



The Center for Intellectual Property Understanding (CIPU)

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## **Intellectual Property Education at Business Schools: An Evolving Landscape**

*Courses, Content and Instructors at Leading Management Programs*

# Intellectual Property Education in US Business Schools: An Evolving Landscape

Interest in approaching intellectual property (“IP”) as a business asset continues to grow. IP attracts investment, drives opportunity, and signifies potential for sustainable success. As James Conley, Clinical Professor of Innovation and Entrepreneurship at Northwestern’s Kellogg School of Management, put it, “IP is an ideal asset. There is zero cost of reproduction and it scales beautifully.” While just a few decades ago most business leaders were unlikely to understand basic principles of IP and IP rights, today there is a demand that they strategically manage IP to support business goals. Fortunately, business schools have tuned in to varying degrees and are evolving their curricula to include elements of understanding IP.

The Center for Intellectual Property Understanding (“CIPU”) presents this report to offer a high-level survey and assessment of how the top business schools in the United States include intellectual property related content in their curricula and discuss what the trends and data suggest for the future of this topic in business schools. To prepare this report, information was collected from the top twenty-one business schools’ websites, course catalogs, and from interviews with faculty at eight of the leading institutions offering master’s in business administration<sup>1</sup>.

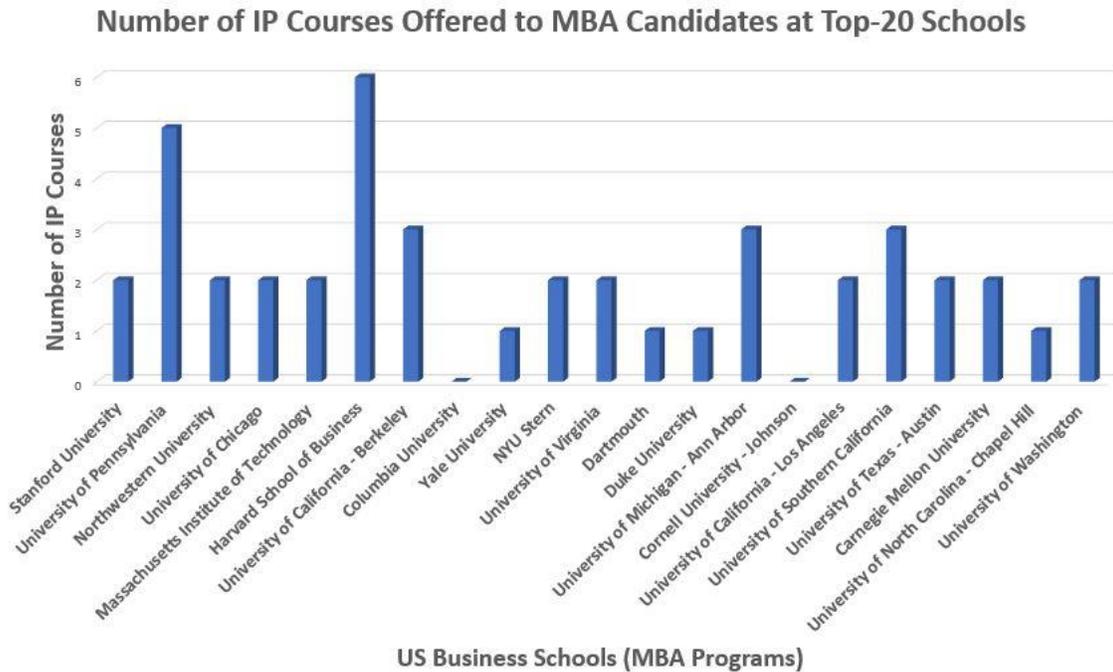
## I. MOST BUSINESS SCHOOLS SURVEYED OFFER IP COURSES

Business programs focus on preparing students to effectively manage, finance or otherwise transact businesses, which is why students earn the distinction of Master’s in Business Administration (“MBA”). University faculty diligently create and evolve coursework so that their students are prepared for a career in the business world. Considering the value IP brings to a firm, business schools have recently begun including more IP business content in both traditional courses and in standalone electives. Today, most of the nation’s leading business programs offer courses that address topics related to IP. At least nineteen of the top twenty-one business schools include intellectual property-related courses in their curricula. These twenty-one schools comprise the Top Twenty ranked schools in the United States according to *U.S. News and World Report*. The courses are offered among ten distinct academic departments. An overview of the survey results follows in Figure 1.

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<sup>1</sup> Based on US News Report 2020 Rankings: <https://www.usnews.com/best-graduate-schools/top-business-schools/mba-rankings>

**FIGURE 1: NUMBER OF IP COURSES OFFERED AT THE TOP 20-RANKED U.S. BUSINESS SCHOOLS**



Ranking: U.S. News and World Report

Source: Center for IP Understanding

Based on a preliminary analysis there are a total forty-four courses offered to MBA students at these schools that discernibly cover IP during the course. However, the courses themselves varied widely by which classic business school departments offered them, and none of the schools had a department dedicate to IP in its own right. So, although most business students have the opportunity to take a course on IP, the curriculum available to them will vary significantly.

One-third of the business schools that offer courses touching on IP offer only a single course. According to our research, Harvard Business School offers the greatest number of IP-related courses of all the leading business schools with six courses that include IP content.

Limitations in the ability to research this topic prevent a more comprehensive look at IP-related course content at all business schools. For example, there is not a uniform way to search these curricula, and sometimes the official course catalogues were inaccessible without school credentials. Additionally, if certain obvious keywords were not included in the title or available via a description of the course, such as “intellectual property,” “intangible assets,” “intellectual capital,” or “patents,” then we were unlikely to find them. A few exceptions were when faculty were interviewed who could point us to otherwise hidden courses. Despite these limitations, there is good reason to suspect that more courses exist than were identified in this research. For example, although neither Columbia University nor Cornell University show active listings for courses in IP on their business school websites, it is known that they have offered these in the past and may still offer something relevant to this topic on an irregular or even regular basis that is not discernible from their website. Included throughout this report is a discussion of other evidence supporting this theory, but a formal survey would provide more certainty.

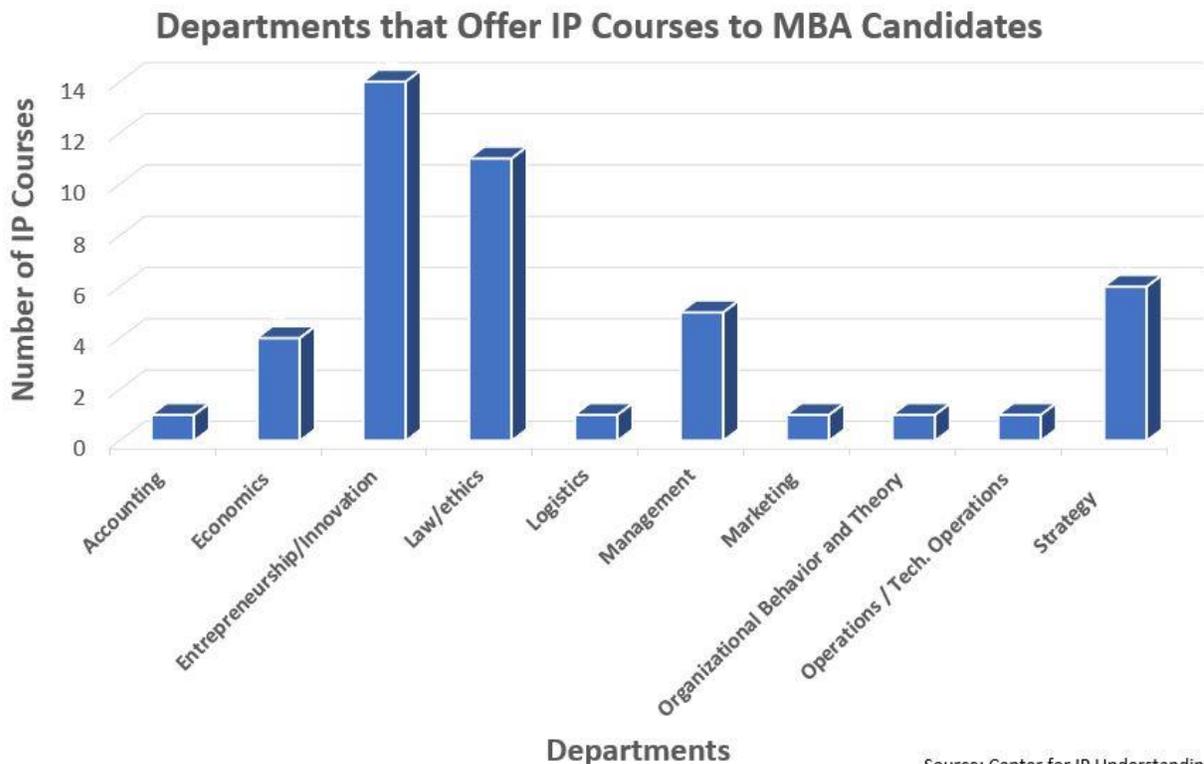
Despite imperfect data, it is clear that not all business students are exposed to IP in their MBA coursework. The research did not uncover a single required course that included IP as a topic, and with a class-size of several hundred of students, it is not mathematically possible for every student to take the same elective. Most of the courses were bucketed into ten classic business school departments and sometimes offered collaboratively across two departments. So, the data suggests that certain business students are more likely than others to have exposure to IP content in business school curricula.

The following presents an overview of the IP courses currently offered at the top business schools, followed by a discussion of factors that influence what courses are offered. The report then assesses these results and analyzes the effect they have on a business student’s potential exposure to IP coursework. Finally, this report concludes with a discussion of the expectations for the future of IP curriculum in business schools.

**A. Overview of IP Courses by Department**

Our research uncovered forty-four “IP courses” offered by the top twenty-one business schools. These courses were offered by approximately 10 distinct departments. While the formal name of each department varies by the school, they generically fall into one of the following categories: (1) Entrepreneurship and Innovation, (2) Law and Ethics, (3) Strategy, (4) Management, (5) Economics, (6) Accounting, (7) Logistics, (8) Marketing, (9) Organizational Behavior & Theory, and (10) Operations. An overview of the courses identified by department and in some instances, group of departments follows.

**FIGURE 2: DEPARTMENTS THAT OFFER IP COURSES TO MBA STUDENTS**



Source: Center for IP Understanding

## 1. ENTREPRENEURSHIP & INNOVATION

Among the top twenty business programs in the country, there are at least fourteen courses offered by Entrepreneurship and Innovation Departments. That amounts to almost one-third of all the courses in IP identified in this research. Including the several other courses related to IP that include “entrepreneur” in the title but are offered by another department (e.g., *Law, Management and Entrepreneurship* is offered by HBS’ Management Department), then it is well over a 33% of the courses are marketed with entrepreneurs in mind.

Classes offered by this department varied by topic. Some were based in law. For example, Yale’s Entrepreneurship Department offers a course titled as *Legal Aspects of Entrepreneurship* with modules dedicated to the legal foundations and concepts of intellectual property. Others appear to be more strategic in nature, such as Scott Stern’s course at MIT titled: *Entrepreneurial Strategy* and University of Chicago’s business course titled *Entrepreneurship through Intellectual Property*.

Whether offered by the Entrepreneurship Department or not, Stephen Johnson, a professor at Stanford, a trained geneticist and former Kirkland & Ellis partner, says covering principle concepts of IP in entrepreneurial courses is particularly common. His course, *Protecting Ideas*, is housed in the business school’s Strategy Department, but Johnson tries to attract as many students as possible, including many students with entrepreneurial interests. Johnson’s goal is to illustrate to his students how IP is reflective of society, and to see where IP fits in so that they can decrease inefficiencies and increase opportunities. Opportunities, Johnson theorized, are often missed when IP is not considered.

Finally, a few schools have Entrepreneurship Concentrations that include either a required course that covers IP or at least includes an IP course within a set of recommended electives. An example is USC’s certificate in Technology Commercialization, where a class with the same name teaches students how to identify, evaluate and commercialize new technologies with an emphasis on the legal aspects of technology transfer and development.

## 2. LAW/ETHICS

Second to only the Entrepreneurship Department, business schools’ dedicated legal and ethics departments offer the next greatest number of IP courses. This report found ten of such courses, which is nearly 25% of the courses discussed. And, similar to what was noted in the previous section, some of the other thirty-four courses mention law but are offered by a different department.

Finding many law-centric IP courses was not surprising. Intellectual property itself is a construct of law, and lawyers have long been recognized as the definitive IP experts. Some individuals and educators, however, are likely to improperly assume they are the only kind. It is helpful to be familiar with legal concepts in order to establish a basic awareness of IP but developing a discussion around these concepts helps to develop a basic literacy or fluency that can be applied. After one understands what the various forms of IP are and how they differ can principles be applied for classic business students to develop IP management strategies. This is probably why of the six schools with only one IP course, half of those offer only a law course.

**TABLE 1: IP COURSES OFFERED BY LEGAL DEPARTMENTS IN BUSINESS SCHOOLS**

Rank*	US Business School	Course Title
1	 University of Pennsylvania - Wharton	Intellectual Property Strategy for the Innovation-Driven Enterprise
		Innovation, Marketing Strategy, and Antitrust
		International Business Ethics
3	 U Chicago - Booth	The Legal Infrastructure of Business
5	 MIT	Patents, Copyrights, and the Law of Intellectual Property
11	 U Virginia Darden	Introduction to Business Law
12	 Dartmouth - Tuck	Managers and The Law
12	 U of Michigan – Ross	Intellectual Property Law
		Law of Marketing
		Legal Aspects of Entrepreneurship
18	 U of TX - McCombs	Intellectual Property

\* Based on 2020 Rankings from US News & World Report

The majority of the IP-related courses offered by the legal and ethics departments are IP law primers or general business law primers that include a module on IP law. This suggests that IP is still largely considered a legal topic which ought to be presented by the law and ethics departments, but lawyers are even progressively shifting focus from the law of IP to the business of it. For example, the classes taught by IP practitioner Steven Weiner, who had served as Chief Patent Counsel at SRI International, the birthplace of many important Silicon Valley inventions, and Stephen Johnson are not relegated to only the legal concepts of IP at Wharton and Stanford, respectively. Weiner's course *Intellectual Property Strategy for the Innovation-Driven Enterprise* is offered for legal elective credits; it is very much a business strategy course with legal roots.

Arguably, a more interesting question is whether lawyers are the appropriate medium for business students to learn IP strategy. Not everyone agrees that attorneys should teach IP to business students. In separate interviews, both David Teece and James Conley believe that IP attorneys are not the appropriate candidates for professorships in business schools. Inventors or creators are effective teaching IP in the business school environment because they are the people who generate the business asset.

On the other hand, Teece disagreed. He believes that IP should be taught by people with a background in economics. Teece suggests that business students need to not only become literate in the legal principles IP is founded on, but to see the bigger picture of how IP impacts economic policies and value.

While Conley and Teece bring up interesting points, their perspective is informed by how they see the world. Conley is a successful inventor and Teece an accomplished economist. Efrat Kasznik, who has a background in accounting and valuation, was not so firmly opposed to lawyers teaching business students, but raised the question “what exposure do lawyers have to business?” This further confirms that business students would benefit from learning IP through more than just a legal lens.

Setting biases aside, this further confirms just how much IP transcends legal doctrine and has relevance in many classic business school disciplines. Yet, there exists a cultural divide among those proficient in one of the pillars of IP: law, science, design, and business. Schools need to bridge these gaps if their students are going to become proficient and prepared to effectively leverage IP. Some schools are filling these gaps with courses offered by more traditional business school departments, which is covered next.

### 3. STRATEGY & MANAGEMENT COURSES

In 1986, David Teece published an article titled “[Profiting from Technological Innovation](#)” that many consider to be the founding authority on IP as a business asset. Prior to the late 90s or early 2000s, IP was a legal concept and taught in law classes. The establishment of the Court of Appeals for the Federal Circuit (CAFC) in 1982 played a role. Now, there are at least six courses offered by strategy departments and another five from the management departments at the top U.S. business schools. Strategy and management are core departments, and the adoption of IP in their curriculums is an innovation. Courses and contents varied by school, but there are some interesting points to discuss.

One of the most important takeaways from the introduction of IP courses by these departments is that it demonstrates a shift in perspective from IP as a legal concept to IP as a business concept. As previously mentioned, IP was rarely thought of outside legal departments before the late 1980s. Now, there is evidence to suggest that the most prestigious schools in the United States believe IP is a topic relevant for future business leaders. Moreover, courses offered by these departments likely cast a net over a wider student population. Strategy and management courses likely attract students who may otherwise not be predisposed to IP related coursework. Classic industries need IP to stay competitive. As their products commodify, their ability to sustain growth and margins dwindles.

At Harvard Business School, Gary Pisano teaches an elective course that illustrates these points. His course is called *Driving Profitable Growth* and is offered through Harvard’s Technology and Operations Management Department. Notably, there is no mention of “IP,” “law,” or “entrepreneurship” in the title of his course. This likely casts a wider net because students who are not particularly attracted to those terms, or even turned off by them, are probably still interested in “profitable growth.”

Pisano discussed two reasons in particular that he felt were important to embed IP into this course. First, Pisano wants his students to understand how businesses can grow faster with IP as an asset. Second, he also strives to convey to his students how securing IP from outside sources can be just as important to extend a firm’s access to distribution outlets and market reach. The discussion of how to leverage internal IP and identify the right external IP is an important discussion, and not necessarily appropriate in a law and ethics class. Pisano captures the value IP adds from a business perspective.

Professors in these classic disciplines shared some of their struggles with bringing IP coursework into their curriculum and convincing their colleagues to do the same. James Conley, a professor of IP management at Northwestern-Kellogg, says that he “strives to be fluent in the other departments’ pedagogies.” This is how you can attract interdepartmental support; he explains. He also discussed the importance of observing cultural phenoms and waves of interests so that you can deliver content that students care about at that time. Currently, Conley looks for examples of businesses owned by BIPOC (Black, indigenous and people of Color) and women that are effectively executing IP strategies.

In comparison, Hong Luo of Harvard Business School had a different approach for how she incorporates IP in her curriculum and explained why she found it difficult to include despite its importance. In Luo’s course *Good Strategies in Flawed Markets*, her students dissect the strategy employed in twelve cases published by HBS, which deliberately include two cases centered on IP strategy. In fact, Luo expressed how she would like to include more IP relevant cases, but she struggles to find good ones.

Luo says that her intent is “to prepare her students to identify when IP is important so that they can ask the right questions.” This, she believes, will prepare them to bring in the right experts when they need those answers. In fact, David Teece and Stephen Johnson co-authored an article that identified this a common issue. They surmised that, “[p]art of the problem [regarding corporate failure to implement appropriate IP strategies] can be traced to business education and training, which generally leaves top managers unable to ask the right questions of their expert advisers.”<sup>2</sup> According to Luo, there are two key components to approaching IP properly that she strives to convey to her students. First, business leaders need to know how to build strategies that suit their industry and firm. Second, it is imperative that business leaders have the ability to identify the tradeoffs inherent to the IP strategy that they deploy.

While all of these professors are exacting in their own approach and include IP topics, it is interesting in how the approaches differ. Conley pulls inspiration from current events and is able to refresh his class without much trouble. Yet, Luo struggles to find the right cases. This might be resolved by looking at their professional backgrounds, which are very different. The former is a Charter Fellow of the National Academy of Inventors and has a background in nuclear and materials engineering who turned his innovations into profit prior to entering the academic stage of his career. Luo, on the other hand, is an academic and researcher who often concentrates her focus on IP. It is not surprising that professors with these two backgrounds would differ in their approach to course inspiration, content, and structure.

#### **4. ECONOMICS & IP**

Across the top-ranked business programs in the US, there are four IP courses offered by economics departments. This is both expected and a little surprising. Regarding the former, David Teece is an esteemed economist and valuation expert, and James Conley dubbed him as responsible “genesis of all of this.” Teece’s *Profiting from Technological Innovation* is the only academic paper Conley assigns his students to read. Thus, teaching business students about IP through the lens of economics makes sense. What is surprising, however, is that this research found only four courses in economics relevant to IP when it was Teece’s economic point of view that arguably made IP relevant beyond legal circles in his article *Profiting from Innovation*.

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<sup>2</sup> IAM *Get (IP) smart for corporate survival and growth*

Berkeley offers half of the IP in economics courses, and Professor Teece is offering one of them through the Haas School of Business. Teece Chairs the Tusher Initiative for the Management of Intellectual Capital. A full listing of IP courses offered by economics departments follows in table 2. Teece’s course, *Management of Innovation and Change: Knowledge, Intellectual Capital and Competitive Advantage*, is offered to MBA students at UC-Berkeley. According to Teece, “[t]he true assets that [business’] have don’t sit on balance sheets.” His students learn how to identify valuable IP within their firm, so they can later develop IP management strategies. The obvious goal is to prepare students how to leverage IP to achieve and sustain competitive advantage.

**TABLE 2: IP COURSES OFFERED BY ECONOMICS DEPARTMENTS TO MBA CANDIDATES**

Rank*	US Business School	Course Title
7		Berkeley
		<b>Management of Innovation and Change: Knowledge, Intellectual Capital and Competitive Advantage</b> <b>Intellectual Property for Entrepreneurship</b>
10		<b>NYU Stern</b> <b>Economics of Creativity and Innovation</b>
17		<b>USC Marshall</b> <b>Economic Consulting and Applied Econometrics</b>

\* Based on 2020 Rankings from US News & World Report

Overall, there are a broad range of topics to discuss where IP and economics are concerned. One course may look at the societal economic implications of IP policy to assess whether the cost of procuring IP rights prohibits low-income participation in IP-centric businesses. Others illustrate how to apply classic economic principals such as elasticity, demand curves and monopolies to IP-centric cases to assess strategies that promote competitive advantage. Given its significance, it would be instructive to survey a larger sample of business schools to see if IP is covered in the required economic courses for first-year graduate students and undergrads.

**5. OUTLIER COURSES**

Finally, the remaining handful of IP courses is spread across four departments, each of which offered only one or two electives on the topic. The figure below provides an overview of these courses.

**TABLE 3: IP COURSES OFFERED BY VARIOUS DEPARTMENTS TO MBA CANDIDATES**

Rank*	University	Course Title	Department
1	 Stanford University	Stanford University Intellectual Property: Financial and Strategic Management	Accounting
1		University of Pennsylvania - Wharton Innovation, Marketing Strategy, and Antitrust MKTG 760	Law/Ethics Marketing
6		Harvard School of Business Driving Profitable Growth	Technology and Operations Management
11		University of Virginia - Darden Developing New Products and Services	Technology and Operations Management
19		Carnegie Mellon University (Tepper) Managing Intellectual Capital	Organizational Behavior and Theory

\* Based on 2020 Rankings from US News & World Report

Discovering one-off courses offered by different departments indicates the interdisciplinary interest in and relevance of IP. David Teece's *Profiting from Technological Innovation* touched on this in a discussion of how owning IP by law is not enough to stop imitators from profiting more from an innovation than its originator. Teece pointed out how relationships with firms who have complementary assets can better situate an innovator for leveraged success. The interdisciplinary nature of IP is why Teece suggested that "public policy aimed at promoting innovation must not only focus on R&D, but also on complementary assets which tend to be specialized or cospecialized to innovation."<sup>3</sup> His suggestion that public policy broaden its reach can be applied to how and where IP should be taught. IP permeates into so many business decisions, and business leaders can prepare for effectively deploying IP strategies if they learn through various departmental applications of IP concepts.

Perhaps, IP is relevant to every business school department. Gary Pisano theorized that at Harvard Business School, IP is weaved into most courses at HBS. This is another topic that could benefit from a more comprehensive survey of IP curricula in business schools.

Critics may look at this information as a lack of support for IP's relevance in these topics. However, some of these courses are long-standing. Efrat Kasznik is the professor and creator of Stanford's *Intellectual Property: Financial and Strategic Management* course. She has taught this course covering how to value IP using classic valuation methods for over 10 years. An elective course is unlikely to remain on the register for long if it is not attracting interest by students.

<sup>3</sup> Teece, David *Profiting from Innovation* 1986

## **B. Factors that effect if and how business schools cover IP**

### **1. The power of current faculty support.**

Interest in IP from current professors and administrators is the single greatest factor in whether an IP course will be offered at a business school. This internal influence can manifest in several ways, but without the support of a full-time faculty member, it would be difficult, if not impossible, to offer new courses at any of these schools.

Most often, IP courses are taught by business school professors with personal interest in IP and prior exposure. In some cases, full-time faculty members were initially hired to teach classic business theories and topics. Hong Luo, a professor of strategy at HBS, was already on staff when she began implementing IP into her curriculum. IP had been an area of interest of hers, and she ultimately decided it is crucial for her business students to have exposure. Once initially approved, a professor can continue to host the elective course if it is successful. If enough students opt into the class and complete the class, then the course can continue to be offered after its initial debut.

Melissa Schilling, a professor at NYU's Stern School of Business, has dedicated her research to innovation strategy. She says that success is determined by "butts in seats." Her course, *Technology Innovation Strategy*, has been offered for over 20 years. Schilling stated that "before the 90s, businesspeople did not know how to talk about the role of IP." Now, she is dedicated to evolving her class to reflect changes in IP policy and technology. This is how Schilling ensures her course is relevant for business students of today.

Moreover, even "disinterested" faculty members have sway in what electives are added. For example, a full-time faculty member may support a pitch from someone outside the university entirely. In at least one instance, an adjunct professor shared off the record how their IP course came to exist with the support of someone who was not an IP researcher themselves but was closely connected to them. This is not to suggest that IP courses are beneficiaries of preferential treatment. Rather, this indicates the power and influence of current faculty members in curating business school curriculum. IP has probably both been added or left out of business school offerings for this reason.

In fact, several IP professors spoke of the defensive and bureaucratic qualities of their administration. Teece and Conley both surmised that there is a defensive quality inherit in administrative roles, and that this impedes the permeation of IP as a business school subject. They suggested that a reason more IP courses are not included in business schools is because of a natural preference to teach topics they know or are most familiar with.

If that is true, then there should still be checks and balances to ensure business students have access to curricula that falls outside their current administration's collective experience. According to David Teece, the onus should be on Deans to identify and fill gaps, but we only found two instances of this. At Northwestern University, James Conley originally taught an IP course within its engineering school. He told us that had the dean of the business school at the time not been "an entrepreneurial spirit" where he identified IP's relevance and importance in business curriculum, Conley would never have found himself within the Kellogg School of Business there.

At Wharton, which offers the second most IP courses of the Top 20-ranked schools, Steven Weiner's course on IP Strategy followed a similar path. Initially, Weiner was interested in offering the

course through University of Pennsylvania’s law school. David Hsu, a full-time faculty administrator at the Wharton School of Business caught wind of Weiner’s pitch, and according to Weiner, “Hsu worked the channels to authorize the course through the business school.” Without the institutional support, it is unlikely the course would exist within the business school today.

**TABLE 4: TOP U.S. BUSINESS SCHOOLS WITH THE MOST IP COURSES FOR MBA CANDIDATES**

Rank *	US Business Schools that offer the most IP courses	Number of IP courses offered
1	 University of Pennsylvania - Wharton	5
6	 Harvard School of Business	6
7	 University of California - Berkeley - Haas	3
12	 University of Michigan - Ann Arbor - Ross	3

\* Based on 2020 Rankings from US News & World Report

While the majority of professors described arduous processes to get approval for their IP courses, course culture at the school promoted robust elective offerings. As Gary Pisano noted, what matters the most for the ability to offer an elective is to get students enrolled. “At HBS,” Pisano states, “there is a free-market system.” Bharat Andand, the Vice Provost at HBS, affirmed that there are not many bureaucratic obstacles to initiate a new course. However, to continue to offer a course, enough students must consistently enroll.

The free-market system at HBS is not universal throughout academia. Therefore, it remains that faculty support is the best factor in whether an IP course will be added to a business schools’ catalog.

**2. University alumni and culture also influence the evolution of business school curriculum.**

Support from those outside the university can also factor into what business schools teach. This includes alumni demand. Efrat Kasznik identified alumni demand as one of the ways students learn of and enroll in her course. In fact, she says that Stanford alums have a “strong voice,” when it comes how Stanford evolves its content. Moreover, Kasznik said it was a major factor for the inception of her IP valuation course. David Hsu also identified alumni demand and spoke of how it manifested in not only the suggestion that Wharton include IP topics now, but to provide resources for previous graduates to become more literate in IP fundamentals.

Another related factor is the university’s culture and stature amongst a particular industry. For example, Marshall Phelps described when IP was framed within the confines of the entertainment

industry, USC administrators were more willing to integrate these topics because their student body is largely made up of people interested in working in that industry. He opined that at Stanford, you could find more examples of IP courses relevant to entrepreneurs because of its proximity to Silicon Valley. Indeed, conversations with professors at Stanford supported this. For example, Stephen Johnson said his course *Protecting Ideas* mainly attracts students with entrepreneurial interests.

### 3. Lack of Academic Research Dedicated to IP

Conversely, there are factors that have seemed to have inhibited the adoption of IP by business schools. The most significant is probably the lack of data. Interestingly, there is a lot of information available that points to the significant contributions IP plays in our economy. In 2016, the USPTO identified 81 of the 313 US industries as “IP-intensive,”<sup>4</sup> and in 2014, these IP-intensive industries were responsible for 27.9 million jobs.<sup>5</sup> Consider this in conjunction with the most recent unemployment rate issued by the Bureau of Labor Statistics, which published that there are 10.1 million unemployed Americans as of January 2021.<sup>6</sup> Accordingly, IP-intensive industries directly contributed to 38.2% of the US’ GDP in 2014.<sup>7</sup> This country needs its business leaders to continue innovating and deploying IP-centric strategies for the sake of its economy.

Despite its measured value, many professors told us that there is not enough data to attract more support to offer additional IP courses. Moreover, the data that does exist is limited in breadth. The body of research that does exist overwhelmingly focuses on patent data. While there are industries where patents are obviously and critically important (e.g., pharmaceuticals), the vast majority of IP use is less direct. Steven Weiner, of Wharton, told us that there is a demand for more and better data on soft-IP, especially copyright in the content industry. Support for more research is difficult by the very lack of unambiguous, objective data.

As previously mentioned, Kasznik recounted how important support from existing faculty was for the inception of her course. Considering it is the only IP course identified by this report that is offered by an accounting department, it is probably not a coincidence that Generally Accepted Accounting Principles (GAAP) in the US simplify IP value on company balance sheets but including it in “goodwill,” which does little to identify its true relevance. Despite many attempts over the past 40 years, there has been little success resolving the lack of financial transparency associated with intellectual property. IP rights, strategic defensive ones like patents and softer ones like trade secrets, are a management challenge for businesses and executives. Management expert Peter Drucker once said, “you can’t manage what you can’t measure.” If GAAP were to evolve its principles of IP valuation, it may follow that more business schools would offer IP-related accounting courses. A lack of data not only affects why there are not more IP courses at these specific schools, but why there likely are not more at schools outside this limited sample. “To impact curricula,” explains Teece, “you have to sponsor research at a top tier school.” He theorizes that if there was a greater body of scholarship on the management of IP, then more business courses would include it in their curriculum.

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<sup>4</sup> <https://www.uspto.gov/sites/default/files/documents/IPandtheUSEconomySept2016.pdf>

<sup>5</sup> <https://www.oceantomo.com/insights/ocean-tomo-releases-2015-annual-study-of-intangible-asset-market-value/>

<sup>6</sup> <https://www.bls.gov/news.release/pdf/empsit.pdf>

<sup>7</sup> <sup>7</sup> <https://www.uspto.gov/sites/default/files/documents/IPandtheUSEconomySept2016.pdf>

Teece's theory was supported and echoed by Hong Luo. She told us that she would include more IP in even her classic strategy courses at HBS if there were more cases published with examples of IP strategy and management. Bharat Andand, Vice Provost at HBS, agreed but explained that he could only go off what research is out there. Patent data is easier to come by, so it has fueled a stream of research. Narrowly focusing on patent data is not always helpful. In what can be taken as a proclamation that his hands were tied on the issue of expanding and diversifying IP research, Andand exclaimed, "you cannot be searching for the key under the lamppost."

The absence of data leads to confusion and conflict among those who support and promote the need for IP in business school curriculum. According to Marshall Phelps, who was responsible for more than \$1 billion in annual licensing income when he was at IBM in the 1990s, the difficulty in measuring the value of IP leads people to assume that it simply "doesn't exist." In opposite, Luo thinks that there is a universal belief that IP is core to business strategy. However, the lack of research, according to Luo, leads to a failure of people to think carefully about it. This is problematic because, as Schilling stated, "default assumptions are going to be wrong." Schilling, of NYU's Stern School of Business, discussed how the knee-jerk reaction for IP strategy is taking a defensive position. However, the patent process is not as fast as many industry lifecycles. So, Schilling suggests that the more important lesson is how to open your IP back up so you can attract adoption in the market. An interesting case of this is when Tesla Motors opened its patent portfolio to encourage adoption of electric vehicles cars,<sup>8</sup> but still vigorously pursues trade secret protections so its products could theoretically outperform competition.<sup>9</sup> If a strategy like this is not carefully planned, Schilling equated it as "putting a horse in every direction on your cart. It will go nowhere." A carefully planned IP strategy, instead, puts all of your horses facing the same direction. Its deliberate deployment can move business forward and profits upward.

## **II. BUSINESS STUDENTS INTERESTED IN ENTREPRENEURSHIP ARE MORE LIKELY TO TAKE IP COURSES.**

Although most business students are eligible to take a course with IP, the vast majority do not. The only evidence needed to support such conclusion is actually an absence of evidence. None of the leading business programs in the US have a required course that includes principles of IP. However, there are some students who will be more likely to take a course on IP whether it was a topic they found attractive or not. Students concentrating on or interested in entrepreneurship and innovation are more likely to end up in an IP course. There are several factors that support this theory.

The strongest evidence supporting this is the fact that more courses that include IP in the curriculum are offered by the Entrepreneurship and Innovation Departments in business schools than any other department. Among the top twenty business programs in the country, there are at least fourteen courses offered by Entrepreneurship and Innovation Departments. That is nearly a third of all the courses in IP found at business schools. Additionally, certain schools have "Entrepreneurship Concentrations" that include required courses with IP curriculums or at least include an IP course as a set of required courses to choose between. Even if IP is not required by the concentration, entrepreneurship students are more likely to be suggested electives by advisors that touch on facets of IP. Many of interviewees discussed how IP is integral to entrepreneurship because innovation and IP often go hand in hand. This collective theory

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<sup>8</sup> <https://www.tesla.com/blog/all-our-patent-are-belong-you>

<sup>9</sup> <https://arstechnica.com/tech-policy/2018/06/after-subpoenaing-apple-in-trade-secrets-case-tesla-goes-after-facebook/>

is supported by findings that showed most IP courses would derive from entrepreneurship courses and schools who especially attract entrepreneurial students.

Finally, several business schools host startup incubators or related programs to provide students and alumni with resources specific to these pursuits. At least three schools surveyed offer such programs included resources for students to learn about IP. Efrat Kasznik mentioned the Venture Studio program at Stanford where she was a guest lecturer for several IP-focused events. At some schools, these were only exclusive to current students, and at others it was open to alumni as well.

### **III. HOW SCHOOLS APPROACH IP AS AN INTERDISCIPLINARY SUBJECT**

Information presented in this report is about how IP is taught in different courses in business schools. The reason there is not a uniform approach is likely due to ad hoc adoption based on the influences that have been previously discussed. This section of the report focuses on IP as an interdisciplinary topic and briefly discusses how business schools have dealt with it.

First, what does it mean to be an “interdisciplinary topic?” Intellectual property is constructed by law, birthed in innovation (often STEM but also art, marketing, and design), monetized by managers, and valued by accountants. Thus, IP is an interdisciplinary topic by nature, discussion of which is arguably deserved within nearly every classic business subject. The transcendental nature of IP is one of its most interesting facets, but it is a double-edged sword because it is likely one of the reasons schools struggle or fail to include it in their curriculums.

Conley theorized that the reason why it is so difficult to bring IP into the business school curriculum is because professors of the classic courses have their own lexicons. If you cannot speak to them and frame a topic in a way that translates in their lexicon, it is very difficult to get them excited about a topic like IP. An alternative approach, Conley suggests, is to become an interpreter. He has succeeded in garnering support from various departments by communicating how IP and IP rights are relevant to them and by framing it within multiple contexts.

Despite the difficulty of translating IP or implementing it into core classes, business schools have adopted several ways to try to tackle it and make it accessible to their students. For example, a single course is sometimes offered through multiple departments. By designating a course with markers of multiple departments, schools send students a message that the course is relevant to them. Considering the cross-functional nature of intellectual property, this makes sense and is likely effective at attracting students who will find the topic relevant in their pursuits after they graduate. An example of an interdisciplinary course is the course *Innovation, Marketing Strategy, and Antitrust* offered at Wharton, which has dual course codes signifying it is an elective offered from the Legal Studies & Business Ethics Department and the Marketing Department.

Interdepartmental offerings are just one example of how business schools tackle the interdisciplinary nature of IP. Another approach is to intentionally hire professors from different disciplines to co-teach the course. Finally, many business schools allow their MBA students to elect classes hosted by other schools within the university, such as the law school. The converse was also true, in that law students or engineering students were often invited to register for or audit courses within the business school. All of this was framed within the conversation of how students learn the principles of IP.

This is how MIT addresses the interdisciplinary nature of IP. At MIT, business students can take classes from the other “schools” within the university. Scott Stern, a professor of Entrepreneurial Strategy, discussed how the schools within the university are dynamic. For example, business and engineering students can take courses from each. Stanford is another example where lines between the schools are fluid, which means students from the business school are able to take courses at the university’s law school. Critics would point that this puts the onus on students to know and be willing to enroll in a course from another school. Teece and Johnson are not convinced this is the best way to offer IP to business students and expect that “[f]ew business students are willing to trudge over to the law school and, if they do, they are likely to be greeted by an IP curriculum that is bereft of business strategy considerations.”<sup>10</sup>

While these are all commendable approaches, for those who firmly believe every business student should have at least conversational literacy in IP, they are not enough. The various ways and offerings these schools have rely on the student to identify and select the curriculum, whether by their own volition or happenstance. Overwhelmingly, the research indicates that IP is not included in the core curriculum at business schools. The next and final section of this report discusses how business schools may cover IP in the future.

#### **IV. PREDICTIONS FOR THE FUTURE OF IP CURRICULUM IN BUSINESS SCHOOLS**

As the Center for Intellectual Property Understanding embarked on a report to uncover whether and how the top business schools in the United States address IP education, the prevailing theory was majority of these schools would fail to include IP in their curricula. Interestingly, most of interviewees were of the same mind and were genuinely surprised as information about the other business IP classes was uncovered. It seems that those with interests in IP as a business topic think they stand alone. However, the data shows the opposite.

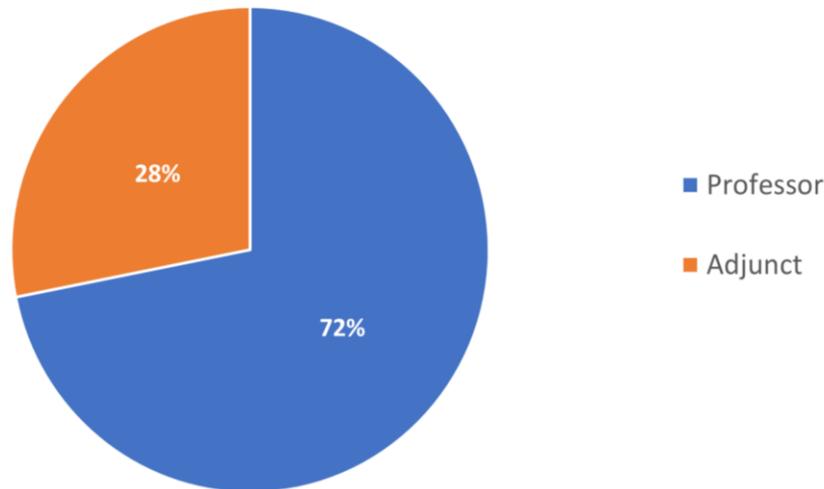
After assessing the totality of the research, there was undeniable evidence that business schools were picking up on IP’s relevance to the business world. This recent adoption has challenges, but it appears there is an appetite for including more IP in business courses. This is probably why often adjunct professors are brought in to teach more than a quarter of the IP courses currently offered. See Figure 3. So, while it remains unclear whether IP will ever have a dedicated department or course, there is good reason to believe the likelihood of business students to achieve IP literacy will increase.

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<sup>10</sup> IAM *Get (IP) smart for corporate survival and growth*

**FIGURE 3: IP INSTRUCTOR FACULTY DEMOGRAPHIC**

**The Percentage of IP Courses Taught By Adjuncts vs. Professors**



Source: Center for IP Understanding

In separate interviews, Gary Pisano and Bharat Andand of HBS both surmised that IP is embedded to some degree into nearly all of the classic curriculum. As mentioned, a limiting factor in our research is the availability and transparency of course details and content. IP could have a greater presence than we believe in and among the number courses available to business students. Given HBS' influence among curriculum worldwide (e.g., ~90% of business cases come from here), coupled with hosting the greatest number of IP-obvious classes suggests that more business schools will include IP in their classic and elective courses.

Similar to how business courses are taught through case studies, looking at the adoption of IP as a concentration in law school may indicate how business schools will approach the topic. When speaking to Steven Weiner, a Professor of the IP Strategy course at Wharton who received his J.D. from Harvard Law School in 1990 and was a partner at Davis Polk & Wardwell, he recounted how there was not a focus for IP in law school when he was a law student. Rather, Weiner became an IP attorney after his firm learned he had an engineering background and thought it would be advantageous for some of their pending IP cases. This suggests that business schools are at an early stage for their adoption of IP curriculum. Eventually, business programs may offer an IP concentration.

While the professors seemed to unanimously agree of the importance of IP in business school courses, this data is somewhat biased because the report focused only on speaking with business school professors who were already teaching and interested in IP. Less biased data also suggests an uptick in the demand for IP literacy from businesspersons. Demand is demonstrated by several factors. In some instances, alumni and students requested courses on the topic. This demand has already led some business schools to begin offering resources so that their alumni can become more literate. This can come in the form of the deployment of a "hub" like Stanford's Venture Studio. Other times it could be periodically hosting speakers on the topic that are open to business school alums.

Regardless of how demand manifests the effect is clear. Business schools have increasingly supplied resources related to IP for their students and alums. This hopefully suggests business schools will continue to find ways to include IP in their classic curricula as well as in extracurricular resources. The IP knowledge and perspective of the business executive, entrepreneur or investor is likely to evolve.

## **V. CONCLUSION**

Over the last three decades, interest in understanding IP as a business concept has increased. This interest has put demand upon business schools to present opportunities for their students to master the fundamentals of IP, so that they are prepared to strategically manage IP within the businesses and among the assets they are associated with. Most of the top business schools have met this demand, and there is support that IP literacy will increase among business school graduates in the future.

While tackling IP in a business school setting has proved to not come in a one-size-fits all solution, these schools have made commendable efforts to provide their students with opportunities to become better acquainted with the nuances of IP and IP rights. There are a variety of ways business schools have initiated IP courses and access to resources, and it is clear that administrative support is critical to evolving and supporting business school IP curricula.

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