The Role of

Intellectual Property Education

In the United States



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I. Introduction

We are pleased to provide our report on the role of intellectual property (IP) education in the overall governing and educating process in the United States. We have focused on the specific topics you identified for us in the Appendix attached to the contract, but have also included other information and comments we thought would be of use in evaluating the IP education system in the United States.

II. Scope of Research

In preparing this report, we relied on information available on the Internet, including information available at U.S. government websites, university websites, private law-firm websites, law-specific databases, and published manuscripts. We also relied on personal interviews with law-school administrators and on our own experiences during our careers in IP law. Where feasible, we have included printed copies of the information we used to form this report, or summaries of that information. The information is attached as a series of Appendices, as indicated at the appropriate points in the report.

III. Dynamism Within the Intellectual Property Field

The IP field in the United States can be characterized as having a great deal of dynamism. Dynamism can be thought of as the sum of the interaction among professionals in the IP field, the amount of individual activity of professionals in the IP field, and the many different roles played by individual professionals in the IP field at one time during, or over the entire span of, their careers. For example, in the United States, it is not uncommon for professionals to change positions one or more times during their careers. Thus, it is not uncommon for private attorneys to leave private practice to accept positions as judges, for government staff members to leave the government to accept positions at private law firms, and for professionals in any position to become law professors. Further, many professionals play multiple roles in the system, for example, acting as both judges and as law professors at the same time. This dynamism

provides a continuity and consistency to the U.S. IP system, and promotes cooperation among IP professions, all of which benefits the IP system in general.

A. Dynamism Results in Continuity

The dynamism seen in the U.S. IP system benefits the system as a whole by providing continuity. In general, continuity can be defined as the continued functioning, at about the same level of efficiency, of the IP system over time. The U.S. IP system is, at its heart, a legal system organized, controlled, and implemented by the U.S. government. Because of the amount of resources invested by businesses, both in the United States and abroad, in obtaining and protecting IP rights in the United States, it is important that the U.S. government provide a continuing, reliable IP system. The U.S. IP system has evolved to provide that continuity even though the government is subject to periodic and regular changes in control.

1. Structure of the Federal Government

The U.S. federal government is divided into three branches: the legislative branch, the executive branch, and the judicial branch. Members of two of the three branches (the legislative and the executive) are elected, and thus are political in nature. Due to the political nature of two of the three branches of the U.S. government, there is a high rate of turnover at high-level government positions. More specifically, periodic elections invariably result in replacement of some elected officials with others. As a result, the heads, directors, etc. of the cabinets and departments of the executive branch, who are political appointees, are replaced when each new U.S. President is elected. Likewise, as congressmen and senators are defeated and new ones elected, the staffs supporting them are replaced with professionals selected by those newly elected. The resulting turnover at high-level and staff positions could result in a great amount of inefficiency, due mostly to the need for each new government professional to become educated in the issues relevant to the position. The U.S. IP system is not immune to this potential inefficiency. But the inefficiency is minimized, at least to some degree, by the dynamism seen in the U.S. IP system.

2. Staff Knowledgeable in IP

Although it is essentially impossible to educate each new congressman, senator, and President on all facets of IP, these government officials often recognize the importance of including on their staff at least one person educated in the field. Thus, they often select staff members and advisors who are IP attorneys from private practice, former or current government employees who hold or held positions that involved governing the IP field, and newly graduated lawyers with IP training. This selection criterion is particularly important for the President and his staff members that are directly and primarily involved in IP issues, and for congressmen and senators who serve on committees regulating IP laws, such as the Senate and House Judiciary Committees.

The desirability to have a staff knowledgeable in IP, however, is tempered by the fact that dynamism works at many different levels. That is, the newly elected officials recognize that, because the size of their staff is limited by budget constraints, they are best suited by having staff who have multiple skills and backgrounds. Thus, elected officials typically do not look to surround themselves with professionals

trained in IP law. Rather, they rely on just one or a few professionals with some (but not necessarily a high) level of training in IP to advise them. These professionals rely on the dynamism of the U.S. IP system to enable themselves to perform their assigned duties. For example, the staff members of various senators on the Judiciary Committee work together and with the designated staff members for the committee to educate the committee members and draft IP legislation. Likewise, the IP professionals from the President's staff interact with the IP professionals from the congressional staffs to draft IP legislation.

By selecting staff members from among IP professionals with experience in IP, newly elected officials provide a continuity in governing the IP field. Furthermore, by relying on members of other elected officials' staffs to provide support, guidance, and informal training, the newly appointed staff members with no previous experience in IP become educated in the particulars of their job responsibilities without unacceptably slowing down the entire IP system.

3. Input from the Private Sector

Furthermore, government officials responsible for governing in the IP field are continually asking for advice, or receiving unsolicited advice, on IP issues from private-side organizations, associations, societies, etc. (often referred to as "special-interest groups") in the IP field. These special-interest groups submit proposals for new legislation, comments on proposed legislation, or research papers on the state of the law in a certain area of the IP field to the government officials or their staffs. The special-interest groups, while subject to constant changes in membership and periodic changes in leadership, are not subject to the political pressures of the high-level government officials. In addition, the groups do not see the high rate of turnover often seen in high-level government positions. Because of the relative stability of these groups, the information presented to newly elected (or appointed) high-level government officials is the same information presented to the high-level government officials formerly in those positions, and the same information presented to other high-level government officials who maintained their positions through the election cycle. Thus, the interaction between special-interest groups and high-level government officials provides a continuity beneficial to the overall governing of the IP field.

Thus, dynamism, from the standpoint of intensive interaction among professionals in the field, permits the U.S. IP system to be governed without unacceptable delays caused by the political nature of the U.S. government.

B. Dynamism Results in Consistency

The dynamism seen in the U.S. IP system also benefits the system as a whole by providing a level of consistency, particularly over short periods of time. Each newly elected official and political regime has its own political agenda, which often includes changes to the IP system. Furthermore, special-interest groups are continually lobbying elected officials to modify laws and regulations to benefit the parties they represent. However, even where change is deemed beneficial, change often should not be brought about quickly. This is particularly so when those affected by the change have already expended a great deal of resources to comply and benefit under the current framework of rules or other requirements. In the IP field, where companies can invest billions of dollars developing and marketing a product based on laws and regulations in effect at a particular point in time, rapid change can be disastrous.

Change also should often be brought about slowly when international relations are involved. More specifically, changes that affect foreign-based companies will likely be important to the governments of the countries where the companies are based. These foreign companies and governments will expect the United States to provide them with sufficient opportunity to comment on the proposed changes and to adjust their practices to comply with the proposed new rules were they to come into effect. Although the concept of dynamism evokes a sense of efficiency and effectiveness, the dynamism provided by the U.S. IP system, in fact, slows the pace of change in U.S. IP law by lengthening the time between the government's proposal for change and its implementation.

One aspect of the dynamism of the U.S. IP system is the high level of interaction between professionals in various positions within the field, either on an individual basis (for example, as described above for government staff members) or by way of professional societies and associations. The high level of interaction necessarily results in a delay in implementation of new government policies and rules because it promotes discussions among IP professionals, and thus requires time for all interested parties to submit their comments, suggestions, and proposals on the new policy or rule. But it also permits the IP field to fully consider issues relating to the new policy or rule and avoid abrupt changes to the IP system that could adversely affect those regulated by the policy or rule. While dynamism results in an IP system that is relatively slow to react to technological advancements or market pressures, it provides a protection to companies having to comply with IP laws and regulations. Thus, it benefits those governed. At the same time, it can rarely be said to burden the government, and often results in rules and policies that are better than they would have been in the absence of the input from IP professionals outside of the government.

C. IP Professionals Interact Constantly

The IP field in the United States is relatively large, with tens of thousands of attorneys and patent agents, and thousands more corporate attorneys and business people. Members of the IP field interact with each other constantly, not only in performing their professional duties, but in participating in professional organizations, societies, associations, and other groups. Indeed, it is widely recognized that participation in professional organizations provides IP professionals with an excellent opportunity to interact, on both a professional and social level, with other IP professionals. Such interaction benefits not only the career of the IP professional (for example, by making business contacts that could result in new business arrangements) but the IP field in general by promoting the transfer of information and ideas among IP professionals.

1. IP Organizations

There are numerous IP professional societies. The societies can be national (or international) in nature or limited to a certain locality. The most widely known professional IP organizations are the American Intellectual Property Law Association (AIPLA), which can be found on the Internet at aipla.org, and the American Bar Association (ABA), which can be found on the internet at abanet.org, and which has a large IP section. Other organizations, such as the National Association of Patent Practitioners (NAPP) (napp.org), the Licensing Executive Society (LES; les.org), and the International Association for the Protection of Intellectual Property (AIPPI; aippi.org), are also known. In addition, there are many local bar associations that have IP sections. These professional societies and organizations are generally

run by practicing professionals in the IP field and hold periodic (for example, three times a year) meetings at which topics of interest to the member professionals are interested. They also research and report on topics of interest to their membership and often lobby high-level government officials to implement laws they feel promote and benefit the IP field.

2. Technical Organizations

IP professionals are often members of scientific and technical professional societies, organizations, and associations. In particular, patent attorneys and agents are often members of scientific and technical societies that relate to their scientific or technical background. These organizations include all of the national (and international) societies, such as the American Chemical Society (chemistry.org), the American Society for Microbiology (asmusa.org), the American Association for the Advancement of Science (aaas.org), the Institute of Electrical and Electronics Engineers (IEEE) (ieee.org), and the American Physical Society (APS) (aps.org). IP professionals become members of these societies primarily to keep current in the field of interest, which aids them in performing their professions. But they also become member to make or maintain personal contacts in the technical or scientific community. Such contacts not only lead to new business contacts, but also promote the transfer of information from the technical members of the society to the IP professional, and from the IP professional to the technical members of the society. The interaction between IP professionals and technical or scientific professionals is important for the overall dynamism of the IP field, and represents an important source of information transferred among IP professionals at other professional meetings or at their respective places of business.

D. Many IP Professionals Are Highly Active

Although the vast majority of IP professionals work full-time (*i.e.*, at least 40 hours each week) at their primary profession, many also take active roles in professional societies. As mentioned above, most IP professional societies are run by IP professionals. Furthermore, most of the reports drafted by IP professional societies are drafted by IP professionals who have volunteered to prepare the reports. These professionals work together, typically under a committee format, to develop a position on an issue, then generate a report. The report is then reviewed, either by the administrators of the society or by the membership at large. A final report is then prepared and submitted to the government official or office primarily responsible for governing the issue the report involves. All of the work performed in preparing the report is performed "after hours." That is, the work represents time volunteered by the individual IP professional.

1. Adjunct IP Professors

Some IP professionals, in particular partners at law firms and high-level government officials, also teach at law schools in addition to working full-time at their primary professions. These professionals are considered "adjunct" professors because they teach only a limited number (usually only one) of courses during the school year. As discussed below, these adjunct professors typically teach about a subject in the IP field in which they are experienced. Although a majority of IP professionals do not teach, because a large number of professionals do teach, most IP courses at law schools are taught by adjunct professors.

It is with this dynamism as a background that we now address the role of IP education in supporting and strengthening the IP system in the United States.

IV. Status of Law School Graduates and Their Roles in the IP Field

Law school is an important, but not necessary, step toward a career in IP in the United States. The IP field can be viewed as having two sides: the U.S. government and the private sector. Though each side has its own requirements for employees, overall, both strive to achieve the same goal - to hire the best qualified candidate for the position to be filled. Due to the numerous positions needed to implement the entire IP system, and due to the breadth of subject matter encompassed by IP, a host of educational backgrounds are needed.

A. The United States Government

The government side of the IP system involves all three branches (legislative, executive, and judicial), and is responsible for providing and enforcing IP rights. To be efficiently and effectively carried out, all of the government IP functions require professionals educated in the IP field. In general, however, the U.S. government lacks professionals with training in, and knowledge of, IP. Thus, in general, the government side relies heavily on the private sector to guide it in carrying out its role.

1. United States Patent & Trademark Office

For example, in setting policies and regulations, the United State Patent & Trademark Office (PTO) internally develops a proposal for a new policy or rule. Then it publishes the proposal and seeks comments from the IP community. Upon receipt of all comments, the PTO then reevaluates the proposed policy or rule based on the comments. Once it has considered all private-sector comments, the PTO either enacts the new policy or rule (with or without incorporating the comments) or decides not to implement it (if it is irreparably flawed).

2. Congress

As another example, when Congress considers a bill amending an IP law, or implementing a new IP law, it first convenes public hearings. At the hearings, leaders from the private sector, such as corporate leaders and leaders of business and legal societies and associations, are invited to testify or submit comments about the bill, for example about how it would affect business, the law, innovation, or international trade. After considering the testimony and comments, and after having committee staff members research the bill, Congress either passes the bill into law (with or without incorporating the comments of the public) or defers action on it until a later date, which typically means that the bill will not mature into law.

3. The Judiciary

A third example relates to the judiciary. Very few judges in the United States have had any training in IP. Thus, in general, when trial judges are confronted with IP cases, they rely heavily on the attorneys

for the litigants to educate them, by way of briefs and motions, on the controlling statutes and case law. Although judicial law clerks have formal training in law, they typically do not have formal training in IP law. Thus, because the IP legal expertise lies with the private-party litigants (through their attorneys), the government, by way of the judge, primarily looks to them as a guide in deciding the legal issues presented during IP cases.

4. Reliance on the Private Sector

In all three of these examples, the U.S. government relies heavily on professionals from the private sector with knowledge of the IP system to guide it in formulating policies, rules, and laws, and in deciding lawsuits relating to IP. In doing so, the government performs its required duties without having to maintain a large staff of professionals formally trained in the IP field. In effect, the government relies on the dynamism of the IP system in the United States, in the form of IP professionals performing multiple roles at one time (*e.g.,* as corporate attorneys and as public-policy lobbyists).

5. The PTO Exception

The most conspicuous exceptions to this general rule of U.S. government reliance on the private sector are the U.S. Patent and Trademark Office examiners and the U.S. Copyright Office examiners. These positions are uniquely governmental in nature, and thus cannot be performed by professionals who are not government employees. Thus, it is incumbent on the government to seek out and employ professionals with an appropriate education in IP.

Patent examiner is a government position that requires not only technical or scientific expertise, but some training in IP law as well. However, the amount of training required is not a formal education in IP law. Rather, it is satisfied by the U.S. PTO's own internal training program, which focuses solely on issues relating to prosecution and issuance of patents. Thus, to become a U.S. patent examiner, one need not first have a law degree. Likewise, to advance through the patent examiner ranks to a supervisory position, one need not obtain a formal legal education. The U.S. PTO believes that the training it provides for its patent examiners, coupled with the experience the examiners obtain performing the job, are sufficient to adequately educate its patent examiners in IP law. In Appendix A, we have included a printout from the U.S. PTO website, describing the internal training programs provided by the PTO for its examiners.

Interestingly, most professionals who apply for positions at the U.S. PTO and who have a law degree at the time of applying seek positions in the legal department (*i.e.*, the solicitor's office) rather than as an examiner. It is generally believed that a professional formally trained in law is "overqualified" for the position of patent examiner. Thus, they are encouraged to seek employment at the solicitor's office or some other office involved in policy development and implementation.

Unlike patent examiners, all trademark examiners at the U.S. PTO are formally trained attorneys, although they need not have any formal training in IP before beginning their position at the PTO. Furthermore, unlike patent examiners, trademark examiners do not need to have any formal education in science or engineering. Rather, they come from all educational backgrounds. As would be expected, professionals with some formal training in IP law are preferred over those with no formal training in IP law.

Finally, like patent examiners, examiners at the U.S. Copyright Office are not required to have any formal training in the IP field or in any other legal field, although some training in the IP field, and in particular IP law, is preferred.

Thus, while the government can rely on the private side to provide guidance on policy goals, on preparation and implementation of regulations and laws, and in judicial proceedings, the government cannot and does not rely on the private side to examine patent and trademark applications or copyrights. These are uniquely governmental responsibilities that require professionals with particular types of formal education.

B. The Private Sector

The private side involves many persons in many different jobs as well. It involves inventors, technical supervisors who can identify a commercially valuable invention, and corporate attorneys who can identify inventions and trademarks, and timely submit them to the PTO (with or without the aid of attorneys outside the company). It involves business people who can effectively manage the company's finances to provide the correct amount of capital to obtain commercially valuable patents, trademarks, and copyrights, and to maintain a research program that produces commercially valuable inventions. It also involves private attorneys, who can assist inventors and companies obtain and defend patent rights. As discussed above, due to the lack of expertise in patent law on the government side, private-side attorneys are also relied on to guide the government in developing and implementing the patent laws. All of these professionals are important participants in the IP system, but very few of them need formal education in IP. Indeed, it is typically only a small portion of high-level private-side employees who have a formal education in IP, and in particular, IP law.

C. Educational Requirements

While it should be understood that many different professionals from many different fields of formal education are necessary on both the government and private sides, because this report focuses on the role of IP education in the whole IP system, it will address only those professions that either benefit from, or require, a legal education, and in particular a legal education that has an emphasis on IP.

As one would expect, law school graduates are the most sought after professionals on both the government side and the private side for high-level positions that require legal skills. That is, positions that relate to developing and implementing IP legislation and regulations, and that relate to developing and protecting IP rights for private companies, are typically filled by attorneys. Their education in the law is the defining factor that qualifies them for the positions they fill.

Due to their positions at high levels in government and private companies, law school graduates have a great deal of influence in the IP system in the United States. They are the persons others look to as leaders in developing new laws and regulations, and in implementing strategies to comply with new laws and regulations. Likewise, they are sought out for their opinions on whether business practices are compatible with IP laws and how businesses should proceed in a manner consistent with protection and exploitation of their intellectual property.

V. Career Paths for Professionals in Law

There are many careers involved in the IP field. As mentioned above, most of the high-level positions that involve IP are filled by professionals with a formal legal education. A formal education in law is often required because much of the activity in the IP field relates to development of laws and regulations, and compliance with those laws and regulations. In the public sector, it is clearly beneficial to have professionals educated in law working in this area to better ensure that the laws and regulations are proper. In the private sector, it is beneficial to have legal professionals on staff because they are better able to understand the laws and regulations, and identify advantageous methods of complying while still protecting and exploiting their employers' IP.

A. Government Employees

On the government side, there are three major career paths that are followed. First, some professionals are elected by the people of the U.S. These professionals include the President and members of Congress. Often, these elected officials have formal training in law. For example, of the 42 men who have been elected U.S. President, 25 have been formally trained attorneys. Further, in the current Congress, 142 of the 535 members are attorneys. This compares quite favorably to the overall U.S. population, in which fewer than 3% are attorneys. Overwhelmingly, however, these elected officials have little or no formal training in IP. As mentioned above, this general lack of knowledge in IP is not necessarily an insurmountable defect in their ability to govern because they often associate themselves with one or more professionals who have formal training in the IP field.

The second major career path for government employees is as a political appointee or staff member to an elected official. These positions include congressional staff members, heads of executive departments (*e.g.*, Commissioner of the PTO, ITC chairperson, U.S. Trade Representative), and federal judges. Depending on the position, the appointee or staff member might or might not have a formal legal education. For example, judges necessarily must have a formal education in law, but they need not have any training or experience in the IP field. Indeed, exceedingly few United States federal judges have any formal training in IP law. On the other hand, other political appointees, such as department heads in the executive branch, do not need, and typically do not have, a formal education in law, much less a formal education in IP law or the IP field.

No formal training is expected of the high-level government position holders, with the exception of the Commissioner of the PTO, who is expected (but not required) to have a background in patent law. The heads of the executive-branch departments are political appointees and thus are selected based on their political affiliation (primarily) and on their aptitude for the position (secondarily). The department heads are responsible for implementing the goals or policies of the President (in accordance with the controlling statutes and case law). Thus, their skill in policy making is more directed toward managing people rather than a knowledge of the subject matter their department relates to. Likewise, other than members of Congress that sit on the judiciary committees, Congress members do not have, and are not expected to have, expertise in IP. In general, the departments and congressional committees have one or a few attorneys with knowledge of IP (either formally trained in law school or having learned by review of the field as part of the job).

The rare exception for high-level political appointees having formal legal training and experience in the IP field are positions in the U.S. PTO, such as the Commissioner/Director and members of the U.S. PTO General Counsel office. Typically, the position of Commissioner/ Director of the PTO is filled by an attorney with extensive experience in the IP field, such as an attorney from a private law firm. Although the present Director of the PTO is an attorney, a former judge, and a former U.S. Congressman, he has no formal IP law training or experience. But the previous two Commissioners of the PTO (Q. Todd Dickinson and Bruce Lehman) were private IP attorneys with extensive experience in the IP field before being selected to serve as Commissioner. Further, as would be expected, all of the high-level positions in the Office of the General Counsel of the PTO are staffed with attorneys. (See Appendix B.)

The general lack of expertise in the IP field at high-level political appointee positions is not surprising in view of the vast number of services provided by the government as a whole, and the government's responsibility to serve the many diverse needs of the U.S. public and maintain and develop international relations. More specifically, because the U.S. government has so many different responsibilities, it is highly departmentalized and specialized. Thus, high-level political appointees are typically chosen, at least in part, based on their expertise or interest in the particular area of government (*e.g.*, IP, drug enforcement, social security, environmental law) for which they are being considered. Thus, it is not surprising that a vast majority of the government professionals that have expertise in the IP field are placed in positions relating to IP, such as the PTO and the Copyright Office.

The third major career path for government professionals is in government service. This career path is characterized by the professional entering government employment early in his or her career (typically directly from receiving a university degree) with the intention of continuing employment with the U.S. government as an entire career. In the IP field, professionals of this type include patent, trademark, and copyright examiners, and, to a lesser extent, congressional staff members. In general, this career path requires no particular formal IP education. The education required to perform the job is obtained over time through practice of the profession.

B. Private-Sector Attorneys

The most influential IP position on the private side is the attorney. In general, the private side relies on two types of attorneys to manage IP issues: the IP attorney and the corporate attorney. The IP attorney is often, but not always, formally trained in IP issues (in addition to general law), and is considered an expert in IP-specific issues. These attorneys either work in private practice or as attorneys for a company. The corporate attorney is formally trained in corporate law (in addition to general law), and, for IP issues, is typically relied on to ensure that the IP attorney's opinions and recommendations are implemented in a manner consistent with the overall business strategy of the company. The corporate attorney is also responsible for ensuring that the IP attorney is informed of business goals and policies, so that the IP research and development of the company is consistent with the overall business strategy of the company. Although there are corporate attorneys in private practice, the overwhelming majority of corporate attorneys work directly as employees for companies. The successful interaction between the two attorneys ensures an efficient and effective IP program within the company.

1. Private Practitioner

The first type of IP attorney is the private practitioner. This professional works at his or her own law firm or as an associate at a law firm owned by others. Private practitioners in IP law are of two main types: (1) attorneys that specialize in IP law and practice entirely, or essentially entirely, in the IP field, and (2) attorneys who practice general law, but occasionally practice in the IP field. It is not necessary for either to have formal training in IP law, but those who do are typically more highly recruited by IP law firms than those who do not. For example, law firms recognize that a patent litigation is, at its core, a litigation. Therefore, law firms recognize that they will benefit from having attorneys with strong skills or aptitude in litigation. But because patent law involves much more than litigation, firms generally look to hire professionals with formal IP training and expect that the professionals will develop litigation skills as they mature in the profession. Thus, while formal legal training in IP is not required for a professional in private IP practice, it provides the professional with an advantage over other attorneys vying for a position at a private law firm.

2. Corporate Attorney

The second type of IP attorney is the IP attorney working for a company. The career of this type of attorney is closely aligned with the corporate attorney. There are numerous career paths to IP or corporate attorneys. Often, law school graduates join a company as entry-level staff attorneys, either in the IP office or the corporate office. If the attorneys received formal training in either IP law or corporate law during law school, then during their careers they build on the skills and knowledge they obtained during law school. Otherwise, they learn about IP or corporate law and develop the necessary legal skills as they perform their assignments. As their careers progress, they advance in the company. If they stay with their company long enough, they might ultimately become the chief IP or corporate counsels.

Of course, if some attorneys are unsatisfied with their positions in a company, or their prospects for further advancement in the company, they are free to look for different careers and leave the company. Thus, it is not uncommon for attorneys to work at one company for one or a few years then join another company, go into private practice, or leave the private side for a government position. This dynamism among career paths is often considered a strength of the U.S. IP field, providing consistency throughout the field. For example, due to the relatively high rate of movement of attorneys among private-side employers, most companies operate using the same, or nearly the same, corporate and IP theories and practices. In this way, a newly hired attorney can quickly become a productive member of the company, without having to first be educated in the particular company's corporate and IP practices. Likewise, due to the relatively high rate of movement of attorneys between private side and government, there is a high degree of understanding among both private and government attorneys of the requirements and limitations placed on each other. Thus, efforts are made by attorneys from both sides to minimize differences in the goals and practices between the government and the private side. Furthermore, attorneys who have moved to a new company bring with them ideas and practices from their previous position. The successful practices and innovative ideas are then shared with their new employer and coworkers, and many are implemented at the new employer's company. In this way, consistent practices are adopted throughout the business community.

As mentioned above, a second career path to the IP or corporate attorney might begin by entering government employment, obtaining training in the IP field, and then moving to the private side. This type of career path is most often seen with examiners at the PTO. It is very common for patent and trademark examiners to work at the PTO for one to four years, then leave the PTO for a position at a private law firm or a company. Of course, those examiners who have a law degree are the most sought after by both private law firms and companies. Often, however, private law firms and companies are interested in hiring former examiners with no formal legal training to serve as legal clerks or technical specialists. One position that many former examiners with no formal legal training are particularly qualified for is the position of patent agent. This position is discussed in detail below.

C. Law Professors

A third common career available to professionals with training in the IP field is the law school professor. As with other careers in the IP field, there are many routes to the law school professor career. In general in the United States, the career of law school professor is chosen early in the career of the professor. Typically, professors in most disciplines choose the career while in law school or shortly thereafter while at a first job. In contrast, most IP professors come to the teaching profession later in their careers. That is, for reasons touched on below, most law schools do not hire full-time IP professors. Rather, they rely heavily on adjunct professors to teach their IP courses. For example, George Mason University School of Law (GMUSL) lists only three full-time IP faculty members, yet lists a total of thirty-two IP professors. (See Appendix C.) A vast majority of the IP professors at GMUSL are adjunct professors whose primary profession is as an IP attorney or judge or other high-level U.S. government official.

Thus, a minority of law school IP professors are full-time professors. Most teach as adjunct professors, teaching as a second profession during time when they are not performing the duties of their primary profession. Most adjunct IP professors are full-time attorneys in private practice or, to a lesser extent, at private companies. A small minority of adjunct IP professors are government employees, such as federal judges or PTO or Copyright Office employees. Adjunct professors rarely teach for the purpose of supplementing their income. In fact, the salary offered adjunct professors is often insignificant when compared to the income they receive from their primary profession. The attraction of the adjunct professor for teaching is often simply the desire to teach.

It is to the law school's advantage to hire part-time, adjunct professors from among practicing attorneys to teach their IP courses. Doing so minimizes the cost to the school of staffing the course (typically, the school pays the adjunct very little to teach the course) yet provides the school with a professor who not only has practical experience in the IP field, but can blend that experience with personal knowledge of the current state of the law in the professor's field of expertise. Finally, by hiring multiple adjunct professors, each assigned to teach a single subject, the law school can provide an expert for each subject taught, thus providing a higher level of instruction for the students at a low cost to the school (and thus, ultimately, to the student).

D. Patent Agents

The fourth main career path for an IP attorney is by way of a patent agent. In the United States, there are two distinct professions within patent law: the patent attorney and the patent agent. Both must (1) have a technical or scientific degree from a university, and (2) pass a rigorous test on patent prosecution and PTO procedure administered by the PTO. In addition to these two requirements, a patent attorney must also have a law degree and pass the bar exam of at least one state. In contrast, a patent agent need not pass the bar exam in any state, but the agent is precluded from practicing law in a U.S. federal or state court. As discussed above, the patent attorney typically works for a private law firm or company but can be a member of the judiciary or legislative/executive support staff. Because the patent agent is not qualified to practice in a U.S. court of law, the scope of the agent's work is limited to practice before the U.S. PTO (*i.e.*, representing inventors and companies during the process of patent procurement) and the performance of pre-litigation research, such as searches for prior art that could invalidate a patent.

As discussed above, attorneys with formal legal training in IP are highly valued by the private side. Patent agents, while valued for particular tasks, are not as widely recruited as patent attorneys. Thus, there is a strong incentive for patent agents to obtain a law degree so that they can become patent attorneys.

E. Common Career Paths in the IP Field

As can be seen from the above discussion, there is no one common career path to all of the professions in the IP field in the United States. High-level government officials are typically elected or appointed, and are not required to have any formal IP training. In a vast majority of the cases, these officials have no more than a basic knowledge of IP. Most high-level government officials rely on a few staff attorneys with a formal or informal IP education, and rely heavily on the private side for advice and guidance. In contrast, the private side relies heavily on attorneys with a formal education in IP. Due to the dynamism seen in the U.S. IP system, there are numerous paths to the high-level positions in the private side. The sole overriding requirement for achieving a high-level position in the IP field is usually a formal legal education.

VI. The United States Legal Education System

For the IP field to sustain itself and succeed, it is imperative that competent lawyers enter the field. Particularly on the private side, competent lawyers are needed to obtain and protect IP rights for companies and to guide and advise the government in providing and enforcing IP rights. The United States has hundreds of colleges and universities providing programs in all fields. Furthermore, there are currently 183 law schools accredited by the American Bar Association, each providing formal legal education. Very few, however, emphasize IP in their curricula.

Interestingly, the lack of a broad emphasis on IP education in U.S. law schools does not appear to have overwhelmingly negative effects on the IP field. The adverse effects of the failure of U.S. law schools,

in general, to provide programs in IP law is minimized by the ability of U.S. law schools to train lawyers who are competent in the law as a whole. The combined efforts of many lawyers trained in general law with a small number of lawyers trained specifically in IP law appears to be adequate for the overall needs of the IP field.

A. Law Schools with IP Curricula

All accredited U.S. law schools provide a basic, broad legal education. Many provide courses in IP. But very few provide more than a few introductory courses in IP.

1. Seventeen Provide 1-5 Courses

Of the "Top 50" law schools, as ranked by *U.S. News and World Report*, 17 offer only 1-5 IP courses:

1. Yale Law School;
2. Stanford Law School;
3. Cornell Law School;
4. University of Iowa College of Law;
5. University of Southern California Law School;
6. Washington and Lee University School of Law;
7. Boston College Law School;
8. Emory University School of Law;
9. University of Notre Dame Law School;
10. University of Illinois College of Law;
11. University of North Carolina Law School;
12. Wake Forest University School of Law;
13. University of California, Hastings, College of Law;
14. University of Colorado, Boulder, School of Law;
15. University of Utah College of Law;
16. University of Alabama School of Law; and
17. American University College of Law).

2. Twenty-One Provide 6-10 Courses

Further, 21 of the "Top 50" law schools offer only 6-10 IP courses:

1. Harvard Law School;
2. University of Chicago Law School;
3. University of Michigan Law School;
4. University of Pennsylvania School of Law;
5. University of Virginia School of Law;
6. Northwestern University School of Law;
7. University of California, Los Angeles, School of Law;

8. Vanderbilt University School of Law;
9. University of Minnesota School of Law;
10. University of Wisconsin Law School;
11. Washington University (St. Louis) School of Law;
12. William and Mary School of Law;
13. University of California, Davis, School of Law;
14. University of Georgia Law School;
15. Brigham Young University Law School;
16. Ohio State University School of Law;
17. Indiana University School of Law;
18. University of Arizona College of Law;
19. Tulane University School of Law;
20. University of Connecticut School of Law; and
21. Southern Methodist University School of Law.

A summary of the course offerings of these 38 schools offering 10 or fewer IP courses per year is attached as Appendix D.

3. Nineteen Provide 11 or More Courses

In fact, only 12 law schools from among the "Top 50" law schools, and only 7 others from among the full 183 accredited U.S. law schools, offer 11 or more IP courses.

From Top 50 Schools

1. Columbia Law School;
2. New York University School of Law;
3. University of California, Berkeley, School of Law;
4. Duke University School of Law;
5. Georgetown University Law Center;
6. University of Texas School of Law;
7. Boston University School of Law;
8. George Washington University School of Law;
9. University of Washington School of Law;
10. Fordham University School of Law;
11. University of Florida School of Law;
12. George Mason University School of Law;

From Remaining Law Schools

13. Franklin Pierce Law Center;
14. Cardozo Yeshiva University;
15. Santa Clara University School of Law;

16. John Marshall Law School;
17. DePaul University School of Law;
18. University of Houston Law School; and
19. Suffolk University School of Law.

A summary of the course offerings of the schools offering 11 or more IP courses is attached as Appendix E.

Interestingly, the law schools that are widely recognized as having exceptionally high standards for admitting students are not widely regarded as having strong programs in IP. For example, it is widely recognized that the law schools at Harvard University, Yale University, Stanford University, and Columbia University consistently have exceptionally high standards for admission and provide an excellent legal education to their students. Yet only one of these schools (Columbia University) is widely recognized as having a strong IP program. Not surprisingly, it is the only one that offers more than 10 IP courses per year.

Most of the law schools that are considered to have strong IP programs are located in large metropolitan areas and areas with high-technology industry. For example, Columbia Law School, Fordham Law School, and New York University School of Law are in New York City; the University of California, Berkeley, School of Law and Santa Clara University School of Law are in the "silicon valley" area of California, which can be considered to include San Francisco; Georgetown University Law Center, George Washington University School of Law, and George Mason University School of Law are in the Washington, D.C. metropolitan area; Boston University School of Law and Suffolk University School of Law are in Boston; and Cardozo Yeshiva University, John Marshall Law School, and DePaul University School of Law are in Chicago. The presence of these schools in large metropolitan areas or areas of high technology underscores the importance of quality adjunct IP faculty to a law school's IP program. More specifically, due to their high amount of commercial activity, large metropolitan areas, such as Washington, D.C., New York City, Chicago, and Boston, generally have a higher concentration of attorneys than small cities and rural areas. Thus, a law school in these large metropolitan areas is more likely to be able to attract a highly qualified IP attorney to its adjunct faculty than a school in a small city or rural area.

B. The Goals of the Institution and Course Offerings

Most law schools strive to provide a broad legal education for their students. In addition, some also strive to provide exceptional programs in specific fields of law (*e.g.*, regulatory law, environmental law, IP law). As would be expected, the law schools that strive to provide exceptional programs in IP law offer more courses, and thus a greater variety of courses, in the IP field than law schools that do not focus on IP law. Likewise, these schools strive to hire faculty, and in particular adjunct faculty, who are highly regarded in the IP law field for their legal skills and knowledge.

Based on a survey of 50 schools generally recognized as providing a high-quality, broad legal education, the most common IP courses offered at U.S. law schools are introductory copyright classes (48 of the 50 schools offer this course), introductory patent and introductory trademark classes (40 of the

50 schools offer one or both of these), intellectual property survey (35 of the 50 schools offer this course), and international aspects of intellectual property (21 of the 50 schools offer a course on this topic). Not surprisingly, these courses are also offered by schools that are generally recognized as having excellent IP law curricula, but not necessarily widely recognized as providing a high-quality, broad legal education.

The overriding objective of most law schools in offering IP courses is to offer at least an introductory, or survey, course that broadly covers the field of IP law, or that covers at least patent law, trademark law, or copyright law. In this way, the school's students are provided with the opportunity to learn, at least superficially, about the IP field. The assumption by the schools is that even the limited exposure to the IP field might engender an interest in IP in some of the students, and those students might choose IP as the field in which to practice law. Attached as Appendix F is a recent publication that includes a survey of law schools regarding IP course offerings.

If the law school has the facilities, faculty, and student interest, it will also offer broad but more advanced courses in patents, trademarks, and copyrights. It is typically only after these basic and advanced courses are offered that a law school will offer more specialized IP courses, such as a course on Federal Circuit appeals practice, patent infringement law, patent damages law, trade secrets law, or international IP law. Due to the need for qualified professors to teach these specialized IP courses, and the need for a student body having interest in them, typically law schools do not offer these specialized courses. That is, as can be seen from the attached listing, only those law schools that are recognized as offering a high-quality specialized IP program offer such courses.

The specialized courses are offered for two main reasons. The first and foremost is to train students in the particular IP topic that forms the subject matter of the courses, with the understanding that a combination of broad training and specialized training better prepares a student for a profession in IP than does broad training alone. A second reason is to enhance the school's reputation as a provider of high-quality IP education. By providing a high-quality IP education, it better ensures that its graduates will find employment in the IP field. The percentage of graduates who find employment in the legal field upon graduation is an indicator commonly used by prospective applicants (and by employers) of the quality of the education provided by the law school. Both of the reasons for establishing courses in IP law achieve the same result, which is self-perpetuating: graduating highly trained IP professionals results in high-quality applicants applying to the law school; admission of high-quality students maintains the high quality of the law school and enhances its image, resulting in a continuing high quality level of applicants.

Interestingly, in our survey of highly regarded U.S. law schools and law schools providing excellent IP programs, we found very few schools that offer IP courses directed to business aspects of IP, such as entrepreneurship and IP management strategy. For example, of the 57 law schools included in Appendices D and E, only 10 offer a course directed to entrepreneurship (University of Chicago Law School; University of Michigan Law School; University of Pennsylvania School of Law; University of Virginia School of Law; Cornell University School of Law; University of California, Los Angeles, School of Law; University of Minnesota School of Law; American University School of Law; New York University School of Law; and Georgetown University School of Law), and only 1 offers a course directed to IP management strategy (Franklin Pierce Law Center). It is likely that these courses are not generally offered as a part of the legal curriculum because they are, at their core, directed to conducting

business. Courses directed to conducting business are typically taught at the university level or in graduate programs for business professionals, such as Masters of Business Administration (MBA) programs.

Although the Juris Doctorate is the most common degree conferred on students by law schools, many law schools also offer Masters Degree programs (L.L.M. programs), and a few even offer doctorates other than a Juris Doctorate. For example, American University's Washington College of Law in Washington, D.C., offers a J.D., an L.L.M., an S.J.D. (Doctor of Juridical Science), and three dual-degree programs. (See the summary of American University's Washington School of Law in Appendix D.) Likewise, Franklin Pierce Law Center offers a J.D., an L.L.M., and an M.I.P (Master of Intellectual Property, Commerce, and Technology), a D.I.P. (Diploma in Intellectual Property), and two dual-degree programs. (See the summary of Franklin Pierce Law Center in Appendix E.) These additional degree programs provide students alternatives for obtaining an education in IP and are likely to be more widely available in the future, particularly from law schools that already have strong IP programs.

C. Teaching Methods

Most law school courses in the United States are taught using a question-and-answer format based on assigned reading. Typically, the professor assigns at least one legal case for the students to prepare to discuss for class. During class, the professor assigns a student to recite the facts of the case and the decision of the court. The professor then selects students to answer questions about the facts of the case and the legal bases for the decision of the court. Through this method, it is hoped that the students will get an understanding of the legal holding of the case and the importance of the case in the general field of law. This format is also designed to give the students experience in public speaking.

With the exception of the introductory and survey courses, IP courses are generally taught in the same manner. Introductory and survey courses do not lend themselves to this question-and-answer format well because much of the material is historical and administrative in nature. Introductory and survey courses are more often taught in the traditional lecture format, in which the professor prepares and delivers a lecture on a chosen topic. In this format, the professor is typically the only person in the class to speak, unless a student has a question about the information being presented.

However, more advanced and specialized IP courses can be, and typically are, taught using the question-and-answer method, because many of these courses include intense study of case law relevant to the IP field. Furthermore, the advanced courses often include "seminars" and "writing" courses. In a "seminar" course, the professor typically presents a topic for discussion and acts as a moderator for a discussion among the students. In such a format, the students are relied on heavily for their analysis of the topic, and the professor typically interjects comments only when needed to stimulate the conversation or correct misunderstandings of law or fact. In "writing" courses, the amount of lecturing or input from the professor is extremely limited. In these types of courses, the professor typically introduces the subject in two or three lectures, then students select topics to research and write about. The students are assigned dates to present their research results, and they prepare and deliver a lecture to the rest of the students on the topic. Thus, in effect, the students lecture for most of the classes, and the professor merely sits and listens to the lecture. After each student lecture, and upon review of drafts of each student's research paper, the professor provides comments to each student about the strengths and weaknesses of the

research, draft paper, and presentation.

D. Professors in IP

As discussed above, IP professors are typically adjunct professors whose primary profession is in private or corporate IP practice, or as a judge or high-level PTO or Copyright Office employee. Because very few law schools offer a significant number of IP courses, full-time IP professors are often required to teach courses not related to IP, such as general property law or contract law. In contrast, adjunct IP professors typically teach a single course per year. The course is invariably on subject matter on which the adjunct professor is an expert.

As mentioned above, adjunct professors are not highly compensated for teaching: they are motivated to teach not out of a monetary desire, but out of a desire to teach. Some also hope to meet prospective employees from among their students. In addition, many use teaching as a method for keeping themselves abreast of new developments in IP law (they need to know the recent developments so that they can present them and discuss them with their students).

Adjunct professors are as highly, if not more highly, desired by the law school than full-time IP professors. Adjunct professors spend a majority of their time practicing IP law. Thus, they bring with them a knowledge of the current state of affairs in the private sector, and in IP law in general. They can also bring prestige to the law school if they are well-known private practitioners or high-level government employees, such as federal appellate judges or PTO or Copyright Office administrators or attorneys. For example, in the Washington, D.C. area, there are two law schools that provide exceptional IP programs: George Mason School of Law and George Washington School of Law. George Mason employs 3 full-time professors that teach courses in IP. On the other hand, it employs 29 adjunct professors to teach IP courses. The IP adjunct faculty includes two judges from the Court of Appeals for the Federal Circuit, the Solicitor of the PTO, a former Commissioner of the PTO, and many partners at nationally and internationally known IP law firms. (See Appendix G.) George Washington School of Law employs 6 full-time IP professors, yet it employs 14 adjunct professors. The IP adjunct faculty includes one judge from the Court of Appeals for the Federal Circuit, a former Commissioner of the PTO, and many partners at nationally and internationally known IP law firms. (See Appendix H.) The presence of such well-known and well-respected professionals on the faculty of these law schools attracts highly qualified applicants to the schools and accordingly enhances the reputation of the school.

Although important characteristics of adjunct professors are their status in the IP community and their desire to teach, they are also expected to be able to convey information to students. Like others in the education profession, if IP professors are unable to communicate their knowledge of the field to their students, they are not fulfilling their role as educators. Thus, although they are of value to the school for their reputation, their inability to educate students weighs against the law school in its efforts to develop or maintain an excellent reputation for graduating highly trained professionals. Therefore, it is in the school's best interest to encourage the failing IP professors to alter their teaching methods, or terminate the offer of employment to them. Thus, although law schools desire to hire highly respected IP professionals as adjunct professors, these individuals are still expected to be adequate educators.

Although the adjunct professors are expected to satisfy certain minimum standards as educators, due to the fact that they are employed full time at another profession, law school administrators typically have a lower expectation for attendance at classes for these professors. More specifically, law schools typically expect their professors to attend every scheduled class, excusing absences only for serious personal illness or family emergencies. But law schools typically excuse absences of adjunct professors, recognizing that they are often compelled to attend to the duties of their primary employment at the expense of their teaching responsibilities. It is only when the adjunct professor fails to attend a significant number of classes that the commitment to teaching is questioned by the school.

While the university receives a benefit from having a highly respected IP attorney or government official as a faculty member, the attorney or government official receives a benefit as well. Among educated persons in the United States, teaching is considered to be a very honorable profession. Thus, among the educated, teachers are highly respected and admired. By becoming a professor at a law school, adjunct professors receive praise and respect from their peers not only for conduct and performance in their primary profession, but for taking on the added responsibility of educating new members of the IP profession as well. As would be expected from a group who choose to teach mainly because they like to teach, the additional respect adjunct professors receive from their peers for teaching is a benefit that is highly valued.

E. Students in IP

As discussed above, not all attorneys working in the IP field have a formal education in IP law. Many have a broad legal education and focus on IP after receiving their law degrees. As would be expected, those who desire a formal education in IP law typically are attracted to the handful of law schools that provide exceptional IP programs. Many students recognize that they will be most prepared for a career in IP law if they attend a law school that has a strong IP program. Likewise, they recognize that they will have an excellent chance of obtaining a desirable position after completing law school if they attend a law school with a strong IP program.[1]

Students in IP courses are a diverse group. They include students who have entered law school directly from receiving a university degree. They also include students who have been in the IP profession for one or more years and have decided to obtain formal legal training in IP to further their careers in the field. Examples of such students include patent examiners, patent agents, and law clerks at private law firms. Students in IP courses are primarily students who are interested in a professional career in the IP field. Some students in IP courses, however, take the courses solely to satisfy a curiosity about that aspect of the law.

The educational backgrounds of students generally depends on the type of IP law the particular student is interested in. More specifically, students with technical or scientific backgrounds are typically

[1] During interviews we had with Deans at George Mason University School of Law and Franklin Pierce Law Center, the Deans indicated that their graduates specializing in IP law had a 100% placement rate (George Mason) or near 100% placement rate (Franklin Pierce) upon graduation.

interested in patent law, primarily because they have the necessary background to be a patent attorney. Of course, as mentioned above, one can be an attorney primarily responsible for patent issues without being a patent attorney, but the typical patent attorney has a technical or scientific background. On the contrary, to specialize in trademarks or copyrights, a student does not need a technical or scientific background. Rather, an interest in this aspect of the law is sufficient for entry into the field.

Many of the students bring with them experience in the IP field and at least a basic understanding of aspects of IP law. For example, at law schools with excellent reputations in IP law, it is not uncommon to see students with a Ph.D., students with an M.S., as well as others with at least one year of experience as an IP professional. The presence of these experienced students promotes in-depth and thoughtful discussions in the IP classes. The presence of students with professional experience thus enhances the learning experience for all students enrolled in the class and better prepares the graduating students for positions in the IP field.

As with other aspects of IP education, the number of students in law schools who take IP courses varies. In general, the number of courses offered at a law school reflects the number of students interested in, and enrolled in, IP courses. This generalization, however, can be misleading in some cases because it does not take into consideration the size of the student body. More specifically, a law school having a large student body, such as Georgetown University School of Law (which enrolls 575 new students each year) would be expected to offer more IP courses than a law school having a relatively small student body, such as Franklin Pierce Law Center (which enrolls 150 new students each year). Thus, although the number of courses can be used as a rough indicator of the number of students taking IP courses, it does not necessarily give a true estimate of the proportion of students within the entire law school who take IP courses.

Correcting for class size, the proportion of students in the entire law school who take IP courses can generally be estimated by the number of courses offered. Thus, schools offering a relatively large number of IP courses typically have a high percentage of their students enrolled in the IP program. In law schools that provide specific IP programs, the number of students who take IP courses can be as much as 25% of the student body. But it must be stressed that the number of schools that emphasize IP education is small compared with the total number of law schools in the United States.

Due to the relatively high number of students who are already professionals in the IP field, and due to the fact that most of the professors are adjunct professors having primary (*i.e.*, daytime) employment in the IP field, most of the IP courses at schools offering a high-quality IP curriculum are conducted during the evening. As a result, a high percentage of students focusing on IP law are enrolled in the evening or "night" program at their law schools.[2]

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[2] In the U.S., many law schools, particularly those in metropolitan areas, offer both a full-time "day" curriculum, and a part-time "night" curriculum. A typical "day" student achieves his law degree in 3 years while a typical "night" student achieves his degree in 4 years. "Day" students are permitted to take "night" courses when no equivalent is offered during the day, and *vice versa*.

One thing is certain: law students who enroll in IP courses during law school have an advantage in securing a position in the IP field after graduation as compared with law students who do not. As discussed above, both on the government side and on the private side, the most highly qualified applicant is chosen for a particular position. Thus, where the position is in the field of IP, *any* education in the IP field puts the applicant at an advantage over other applicants with no formal legal training in the IP field. In general, the more education graduates have in the IP field, the more likely they are to obtain employment at a highly respected law firm or at a high-level position within the government.

Interestingly, many private law firms publicly state that they are primarily interested in applicants having a strong general legal education. For example, Oppedahl Larson LLP, an IP law firm widely known to those who use the Internet for IP purposes, states on its website that its primary criteria for selecting employees are, in this order: an adequate technical background, attendance at a "top ranked" law school (regardless of its reputation in IP), and academic achievements in law school (such as being selected for the law review or having a high grade point average). These law firms uniformly state that a person with a strong general legal education is more desirable than one with a specialized education in IP because their firm can quickly educate the new employee in the IP field, but cannot easily educate the others in general law. In practice, however, private law firms (and, for that matter, private-side companies) highly value, and compete with each other for, law school graduates with formal IP law education.

The employment situation for students that have taken IP courses during law school varies. In general, it is excellent. For this analysis, three types of IP law students can be identified:

- students who have only a passing interest in IP law, but who have taken one or more IP courses during law school
- students who have a sincere interest in IP law, but who have attended a law school that does not have a strong IP program
- students with a strong interest in IP law who have attended a law school with a strong IP program.

In the first case, the student is in a better position to obtain a position in IP law than a student who has taken no courses in IP law. But such a student's position is only marginally better than students having taken no IP law courses because most employers, be they the U.S. government or private companies or law firms, recognize that the dynamism inherent in the U.S. system will quickly nullify any advantage one student's background has over another. Thus, although a student who has taken one or a few IP courses during law school will have a marginally better chance of being employed in the IP field, the likelihood that other factors, such as personality or overall quality of the law school, will be dispositive is greater.

The second type of student who has taken IP courses during law school is the student who has a sincere interest in IP law, but who has attended a law school that does not have a strong IP program. This student will likely have taken all of the IP courses offered by the law school. The student's prospects of obtaining employment in the IP field are good. However, depending on professional goals, it is not certain

that the student will be able to get a position of the most interest to him.

The third type of student is the student with a strong interest in IP law who has attended a law school with a strong IP program. This student is highly likely to be employed, typically in the position of his or her choosing. This student is the best prepared to enter into a position in the IP field, and thus is highly recruited by the private side.

F. Evaluation System

As would be expected, law schools, individual professors, and students are constantly being evaluated to determine the quality of each. The manner in which they are evaluated differs and the immediate purpose for which they are evaluated differs. However, the combined evaluation process provides information that is used by all three and others in the IP field to judge each.

Law schools are evaluated by both prospective students and by employers in the IP field. Evaluation is based on numerous factors. Among the most important factors are: (1) academic qualifications of the students accepted by the law school (LSAT scores and grade point average during university studies); (2) percentage of students employed in the legal profession within six months of graduating from law school; (3) the quality of the faculty (as judged by publication of scholarly articles, national and international recognition by peers, etc.); and (4) the quality of graduating students (*i.e.*, level of preparedness of the students to work in the legal profession). Obviously, much of the evaluation process is subjective, being based on qualities that cannot be quantified easily (such as level of preparedness and recognition by peers). Thus, it is essentially impossible to accurately rank law schools in numerical order for either overall quality or quality of IP curricula. Rather, it is more useful to rank schools generally (*e.g.,* "excellent," "good," "average," and "poor").

Professors are primarily evaluated by the students. Typically, at the end of each course, the students are given an evaluation form with which to evaluate the professor. The evaluation is either confidential between the student and the law school administration, or is anonymous. The evaluation includes questions about the professor's teaching style, the subject matter of the course, and the ability of the professor to convey information to the student. It also includes space for the students to provide specific comments (positive or negative) about the course and the professor. The evaluations are reviewed by the law school administration and are often forwarded to the professors so that they can consider the evaluations and make adjustments to their courses, if necessary. This system permits the professors to alter their courses and their teaching styles to optimize the transfer of information from them to their students. Thus, overall, the criteria are quite subjective, with students providing input on whether their expectations for the course were met and whether the course should be changed to improve it.

There are, of course, times when either the professor's teaching style or the subject matter of the course is unpopular with the students. In such cases, the course and professor develop a poor reputation among the students: former students recommend to new students that they should not enroll in the course. Enrollment in the course typically drops over the years until it becomes evident to either the professor or the law school administration that there is insufficient interest in the course to warrant its continuance. In these cases, either the professor informs the law school that he or she does not intend to continue to teach

the course, or the administration eliminates the course from the curriculum.

Students are, of course, evaluated as well. Evaluation is based solely on the professor's opinion of the legal and analytical ability of the student. There are various ways professors evaluate students, the method chosen being the one the professor believes is most appropriate for the subject matter of the course and the manner in which the course is taught. In general, there is a single exam administered at the end of the course. The exam typically includes two or more questions, the answers to which are provided by the students in essays ranging from one to several pages each. However, due to the variation in subject matter encompassed by IP law, the format of the evaluation can be quite variable.

For example, for IP courses that primarily involve the study of case law (*e.g.*, patent infringement law or patent damages law), students are typically evaluated using a question-and-essay answer format. In this format, a pattern of facts is presented and at least one question is posed based on those facts. The student is expected to devise an answer consistent with the holdings in the cases studied during the course. The student's ability to identify the correct relevant cases and apply the holdings of the cases to the facts of the question govern the evaluation by the professor.

On the other hand, many IP courses focus on the state of the law in many different areas of IP. For example, a course directed to Federal Circuit appellate practice is not limited to a single aspect of IP law, but encompasses issues relating to all aspects of the field. For such courses, professors often evaluate the students based on a single essay, or "term paper," which addresses in detail any issue relevant to the subject matter of the course. The professors typically require the students to write at least 25 pages of text, but permit them to address any relevant topic of interest to them.

In addition, many specialized courses in IP are designed to give students practical experience in aspects of IP law. These courses include IP litigation, IP licensing, and appellate brief writing. In these courses, professors may choose to assign the students a project that mimics a project they might be assigned if they become an IP professional in private practice. For example, in the IP litigation courses taught at George Mason University School of Law and Suffolk University School of Law, the classes are pitted against one another in a mock patent litigation. One class is assigned the role of patentee and the other class is assigned the role of accused patent infringer. As the course progresses, the two classes work their way through the litigation, filing complaints and motions, conducting hearings before a judge, and ultimately going to trial against each other. The students are evaluated by their performance at the task they were assigned (*e.g.*, based on the quality of a motion the student prepared). Another example of the use of a project rather than an exam is in an IP licensing course. In such a course, the professor can evaluate the students by having them prepare licensing agreements based on fictitious facts and companies.

Although rarely used, some professors evaluate their students using a "multiple choice" or "short answer" format. The multiple choice format uses a series of questions, each having four or five possible answers following each question. The student is required to pick the best answer out of the four or five provided. In the "short answer" format, the professor provides a sentence that is a statement of law or policy, but is missing some key information, such as a statute or rule number, a time or date, a case name, or person's name. The student is required to supply the missing information. The multiple choice and short answer formats are typically used only for courses that involve subject matter that relies heavily on facts

rather than on law. Such courses include general introductory courses on IP, and specialized courses, such as PTO interference practice and trade secret law.

Thus, overall, there are numerous ways that professors evaluate students. Ultimately, though, each student receives a grade for each course taken, and the average of all the students' grades is calculated. The student is then ranked against the other students in the class. Often, prospective employers will use the student's rank as a factor in determining whether to offer the student a professional position.

In addition to being evaluated by their professors, students are evaluated by prospective employers when they apply for professional positions. Employers typically consider not only the school the student attends, the students' grades, and the students' class rankings, but also the types of courses taken (in particular, the number and types of IP courses), and their extracurricular experience. The most highly valued extracurricular experiences are previous or current employment in the IP field, internships with judges or in offices of other high-level government officials, and "clinical" experience. Likely the most important experience is current or past employment in the IP field. In the patent field, a student's status as a patent agent is also highly valued.

G. Structure of University Administration

A vast majority of law schools in the United States exist as a school (or college) within a university. Thus, the law school is organized under the auspices of the university and provides a legal education to its students within the overall education framework set up by the university. Officials of the law school (*e.g.,* Deans, presidents, directors) administer the law school based on the overall university plan and participate in governing the university in the same manner as the officials of other schools in the university. Decisions on policy and curricula for the law school are often made at the university level, relying heavily on recommendations provided by the law-school officials and law-school board of governors, if such a board exists.

Law schools are typically organized as any other school or university would be organized. There is typically a board of governors that broadly oversees the activities of the law school. The board often consists of highly respected members of the legal, political, and business communities. The board members are independent (*i.e.*, not law school employees), and thus expected to provide guidance and leadership without regard to personal gain or advancement within the school. Law schools also have an internal administrative structure. Internally, the administration comprises one or more Deans, who are responsible for administering the education program to the students. In many schools, there is a head Dean, who oversees the entire education program, and other, assistant Deans, who are responsible for various aspects of the education program. Examples of assistant Deans are a Dean of Admissions, a Dean of Student Placement (*i.e.,* in charge of helping students get professional employment upon graduation), and a Dean of Curriculum.

There are no federally administered law schools in the United States (although the military provides specific legal training in military law to its lawyers). However, many states support one or more law schools. For example, among the 50 highly regarded law schools discussed above, several are state-supported schools in California, Virginia, and Texas. In contrast to private schools, state-supported

schools rely on state tax money to support the services provided by the university. The rationale behind state-supported law schools is the recognition that it is important for a state to educate its citizens, be it through undergraduate studies or law school. Thus, states use part of the money collected through taxes to support universities and law schools. In most, if not all states, tuition for state residents is lower than for nonresidents, under the theories that (1) the resident has already paid tax to the state to support the school and thus should not have to pay a full tuition to attend the school (this would result in the student paying more money to attend the school than a student from a different state), and (2) those who reside in the state and attend a school in the state are likely to stay in the state after graduation, and thus become productive, educated members of the state's citizenry.

It is important to note that many law schools with excellent reputations for general legal education and specifically for their IP programs are private schools. For example, of the 50 law schools we identified above as being widely regarded as providing an excellent overall legal education, 26 are private law schools. Likewise, of the 19 we identified as having an excellent IP program, 12 are private. Thus, although funding for a state-supported law school is more stable, private law schools are clearly capable of obtaining the necessary funding (by way of high tuition rates and donations) to provide an adequate, if not excellent, legal education for their students.

H. Funding of Law Schools

Law schools are funded in many ways. State-supported law schools receive a large portion of their operating expenses from the state government. The remainder is obtained from tuition charged to the students, and private donations from law firms and alumni. In contrast, private law schools depend entirely on private funding. Thus, they obtain money to cover all of their operating expenses from tuition charged to the students, and private donations from law firms and alumni.

As mentioned above, nearly all law schools in the U.S. are associated with a university. In addition to the law school, the university includes other schools, such as a school of engineering, and a school of arts and sciences. The law school is typically not autonomous within the university - its policies, faculty, and finances are regulated, at least to some extent, at the university level. Although regulated at the university level, funding for most law schools reflects the amount of tuition charged per student. That is, regardless of the type of funds maintenance program used by a university, the law school typically gets to use all of the money it generates - it is not generally used as a money-making center to support other university programs.

For example, at the University of California, Berkeley (a state-supported school), all tuition is deposited into the university's general fund. The law school faculty and staff (as well as the bills for the facilities, etc.) are then paid by the university from this fund. Other expenses, such as for guest lecturers, symposia, etc. are paid out of funds obtained through donations from law firms and alumni. Likewise, at George Washington University (a private school), all tuition is deposited in the university's general fund. The university administration, and in particular, the law school dean, the university vice president of academics, and the university vice president of financial affairs, collectively decide how much money is returned to the law school, and where and how that money is spent.

In contrast, at the University of Michigan (a state-supported school), all law school tuition is deposited in a law school fund. The law school then uses that money to pay the faculty and staff. Money is also transferred to the university's general fund to pay for the law school's share of the facilities costs. At the University of Michigan, the Provost has the discretion to increase or decrease the amount transferred to the university's general fund, based on any number of factors.

Thus, although there are various funding mechanisms and various ways of maintaining and disbursing the money collected, in general, law schools are funded in a manner that reflects the amount of money generated by the law school and needed by the law school to maintain its program.

I. Relationships Between Law Schools, Law Firms, and Government

There are typically strong ties between law schools and law firms and government agencies. Law firms, particularly large law firms, sponsor numerous social events, educational lectures, symposia, and academic competitions at law schools. Likewise, local, state, and federal government agencies (including courts) develop internship programs for law students to provide them practical experience while still in law school. As with other aspects of the legal-education system in the United States, the amount of interaction between law schools, law firms, and government varies depending on the school and the geographical area in which it is located.

Large private law firms often sponsor educational and social events at law schools. For example, a law firm might set up a visiting lecture program for a law school in which highly respected professors from other law schools visit and lecture on a topic of interest. A reception often follows the lecture. By providing the visiting lecture program and reception, the law firm has benefited the law school. At the same time, the students at the law school are exposed to the law firm and develop a positive attitude toward the law firm. The law firm thus benefits from the program by attracting applicants from the law school. Other educational and social programs that can be sponsored by private law firms also benefit the law schools, reflect positively on the law firm, and enhance the learning experience for the students.

The ties between private law schools and private law firms is particularly important because private law schools do not receive a steady stream of funds from a large, stable source, such as a state government. Thus, in order to keep their tuition rates as low as possible yet still provide a stimulating and rewarding educational experience, private law schools must rely on private donations. The donations often come from alumni, but the large donations typically come from law firms in the form of cash or sponsorship of educational and social events, or sponsorship of the salary (or a part of a salary) of a professor at the law school. The benefits to both the law school and the law firm are of the kind mentioned above.

A third example of the strong ties between private law firms and law schools is the internship, law-clerk, and summer-clerk positions offered to students at law schools. Often, law firms will interview students during the students' first and second years of law school for part-time or summer positions at the law firm. This not only provides employment for the selected students, but also provides the selected students with practical experience in the field before graduating, and enhances the educational experience

of the students at the school. Of course, it also benefits the law firms by enabling them to evaluate potential new employees while paying them relatively low wages, and by exposing the students to the law firm in a positive manner.

Governments are generally precluded from making donations to law schools. However, grants are often available to both private and state law schools for educational programs and tuition supplements. Furthermore, government agencies are able to enhance the educational programs of many law schools by developing internship programs in which currently enrolled students work part-time at a government agency, typically without pay, during the hours when the student is not in class. Generally, these internships are conducted at local, state, and federal courts, where the students work in the office of a judge. However, in areas where a local, state, or federal agency has a large presence, internships can be available in those offices as well. For example, in the Washington, D.C., area, the federal government has numerous offices in which law students can serve as interns. Examples of federal internships that are available include internships in the offices of U.S. congressmen and senators, internships in the Department of Justice; internships in the Federal Bureau of Investigation; as well as internships in other departments and agencies, such as the Federal Trade Commission, the International Trade Commission, the Bureau of Alcohol, Tobacco, and Firearms, and the Immigration and Naturalization Service.

In summary, there is a great deal of interaction between law schools, private law firms, and the government. It is a key aspect of the dynamism seen in the U.S. IP system, and enhances the educational experience for law students.

J. The Qualities of an Excellent IP Program

In summary, many factors are involved in developing an excellent IP program. The most influential factors appear to be: (1) access to highly qualified and highly respected adjunct faculty; (2) offering a wide variety of both introductory and advanced level courses; and (3) the ability to attract highly qualified students to the IP program. Of course, all of these factors are interrelated, one depending, at least to some extent, on the others.

The internal governing structure of the university or law school does not appear to be critical. Furthermore, the relationship of the school to the state government (*i.e.,* whether the law school is a private school or a state-supported school) does not seem to be critical for development and maintenance of an excellent IP law program. Finally, although ABA accreditation is necessary, the quality of the broad legal education offered to IP students does not appear to be a critical factor in developing an excellent IP program (*i.e.,* a school does not need to develop a reputation as excellent overall first, before it begins to develop an excellent IP program).

Thus, the question becomes "How does one get the cycle leading to excellence started?". The answer appears to be the commitment by the law school and university officials, and the board of governors, to develop and maintain a strong IP program. Without a commitment, highly respected adjunct professors will not teach at the law school. Without the highly respected adjunct professors, it will not be possible to provide high-quality IP courses or numerous IP courses. The lack of enticing courses will deter high-quality candidates from applying to, and attending, the school. The overall effect is a failure of the

school to develop (and then maintain) an excellent reputation for IP studies.

As a final note, one factor beyond the internal commitment by the school that appears to be relevant to developing and maintaining a high-quality IP program is geographical location. That is, it appears that most of the law schools with top IP programs are in large metropolitan areas or areas known for high-tech industries. Although geographical location is not a primary, critical factor in developing an excellent IP program, it does appear to be important in the school's ability to attract and retain highly respected adjunct faculty (such faculty are rarely found in small cities or rural locations). It might also be important in providing extracurricular activities for the students, such as internships and clerkships, the absence of which might ultimately reduce the quality of applicants to the school, and in particular, the IP program.

K. Continuing Legal Education

The value of continuing legal education (CLE) after completion of law schools is widely recognized. Forty of the fifty U.S. states require registered attorneys to continue their legal education after graduating from law school. Attached is Appendix I, which shows the continuing legal education requirements of these 40 states.

Interestingly, in the United States, law schools rarely participate in the CLE process. Rather, CLE is primarily provided by private companies and organizations, which work with the state bar associations to develop acceptable CLE programs. In addition, many state bar associations provide CLE programs to their members, without using an intermediary private company. The most widely recognized organization that provides CLE programs is the ABA's American Law Institute (ABA-ALI), which can be found on the Internet at ali-aba.org. A recent trend is to provide CLE programs over the Internet. Companies such as LawCommerce.com (lawcommerce.com), LawLine.com (lawline.com), LegalSpan.com (legalspan.com), CLE International (cle.com), West Group (westlegaledcenter.org), American Society of Law, Medicine, and Ethics (aslme.org), and the Practicing Law Institute (pli.edu) provide online CLE programs approved by many state bar associations.

In the IP field, the premier company that provides nationally recognized CLE programs is Patent Resources Group (PRG; patentresources.com). PRG conducts periodic (*e.g.,* three times per year) intensive CLE programs on most major aspects of IP law. The programs are accredited by most, if not all, state bar associations, even though they are specifically designed to address only IP issues.

Finally, CLE is conducted through programs initiated, developed, and executed by attorneys in private practice. For example, many large law firms designate a member to research a topic of importance in the field. That person then develops a program and submits it to the state bar for approval. Upon approval, the attorney presents the program to fellow attorneys (or to attorneys from other firms or at private companies).