Assets can be property, such as music that is licensed for play on the radio or use in a television show; a book that is being marketed and distributed for sale by a publisher, or a script that is made into a movie. Assets can also be a design or a process for manufacturing a finished product; or the know-how, formula, R&D, or intellectual capital used to develop or produce something of value, such as software, technology, drugs or medical devices. Finally, assets can also be a physical component that is used with other assets to produce something of value. Most IP give the owner a bundle of rights, which may be licensed together or separately. Ideally, licensing technology or intellectual property expands the market for the product or service, creating new jobs to meet the demand, without a huge expenditure of capital. The compensation may be a royalty that is paid as a lump sum or on a recurring basis over the term of the license.

As a field of study transborder licensing focuses on the legal, regulatory and business issues governing the export and import of know-how and technology in industries such as telecommunications, computer and information technology, biotech and clean energy between two or more parties and/or the United States and governments from different countries. Transborder licensing is interdisciplinary, involving legal issues in business, licensing, employment, immigration and tax.

On March 11, 2010, President Obama issued an Executive Order to launch the National Export Initiative (NEI) to foster job creation for Americans by doubling U.S. exports within the next five years. NEI efforts include expanding trade promotion and advocacy for small and medium-sized enterprises SMEs through education outreach, improving access to credit for businesses that want to export, and enforcing trade laws and intellectual property. In the first quarter of 2010, U.S. exports of goods and

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3 A trade secret is any information, formula, pattern, compilation, program device, method, technique or formula that is used in one's business and which 1) derives some independent economic value from not generally being known to competitors or others who may obtain some economic value from its disclosure or use; and 2) is kept secret through reasonable efforts. A trade secret does not have to be unique, novel or inventive, as is the case with copyrights and patents. However, the owner must continuously use the trade secret in his or her business. A trade secret will be protected as long as it remains secret.


5 Id.

services increased by 16.7 percent, for a total of $434 billion.\textsuperscript{7} Much of the increase was due to financing available through the Export-Import Bank of the United States.\textsuperscript{8} As a result of lending activities, the increase in exports was estimated to have created 109,000 jobs, up from 61,000 jobs for the same period in 2009. With firm support from the Obama Administration, the United States may well be on its way to reaching its five (5) year target of two (2) million additional jobs.

This article explores why entrepreneurs should consider transborder licensing as a way to increase markets and create jobs. This article will define transborder licensing, how it is regulated and its nexus to job creation, with recommendations on using technology to address redundancies and inefficiencies in the current regulatory structure. While transborder licensing can involve both goods and services, this article focuses on exporting nondefense or security-related services, intellectual capital, and how the U.S. government can facilitate the development of an industry of support professionals to help U.S. companies navigate through the regulatory complexities.

Transborder licensing is the “new” emerging field of practice and business transactions because America’s most valuable asset, its U.S. intellectual capital, is being underutilized as a vehicle for building wealth. Foreign students flock to the United States for education. The demand for U.S. technology in biotech, bio-fuels and information technology is unparalleled. Research universities and professional schools own a treasure trove of intellectual property created through collaborations between faculty, governments and private industry. These collaborations are encouraged and supported by academic and research institutions and governments around the world. Under laws such as the Bahl-Dole Act,\textsuperscript{9} which grants to SMEs, universities and nonprofit organizations, ownership and disposition of intellectual property created through government sponsored research grants, technology transfer provides the best and most reliable access to innovation and the promise for job creation.

The next section will define transborder licensing, and explain the life cycle of a typical patent. The third section will show how current population and foreign business ownership trends necessitate studying how trade is conducted in the U.S. and abroad and potential opportunities for U.S. job creation. The fourth section will explore the complexity of navigating through the multitude of federal agencies that regulate exports, which often discourage U.S. businesses who want to export their technology, but need assurances and advice on how to minimize unforeseen risks. The author proposes creating a quasi-public “Virtual Protocol” or VP that will allow inventors, authors, registered and unregistered IP owners to identify prospective partners, track IP licensed

\textsuperscript{7} “US Exports Rise 16.7 percent in First Quarter; On Track to Meet President’s Goal of Doubling Exports over the Next Five Years,” News Release http://www.exim.gov/pressrelease_print.cfm/ (May 18, 2010) Much of the increase came from Taiwan (80%), Korea (66.2%), Malaysia (49.2%) and China (46.6%).
\textsuperscript{8} Id. Ex-Im bank loans increased from $832.6 in FY 2009 to $4.9 billion in FY 2010.
\textsuperscript{9} P.L. 96-517, referred to as the “Patent and Trademark Act Amendments of 1980.” The Bahl-Dole Act created a uniform patent policy among the federal agencies that fund research which allows universities, SBEs, and nonprofits to retain title in materials, products and inventions created under federal grants. “University of California Office of Technology Transfer-Questions and Answers,” http://www.ucop.edu/ott/faculty/tech.html (last visited on June 4, 2010).
abroad, and notify infringers of violations. This VP can be accessible to agencies such as the U.S. Patent and Trademark Office that grants IP protections, the U.S. Commerce Department that licenses exports; and the Justice Department and Federal Bureau of Investigation (FBI), which enforces IP, without subjugating existing authority of current agencies. This article concludes that the environment to foster transborder licensing has to be developed with active participation from academic and research institutions, their students and alumni; and should integrate technology to achieve maximum benefits.

II. Overview of Transborder Licensing

A. Exports Generally

U.S. exports are an integral part of the U.S. economy. In 2009, U.S. exports accounted for 11 percent of the nation's gross domestic product and supported nearly 10 million American jobs.\(^\text{10}\) For every $1 billion in exports, 6,250 manufacturing jobs were created or supported.\(^\text{11}\) Industries such as aviation, machinery, and electronic products now depend on exports for up to half of their sales.\(^\text{12}\)

Historically, U.S. companies have not exported to other countries because the risks were perceived as too high. Companies had to deal with language barriers, different cultures, lack of transparencies in the rules, lack of financing, and the threat of nationalization. In fact, according to the Department of Commerce, only one percent of all U.S. companies export their goods and services abroad, and of those 58 percent export to only one country. \(^\text{13}\) Most of these companies are publicly traded, so few small business enterprises (SBE)\(^\text{14}\) or medium size enterprises (MBE) export.

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\(^{11}\) Id.


\(^{14}\) Small business enterprise (SBE) — A concern, including affiliates, that for subcontracts valued $10,000 or less, and does not have more than 500 employees; and more than $10,000, does not have employees or average annual receipts exceeding the size standard in 13 CFR part 121 (see 19.102) for the product or service it is providing on the subcontract.

An offeror that represents, as part of its offer, that it is a small business under the size standard applicable to the acquisition; and either:

1. It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B; and
2. No material change in disadvantaged ownership and control has occurred since its certification;
3. Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed $750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and
4. It is identified, on the date of its representation, as a certified small disadvantaged business concern in the data base maintained by the Small Business Administration (PRO-Net); or for a prime contractor, it has submitted a completed application to the Small Business Administration or a private certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR part 124, subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since it submitted its application. In this case, a contractor must receive certification as a small disadvantaged
(collectively referred to as “SMEs”). In fiscal year 2009, U.S. firms reported 12,335 export successes that were assisted by the U.S. Department of Commerce’s Commercial Service. Only 832 of these successes were from SMEs (small-medium size enterprises). This is an area of concern for the government, as most innovation occurs froms. Lack of financing, access to capital and the complexity of the process have been primary reasons for little export activity among SMEs.

In a typical export scenario, ideally a U.S. company has a product or service that has an established market in the U.S. and is looking to expand, so they select a country and must find an agent or distributor who will sell their product or license their technology to one or more companies abroad. In another scenario, an individual or company may import into the United States, parts or raw materials or technology from another country, perhaps to a free trade zone, to assemble a finished product that the company is interested in re-exported abroad. Finally, a company may outsource the manufacturing or development of a product abroad because the cost of labor is cheap, which will be to imported back into the United States for domestic distribution, or reexported abroad.

In each of these situations there are a variety of issues, such as finding a reputable partner, distributor, or agent; minimum local ownership requirements; stringent local labor law; fraud and corruption; obtaining a license, and being aware of applicable tariffs or other trade barriers to ensure that the venture is cost effective and profitable for the U.S. company. One misstep could result in not only loss of money, but nationalization of the business, and ultimately bankruptcy. This is where transborder licensing may provide ways to minimize some of these risks.

B. Life Cycle of Licensing Deal

Transborder licensing involves a process that follows the life cycle of an invention or process, and may result in a patent, copyright or trademark being filed with the business by the Small Business Administration prior to contract award. See Federal Acquisitions Regulations (FAR). See (13 CFR §121) The SBA defines a business concern as one that is organized for profit; has a place of business in the U.S.; operates primarily within the U.S. or makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials or labor; is independently owned and operated; and is not dominant in its field on a national basis. The business may be a sole proprietorship, partnership, corporation, or any other legal form. See (www.sba.gov/contractingopportunities/officials/size/index.html)

Id.


This is defined as an export under 15 CFR §734.2 (b).

This is defined as a re-export under 5 CFR §734.2 (b)(4)-(6) .

A patent protects the design and manufacturing of an invention, codified by the Patent Act, 35 U.S.C. §§ 1-3. A patent gives to the inventor the right to exclude others from making, using, offering for sale, or selling the invention in the United States. It is important to note that unlike the Copyright Act, which grants to the owner affirmative rights to make, use, and offers for sale of the invention which are automatically protected, the Patent Act only grants

http://www.sba.gov/contractingopportunities/officials/size/index.html
U.S. government, and one or more foreign governments. Recognition of intellectual property rights usually confers upon the registered owner a bundle of rights, including the right to receive compensation for use by others, and the right to prevent others from using the protected work or invention. The stages of the IP life cycle will vary depending upon the nature and length of the protection sought, and the processing time. While an idea may start out with limited value, as it becomes commercialized, the value of the IP will likely increase.

Protection of IP can be conferred immediately through copyright, once the idea is reduced to a tangible form; or within two to four years after filing a patent application. For purposes of illustration, consider the life cycle of a patent, which can have up to eight stages or steps:

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<th>LIFE CYCLE OF PATENTABLE IDEA</th>
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<td>3) Product Viability Established</td>
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An author automatically gets the protections of a copyright when the work is reduced to some tangible expression. Any derivative, modification or by-product of a copyrighted work is automatically protected and the owner of the original copyright has rights to the derivative, in the absence of an agreement to the contrary. However, in order to sue in court for copyright infringement against another the author must register the work with the U.S. Copyright Office in Washington, D.C. Registering a copyright requires filing out the appropriate form based upon the type of work, filing copies of the work with the U.S. Copyright Office, and paying a modest fee. In order to collect statutory damages, the copyright must be registered within 90 days of publication. A registered copyright lasts for the life of the author plus 70 years. Notice of copyright protection, although not required, should state the name of the author, a copyright symbol © or name, and the date, e.g. John Doe © 2002 somewhere prominently on the work.
Licensing involves informational assets that may be created, discovered or evolved over time and which may result in a commercially viable product or service.\textsuperscript{26} Sometimes, it may result in a physical product, or it may only be “seen” through a computer or some other device. The cycle begins with a raw idea that is developed into a prototype or process. The idea may result in a formula, drawings, processes, software, literary or artistic works that may be protected by a copyright, patent, trademark, know-how or trade secret. Copyrights, trademarks and patents have different registration requirements, but registering preserves the owner’s priority in time, so that anyone filing a patent or trademark afterwards may be subject to an infringement claim -- or simply have their application rejected.

After the author or inventor applies for a patent or registers a copyright, the next steps focus on determining if the idea or invention is commercially viable and whether there are available markets. Technical support and funding are often required during these stages to develop the idea, and will vary widely, from sweat equity to millions of dollars. Financing at these early stages of development tend to be very risky and difficult to find. Government programs through the U.S. Department of Commerce, the Small Business Administration, or nonprofit organizations, such as CONNECT, provide assistance through “seed capital,” “angel investment,” or “early stage financing.”

Transborder licensing has advantages over a documentary sale of goods that involve bills of lading, shipment and risk of loss issues involving insurance. Intellectual property or capital is generally, not subject to typical entry level requirements of tariffs and quotas, or other nontrade barriers, such as minimum ownership requirements. In fact, most SMEs transactions occur with little to no government involvement. If there is nonpayment or a breach, the licensor simply cuts off access to the technology or IP. If parts or components of goods are involved in a transborder licensing agreement, then the goods may be shipped to a free-trade zone, where they will be re-exported to another country.

By the time the IP has been exported commercially in the U.S. market, the patent will be granted or it may be denied, in which case the denial can be appealed. Inventors and/or their representatives can often meet with the assigned U.S. patent examiner during the process to decide whether to proceed or abandon the application if there is less than a good chance a patent will be granted. Even if the patent is abandoned, the inventor may still commercialize it and export it.

The market for licensed goods can be domestic or international, although experts warn that unless steps are taken to first establish a market for the IP in the United

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\textsuperscript{25} Jay Sorensen, \textit{supra} note 2. \\
\textsuperscript{26} Id.
States, it is quite possible that a version of the asset-- perhaps counterfeit, pirated or reverse engineered-- could find its way back into the United States within 18 months, competing against the original asset. For this reason, inventors often file notice of intent to file patent applications in selected foreign markets simultaneously with or right after filing in the United States.

The Patent Cooperative Treaty, (PCT) administered by WIPO, provides for a common international patent filing.\(^{27}\) The process begins with a single filing and payment of a fee.\(^{28}\) An international search, publication, and examination follow to establish the patentability of the invention. After this process, the inventor must file an application with the applicable agency in each country where protection is sought. This is considered the national phase. So while there is a single international application, the actual grant of the foreign patent is from the individual governments during the national phase of the process. The process takes from 18 to 30 months and presumptively, an inventor filing an international patent will be deemed to have established a priority of right.\(^{29}\)

For licensing that involves copyrighted work, the challenge is the risk of losing control over the technology, or the threat of theft through counterfeits or knock-offs.\(^{30}\) While licensing tends to produce fewer profits than exporting goods, it is more attractive to SMEs, who may have limited access to capital.\(^{31}\)

III. Protecting Intellectual Property

A. Patent Protection

For most entrepreneurs with IP assets, IP protection falls at the top of the list in terms of considerations when exporting abroad. To obtain a patent or register a trademark, the inventor must apply to the United States Patent and Trademark Office (U.S.P.T.O.).\(^{32}\) A patent application must be in writing; include a description of the invention and the manner and process for making and using it in full, clear and concise terms. The description must include a claim of what is being patented, along with drawings or a model of the invention. Finally, the applicant must swear that he or she is the original and first inventor. A prospective applicant may conduct searches of the U.S.P.T.O. database of prior art to see if there are any patents granted for the same or similar inventions. Once a patent is filed in the United States, the inventor must then file patents in every foreign jurisdiction it seeks to extend patent protection.


\(^{28}\) Id.


\(^{30}\) Jay Sorenson, supra note 2.

\(^{31}\) Id.

\(^{32}\) See http://www.uspto.gov/ (last visited on June 1, 2010).
To qualify for a patent, the application must be filed within one (1) year of the first publication of the work or invention along, and pay a filing fee. Once the patent is obtained, the holder must pay maintenance fees periodically or the patent will be cancelled. If an inventor publicly uses or sells the invention more than one (1) year after its creation without filing for a patent, the inventor loses the right to a patent. Public use of the work can be with or without compensation, but generally excludes experimental use\textsuperscript{33} to test or perfect the invention. Whoever makes, uses or offers to sell any patented invention within the United States without authority is deemed to have infringed upon a patent. There are two types of patent infringements: (1) literal infringement where the article created is identical to the claims of the patented article, and (2) the doctrine of equivalents, where the infringing article performs substantially the same function in substantially the same manner to obtain the same result.\textsuperscript{34} To determine if the item is equivalent, each element will be examined separately as opposed to as a whole.

A person who infringes may be liable for actively inducing another to infringe, such as one who disseminates unauthorized information about a patent process over the Internet.\textsuperscript{35} A person who infringes can also have contributory liability for selling the components made or adapted especially for use in an infringing patent. Remedies for patent infringement include injunctive relief to stop someone from using the item; compensatory and treble damages; lost profits if certain findings are shown, and attorney fees and costs to the prevailing party.

B. Disposition of IP

Software patents pose an interesting dilemma for developers in transborder licensing deals because many countries do not recognize business method patents or consider software to be patentable. While patents protect against another duplicating the invention, it does not protect against someone reverse engineering a software program.\textsuperscript{36} Reverse engineering is a process by which the product is analyzed and the steps are retraced to recreate the formula or process. Computer chips are routinely dissected by competitors, stripping them apart and examining them microscopically to learn the design.

\textsuperscript{33} There are several factors to determine if experimental use falls within the exception: 1) length of the test period; 2) payment for use of the invention; 3) the existence of nondisclosure or confidentiality agreements; 4) the existence of progress records on the invention; 5) who performed the tests; 6) how many tests were performed; and 7) the relative test period in relation to other similar inventions. It is advisable to seek legal counsel from a patent lawyer before filing a patent application.

\textsuperscript{34} See Graver Tank & Mfg. V. Linde Air Products Co, 339 US 605 (1950)

\textsuperscript{35} Defenses to an infringement claim are 1) the patent is invalid as not being patentable; 2) misrepresentations made to the USPTO; 3) misuse of a patent; 4) failure to pay the maintenance fees; 5) the invention was abandoned; 6) the person is an innocent infringer where no notice is provided on the item that it has been patented; 7) the expiration of the patent; 8) experimentation by someone to see if it works or where it is used for non-commercial use; and 9) equitable defenses. See 35 USC 273.
The threat of reverse engineering causes some developers to put the code into a secure, physical device for further protection against theft. There are also tamper-resistant packaging methods for digital info, but they are rarely used except for special programs.

In academia, many employers, including research institutions, who create patentable works, have stated policies that specify the relative rights of the employer and employees to inventions made or discovered using the employer’s facilities or at the employer’s direction. However, having a stated policy regarding ownership does not automatically create an assignment of interests in the absence of some consent by the inventor.

Existence of an agreement of assignment requires an offer and acceptance. Merely inserting an employer's rights to an invention in the employee handbook has not been found by the courts to necessarily create a contract without specific intent. Employer handbooks are generally construed as only a guide, rather than an enforceable legal document. To be an enforceable agreement, there must also be a specific acceptance or acknowledgement by the employee. Employee acceptance of the policy is a question of fact that will be viewed based upon the circumstance. Some employers have specific patent disclosure forms or invention disclosure forms that outline the respective rights of the parties. For someone whose primary interest or expertise is in the invention, the process of getting a patent usually requires legal counsel.

C. Necessity for Registered Protection

It is important to note that every idea that may be copyrightable or patentable may not be entitled to protection. There are several reasons for this.

First, the idea may already be preempted by someone else having filed a patent for a similar product, process or service. This will not preclude the owner from licensing the technology or invention commercially, but will prevent the owner from claiming infringement for statutory damages against entrepreneurs who copy, reverse engineer or create something equivalent. Moreover, the inventor may still have to defend against infringement actions brought by someone who has a pre-existing patent.

Second, an owner may decide not to pursue a patent because the invention or idea has a short shelf life, say three to four years, before upgrades and enhancements are required. In this case, piracy or reverse engineering has little long-term benefit and does not undermine the competitive advantage of the U.S. company.

Third, training on how to use some technologies may be extensive and on-going, making the presence and contribution of the inventor indispensale. For example, training manuals may be several thousand of pages for some types of engines manufactured in the United States for trucks, buses and industrial machines powered by

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natural gas instead of diesel, or converted diesel to natural gas engines. In this case, the inventor is less concerned about long term infringement, because the complexity and ongoing maintenance of the equipment requires on-site personnel knowledgeable in troubleshooting.

Finally, licensing agreements for technology created in the United States, but designed for re-exportation may have parts or components that are manufactured in different countries, making piracy or reverse engineering virtually impossible. The manufacturing process may occur in stages in different parts of the world and then brought to the United States for assembly and re-exporting abroad. The U.S. company enjoys the protection of U.S.IP laws, and can effectively prevent any unauthorized use of the technology. IP protection without a trust relationship with the other parties, however, will only cost the owner in the long term.

As with most types of intellectual property, parties from around the world can collaborate on an invention because there is a universal language, in many industries such as e.g., programming, mathematics, and science; devoid of politics and cultural differences. What matters is that the intellectual capital from the United States is being shared and exchanged to return value to all of the parties. That is the potential of transborder licensing.

IV. The Case for Transborder Licensing

“This country doesn’t value teachers, and that upsets me,....Teachers don’t earn much, and this country [U.S.A.] worships making money. In China, teachers don’t earn a lot either, but it’s a very honorable career.”

A. Response to Critics’ Outsourcing Claims

Critics claim that transborder licensing is just another form of outsourcing that hurts Americans because jobs are created elsewhere. Between 1970 and 2009, goods-producing jobs in the United States decreased by 54 percent, from 39 percent of the private-sector workforce to 17 percent. China is credited as having been

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37 Daria Brovchenko, Exporting Technologies to Russia, (March 29, 2010) (unpublished, but on file with the author).
38 Id.
39 Id.
Zhenh Yue is a teacher at the provincial university south of Beijing. She is currently teaching high school at Lawton, Oklahoma. She said, “In China, students study six days a week from 8 am through a mandatory evening study hall ending at 10 pm.”
41 See Don Lee, “Is a college degree still worth it,” LA Times A1 (June 12, 2010).
responsible for a loss of 2.4 million manufacturing jobs from 2000-2010.\footnote{Mike Elk, \textit{Chinese Currency Decision Could be Obama’s Biggest Wall Street Giveaway}, http://www.ourfuture.org/blog-entry/2010041302/biggest-giveaway-wall-street-china-currency, cited in Rachelle Lam, “China’s Artificial Deflation of Currency: At the Expense of the Dollar and US Jobs,” (unpublished student paper on file with the author.)} Based on this, one could argue that in its simplest form, licensing may involve an element of outsourcing, but as it evolves has strong potential to generate new jobs and wealth for all parties.

The U.S. market is highly sophisticated, and is still the preferred market for manufacturing and development of high-end products and services.\footnote{Id. at 86.} Despite higher costs of labor in the United States, Chinese companies are moving plants to U.S. cities like Spartanburg, South Carolina, because by Chinese standards, it is cheaper to manufacture in the United States.\footnote{Id.} One state-of-the-art company that makes cylinders, Yuncheng Gravure Cylinder, moved a plant to the South Carolina because of the cost of land, which was one-fourth the price in China; and the cost of electricity was much cheaper.\footnote{Id.} Yuncheng pays up to $.14 per kilowatt-hour in China at peak usage, and just $.04 in South Carolina, with no brownouts.\footnote{Id.}

Other incentives such as tax credits and low cost financing by the Beijing government, are attracting Chinese entrepreneurs to the United States. Officially, the Chinese government has approved over 1,200 Chinese investments in the United States; but the number is considered low, because it does not include investments through Hong Kong, or investments by SMEs, e.g., less than $100 million.\footnote{Id. at 88.} As a result of these and other efforts, Chinese entrepreneurs have invested $280 million and created 1,200 jobs in South Carolina.\footnote{Id. at 86.} Moreover, Chinese investments in the United States almost doubled in 2009, through new commercial development and mergers and acquisitions.\footnote{Id. at 87.} It is, therefore, overly simplistic to criticize exports for job loss, without looking at the associated job creation from immigration to the United States. Moreover, many of these Chinese companies are exporting the goods back to China.\footnote{Id. at 92.}

Another example is Chinese investments in wind energy in Nevada, which will create 1,000 American jobs. Chinese companies have also acquired failed U.S. companies, such as the purchase of the 400-employee LA Marriott Downtown out of foreclosure, or a shopping center in Milwaukee that intends to bring 200 Chinese-retailers.\footnote{Id. at 88.} Foreign companies in the United States have also been hiring U.S. engineers — metallurgical and mechanical — from local universities. In each case, job creation has resulted from foreign investment in the United States. For many of these

\footnotesize{\bibliography{references}}
companies, the lure to the United States is clearly for its intellectual capital, since the perception exists that products made in the U.S.A. are better.\textsuperscript{53} For many outside of the US, said some Chinese entrepreneurs, “the problem is customers just accept ‘made in U.S.A.’ products, so [they] have no choice. Lots of customers here have government contracts that have ‘made in the U.S.A.’ requirements.”\textsuperscript{54}

In the biotech field, job creation is not just a dream; it has become a reality. According to the Association of University Technology Managers (AUTM), a nonprofit association of 3500 academic technology transfer professionals, export of biotech licenses has had measured success. During 2008, there was much progress:

- 648 new commercial products were introduced;
- 5,039 total license and options were executed;
- 595 new companies were formed;
- About 72 percent of new companies formed with the primary place of business in the institution’s home state;
- 3,381 startup companies were still operating as of the end of FY2008; and
- $51.47 billion total in sponsored research expenditures.\textsuperscript{55}

These statistics represent a significant increase from previous years.\textsuperscript{56} Most striking is the impact on new jobs. Prior to licensing their technology abroad, 58 percent of the companies had less than 10 employees. Within two to five years after obtaining the first in-license agreement, the number of companies with less than 10 employees dropped to 19 percent, but the number of companies that had 10-100 employees increased to 42 percent.\textsuperscript{57} These are considered “gazelle” companies, which are likely to double in number of employees in four (4) years.\textsuperscript{58}

There are also nonprofit organizations like CONNECT, founded in San Diego, CA, which provide assistance to entrepreneurs seeking to license their technology. CONNECT was established to accelerate the process of translating ideas into businesses, through its Springboard process, taking assets from innovations through

\textsuperscript{53} Id. at 90.
\textsuperscript{54} Id. at 90.
\textsuperscript{56} Association of University Technology Managers, \textit{AUTM U.S. Licensing Activity Survey: FY 2007}, (2007) \url{http://www.autm.net/FY_2007_Licensing_Activity_Survey.htm} (last visited on June 6, 2010). Research expenditures increased from $48.8 billion in 2007; and there were 555 startups reported in 2007.
\textsuperscript{57} Id.
\textsuperscript{58} Robert D. Atkinson, supra note 18 at 4.
commercialization to competition. The goal of CONNECT is to identify intellectual property created in research institutions that has commercial potential, put talent onto it and then build businesses around it.\textsuperscript{59} Since 2005, 118 companies have completed this Springboard process and 75 percent of these companies were still in operation as of December 2008.\textsuperscript{60} These companies have also raised over $110 Million in seed-, venture- and debt financing.

B. Current Market for Job Creation

Ten years ago, foreign governments expressed concern over the enculturation of their citizens, who came to the United States on foreign exchange programs. This lead to efforts by foreign governments to stop what was called, “brain drain.” Brain drain then, referred to a trend where foreign students would come to the U.S. for education and want to stay here, much to the chagrin of the host governments trying to promote nationalism. While they initially came to the United States to study, work or for family reasons, many became immigrant entrepreneurs generally within 13 years after arriving.\textsuperscript{61}

One of China’s self-made entrepreneurs, Jeff Chee, founder of Top-Eastern, a tool manufacturer based in China, with a significant presence in the United States, started the company in 1994 with $500. Now, the company has world-wide sales of more than $120 million, 4,000 employees, and factories in Brazil and Germany.\textsuperscript{62} In addition, through several acquisitions, Chee has been able to rehire laid-off U.S. workers.

Concerns expressed that foreign-ownership of U.S. companies will displace U.S. workers, seems misplaced in many cases. The cultural differences make it difficult for foreign-borne entrepreneurs to bring in foreign-borne managers to oversee U.S. workers. Chinese Appliance maker Haier, the first Chinese company to build a plant in the United States, hired Chinese managers to oversee workers in a small Southern town with a population of 6,682. Simply, it did not work. In one instance, a Chinese-style manager was publicly embarrassing workers for their mistakes. The level of resentment reached a point where company executives replaced all of the Chinese managers with Americans, realizing the importance of being “good corporate citizens” and the value of having Americans in key managerial positions.\textsuperscript{63}

Studies show that immigrants to the United States settle in diverse regions of the country, so the wealth creation has been spread across the country, rather than being

\textsuperscript{59} Presentation by Ruprecht von Buttlar, CONNECT, at California Western School of Law on March 27, 2010.
\textsuperscript{60} Id.
\textsuperscript{62} Sheridan Prasso, supra note 44.
\textsuperscript{63} Id. at 92.
concentrated in immigrant gateways, such as Los Angeles and New York.\textsuperscript{64} This suggests that foreign national entrepreneurs favorably impact the U.S. economy.

According to one survey, from 1980-1998, Chinese and Indian engineers started and ran 24 percent of Silicon Valley companies.\textsuperscript{65} By 2005, these companies generated $52 billion in revenue and employed 450,000.\textsuperscript{66} Moreover, foreign nationals residing in the United States were inventors or co-inventors in 25.6 percent of patent applications filed in the United States, representing a 337 percent increase from 7.6 percent in 1998.\textsuperscript{67} The chart\textsuperscript{68} below shows the largest concentration of foreign born nation entrepreneurs to be in IT and biotech.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{chart.png}
\caption{Percentage of immigrant-founded companies by industry.}
\end{figure}

C. Visas

The United States has created several classifications for scholars, researchers and students to obtain visas to study and conduct research.\textsuperscript{69} Even with these

\begin{itemize}
\item \textsuperscript{64}Vivek Wadhwa, \textit{supra} note 61. Fifty-two percent of immigrants came to study, 40 percent came to work, and 5.5 percent came for family reasons.
\item \textsuperscript{65} Id. In Silicon Valley, immigrant-founded start-ups were at 53 percent: Indian start-ups were at 26 percent, more than Britain, China, Taiwan and Japan together.
\item \textsuperscript{66} Id.
\item \textsuperscript{67} Id. A majority of foreign nationals contributed to US company patents: Qualcomm at 72 percent; Merck at 65 percent; GE at 64 percent, and Cisco at 60 percent.
\item \textsuperscript{68} Id.
\item \textsuperscript{69} The Department of Labor permits foreign workers to work in the United States, by issuing “Green Cards,” through one of four classifications: 1) Based upon an offer of permanent employment in the US, by filing a Form I-140, Immigrant Petition for Alien Worker; 2) Through investment as an investor/entrepreneurs who invest $1,000,000 or more, or $500,000 in a high unemployment or rural area, in an enterprise that creates new US jobs; 3) Through Self-Petition where the foreign national has “extraordinary ability” in the arts, education, business or athletes; or is granted a National Interest Waiver; and 4) Through a Special Job Category, by filing a Form I-360, I-485, or I-140. See Immigration and Nationality Act http://www.uscis.gov/portal/site/uscis/menuitem.eb1d4c2a3e5b9ac89243c6a7543f6d1a/?vgnextoid=24b0a6c515083210VgnVCM100000082ca60aRCRD&vgnextchannel=24b0a6c515083210VgnVCM100000082ca60aRCRD (Last visited on May 18, 2010)\end{itemize}
programs, some believe a reverse trend is occurring, leading to a “reverse brain drain.” It is estimated that 200,000 Chinese and Indian immigrant entrepreneurs are expected to return to their countries, taking U.S. jobs with them. Many believe that the reverse brain drain trend is attributable, in part, to delays in the visa process.

As of September 30, 2006, 1,181,505 foreign nationals were waiting for visas to work in the United States: 500,040 foreign nationals had applied for permanent status under employment-based visas, an additional 555,044 family members had applied for permanent-resident status; and another 126,421 foreign nationals who had job offers, were waiting in their home countries for clearance to immigrate to the United States. With only about 120,000 U.S. visas that can be issued for skilled immigrants in key employment industries, and no more than 7 percent can be allocated from any one country, it is likely that many may get tired and choose not to come. It is clear that Americans have some choices: permit more skilled immigrants to come to the United States under an expedited process, prepare the nation’s young people to compete, or some combination of the two.

In 2009 Congressman Jared Polis (D-CO) introduced legislation called “Employment Benefit Act of 2009” to update the U.S. EB-5 visa system to make it easier for foreign entrepreneurs to invest in the United States and create jobs. Under this legislation, the immigration process would be streamlined and expedited; the Regional Center Program would be reauthorized permanently; and a “Start-up Visa” would be created for entrepreneurs who demonstrate interest from venture capitalists.

It is also important to note that most immigrant entrepreneurs are highly educated with advanced degrees: 96 percent hold bachelor’s degree; and 74 percent have post graduate degrees. These entrepreneurs hold degrees in science, technology, engineering and mathematics related jobs. These figures are consistent with the profile of U.S. citizens who work in these industries. Since these jobs are held by persons who have the highest level of education and wage earners, it is critical that attention be given to how to preserve and maintain these entrepreneurs and jobs, whatever the nationality of the employer. Alumni associations provide the best hope of forging trusting relationships with people who may ultimately be doing business together in the future.

70 Id.
72 Vivek Wadhwa, supra note 61.
73 Id. See AnnaLee Saxenian, The New Argonauts: Regional Advantage in the Global Economy (Harvard University Press 2006) anno@sims.berkely.edu.
75 Id.
76 Vivek Wadhwa, supra note 61.
77 Id.
D. Potential for Future Job Growth

From March to June of 2009, the only industry where there was no gross job loss was in health services and education. These industries had gross job gains of 60,000. These industries are also the only industries that have consistently posted positive net gains every quarter since 1992. Projections are that employment in public and private educational services will grow by 12 percent or 1.7 million new jobs through 2018. Health services will also see major growth. Currently, roughly 26 percent of all new jobs created in the U.S. economy will be in healthcare and social assistance.

Education, training and library occupations are expected to add 1.3 million new jobs, representing a growth rate of 13. Computer and mathematical science occupations are projected to add 785,700 in new jobs by 2018. Trends in job growth are attributed to a number of factors, including U.S. population growth, the likely demand for education services from adults, and the adoption and increase in use of technology. However, the legal occupation will add the fewest new jobs among all professionals, increasing only 188,400. This means that law school graduates will have to be more creative in reinventing themselves or pursue nontraditional jobs.

The U.S. Bureau of Labor Statistics reports that job growth areas for the legal profession are in healthcare, intellectual property, corporate and securities litigation, antitrust law and environmental law. Self-employed lawyers, who comprise 26 percent of all lawyers, are expected to grow slowly, under stiff competition from larger, established law firms. There is also a growing trend toward specialization. Employers are looking for persons who have advanced degrees in specialty areas such as tax and patent law. To the extent that the fees charged by established firms are often too high for the average SMEs, young lawyers who develop an expertise in transborder licensing have the opportunity to fill a niche that could be very lucrative.

Redefining the role of academic institutions will be indispensable to this process. That is why this author and others think “outside of the box” in retooling courses in Business and International Business Transactions to include a practicum component on transborder licensing. It is what some refer to as a paradigm shift to focus on teaching

79 Id. Gross job gains were 770,000 in the second quarter, with gross job losses decreased to 710,000.
80 Id. These jobs are reflected in public and private hospitals, nursing and residential care facilities and individual family services; and are expected to job by 24 percent, or 4 million jobs.
81 Id
82 Id.
84 Id.
85 Id.
students interdisciplinary studies in solving international business problems, or 
addressing the needs of business going forward.  

The top three critical issues that young professionals and entrepreneurs will face 
are access to competent advisors and specialists; negotiating comprehensive licensing 
agreements; and devising ways to protect entrepreneurs. First, a prospective exporter 
must identify someone who is knowledgeable about the process and prospective 
partners, culture, language and business practice. Second, he or she must ensure a 
contract includes all of the critical issues, assurances, representation and warranties. 
Third, countries engaged in the licensing of intellectual property must be willing to 
enforce the rights of owners.

According to Arnoud De Meyer, Director of the Judge Business School at the 
University of Cambridge,

“[W]hat a manager needs to know is in constant flux because the problems that 
confront organizations are subject to change.....Today, senior manager need to 
formulate responses to new problems of a geopolitical nature, or sustainability of 
the environment, conservation, energy, security or diversity on top of problems of 
positioning, competition and efficient use of resources. These are different 
problems than those they were confronted with yesterday, and no doubt 
tomorrow’s problems will be different....It is our task [as professors], to listen to 
what the people who lead organizations need, and be a facilitator in providing 
them with the appropriate conceptual support, wherever that support comes 
from. Rather than business schools that focus on basic management disciplines, 
we need to become schools for business, i.e., active facilitators that provide 
managers and business leaders with access to the wide range of disciplines that 
a university can offer, and that can help them handle systemic problems they are 
confronted with.”  

In non U.S. business schools, students are partnering with a U.S. business 
school to expand their skill sets to be more competitive. A group of twelve business 
schools around the world work with Tulane’s Freeman School of Business to allow 
M.B.A.s to research, write and publish investment reports on small and medium size 
businesses. Open since 2003, schools in seven countries, including Mexico, Columbia 
and Venezuela sponsor a program that improves Latin American access to capital 
markets, and gives Latin American MBAs an edge in the job market by giving them 
marketable skills.  

The same observation and approach applies to law schools. Law schools need 
to rethink the training of its students in International Business Transactions (IBT), and 
focus more deliberately on creating job opportunities through closer alliances with

88 Id.
89 Id.
90 Id.
alumni, particularly those MCL and LLM students who can provide links to new markets around the world; and provide internship programs for students. There is also the threat of increase in competition from professionals abroad. This is evident in the concern over the legal ethics of outsourcing paralegal services to foreign law firms, i.e., foreign professionals offering to provide U.S. law firms with paralegal services. In order for U.S. students to be competitive, they will need problem solving skills and practical exposure in transborder licensing issues.

Some countries, like China, are being proactive to help bridge the culture and language gap. China’s Education Ministry has partnered with the College Board to sponsor\textsuperscript{91} Chinese teachers in America to teach Chinese, and learn more about American culture.\textsuperscript{92} The biggest challenges for Chinese teachers coming to America are the perceived informality of American schools, the perceived stereotypes of American toward Chinese, and the lack of value for teachers in the United States.\textsuperscript{93} In 2010, China sent 325 guest teachers to America, who volunteer to work for up to three years in American schools.\textsuperscript{94} There is a parallel effort to send 2,000 U.S. administrators to visit China at Beijing's expense.\textsuperscript{95}

The most compelling reason to consider transborder licensing as a potential new revenue source and stimulus for job creation is that today’s young people do not define themselves, as my generation did, by geographical boundaries. They travel abroad earlier, are bi- or tri-lingual and bi-cultural, having been exposed to classmates in school from all over the world. Generation X is also much more comfortable with technology, text communication, and non-face-to-face interaction. Consider the findings from a recent survey:

- “\textit{I live} some of my life \textbf{online}” - 42% U.S., but 86% China
- Online experiences are often \textbf{more intense} than offline – 12% U.S, but 48% China
- “Interactivity helps create \textbf{intimacy}, even at a distance” – 36% U.S., but 82% China
- “The Internet helps me make friends” 30% U.S, 77% China
- “\textit{I feel more real online than offline}” 4% U.S., 24 % China.\textsuperscript{96} [Emphasis added.]

Ease with technology creates new opportunities for virtual communities, E-commerce and technology transfer innovations.

\section*{V. Government’s Role to Facilitate Exports in the Existing Regulatory Regime}

\textsuperscript{91} China subsidizes their salaries.
\textsuperscript{93} Id.
\textsuperscript{94} Id.
\textsuperscript{95} Id.
\textsuperscript{96} IAC and JWT survey - Nov 23, 2007 (16 – 25 year olds) cited by David Larson at presentation at California Western School of Law, March 27, 2010.
General export controls are administered by the Department of Commerce, while other federal agencies may impose controls on specialized goods or items. Regulations cover three general categories of exports involving licensing of technology or IT: 1) licensing for commercial use, which typically is not subject to any or few regulatory requirements; 2) licensing for controlled use, e.g., military, intelligence or security use; and 3) licensing for technology or IP that may have a dual-use, and may or may not be subject to regulatory licensing provisions, depending upon the level of use.

A. Navigating the Regulatory Quagmire

Federal agencies that regulate exports generally, and transborder licensing specifically, can also be divided into three groups. There is a group of federal agencies and departments that determine whether and how products, technology and IP can be exported; another group of agencies which is primarily responsible for protecting and enforcing intellectual property rights, such as copyrights, trademarks and patents; and finally, a group of agencies and departments that work in concert with the second group to focus on investigation and enforcement of intellectual property rights.

The first group of federal agencies and offices have jurisdiction over different aspects of exports and oversee the import and export of technology: 1) Department of Commerce; 2) Department of State; 3) Small Business Administration; 4) Department of Defense (for dual-purpose exports with a military or national security component); 5) Treasury Department; and 6) Office of Foreign Assets Control.

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98 Most of the regulating agencies have lists of goods that are subject to their licensing requirements, e.g., Munitions List, Commerce Control List (CCL). Aircraft technology, defense-related technology, encryption, and software subject to dual defense and commercial use will be subject to special regulations and licensing requirements. State Department regulates defense articles and services. Import and export of services or goods used in defense are regulated by the Directorate of Defense Trade Controls under the Arms Export Control Act, and are subject to registration and licensing requirements. Cecil Hunt, “Coping with US Export Controls 2006: Department of Commerce Export Controls,” 892 PLI/Comm 35, 45 (2006) The requirements such goods and services are determined on a case-by-case basis, based upon the category of goods and whether it appears on the Munitions List maintained by the Department of State. Agencies, such as the Department of Defense, often confer with each other over the registration applications.
100 The SBA has adopted size standards to determine the maximum size permitted to qualify as a small business under its various programs. With the exception of industries, such as communications, energy-related products and service, e.g. gas, electricity, finance and insurance, there are no maximum size. Size is generally defined by the number of employees (500 for small business manufacturing) and average annual receipts ($7 million for service and nonmanufacturing). Most common classifications for service businesses generally involved in transborder licensing: $7 million --Computer programming, data processing and systems design: $25 million: Engineering and architectural services and a few other industries have different size standards. The highest annual-receipts size standard in any service industry: $35.5 million --Research and development and environmental remediation services: the only service industries with size standards stated in number of employees. http://www.sba.gov/contractingopportunities/officials/size/summaryofssi/index.html
101 Treasury Department implements broad controls and embargoes with certain foreign governments.
Department of Commerce has several offices that are involved in regulating exports of technology licensing, including the Patent and Trademark Office, International Trade Administration, National Institute of Standards and Technology, Commercial Services, and Bureau of Industry and Security (BIS). There are also policy advisory offices under the Secretary of Commerce, such as the Office of Innovation & Entrepreneurship Policy.

Department of Commerce has jurisdiction over export controls through a licensing system under the Export Administration Regulations or “EAR.” EAR covers a broad range of exports and re-exports including “items,” such as commodities, software and technology; and “technology,” which includes technical data and technical assistance. While the statute is broad in scope, there are several exceptions that significantly reduce the percentage of U.S. Industrial exports subject to BIS registration or licensing requirements. As such, only a small percentage of exports are required to be registered. These exceptions include items that are exclusively controlled by specific federal agencies; publications and information related to publicly available technology and software; and goods made abroad that include a de minimis level of U.S. content, i.e., under 10 percent or 25 percent of the value. The EAR may also apply to software or technology that is deemed “released” to a foreign national in the United States, either through oral or other communication or visual inspection, where the release occurs in a third country.

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102 ITA has several offices that cover import administration, market access and compliance, trade promotion and commercial services, and manufacturing and services. The US and Foreign Commercial Service has trade experts in 109 domestic and 126 international offices in 77 countries to assist firms in exporting products and services. [http://www.commerce.gov/NewsRoom/PressReleases_FactSheets/PROD01_008888](http://www.commerce.gov/NewsRoom/PressReleases_FactSheets/PROD01_008888) (Feb 3, 2010 Press release) (US Dept. Commerce 202 482-4883).
103 U.S. Commercial Service of the Department of Commerce offers comprehensive, customized solutions to U.S. companies’ international trade challenges and provides export promotion assistance through a variety of products and services. See 15 CFR §734. “Export” is defined to include “release of technology or software subject to the EAR to a foreign national. “Release” of technology or software includes through visual inspection, oral exchanges or “application to situations abroad of personal knowledge or technical experience acquired in the United States. 15 CFR §734.2 (b) (3).
104 Office of Intellectual Property Rights (OIPR) of the U.S. Department of Commerce International Trade Administration works with U.S. firms to help them protect their intellectual property abroad. 15 CFR §734.
105 See 15 CFR §734.3. the EAR covers “1) All items in the United States, including in a US Foreign Trade Zone or moving in transit through the United States from one country to another; 2) All US origin items wherever located; 3) Foreign-made commodities the incorporate controlled US-origin commodities [or foreign-made software] that is commingled with controlled US-origin software, and foreign-made technology that is commingled with US-origin technology; 4) certain foreign-made direct products of US origin technology or software; and 5) certain commodities produced by any plant or major component of a plant located outside the United States that is a direct product of US-origin technology or software…”
106 Cecil Hunt, supra note 97 at 46.
107 Id. at 46. See 15 CFR §734.4 (c)- (d). See also 15 CFR Pt 734. Supp. 2 related understanding the de minimis rules.
108 Cecil Hunt, supra note 97 at 45.
The Department of Commerce maintains a Commerce Control List (CCL), which is a chart with 10 categories and numerous subgroups with identifying numbers for classification purposes. This list is used to determine when a license is required. There are three basic exceptions that will generally exclude most technology and IT: 1) items covered by EAR, but not on the CCL; (2) items covered by the CCL, but the country chart specifies that no license is required, and (3) items subject to the license exception. The last group of items may include exports of a low value, or which are going to the U.S. government, or being temporarily exported.

The second group of federal agencies regulates the rights and entitlements of owners to protect their intellectual property. These agencies may either be domestic or international organizations established by treaties in which the United States is a signatory. They have responsibility over registration of technology and software; such as the (1) U.S. Copyright Office, (2) Patent Trademark Office, (3) National Institute for Standards of Technology (NIST), and the (4) World Intellectual Property Organization (WIPO). There are 17 treaties and agreements related to IP and administered under WIPO. The entrepreneur will likely encounter these agencies first in the life cycle. However, they will not control whether the item can be exported, just the level of protection. Difficulties in the planning stages may dictate which protections or registrations should be pursued.

Licensing that involves software or products protected by copyright, generally will not require a license from BIS, since copyrighted works are available to the public. The issues surrounding copyrights usually relate to pirated or counterfeit works, where someone creates a knock-off or copy of the work without authorization or compensation to the original owner. Moreover, if the copyright or trademark is associated with a tangible product that is exported or imported, then the U.S. Customs and Border Control will have jurisdiction to confiscate and destroy pirated works. Knowing which agencies have jurisdiction over the invention, product or service may not be a simple task. Failure to comply with all of the applicable statutes could result in unplanned delays, fines and other penalties.

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112 15 CFR Part 740.
113 Cecil Hunt, supra note 97 at 47-48.
114 U.S. Copyright Office is responsible for registering copyright claims. Under Title 17 §106, a copyright grants to the author six specific rights: 1) reproduce work, 2) prepare derivatives of it, 3) distribute copies for sale, gift, rental, lease, or lending, 4) perform publicly, 5) display publicly, and 6) right to transmit sound recordings digitally.
115 U.S. Patent and Trademark Office (USPTO) is responsible for granting and administering U.S. patents and trademarks.
116 See 15 CFR §734.3 (b) references items under the control of other agencies and therefore, not subject to EAR jurisdiction.
118 Subject matter agencies may also apply, such as the Food and Drug Administration and National Institute of Health for licensing pharmaceuticals, drugs, medical devices in biotech. Green and clean energy and conservation may also be regulated by the 1) Department of Energy, 2) Nuclear Regulatory Commission (NRC); the 3) National Oceanic and Atmospheric (NOAA); and the 4) Department of Agriculture.
International protection of copyrighted works is subject to international treaties, such as the Berne Convention\textsuperscript{119} or Trade-Related Aspects of Intellectual Property Rights (TRIPS)\textsuperscript{120} administered by the World Intellectual Property Organization (WIPO) and World Trade Organization (WTO) respectively.\textsuperscript{121} U.S. companies and entrepreneurs who have registered their copyright with the U.S. Copyright Office can expand their protection to member nations by registering the copyright with WIPO. This is not the case with patents, which permit a single international application under the Patent Cooperation Treaty, but also requires filing in every jurisdiction where protection is sought.

The third group of federal agencies has primary responsibility over enforcement of intellectual property that may be associated with physical or tangible goods, such as CDs, DVDs, games and the like. These agencies include: Federal Bureau of Investigation (FBI), the U.S. Customs and Border Protection (CBP), and the Department of Justice. The FBI investigates criminal counterfeiting, piracy, and other federal crimes. The CBP keeps foreign pirated and counterfeit goods from being imported into the United States, but generally does not handle enforcement of intangibles, such as electronic or web-based information and services. The Department of Justice prosecutes intellectual property rights crimes on behalf of the United States.

In March 2010, the Justice Department committed to increasing enforcement of intellectual property,\textsuperscript{122} by expanding resources in investigations and prosecutions of IP-related crimes. This was the latest step by the Obama Administration to make IP protection a priority. In 2009, President Obama appointed an Intellectual Property Enforcement Coordinator to serve in the White House and to work closely with an Advisory Committee composed of high level officials from all federal agencies across the United States.\textsuperscript{123} In February of 2010, a Department of Justice Task Force on Intellectual Property was established to help develop and implement a multi-faceted criminal enforcement strategy with federal, state and international partners to effectively combat IP crime.\textsuperscript{124} The Department of Justice has also created two highly-specialized groups of criminal prosecutors: the Computer Crime and Intellectual Property Section, in the Department’s Criminal Division, with 40 prosecutors; and four, Cybercrime Lab specialists, who focus exclusively on computer and intellectual property crime. These

\textsuperscript{119} The Berne Convention rests on principles of national treatment, automatic protection and independent protection. WIPO Intellectual Property Handbook, Policy Law and Use, supra note 121 at 26-27.

\textsuperscript{120} TRIPS is an international agreement that took effect on January 1, 1995 and covers all IP, and includes standards of protection among member states; enforcement of IP rights, and dispute resolution. See “Overview of TRIPS,” \texttt{http://www.wto.org/english/tratop_e/trips_e/intel2_e.htm} (last visited on June 10, 2010).

\textsuperscript{121} WIPO is a specialized agency of the United Nations, created by the WIPO Convention (1967), to establish an international system to protect intellectual property. \texttt{http://www.wipo.int/about-wipo/en/what_is_wipo.html} WIPO has 184 member states, who determine the strategic direction and activities.


\textsuperscript{124} Id.
attorneys prosecute several major criminal IP cases that have international sources or that require multi-district coordination.

Given the multitude of agencies that control some aspect of transborder licensing, there is a need to distribute a lot of information to several different agencies at different periods in the life cycle of the intellectual property. Much attention and criticism has been focused on ways to address redundancies, delays in processing; and ineffective administration of the licensing and enforcement systems.\textsuperscript{125} Even when IP does not involve defense or security-related technology, there are still a number of agencies that entrepreneurs have to deal with to obtain approvals, permits or licenses. This is where professionals trained in these complexities can provide a meaningful service.

B. Case Study: Academic Research, Presentations and Publications

To demonstrate the complexities of deciphering the regulatory requirements, consider a professor who has created something novel with the help of students, some of whom may be foreign students, and who wants to discuss the research with foreign nationals at other institutions, while being under contract to a private corporation. Under BIS, there are some broad exceptions from EAR licensing for educational materials;\textsuperscript{126} and published information and software, which would include patented\textsuperscript{127} technology and software,\textsuperscript{128} works available in the library, available at “open”\textsuperscript{129} conferences, or the subject of “fundamental research” conducted by an academic institution or corporation.\textsuperscript{130} The EAR will also not apply to government-funded research that does not have specific national security controls.\textsuperscript{131}

One could conclude that the professor’s teaching and consulting services in the above hypo, whether performed in or outside of the United States, would probably not be subject to any licensing requirements, so long as the information related to such research or services becomes publicly available or published.\textsuperscript{132} This analysis becomes trickier when the person is compensated for work that will be proprietary to the licensor or licensee. Restrictions on publication rights will subject the research to EAR licensing

\textsuperscript{126} 15 CFR §734.9 refers to educational information that is released in catalog courses or associated with teaching laboratories or academic institutions. The only exception here where EAR may apply is where it involves encryption.
\textsuperscript{127} 15 CFR § 734.10.
\textsuperscript{128} 15 CFR §734.7 (a).
\textsuperscript{129} An “open” conference has been interpreted to include invitation-only conferences, so long as the participants can take notes or make a record of the proceedings and presentations. 15 CFR 734.7
\textsuperscript{130} 5 CFR §734.8 (a) “Fundamental research” includes basic and applied research in science and engineering, where the resulting information may be published and shared broadly with the scientific community. See also 15 CFR Pt.734, Supp. 1.
\textsuperscript{131} See 15 CFR § 734.11, where the government would have to retain the right to withhold permission for publication.
\textsuperscript{132} See 15 CFR Pt.734, Supp. 1.
requirements for as long as the restrictions are imposed, but will not extend to prepublication review requirements imposed solely to ensure no compromise of intellectual property rights, and do not preclude any publication of the results.\footnote{133}{15 CFR 734.8 (a)-(d).}

Other considerations of the EAR licensing requirement in the above scenario would be the cost of selling the information. Generally, the EAR will not apply if the information is made available free to the public, or at a cost that does not exceed the reasonable costs of reproduction and distribution.\footnote{134}{See 15 CFR Pt.734, Supp. 1 Questions (A)(1)-(A)(6).} Moreover, the EAR will not apply to cooperative research arrangements with a research group at a university under specific conditions, provided again that the results may be published.\footnote{135}{15 CFR Pt.734, Supp. 1 Question (D)(1)-(D)(5).} This would apply to faculty who do work or provide their expertise to foreign nationals or nations in China or Russia.

As a result, in the above hypo, the three critical issues in determining if the EAR requires a license, would be (1) who is providing the information, not the site or location; (2) the ability to disseminate information to the publicly or commercially, and (3) whether the research is considered “fundamental research” conducted by a qualifying institution or corporation; and in which information related to it may be published, or made available to the public.\footnote{136}{15 CFR Pt.734, Supp. 1.} On the website explaining the regulations, BIS acknowledges the complexities of these decisions, and encourages entrepreneurs to contact the BIS for advisory opinions on whether a license is required.

It is important to note that the EAR is simply a licensing regime; it does not enforce national security controls, or intellectual property protections. To this extent, the EAR is limited in scope and entrepreneurs must seek protection from other agencies to protect their rights. The onus is on the entrepreneur to know what rules apply. Otherwise, they may find themselves subject to liability for noncompliance of other agency requirements. In addition, if a particular transaction is not subject to EAR licensing requirements under U.S. law, the entrepreneur may still be liable for compliance with the laws and any licensing requirements imposed by the foreign country receiving the import.\footnote{137}{See 15 CFR 734.12 regarding compliance with foreign laws.} This is because the application abroad of personal knowledge or technical experience acquired in the United States constitutes an export of that knowledge and experience, and may be subject to the EAR.\footnote{138}{15 CFR Pt.734, Supp. 1 Question (D)(5).} For example, if the U.S. professor in our hypo becomes a consultant in the design and creation of technology that would be subject to EAR, then the consultant to a foreign national would likely have to get a license to train foreign nationals on the manufacture of such devices.
VI. Recommendations

There have been several recommendations on how to facilitate exports. Recommendations include how to spend government resources, e.g., increased funding for R&D, tax credits for SMEs;\textsuperscript{139} and consolidating authority in a single agency or streamlining the licensing process.\textsuperscript{140} In April of 2010 the Obama Administration unveiled a proposal to restructure the export control system to streamline and centralize the licensing process for exports with dual military and commercial use, which will tighten restrictions on some exports, and loosen exports on others.\textsuperscript{141} The plan, if implemented, proposes to be a “major boost” for manufacturers, defense contractors and technology companies by imposing fewer regulations, which would spur export of goods to foreign buyers.\textsuperscript{142} The plan would close the gaps in the current system that allows exporters to forum-shop for the agency that will approve the license with the least controls.\textsuperscript{143} While the proposal focuses on those exports that tend to be more heavily regulated because they implicate national security, the need to address redundancies, overlap and inconsistencies in interpreting regulations would also apply to commercial exports. A major stumbling block will be anti-trade sentiment in Congress and turf wars, which could derail any true reform.\textsuperscript{144} For this reason, more creative ways are necessary to enhance enforcement of intellectual property and while preserving existing jurisdictional boundaries, and facilitating more effective coordination and dissemination of information.

The International Law Association (American Branch) published a White Paper on May 4, 2010 which recommended reform of the Patent Cooperation Treaty to address problems of backlog, needless duplication of patent searches, inadequate searches at the national level, and prohibitive costs for SMEs of obtaining multinational patent protections.\textsuperscript{145} The World Intellectual Property Organization (WIPO) had recommended creating a new treaty that would establish an International Searching Authority that would integrate the international search with national searches, so that only one search was necessary.\textsuperscript{146} This would avoid the need to conduct parallel national and international review of patent applications. Enhancing the quality of the search reports would lend credibility to the process that would enable national authorities to rely upon the reports. It may also address criticism that too many invalid patents are issued because the examination process is inadequate without an efficient mechanism for invalidating patents.\textsuperscript{147}

Using technology to enhance the quality of information available allows the stakeholders to address the redundancy problems without forcing any party to abdicate

\textsuperscript{139} Christi Parsons, supra note 18 at B1.
\textsuperscript{140} Richard Atkinson, supra note 18.
\textsuperscript{142} Id.
\textsuperscript{143} Id.
\textsuperscript{144} Id.
\textsuperscript{145} International Law Association, supra note 125 at 2.
\textsuperscript{146} Id.
\textsuperscript{147} Id.
their authority or jurisdiction, a possibility that has brought extreme opposition from those developing countries\textsuperscript{148} that are principal patent holders. While any serious reform seems unlikely because of the extreme level of distrust among nations of WIPO efforts, it would be possible to create a central repository of information in the United States to facilitate better coordination and more reliable access and reporting.\textsuperscript{149}

The most promising solution can be found in what the Obama Administration emphasizes as a “new era of diplomacy” where the focus is on building strong alliances.\textsuperscript{150} This new international order based upon diplomacy and engagement, creates some incentive for U.S. universities across the country to reach out to their alumni to forge a foundation of new strategic partners across the borders. This author would like to propose three guiding principles that need to be followed: 1) Market Access; 2) Mutual Cooperation, and 3) Mediated Compromise, in building these alliances.

A. Market Access

The first principle is Market Access. Entrepreneurs who own IP should be paired with those who need or can benefit from it. The Internet makes many things possible, and the government makes volumes of information available on exports; but it may be overwhelming to the average entrepreneur not well versed in search functions. This is where a central portal, modeled after programs, such as “Planet Eureka’s Innovation Marketplace,” could be used to partner U.S. companies with interested parties in a controlled environment, which could build in necessary controls. The most important consideration at the beginning of the export process, is evaluating the suitability of engaging in transborder licensing in a given country. Criteria would be based upon predetermined variables requested in an online-profile form. The profiler could match criteria to develop potential countries, partners, distributors, etc. Evaluation factors could include measurements related to transparency of rules, IP enforcement, ownership and registration requirements, constraints, and political stability. Moreover, such a system could be designed as an online resource that includes both training modules, as well as online surveys with a series of branching queries that could provide useful information on selected markets.

The front end of the portal could be open source, accessible to participating institutions; and could include a variety of functionality, including allowing inventors and authors to register IP electronically, and upload information or link to the various government resources and services available. The administrative back end could be secure and would include an IP data management platform that would be a central repository for IP owners to register and track their IP, using watermarks; and then set up

\textsuperscript{148} The countries include the European Union, Australia, Canada, Japan, New Zealand, Norway, Switzerland and the United States. Id.
\textsuperscript{149} Id.
an automatic notification system when suspected violations have occurred. Entrepreneurs could be incentivized to use the system by receiving reduced fees or expedited review.

B. Mutual Cooperation

The second principle is Mutual Cooperation. The future of transborder licensing is dependent upon parties being able to develop relationships that provide a level of transparency, trust and mutuality; the breeding grounds for innovations. For this reason, whatever solutions devised by the stakeholders should be based upon the principle that all will win or receive the expected benefit, be it monetary, attribution, or substantive. A Virtual Portal could also assist in investigations and IP prosecutions.

Director at General of Foreign Trade (DGFT) India has followed this approach with some success. In 2003, India introduced a program under which import and export licenses applied for online would be granted automatically within 24 hours. In addition, the application fee was reduced to 50 percent of the fees typically charged. The effect of India’s efforts toward a paperless process has proven successful with over 70 percent of applications being filed online. There are 32 DGFT offices equipped with grievance procedures to address problems with policy and procedures. In addition, the DGFT has focused on special economic zones for industries such as software and electronic hardware technology parts and provides 100 percent export-oriented units with minimal government interface.

C. Mediation and Alternative Dispute Resolution

The last principle is encouraging Mediated Compromise. Disputes are inevitable in any business relationship. However, having an effective mechanism to work through differences, can reduce costs, avoid the delay and uncertainties of litigation, and produce a resolution that will not terminate the relationship. This is another area where technology may play a role.

Technology Mediated Dispute Resolution (TMDR) is a new area that fosters Online Dispute Resolution (ODR) In effect, using technology to mediate disputes allows parties to add a new host of technology tools that can neutralize the language barrier and allow parties to mediate simple disputes through a variety of queries and artificial intelligence.

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151 It could be modeled after the Digital Copyright Millennium Act devices used for copyright protected recorded music and videos.
154 Technology tools would include cellular telephones, satellite communications, tele-immersion, video conferencing, avatars and virtual personalities.
The basic principles in using technology-based dispute resolution are that the parties must be willing to think creatively about technologies such as cell phones, web conferencing, and podcast to integrate into dispute resolution processes. Technology can assist in orienting the parties to the issues, information gathering, and generating options. Technology can, in essence, be a fourth party at the table.  

Examples of technology-based solutions include Cybersettle, or Smartsettle. Cybersettle has a patented double bind system that eliminates posturing/hassle/egos that compromise the traditional negotiation process. Cybersettle boasts over $1.6 billion in settlements reached in 2009; over 200,000 claims handled - 60% of claims settle within 60 days of submission; reduced cycle times by 4-6 months, which in turn has saved in the amount paid out in claims. New York City, its first municipal client, is reported to have saved $11.6 million during its first year of use. 

This is how it works. Party A enters three settlement demands - one for each round of negotiations. The demands are never revealed to the other party. Party B is notified by email/fax/phone when demands have been made. Party B logs onto website and enters up to three offers. The system compares the demands to the corresponding offers. If during any round the demand is less than or equal to the offer, a settlement for the average of both amounts is declared. If no settlement is obtained, the party can resubmit the claim and enter three new demands. The other side will then respond with up to three new offers. Either side can request a trained facilitator to assist with negotiations.  

Technology has become a useful tool in mediating of disputes, and may be an attractive component to the Virtual Protocol proposed to complement the IP data management system. To the extent that many EU countries, such as Italy and Spain, 

155 Katsh and Rifkin: Online Dispute Resolution, cited by Prof. David Allen Larson, Hamlin University, dlarson@hamline.edu. 
156 http://cybersettle.com/pub/ Cybersettle has 150,000 attorneys registered in the system; 30,000 lawyers have used to facilitate settlement; and 2,000 claim offices, 10,000 claim professionals are registered users. 
157 Significant reductions in claim cycle time, administrative expenses and legal fees. The world's only secure eNegotiation system using patented optimization algorithms to achieve fair and efficient solutions that are truly Beyond Win-Win®. Smartsettle puts decision-makers in control, accelerates the process, and produces more satisfactory results. Smartsettle works as follows: Party A enters bargaining range: from initial proposal (better than fair but reasonable; will be revealed to party B) to walk-a-way value (will not agree to anything worse/higher than this value; will not be revealed to party B). Party A determines a fair settlement amount to which he/she willing to agree in advance; this amount will remain hidden from party B. Chat utility allows for direct communication between the parties. Negotiation is structured in sessions. Party A begins the session by defining the range in which he/she will negotiate (best case and worst case values to which party A would agree) as well as an agreement amount representing a fair value to which party A agrees in advance. Session is ended by the opposing party (B). If no agreement is reached the opposing party begins a new session and the process continues. Parties can declare a session to be the final round of negotiation; Parties can declare when they are not willing to make any additional offers/demands (I'm done) Parties are incentivized to be reasonable because the final settlement amount favors the party that first enters the zone of agreement (overlap between what party A and B are willing to accept/pay). David Larson, “Technology Mediated Dispute Resolution (TMDR): Effective and Efficient Dispute Resolution,” presentation on March 27, 2010 (PPT slides on file with author) 
158 Reduced cycle time saves property & casualty insurance carriers an average of $2,000/claim. 
159 David Larson, supra note 153.
are relying more heavily upon mediation to resolve disputes, designing a process by which interested parties already engaged in transborder licensing may be able to resolve simple disputes involving payment, or performance disputes, would be truly innovative. There are existing software applications that could be used or customized specifically for licensing.

VII. Conclusion

Transborder licensing has become more prominent in recent years, due to the increase in volume of deals involving U.S. intellectual property. Moreover, foreign exchange programs to the United States over the last 10 years have produced a more sophisticated entrepreneur, changing the complexity of licensing deals with foreign nationals and countries as they build-out their infrastructure and try to sustain new industries and encourage foreign investment.\textsuperscript{160} These trends have helped maintain U.S. prominence in such areas as biotech, information technology, and education; but also have left the United States vulnerable that our most valuable asset may not be producing sustained opportunities for new job areas in the United States, which could ultimately hurt us.

Recent trends clearly show that the best and brightest still flock to the United States to study. Collaborations that produce some of the most significant innovations in the world almost always include U.S. researchers, scientists, lawyers and business professionals, and America’s most prestigious academic and research institutions. These will also be the highest paid positions, the research from which will likely create the new industries of tomorrow.

For this reason, there is a need for a new breed of lawyer and financial professionals who are knowledgeable about intellectual property, immigration and employment law, the mechanics of an international business transaction, and the tax implications of earning revenue from off-shore activities. Business schools and law schools must begin to provide practicum courses in international trade. These schools need to include in their curriculum how to conduct international trade negotiations. The potential for job creation is enormous. “Modernizing U.S. export controls would produce higher export growth in the future” that will spur job creation, according to the Milken Institute.\textsuperscript{161}

The web-based IP management and tracking system could link all of the stakeholders, including the associated agencies with authority over exports; and accessible by trade associations, and academic stakeholders who could upload information to a central platform. The system could serve as a model of how the government could link the various government functions and requirements electronically, so that it would be transparent to the end user and facilitate a "one-stop shop" approach. This could be a first step to provide better coordination. It seems

\textsuperscript{160} Pat Broderick, supra note 86.
\textsuperscript{161} Id.
preferable to pursue a phased-approach in consolidating functions as innovations and experience reveal the best options.