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Law and Technology in the US Law School Industry

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Abstract: Law schools are increasingly pressured to rethink the character of next generation research, policy impact and curricular training in the wake of computer-oriented technologies. For all its heralded importance and the proliferation of markets and talk around the topic of law and technology within the law school industry, there are still no systematic scholarly attempts to understand how these dynamics currently play out in practice for law schools, what such an investigation might tell us about the present and future composition of legal academia, or how one might begin in the first place to even identify, gather and make sense of data toward these ends. The purpose of this paper is two-fold: on the one hand, to analyse the methodological and theoretical challenges involved in this sort of blended empirical/qualitative study that might be applied to similar studies in any global context, and on the other hand, to draw out a clearer picture of the dynamics of organizational change in US law schools in relation to the phenomena of digital technologies – and all too often underexplored, to unpack some of the dynamics of culture, profession and wealth at play. In more vernacular terms, our aim here is to get a better sense of how and what we talk about when we talk about law and technology as legal academics.

Keywords: law and technology, law and political economy, law and culture, capitalism

Law schools are increasingly pressured to rethink the character of next generation research, policy impact and curricular training in the wake of computer-oriented technologies. For all its heralded importance and the proliferation of markets and talk around the topic of law and technology within the law school industry, there are still no systematic scholarly attempts to understand how these dynamics currently play out in practice for law schools, what such an investigation might tell us about the present and future composition of legal academia, or how one might

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begin in the first place to even identify, gather and make sense of data toward these ends.[1] The purpose of this paper is two-fold: on the one hand, to analyse the methodological and theoretical challenges involved in this sort of blended empirical/qualitative study that might be applied to similar studies in any global context, and on the other hand, to draw out a clearer picture of the dynamics of organizational change in US law schools in relation to the phenomena of digital technologies – and all too often underexplored, to unpack some of the dynamics of culture, profession and wealth at play. In more vernacular terms, our aim here is to get a better sense of how and what we talk about when we talk about law and technology as legal academics.[2]

1 Initial Methodological Challenges

To understand the contemporary dynamics and trajectory of law and technology requires that we drill into the empirical details and sociological conditions of the field. This type of investigation, however, raises difficult questions concerning methodological and theoretical practices and priorities.

The first two sections of this paper reflect on these challenges, detail attempts to address them in a narrative sequential style, and experiment with ways to draw possible conclusions from the information.[3] The study makes regular reference to an excel sheet (available online along with data visualization and an additional

1 Attempts to understand the field within the law school context often emphasize traditional modes of legal service engagement with digital technologies (see Canick 2014: 663), construct taxonomies of new legal roles or skillsets said to be emerging within legal services to justify general normative claims about the need for transformation in legal education (see Susskind 2014), or address new curricular legal tech programs in a piecemeal, undertheorized fashion that misses out on significant data sets (see Galloway et al. 2019). There are a handful of online non-scholarly studies attempting to capture the field though usually light on details; for some of the more detailed studies available: https://www.legaltechinnovation.com/law-school-index/ and https://thelegaltechlab.com/index.php/ltl-community.

2 The effort here to blend methodological and theoretical reflection with original empirical, quantitative detail is inspired by Pierre Bourdieu's efforts to make sense of academic fields through blended investigation of conceptual and sociological detail beyond the literature produced by the field itself (Bourdieu 1990). For examples of legal scholars demonstrating the often unexplored dynamics of hierarchy at play in the rule of law, see for example Akbar Rasulov (2010), Duncan Kennedy (1982), and Ugo Mattei and Laura Nader (2008).

3 The narrative style concerned with methodological practice as a key aspect of knowledge production is an important analytical tool within critical gender and race theory, and my deliberate use is to try and experiment with how we can expand our methodological repertoire when carrying out more empirical analysis to accommodate (and legitimise) more fully the insights from critical gender and race studies in law. See e.g., Williams Jr. (1997: 741).

extensive sheet of short profiles of faculty members, centres/institutes, and law journals), which not only provides original data from our research but also informs our discussion about the constraints and opportunities more generally into this type of study (Author 2020a, 2020b).[4] While the excel sheet and related material are incomplete (due to an almost inherent difficulty that the field is constantly moving and information on websites is partial and piecemeal), it is possibly one of the most comprehensive gathered information to date on its specific subject matter and part of an ongoing effort to design a holistic, interactive picture of the field, and was compiled over the course of the 2019–2021 academic year. So the goal in this paper is to capture a snapshot of the law and technology field in US law schools and to help think through how a researcher, law school administrator or interested third party might seek to go about making sense of the industry and its cultural prejudices. While the focus is on US law schools, a similar type of analysis might be useful for non-US law schools or other departments interested in legal regulation and services in relation to digital technologies. For those not interested in the interplay between empirical analysis and methodological theorization, the third section of this paper incorporates historical, political and sociological contexts to the law school programs. To understand this phenomena – law and technology – requires a blend of empirical evidence, scholarly literature, and lived-experience within higher education. Here, in this section, we begin to trace out some of the difficulties with this effort.

Immediately one is faced with the challenge of trying to understand what we mean when speaking about 'law and technology' in relation to 'higher education'. While the clarification of 'higher education' is a leap from the tendency in general professional parlance and scholarly literature that refers broadly to 'law and technology' as if it is an already recognizable economic force or social field 'out there' in the world, it raises more questions than it answers in itself. Business schools run technology oriented courses aimed at legal professionals. Computer science departments collaborate with law schools and occasionally lead research programs focused on themes of governance and law. Economics departments train students to program and structure data that directly feeds into automation for the

4 The excel sheet is available here: https://docs.google.com/spreadsheets/d/10aayUbX6Sy_Mgs-1FPfWX09tbci4pjuhLQRooB70Lc/edit?usp=sharing. Some interactive data visualisations to better understand the excel sheet are available here: https://app.flourish.studio/visualisation/2736840/. In addition, original research that provides extensive information about specific professors across law school programs and research centres, as well as journal profiles about all law publications with the title 'technology' maybe found through the following link: https://docs.google.com/document/d/1G9dWVlWtj4ocs82GNb1aswIC4CInmYOH/edit?usp=sharing&ouid=101181826762548397079&rtpof=true&sd=true. All this material is originally developed out of this research initiative.

legal sector. It is not clear who or what sector of the higher education industry one is aiming to address.[5] The wider a scholar casts their net, the more resources in terms of time and expertise will be required to draw out the distinct characteristics and trajectories of different departments and make sense of the complex interplay between expert communities and their clienteles. And much of the day-to-day operational factors that shape how departments collaborate is informal and *de facto* proprietary, at least without painstaking and sophisticated investment on the part of the research team. Nevertheless, claims are often thrown around about how universities are impacted by innovations in digital technology. Significant change may very well be in play, but any precise and usable insight at this level of analysis is unlikely. Often, these claims really function not as windows into actual existing practices but as themselves rhetorical tactics of persuasion linked to personal career ambitions or to legitimate some managerial reorganization of an organization. In other words, in a world where attention is fleeting and liquidity is tight, digital technology becomes a useful buzzword to get buy in.

In this paper, we focus on one of the hotspots for 'law and technology' talk: law schools within higher education. And yet again, even when we specify the disciplinary terrain, even when we identify that our interest is with those professional cadres involved in the law school industry, we are not out of the woods. The focus on law schools can lose out on important contexts, both internal to the university structure (e.g., how a law school and business school might collaborate) and within broader socio-political and higher education contexts (e.g., competition between departments or between universities for different donors and stakeholders). These sort of challenges are compounded by the fact that legal scholars often veer toward "transcendental reflection" (Bourdieu 1990; Cohen 1935; Schlag 1991). In other words, more often than not, legal scholars focusing on their field of interest erase the socio-historical conditions that produce and maintain the roles and ideas that make up the field itself (e.g., advising, publishing, securing grants,

5 There is a significant degree of cross-disciplinary interaction around law and technology. HEC Paris, for instance, organised a two day conference addressing the interface of legal and computer engineering expertise around data mining, with participants from an even more diverse range of professional orientations from informatics to management studies to public regulation (HEC n.d.). Similarly, the University of Manchester's Law and Technology Initiative (LaTI) is a collaboration between the schools of business, computer science and law in collaboration with a variety of industry stakeholders (University of Manchester n.d.). This type of coordination looks to become the norm not the exception. It is difficult to imagine that there is a distinct disciplinary home for this type of engagement with digital technology and governance. And it is not merely an issue of different disciplinary cooperation (as with the mid-20th century cybernetic tradition), but that these new 'hybrid' skills blur what counts as the essential skillsets within any specific expert training (Schlag 2009).

teaching). The most common form of erasure is to fall into various forms of textual exegesis: to 'go technical' and produce a paper that resembles a legal brief imagined to speak to a hypothetical court or set of legal experts on a specific legal issue (e.g., data/privacy) within a discrete legal regime (e.g., constitutional law), or to attempt translation of computational thinking into legal knowhow (e.g., blockchains, smart contracts) or to highlight financial, social or political trends that influence technological design (e.g., racially discriminating algorithms, digital innovations practiced by secondary financial market). In all these scenarios, the author ignores the actual conditions for the production of the scholarship itself in favor of interpretative debate or some economic-political-social tensions said to be occurring in the world at large. In these scenarios, authors almost unanimously follow a similar formula in their scholarship: highlight some technological innovation, point out downsides and upsides to this innovation, and then work to find some balance that allows for the technology in tune with the author's comfort level (Agre 1997). The implicit assumption is that the administrative politics and the business models of the profession are secondary to academic debate and intellectual innovation. The result is that the concrete administrative conditions of struggle over legitimacy and hierarchy among the members of the industry are regularly sublimated in favor of endless literary debates over doctrine and taxonomy, as if the struggle actually takes place through official argument. In contrast, the effort here is to focus in on exactly these cultural and institutional conditions that shape changes in the law and technology field.

Still, even when we bracket our study to the 'law school' and shift from exegesis to a statistically-informed institutional study of membership, we are still left without a clear picture of exactly what indices to prioritize. Just as the case when we speak of 'the economy' at large, there is really no single law school economy or industry, but rather multiple markets composed of distinct constraints and functions.[6] What counts as the market or jurisdiction of the 'law school' is not straightforward even when we try to impose criteria. Perhaps we want to limit our study to 'Western' schools, can we adequately conflate Australian and German universities? Is there any meaningful overlap between its student bodies, its employers, its curricular structure and assessment criteria? Probably less than imagined, though perhaps in relation to incorporation and tax concerns or digital tokenisation models, then maybe some useful overlap. Or perhaps we focus on English-speaking universities. Would this include French university programs that are run in English, such as Lille Catholic University and Sciences Po? Are these schools part of the same scene as a US law school in Mississippi? Within the United

6 For a discussion of the difficulty assessing the correct parameters of what counts as a market, see Mirowski and NikKhah (2019: 268).

States, do we need to distinguish between accredited and non-accredited schools, or in the United Kingdom, between university undergraduate and graduate programs (e.g., University of Edinburgh) and the private industries that oversee certification tracks to barrister or solicitor (e.g., BPP)? And even once we have identified our market, to what extent and on what basis can we conjecture about the implications of our data to any broader field of law schools at the interface of law and technology? Is there cross over between what is happening in Munich and Madrid, between Helsinki and Singapore, between Bogota and Palo Alto, between English and non-English programs? Whatever choice, there will be any number of rationalizations, all of which will be a matter of rhetorical persuasion by the author and anecdotal relevance to the audience. If I am a US based law professor at a mid-tier Midwestern public law school, what is going on at a law school in mainland China will probably not have much gravitas on our radar – and vice versa.

In this paper, our focus will be on accredited US law schools. One rationale is that one of our authors received their law degrees and held permanent positions at law schools in the United States and United Kingdom and has a certain 'working knowledge' of how these social contexts operate. In addition, we have a strong hunch that the United States law school industry disproportionately attracts financial and professional resources and maintains the most robust capacity to impact other academic law markets. Moreover, while US law and technology schools are often associated with innovation and even progressive ideals, our study suggests that in many ways the scene perpetuates entrenched cultural and wealth-based hierarchies. While we do not have any unassailable empirical proof about the influence and resources of US law schools abroad, there are a range of general statistics that would seem to back this assumption that US law schools disproportionately influence (and coerce) non-US law schools to follow its biases and affiliations: the endowments, alumni gifts and operating budgets of US law schools in comparison with non-US peer institutions, the historical record of the American Bar Association contributing to the design of foreign legal systems, the number of international students holding US law school degrees in comparison to other countries, the affiliation of US law schools with preeminent technology-oriented companies, the prestige of US publications and academic positions, and so forth.

At the same time, the ability to attract resources and influence other institutions does not necessarily imply that US law schools are the most innovative with their curriculum or produce the most insightful scholarship or skilled graduates. It could very well be possible, much like the US automobile industry in the 1980s, that the fixed infrastructure costs and organizational momentum of the US law school industry is too entrenched to allow for the sort of flexibility that might otherwise be expected in the disruptive, future oriented rhetoric around digital

technology. Perhaps powerful vested interests hold back change and the 'real action' shaping the business model and roles of the future is happening off the grid in locations with greater capacity for experimentation. In order to make this sort of determination, we would need to develop and implement a strategy to contrast different law school markets, which raises many challenges mentioned earlier as to what criteria are best suited to distinguish between markets. One of the parameters of the study here is that it will only look at US law schools, even if evaluated in light of anecdotal awareness of law school activities around law and technology in a number of other English speaking and European based contexts. In other words, we should not loosely speak of 'higher education' or the 'law school', but rather specify the organizational configuration under scrutiny – in this case, accredited law schools in the United States.

Even if we are able to select a bounded constellation of law schools, we are still left with the challenge of what exactly to look for within or between the US law schools. What sort of information are we looking for and where do we scrape the data, and how do we weigh different inputs to come up with some overall assessment? In terms of the data type and where to find it, the two most readily available sources of information are related to scholarship and teaching. This information is usually officially listed on websites. At the same time, even the most empirically grounded study will almost immediately run into all sorts of potential distortions that begin to filter data into confirmation biases and normative scripts. And drilling into the material, many other factors become significant. The next section explores these dynamics, beginning to unpack the cultural particularities and the many markets within the US law school scene.

2 Data Findings and Further Questions

Mindful of the ease that best-intentioned research always embodies blind spots, and at the outsdet of the research project we brainstormed for months about what might allow the most 'objective' framework for looking into the law and technology scene within the US law school industry. We were under a number of defined constraints. First, one of the authors is a PhD student and the university would only allot a few hundred hours of paid research toward the project. Second, the funding was coming from external funders who were members of a university program, and we were expected to produce a useful report within a defined period of time, which gave us approximately 6–12 months to complete the study. Third, aside from some very patchy online material, there was no reliable database with any in-depth information about legal tech programs at US (or non-US) law schools, nor was there significant literature specifically on point in legal journals. The materials that

existed tended to be uncritical of industry and uninterested in the sociological composition and theoretical biases within the field. We realised that we would have to develop the material from scratch, and without the time to conduct interviews or request information from organizations, we would be largely reliant on available online material. Our research question became more refined: armed with only a laptop, internet connection and a library card, what insights were available through what means to best understand the organizational dynamics of change within US law schools at the interface of law and digital technology?

We created an excel document (that early template that first helped popularize the personal computer). Down the left hand column we listed every accredited US law school in alphabetical order, state by state, organized according to five geographic regions: central, northern, pacific, southern and western. The list came out to 197 law schools. Across the top row of the spreadsheet we created columns left to right to include a range of factors: courses, associated academics, degree and certification pathways, centres or clinics, external and internal collaborations, journals, promotional material, and a final column for miscellaneous information. Our approach was to visit the law school website and enter relevant search terms (e.g., technology, e-discovery, cybersecurity), scroll through the curriculum (e.g., certificates, classes, degrees), follow any associated faculty profiles and institutional events or research programs (e.g., centers, institutes). Some of the categories lent themselves more readily to comparison (e.g., names and number of courses, degree programs), some lists proved more difficult to verify than anticipated (e.g., external collaborations), and other information was useful but less measurable (e.g., promotional material).

While certain information seems to regularly show up in the same location across law schools, it is not always apparent where to find and how to characterize information. For example, if a corporate executive plays an active role in a centre, should they count as an external or internal collaborator? If the executive sits on a university board of advisors, is this an active or passive role, and is the executive acting in a private capacity or on behalf of the affiliated company? More generally, any analysis seems inescapably clouded by interpretative assumptions and a wide range of cultural influences. The particular shading on a website, the décor of the room in the background of pictures, the professional manners of participants in a recording – all these factors might offer relatively reliable clues to the location and ranking of the law school, but it is difficult to pinpoint what exactly feeds these predictions and if they carry more negative biases. Nor would interviewing participants within the culture necessarily lead to 'uncovering' the actual decentralised bureaucracy of power.

To better understand the spreadsheet, we ran the inputs through data studio software to create a series of interactive visualizations. We then scheduled a series

of short meetings where we sat down with the visual formats and excel sheet information and assembled some initial takeaways. First, the presence of research and teaching activities around technology shows some strong regional characteristics. In total, the ratio of law schools that run a tech program to those that do not offer any program is 147/50, and this breaks down with the highest concentration of programs in Northern states (43/7) and the lowest concentration in the Southern states (31/18), with Central (31/10) and Western (18/6) at an almost identical rate of 3/1 and the Pacific states slightly lower (24/9). In itself, this tells us nothing about how robust any of these programs. We decided that one way to begin to get a sense of the quality of the programs was to leave the regional categories and adopt a state-by-state perspective that focused on the number of courses offered. California and New York lead the pack with somewhere around 117 and 106 classes respectively, followed by Illinois (57), Washington DC (47), and Massachusetts (47). Michigan (31) and Pennsylvania (26) law schools have relatively strong showings in contrast to law schools in states like Texas (19), Florida (16), and Virginia (7). When taking into account how many law schools per state, these number shift with a few surprises. While Washington DC (7.8) and New York (7.0) are at the top of the list, Colorado also enters into the equation (7.5) and Michigan (6.2) leads both Massachusetts (5.9) and California (5.85), with states like Florida (1.45) and Virginia (0.9) only registering because of the relatively large number of in-state law schools. More on these findings later; but what we were beginning to notice is that a purely quantitative spread could yield some interesting questions, but requires further non-quantitative investigation. If Washington DC is close to the heart of policymaking, why are there not more law and technology programs at law schools in Virginia? Or why is it that Florida and Texas have such low numbers while Colorado is near the top of the chart despite all three states being wealthy regions of the country and historically home to aeronautic/space industries? The numbers alone just did not always seem to add up. In fact, as we went through the data, it began to look as if maybe the geographic unit itself needed to be smaller. The maps of California and Illinois, for instance, look very different if you take away Silicon Valley and Chicago – in other words, the majority of the activity in large regions is concentrated in small cultural hubs of expertise and wealth.

The number of courses is not the only way to qualify various regional and state characteristics.

The title of courses, for instance, allowed us to begin tracing out the different concentrations and trends within law schools. Courses with a title containing the phrase ‘law and technology’ are the most common (165), followed by the descriptions ‘privacy’ (57), ‘internet’ (52), ‘cybersecurity’ (46), ‘policy’ (44), ‘digital’ (33), ‘media’ (32), ‘data’ (28), ‘discovery’ (24), and ‘justice’ (4). What might be

included, however, in 'law and technology', or the possible overlaps between 'data', 'privacy' and 'cybersecurity', or between 'internet', 'discovery' and 'digital' are difficult to catalogue. Two classes on 'cybersecurity', for instance, might entail very different types of readings (cases versus scholarship) and formats (classroom versus clinical). Similarly, 'law and technology' is often used by instructors as a catch-all that can indicate a range of 'hot' topics, such as blockchain and robotics, but also commonly refers to more traditional interests, such as intellectual property and data privacy. While the number of classes commonly indicates a more significant investment by the law school in law and technology, an internet scrape of class offerings often do not reveal if listed courses run every academic year or if the courses represent a substantive change from traditional material rather than a rebranding exercise.

At least five other variables also appeared relevant to us: law school pathways, centers/institutes, concentrations, journals, and gender/race demographics within the faculty. Pathways indicates the various academic degree opportunities available to students, which we organized into six categories: curriculum, certificate, LLM, Dual JD, CLE, and 'other'. Even here, there is a certain degree of imprecision. The category 'curriculum', for example, is meant to designate when schools include a substantial range of second and third year JD courses broadly around law and technology that allow students to make some claim to have a type of tech distinction upon graduation. However, we began to find that it is not uncommon that a stated technology emphasis in the curriculum is not trustworthy (e.g., listed classes might be inactive), and a precise metric for determining the appropriate composition or number of classes that needs to add up to meaningfully count within the 'curriculum' suffers from the same problems we previously encountered when analysing individual classes. For instance, if a program offers a range of IP related courses and also includes 1 or 2 other 'tech' modules, but these tech modules do not run every academic year, does this amount to a 'law and technology' program or simply a conventional intellectual property oriented curriculum, albeit with a more unfamiliar elective option? The more time mulling over the information on the law school websites with these questions in mind, the more there emerges a certain 'sensitivity' or 'feel' to the law school ecologies, but it is unclear how to translate this sensitivity into formal measurements or whether other researchers come to similar conclusions. For the most part, we tried to follow the rule of thumb that if a school claimed to offer a type of concentration in law and technology, then we would include it within the category 'curriculum'. To the extent this approach could be trusted, we found a pattern emerging: Northern law schools lead the pack (13), followed by law schools in Central (11), Pacific (7), Western (4) and Southern (3). Certificates are less common that curriculum pathways, with 1–3 programs per region (with the Southern region leading). LLMs are

slightly more frequent, especially among Pacific (6), Central (5) and Northern (5) law schools. Dual JD programs and continuing legal education units are also infrequent, with the largest concentrations in the Southern and Western regions, but never more than 3 in total. It often (with some noticeable exceptions) appeared that law schools are not so much investing new resources into law and technology instruction as they are rebranding the existing curriculum. To date, legal professionals – if we judge law school services – are not pursuing substantive continuing professional development in response to technology. Digital technologies may be disruptive, but within law schools, the strategy to date is more creative marketing than innovation per se.

Centres and institutes tend to be relatively visible on law school websites, though where they are located varies. They can often be divided on the basis of research and teaching-focused agendas, with less overlap than might be expected. The most common words describing the centres and institutes are 'technology' (41%), followed by 'innovation' (30%), and then a range of other possible descriptors, such as cybersecurity, data, entrepreneurship, privacy, or science. Well-resourced initiatives, usually based at top-tier law schools, are occasionally named after a generous donor, which itself helps highlight investment and types of external collaboration at play within the law schools.

For instance, is the donor an alumnus or a philanthropist with no previous connection to the university? Is the money coming from a company and what is the physical proximity of the company to the university? Is it government-backed funding? Does it entail the presence of certain military or scientific organizations? Many of the centres at law schools do not appear to have any external-based funding and are rarely managed by dedicated administrative staff (more on this later). The breakdown follows the pattern that we had begun to anticipate, with the largest number of centres and institutes in Northern (28) and Pacific (15), followed by Central (12), Southern (9) and Western (8) law schools, and those in the Southern and Western regions tending to be the least resourced.

We will return to journals later, but even without looking into the editorial boards or reading through the publications themselves, the information available on the law school websites dedicated to the journals is instructive. First, out of the 147 schools with some technology presence, there are only 28 journals. Second, the journals are almost exclusively based at law schools in key hubs of activity: Boston, California, Illinois, New York, and Washington DC. Third, most of the journals were founded in the early 2000s or in the last few years. The journals are student-run and there is no necessary connection between the journal and any research centre/institute, though they commonly host an annual symposium.

The gender breakdown at the law schools is also revealing, though it raises a number of questions that require significant further study. Because we were

working solely off information on the website and it was not always clear whether or not an academic identified within the law and technology cohort, we decided on a narrower sample and constrained the data to the professor at the law school that seemed to be most senior (e.g., director of any centre/institute, teaching the majority of the technology-oriented courses). In aggregate, women are outnumbered by men 3-to-1, with the closest parity among Western law schools (8-7), the greatest inequality within the Southern region (21-4), and the other regions closely resembling one another: 15-6 (Pacific), 20-6 (Central), and 27-11 (Northern). We did not factor in racial dynamics because we were relying solely on visible cues and written names, but anecdotally, the tenured/tenure-track academic community in law and technology is overwhelmingly white Caucasian. Of course, it could be this is due to broader societal factors, such as the comparatively low numbers of women with STEM degrees, but upon first look at the academic population on the spreadsheets, it does not appear that the majority of academics hold a science-oriented degree. In fact, it appears that the women in academic leadership positions are often more qualified in relation to their male peers (more on this later). This requires a much deeper dive into the cohort's academic profiles – at the very least their bios and CVs (not always available), and quite possibly follow up interviews.

The category 'concentrations' wraps together the existing information from the number and topic of classes, pathways, centres and institutes, as well as other factors, such as the number of faculty teaching tech-oriented classes, whether the law school hosts a relevant journal, and the framing of any promotional material. While imprecise, it seems a potentially valuable technique to cluster together disparate factors and thereby identify some relatively clear characteristics within and between law schools. We organized the data into six concentration options: advanced, business, cyber, legal skills, medical, and technology. The options 'business', 'cyber', 'legal skills' and 'medical' were all topically driven, so that a law school would fall within this designation if its overall environment was oriented around one of these specific themes. In other words, if 'business', then the law school components are geared around themes such as entrepreneurship, finance and innovation; 'cyber' includes cybersecurity, cyberterrorism, data and privacy concerns; legal skills relates primarily to more practicum/office-based skills, such as 'e-Discovery'; 'medical' stands for 'biotechnology', though this often entails intellectual property (and occasionally bleeds over into 'business' themes of entrepreneurship and innovation). The option 'advanced' signals law schools that offer a robust law and technology research and teaching environment, including a substantial range of classes, faculty research community, and regular events or activities that most likely indicate an active centre or institute (as well as relevant journals, student organizations and other efforts to generate a distinct

'technology' presence). The 'technology' option indicates a program that does not fall within any of the other thematic designations or offers a combination of those other themes, but which does not enjoy any built out 'advanced' institutional culture around law and technology. For the most part, the numbers are predictable, with the highest percentage of advanced programs in Pacific (18%) and the lowest in Southern and Western law schools (4%). Pacific law schools also lead with business oriented programs (21%), but otherwise post some of the lowest percentages in relation to general technology, legal skills or cyber programs (12%, 6%, 12%). When it came to all three of these options, every other region posted relatively consistent percentages. In cyber: Central 29%, Northern 22%, Southern 20% and Western 17%. In legal skills, Central 17%, Western 17%, Northern 12% and Southern 12%. In technology, Northern 28%, Central 17%, Southern 16% and Western 13%. There are almost no exclusively medical oriented programs among law schools, though biotechnology can be found sporadically in a range of other research and teaching activities – perhaps most commonly as a class or as an initiative within a center and loosely connected to faculty that otherwise teach intellectual property.

The general picture that emerges is a subfield of US legal academia, predominantly male and overwhelmingly white, structured around a small pool of well-resourced institutions typically centered in a handful of cities with the remaining law schools sprawled across the US landscape, loosely connected by geographic characteristics and the various conventions of the industry (e.g., professional memberships, annual conferences, journal publications). Lower tier schools are more likely to focus on teaching over research and policy work, with the promise to produce practice-ready students: knowing how to appropriately gain electronic access to court documents during proceedings, aware of how to safety (and legally) use email and protect information, familiar with drafting user agreements and employment contracts, filing patents, and setting up various corporate vehicles. Occasionally the geographic proximity to important tech hubs or related industries allow a lower tier law school to capitalize on its location and attempt a more robust agenda, hosting events and setting up clinics (e.g., Santa Clara's High Tech Law Institute) – but these activities are rarely geared toward maximizing research or policy influence. This policy-oriented work is reserved, by and large, for a handful of designated leading institutions; but equally, many top flight law schools do not participate in these activities. The big name institutions in Florida, Texas and Virginia, for instance, do not really produce any buzz in terms of either research or teaching, though they are prominent players in other legal fields and have no shortage of resources or prominent scholars. At the same time, many initiatives, especially at smaller and mid-size schools, seem more branding efforts than any real transformation of the curriculum, and across the board, very few law

professors seem to have a research or teaching portfolio solely built around law and technology. The field, for most academics, seems a mid-career transition. The most common classes and research themes, in fact, seem to gravitate toward intellectual property and constitutionally protected privacy rights – not exactly untrammelled ground. What is it then that leads some schools and not others with seemingly comparable profiles to move into the field? To what extent do these communities talk to one another? Where is collaboration not visible online taking place? And so forth … There were more unanswered questions than before.

3 Back to the Drawing Board and New Observations

So our first sweep through the data opened up questions that were not readily answerable with the information in the spreadsheet. It seemed that a deeper look into the community members themselves and broader socio-political dynamics surrounding law schools and digital technology industries was essential if we wanted to understand developments in the field. The more time spent with the empirical data, the more it seemed inescapably qualitative and required a certain level of inference that did not lend itself to clear assessment criteria. For instance, while working through the initial data, it did not seem that academics had degrees from Harvard or Yale at the same rate visible in the general law school markets. But were these the only universities to pinpoint? And should we include non-JD degrees from Harvard and Yale? Many scholars hold graduate level non-law degrees, ranging from maths and economics to geography and history to computer science and electrical engineering – do each of these degrees require their own designation or may they be separated into some common boxes, such as 'sciences/non-sciences'? If a colleague holds a master degree in a social science and a doctorate in the natural sciences, what is the best way to place them within the overall statistics? Anecdotally, the idea that legal tech is a young person's game did not seem to match the law and technology cohort teaching and writing in the field. But this was by and large just eyeballing profile pictures and trying to make estimates based on dates provided within CVs. Many academics did not include their professional history or redacted their graduation years, along with other relevant information such as degree concentrations, work experience, publications, and so forth. But then again, to what extent is this information relevant and how should it be weighted? Does withholding career information suggest distinct agendas and pressures within the institutional structure of legal academia; perhaps, for instance, a type of insider-outsider logic at play? And how does any of this type of

scrutiny help make sense of why schools such as Stanford seem significantly more 'business oriented' than schools like Harvard? To get at these sort of questions almost certainly required different research methods and source material.

To make matters even more complicated, around this time we discovered that our original data had missed important initiatives at Cornell, NYU, and Stanford. Our original data gathering appeared to have focused too closely on the curriculum; research clusters around law and technology that did not have any teaching component had occasionally dropped off our radar. In addition, we had omitted two university altogether (UC Irvine and one of the University of Pennsylvania campuses). The missing information did not substantively change the data but it suggested more research was needed to unpack the field. We decided to focus on three primary sources. First, we would revisit the most prominent academics at each law school and closely read through their profiles and available CVs, looking for cultural and professional patterns. Second, we would return to law schools with the most active centres/institutes and teaching programs and attempt to comprehensively study their academic and affiliated members, again looking for regularities between the cohorts. Third, we would go back through all the relevant journals to see how the publications described themselves, what themes were most popular in print, and whether there was an identifiable community of authors. We ultimately settled on looking at the inaugural and most recent issues of each of the law school journals, the community and events at 18 of the most active research centers/institutes, and the profiles of all the academics at 15 of the most active looking law schools in the field (as well as revisiting the profiles of the most prominent faculty member at every US law school). In addition, we turned to historical studies and science and technology literature to try and better understand why the field seemed to gravitate around specific locations. The aim was to capture the social character of the field. We tried to frame this for ourselves as a question: what were the ideal personas and business models attached to 'law and technology' in the US law school industry?

As a starting place, compare the overall reported hiring patterns at law schools from 2013 to 2019 with the make-up of the law and technology field (Prawfsblawg 2020). Up until 2012, hiring within the industry at large hovered around 130–150 incoming academic posts per year, but since then, the numbers range between 62 and 88 reported hires per year. Of this reduced pool of faculty hires, approximately 41% earned their JD degrees from Harvard or Yale, and if one includes Berkeley, Chicago, Georgetown, Hebrew University of Jerusalem, Michigan, NYU, and Stanford, the number rises to 88%. A little more than 80% of that number also held fellowships, again from a very small cadre of institutions including Harvard (19%), NYU (15%), Stanford (12%), Chicago (7%), Columbia (7%), and the University of Pennsylvania (4%). A Masters, PhD or SJD/JSD (76%) was a more common

predictor of success than a clerkship (58%), especially if the candidate held a doctorate (57%), and approximately 30% held an advanced degree, clerkship and a fellowship. The most commonly seen doctorate was in law, followed by political science and economics. Some of these trends are more recent to the last decade, such as the shift in emphasis from clerkships and the rise of doctorates, while others are relatively consistent, especially the success of Harvard and Yale placing its graduates.

There is no collected data on where hires in law and technology fit into this picture, but what is available suggests some significantly variation from the general hiring pattern in the industry. First, Harvard and Yale are significantly less well represented; even if we accept any degree earned from either institution (from BA/BS to PhD), these institutions only account from approximately 30% of the industry. Other schools also drop off the map, such as Columbia and NYU, and while there are no new entrants, some institutions remain in similar or slightly stronger positions, such as Stanford (12%), Chicago (9%) and Michigan (7%). When broken down by region, the numbers show institutional preferences. Harvard and Yale fair strongest among law schools in Northern (40%) and Pacific (37%) and poorest throughout Central (13%). Similarly, Stanford graduates do best in their own Pacific region (24%) and show strong numbers within Northern (14%) and Western (13%) law schools, but are invisible through Central and make few inroads in Southern states (8%). Like Stanford, the University of Chicago is most successful placing graduates in its own region (23%), makes a modest showing in the Southern region (12%), but places no graduates in Pacific-based law schools and leaves almost no mark through the Northern region (5%). When taking into account affiliations with prominent law and technology research centers/institutes, these numbers remain remarkably consistent, with the exception that New York and Yale barely register in Pacific regions, and vice versa, while there appears to be some crossover from Berkeley to the Northern law schools, Stanford does not have any marked presence. And in contrast to the general assumption that 'technology' is a young person's game, a majority of academics linked to the field earned their degrees in the 80s and 90s, and almost all colleagues acquired their degrees before 2010.

Though there is not available data on the general industry to compare, a few other numbers jump out observing the law and technology field. First, more than 20% hold a degree in some hard/natural science or have worked as a computer scientist, electrical engineer, or physicist. Often affiliated faculty not based at the law school also hold these types of specialization. Science backgrounds are least common in Central and Northern regions (15%), and highest among Pacific (39%) and Southern (35%) law schools. Second, approximately 20% of the faculty hold professional roles within a company – which does not include a significant number

of academics who have represented corporate clients in the tech industries. The majority of this cohort hail from law schools in Pacific (29%), Central (25%) and Northern (18%), though for academics in Northern and Pacific regions this commonly means acting as general counsel or holding a high-level position, whereas Central based academics are more often the founder of a company. Third, while academic profiles might include a wide range of technology-related interests (e.g., algorithms and machine learning, robotics), in terms of the actual modules taught by academics (and echoed closely in their scholarship), the field is primarily populated (49%) by expertise related to intellectual property and privacy concerns with data (e.g., cybersecurity, data protection). This expertise is echoed in the research activities of the centres/initiatives and journals.

There are approximately 28 law and technology oriented journals hosted by US law schools. There are some visible trends looking at how the journals are situated within the law school websites and how they present themselves – no uniformity per se, but a limited range of available business models to select from. We focused on how journal websites framed the publication and the table of contents within both their inaugural and most recent issue. Intellectual property is the most common theme, especially in early issues and it remains the primary focus of a little less than half of contemporary issues (e.g., Berkeley Technology Law Journal, Yale Journal of Law and Technology). The other prevalent theme through the journals (echoed in the centres/institutes) is data protection, most commonly in relation to individual rights within the US context but also concerning cybersecurity and net neutrality. More than 25% of the journals hold annual symposia, though even established top-tier specialty journals (e.g., Harvard Journal of Law and Technology, Michigan Technology Law Review) do not always consistently host these events or follow a standardized type of program. The journals often have a specifically business oriented feel, sometimes to the extent that the technology aspects drop out of the volume (e.g., UM Carey Journal of Business and Technology Law) or where the featured speakers at their events come directly from industry (e.g., 2019 Northwestern Journal of Technology and Intellectual Property symposium).

The journals offer insight into how the field is developing. Looking to the inaugural issue, 2 journals were established in the 1970s (the oldest, Rutgers Computer and Technology Law Journal in 1969–70), 2 in the 80s, 5 in the 90s, another 8 between 2000 and 2010, and the remaining publications post-2016. In issues dating back to the 1980s, such as the Berkeley Journal of Law and Technology, we often see more non-traditional authors, such as librarians and legal practitioners, suggesting that its prestige as a topic only begins to take off in the mid-90s, and it is not until the 2000s that this interest begins to be reflected more broadly in classes, hiring strategies or institutional initiatives outside intellectual

property (more on this below). Journals may be a technique for the law school industry to feel out whether a trend is worth incorporating more fully into its institutional dynamics. Sometimes the journals provide hints to the dynamics that sparked interest at the law school. For instance, we learn from Professor Weiser in the University of Colorado Boulder's Technology Law Journal inaugural issue that the supposed implosion in the telecommunications industry due to new digital technologies is not the end of the industry, but the beginning of a dynamic transformation (Weiser 2002: 1–3). Under Weiser's lead, Colorado would go on to drive the Silicon Flatirons initiatives and Weiser would himself be selected to come onboard the Obama White House administration. The journals almost uniformly are described in their mission statements as 'interdisciplinary', and there is usually a notion of cross-cutting themes, such as entrepreneurship, policy, science, society and technological innovation. At the same time, however, the overwhelming majority of articles are authored by legal professionals, and increasingly by law academics. Looking at which authors at what institutions get published and invited to speak at journal sponsored symposiums reveals a relatively narrow pool of talent defined by relatively traditional hierarchies. For instance, in its 2019 symposium, the Ohio State Technology Law Journal's keynotes were both affiliated with Yale University's Internet and Society Project, graduates of Harvard, with one speaker a Rhodes Scholar now holding a prominent position at Google and their colleague teaching at an Ivy League institution (Moritz College of Law 2020). Among the few journals that have assembled boards and sponsors, these more traditional power-brokers also remain relatively fixed – at Berkeley, the CEO of McKenna sits on the advisory board; at Harvard, the sponsors are by and large the leading law firms with Boston offices. The centres and institutes (CIs) reveal additional layers to the field. First, there are a handful of institutions with CIs that enjoy substantial external funding: Berkeley, Harvard, NYU, Stanford, and Yale. The gifts are usually described as 'generous' but CIs do not generally disclose the specific extent of the funding on the website and often make a statement about the independence and integrity of their work. There is nothing that would suggest any overt institutional compromises, but there are occasionally certain overlapping affiliations that might potentially have some influence shaping institutional decisions. For example, NYU's AI Now receives funding from, in part, a small cohort of corporate donors including Google and Microsoft, and the CI's founding directors are also research leads at these same companies. Of course, this does not mean AI Now's work is not meaningful or any less objective than other institutions, but even here, things can get tricky – for example, one of the only academic members on its board of advisors is the co-director of the University of Washington's CI, another recipient of Microsoft funding. These sort of issues do not simply disappear when the money comes from non-corporate private individuals

and foundations. For example, the Berkman Klein Center for Internet and Society at Harvard Law School specifically makes a point that it accepts less than 10% of annual funding from corporations and that it currently does not rely on any corporate sponsorship. The implication here is that corporate money might have a corrupting influence. The CI was set up by a large 5 million plus grant by the Berkman family in the late 90s and another large gift by Michael Klein in 2016 – what are described by the university as examples of purpose-driven private philanthropy (Harvard Law Today 2016). The Center is extremely active and produces a wide range of cutting-edge scholarship and policy insight, but again, when looking a bit deeper into the funding sources, the context is murkier. Jack and Lillian Berkman were not just philanthropists, they were the couple at a head of a large company owning diverse telecommunication platforms and their gift established a chair in "entrepreneurial legal studies" and financed online classes focused on intellectual property and privacy in cyberspace (Berkman Klein Center for Internet and Society 2021a, 2021b, 2021c; Kady II 2001). Michael Klein also has strong corporate ties and which are potentially more troubling. On the one hand, he is closely attached to the CoStar Group, which is one of the largest US companies in the commercial property industry, and which is notorious in the scene for aggressively litigating against individuals and companies to preserve their market position over digital databases with commercial real estate (FTC Trade Commission 2020; Konrad 2016; Stribling 2020). On the other hand, he is part of the C-Suite executives at the Tutor-Perini Corporation, which is not only one of the largest general contractors in the United States, but has a documented history of corruption inflating the costs on public contracts (Bosselman 2018; National Black Chamber of Commerce 2020; Zusha 2012). Of course, it is very possible that none of this bleeds over into institutional decisions, but if corporate money corrupts, there are clear corporate stakes in digital technologies and regulations with both of the key funders to the Berkman Klein Center. This also suggests a key function of the leading CIs in the law and technology field at US law schools: they provide cultural legitimacy and prestige to their donor class and tend to give a public purpose to corporate interests.

The funding from foundations is also often directed toward specific types of research and policy efforts. For instance, Yale's Internet and Society Project is sponsored in part by the John S. and James L. Knight Foundation and the Wikimedia Foundation, which respectively fund Yale-based initiatives concerning the lawfulness of government surveillance in relation to 1st Amendment protections and the scope of media freedom (e.g., in the wake of disinformation campaigns by foreign governments) and seek to raise awareness about governmental threats to the internet. A similar project at the Berkman Klein Center, also focused on foreign disinformation campaigns over digital platforms, is likewise funded in part by the

Knight Foundation. And at the Center for Internet and Society at Stanford, again we see funding from the Knight Foundation attached to net neutrality and security attacks on digital infrastructures. These specific concerns are often framed around promoting and protecting democracy, but they are also premised on a specific set of assumptions about democracy (e.g., that knowledge is disembodied and progress comes from accumulation and dissemination of information to decentralized users) that also overlap with the objectives of lobby efforts by the large digital technology companies.[7] Wikipedia's entrance into politics, for instance, began with the 2011–2012 battle of large technology companies to quash the Stop Online Piracy Act (SOPA), which was argued would lead to First Amendment violations and censorship overreach and result in the "explosion of innovation-killing lawsuits and litigation" (Wikipedia 2021). The very same year, the Wikimedia Foundation established its collaboration with Yale's Information and Society Project. Similarly, the Berkman Klein Center program, 'Assembly: Disinformation', was kick-started by a 27 million dollar gift from the Knight Foundation as a response to the allegations of Russian gaming the commercialization and data collection business model of digital platforms to subvert the democratic process in the US election and secure the election of Donald Trump to the presidency. The central aims of freely shared information and data protection from government intrusion couched in democratic commitments connects the leading CIs, the foundations, and digital technology companies. This offers another takeaway: the focus on funding not only allows for understanding how private interests are vetted through financial support of prestigious public institutions, but also provides insight into some of the broader economic and political context surrounding these tech industries and how their activities shape the development of the law and technology field within law schools. In addition to donors and technology companies, these CI communities closely align with a handful of non-profit organizations with the same ideological mission of internet democracy, in particular the American Civil Liberties Union (ACLU), the Center for Democracy and Technology (C4DT), and the Electronic Frontier Foundation (EFF). For example, at Berkeley's Center for Law and Technology, out of its 17 faculty co-directors, 2 may be linked to the ACLU, 3 with the EFF (including a board member), and 5 with the C4DT, which includes a former director, a former general counsel, and the current managing administrator at the CI previously worked 18 years at C4DT. The former director at the C4DT also worked with the ACLU and the EFF, assisted in the creation of the Global Network Initiative (an alliance of telecommunication companies and non-profit groups fighting against government surveillance), and helped found the law

7 It may not be purely coincidental that most legal output from these institutions on the related projects focuses on government overreach rather than corporate malfeasance.

school's Samuelson Law, Technology and Public Policy Clinic (the Samuelson family also funds another clinic in Colorado, which coincidentally has a strong California presence among its staff and maintains links to the C4DT and technology oriented companies). At Harvard and NYU, we again find core academic staff members sitting on the boards of the EFF and C4DT and, in the case of NYU's AI Now, core staff are formerly counsel at the ACLU (as well as Facebook). The co-director at the University of Washington also sits on the board of the EFF and was a former research director at Stanford's Center for Internet and Society (CIS), which itself was cofounded by an attorney who was previously one of the directors at the C4DT and currently serves as counsel for the ACLU's speech, privacy and technology project and remains a non-residential fellow at CIS. The Center at Stanford was itself cofounded by Lawrence Lessig, who originally held the Berkman Chair at Harvard.

These three organizations (ACLU, C4DT, and EFF) share intertwined histories as well as close connections with the digital technology industries. The EFF, for example, was launched by software mogul Mitch Kapor and Grateful Dead lyricist, John Perry Barlow, who wrote the libertarian manifesto, 'A Declaration of the Independence of Cyberspace' (Barlow 1996). Its early funders included companies such as Apple, AT&T, Bell Atlantic, IBM and Microsoft (Levine 2018). Barlow would become an affiliate of the Berkman Center in the late 90s, and the EFF quickly centered its headquarters in DC and encouraged researchers to influence legislative reform according to its sponsors' ideological (and financial) goals. The C4DT, one of the EFF's future collaborators (e.g., partnering on amicus briefs, revolving employment) was also launching right around this same time in San Francisco. The Center was established by an attorney, Jerry Berman, who had founded the ACLU's project on privacy and information technology. Berman had pushed hard for the ACLU to transform itself into a lobbying arm for major technology firms and to collaborate with intelligence agencies, which ultimately led to external pressure forcing him to resign from the DC offices. Just as Microsoft ramped up its legal divisions and began investing heavily in law schools and legal activism in the aftermath of their existential and protracted legal battle over monopolization charges (thereby signaling a commitment to the rule of law and ensuring more favorable regulatory outcomes), Berman's new non-profit in the Bay Area would resuscitate his image as a man of the people fighting for individual rights and democratic society (while also amenable to the continued growth of digital technology industries). This does not mean that these non-profit organizations do not score meaningful victories for a type of democratic society, but it highlights an additional component to the conceptual infrastructure and sociology of the law and technology field in the law schools – namely, the close ideological and professional alliances between donors, technology companies, academics and

nonprofit organizations. The objective to effect meaningful policy outcomes that fit within the communities and ideologies of the technology companies is, in short, a unifying theme throughout the academic communities within the leading CIs and it helps explain the disproportionate volume of amicus briefs and congressional testimony produced by their core academic staff (in comparison with their colleagues in many other legal fields) and the revolving door between these organizational roles (nonprofit, private tech, and university) among the more elite law school circles.

The other common factor between these CIs is their gravitation toward more socially liberal cultural values and institutional links to the Democratic Party establishment. Looking through the websites, the law and technology field appears slightly more open to non-traditional employees in the law schools, especially the more the individual CIs are not dependent on collaboration with law firms or industry norms that require a more institutionally safe appearance. At NYU, for instance, 3 out of the 4 research centres are led by female directors, with AI Now supporting a female dominated staff (14 out of 20) and noting on its website that it is the first of its kind within the field to be led by women. The faculty co-directors at the Berkeley Center for Law and Technology are also more than half women and the Center for Internet and Society at Stanford Law School is led by a female academic. The elite CIs also tend to host more diverse affiliated researchers and scholars in relation to ethnicity/race and gender than other programs within the law school, even if certain countries are disproportionately represented: Brazil, Germany, Italy, Netherlands, Switzerland, and Israel. While elite universities in law and technology tend to open doors to more gender diversity, a closer look at the academic profiles of the female leads still suggests that the industry sets a higher bar for women than men to secure leadership positions. Whereas many of the male colleagues running initiatives and programs at the CIs will only have degrees in humanities and social sciences, the women will often hold advanced science degrees and have various prestigious non-law affiliations (e.g., Engelberg Center on Innovation Law and Policy). These numbers are also primarily only true at more elite institutions and do not extend outside the CIs to the wider law school community. And, of course, the big money donors and the heads of the technology corporations and law firms associated with the CIs are almost exclusively white and male. But the overall feel is that diversity matters, in terms of both personal and professional orientations among the elite CIs' academic and administrative communi-ties.

Especially if taking into account the affiliated faculty and researcher profiles, there are also visible affiliations and collaboration with the Democratic Party networks within these communities without any corresponding (at least overt) Republican party ties. On one website, we find a non-residential fellow who

advised the offices of Senators Kamala Harris and Bernard Sanders; on another website, we learn of a director who provides technology advice to the Obama administration. It is not uncommon to see CI member profiles including links to the FCC, the Council on Foreign Relations and the American Law Institute. Careers among more prominent members often pass between academic, governmental, non-profit, and private sectors. For instance, a non-residential fellow at Stanford Law School's Center for Internet and Society (academic) is a graduate of Yale and Harvard (academic), currently serves as the director of Code for America and Civic Commons (non-profit organizations), previously held appointments as President Obama's Deputy Chief Technology Officer (Democratic party), director of global public policy and lead on outreach to Africa at Google (private tech industry), senior fellow at Harvard's Berkman Center (academic research CI), assisted in the launch of ICANN (non-profit corporation), and worked as an attorney at a private sector firm that won the first case against the Supreme Court related to internet censorship laws (private legal sector).

The explanations for this revolving door, at least in part, have historical roots stretching to the 1980s. This was a conflicted era: on the one hand, the death of big government ideologies with the collapse of Keynesianism and the Soviet Union and the triumph of market democracy; on the other hand, the declining standard of living associated with de-industrialization in the heartlands of capitalism. Digital technology offered the promise of a networked service economy that could spell the next era of progress and prosperity for America. While the Reagan administration and the Republican Party doubled down as the party of law enforcement and military-led technological innovation (e.g., Star Wars), the Democratic Party was shifting its clientele from labor unions to financiers and the wealthy white collar professional class (O'Mara 2019: 284–314). Democratic politicians such as California governor Jerry Brown in the mid-to-late 80s and the White House leadership of Clinton and Gore in the early 90s would support the massive push for computer literacy and the market for personal computers (e.g., IBM PC unit operating Microsoft software via Intel chips). These new technologies were finding their ways into every America household and business, perhaps most importantly the finance sector where digital computation was rapidly expanding the possibilities of secondary markets and their relationship to traditional regulatory institutions (Omarova 2019). The huge new wealth derived from these transformations were in turned funneled into the computer-led industries. These ties became only stronger in the aftermath of the financial crash in 2007–2009 with Bloomberg's New York recovery focused on wooing tech to the city and the White House throwing its weight with the online digital platforms against SOPA and creating formal institutional links between government and the tech community such as the White House Chief Technology Officer (the first appointment Vint Cerf

was Google's Vice President and Chief Internet Evangelist and one of the founders of ICANN) (Jones 2019).

Leaving the most elite CI network, many of these organizational traits persist through a second tier of CIs, and then drop off quickly among the remaining institutions. Of course, there is no formal metric to divide these organizational tiers, but certain traits seem to tie institutions together. In the second cohort, we usually see at least a few core academic faculty associated with a CI focused on research and policy outputs, a developed student-focused program, and often a small administrative staff. The more prominent the CI, the more likely it orients around research. This network might actually be further subdivided between CIs that generate external funding through donors and foundations and those that rely primarily on student revenue; and these CIs can in turn be differentiated from smaller organizational outfits throughout the US that appear to be fueled by an entrepreneurial academic or the result of an administrative branding exercise. This all works along a spectrum. Moving away from the more elite CI networks, it becomes increasingly difficult to distinguish the law and technology field from the more general legal academy, except that the profiles of academic faculty leads will occasionally include some otherwise out-of-character entry: a science degree or a National Science Foundation award or an association with a start-up tech company or some early 90s blog, and so forth.

The second tier include CIs based at American University Washington College of Law, Arizona State, Chicago Kent, Georgetown, George Washington University, Michigan State University, Northwestern, Penn State, Santa Clara, the University of Colorado Boulder, and the University of Washington, as well as borderline institutions, such as Duke University, the University of California Hastings and the University of Pittsburg, and possibly a handful of other sites. A few business models are visible within this cohort. Especially among organizations with less external revenue streams, student recruitment is a key driver for its viability within the law school and the CI programs are built around making students 'practice ready' in the twenty-first century workplace. In these situations, the CI and its faculty are faced with a set of difficult considerations: how to build out an innovative program without substantial resources, how to balance the claim to innovation without delegitimizing the traditional bread-and-butter curriculum, and – to the extent there is the ambition – how to increase exposure, gain access to more elite academic and funding circles, and leverage their own institutional positions. One common business model is for these less resources organizations to secure 1–2 key academic leads with some access to a more prestigious CI or some elite circle within the law and technology academic field. For instance, David Katz (Chicago Kent) and Daniel Linna (Northwestern) both serve as affiliated faculty at Stanford's Codex (Linna regularly co-teaches a course), Clara Reyes (Michigan)

and Derek Bambauer (Arizona State) are members of the Berkman Klein Center, Margot Kaminski and Kristelia Garcia (directors of initiatives at the University of Colorado's Silicon Flatirons Center) are both affiliated with the Yale Information Society Project, Ryan Caho (University of Washington) is a former research director at Stanford's Center for Internet and Society, and a number of faculty at the DC based schools have strong ties with academic networks supported by tech corporations (e.g., Microsoft's TAP website).

These select faculty members are usually then pegged to develop some certificate program or concentration or clinic for students, often teach more 'cutting edge' topics (e.g., AI and law, blockchains, robotics), and bring onboard existing faculty to deliver more traditional courses that can be plausibly cobbled under the technology branding (e.g., intellectual property, internet law). The clinics are occasionally geared around actual technology oriented skills, such as document automation and no-code app building, but more commonly take the form of 'entrepreneurial' or 'start up' clinics, often described as 'labs' or 'garages' (e.g., UC Hastings), whereby students learn the skills to set up and provide traditional legal services – incorporation, employment contracts, patent registration – to tech companies (e.g., Pepperdine). If geographically situated in the midst of tech industries, the students will often be partnered up with mentors from within the tech industry or students may have the opportunity for work placement schemes getting hands-on training aiding tech companies in exchange for unit credit (e.g., Santa Clara) and occasionally receiving some special concentration or certification with their JD or LLM degrees (e.g., Arizona State). The more the CI is focused on student training, the tendency is for research activities to be kept muted, which at most results in an annual conference (Arizona State's eDiscovery Conference) or some type of speaker series (University of Washington). More often than not, external speakers will be pulled from local industry (e.g., Penn State), but occasionally the events focus on a broader range of academics and professionals and may be recorded as a video or podcast series (e.g., Chicago Kent). Some institutional programs, especially at the further end of the spectrum, are more or less aspirational to the extent the classes listed are not regularly offered or function primarily as a rebranding of existing courses, or the affiliated members are just drawn from the law school faculty and do not have any technology oriented expertise. If we step back a moment, it seems intuitive why the dynamism in states like California (Silicon Valley), the District of Columbia (federal government), Massachusetts (Harvard, MIT, Tuffs), New York ('the city'), and Washington (Amazon, Microsoft); but why states such as Colorado, Illinois, Michigan and Pennsylvania? And what explains the differences in character or style between any of these institutions? Here, the historical context to the geographic locations of these schools seems to play a significant factor.

Take some of the less intuitive locations for developed law and technology initiatives. Pennsylvania (Penn State and University of Pittsburg) was a hub for steel manufacturing and the home turf for the first digital mainframe maker, Univac. The combination of the state's background in manufacturing is preserved through research institutions such as Carnegie Mellon and the abandoned factories offer low cost infrastructure to rebuild around technological manufacturing and services – what has become colloquially referred to as 'Robotics Row' and includes companies such as Amazon, Google and Uber (Peterson 2013). Colorado is home to the military industry in Colorado Springs, but Boulder also has a unique history in technological industry and research. Since the 1950s, the city was a hub of space and atmospheric science research, and with the encouragement of Harvard solar astronomer Walter Orr Roberts, IBM opening a plant in 1965, and the fact that its focus leaned toward fields that were not heavily classified (e.g., light high-tech and software development) allowed a collaborative environment of scientists to grow into what is today the leading per capita city of scientists, with almost 20% of the workforce holding an engineering or science degree, almost 10% with an advanced STEM-based degree, and running more than a dozen top scientific institutes (e.g., National Center for Atmospheric Research, National Institute of Standards and Technology) (Bassi 2017). In addition, waves of immigration from the Californian suburbs have arrived in Colorado over the last few decades, bringing their engineering expertise and money from the West Coast. The law school makes a nod to these dynamics, naming their center the Silicon Flatirons (a reference to California and New York) and the profiles of the faculty (predominantly Californian) have a casual but committed vibe, with the occasional nature backdrop and flannel shirt. Michigan was the home of the big three automotive makers and this legacy continues with the state hosting 8 of the top 200 engineering programs in the country, Detroit a hub for microprocessors, and more than 13 billion dollars a year (more than 2 billion of it foreign investment primarily from Germany and Japan) pumped into automated vehicle R&D (Levine 2019). And as noted by the University, Michigan is also the home of agricultural sciences and places institutional stress on strong public support for scientific research toward industrial innovation. Illinois' presence is largely due to Chicago as a traditional hub of finance and trade, which is clearly reflected in the faculty and staff involved in the centers at schools like Chicago Kent and Northwestern.

In Washington DC, Georgetown, George Washington and the American University all hone in on their proximity to federal decision-makers. "Why build a privacy and technology center almost three thousand miles from Silicon Valley?" asks Georgetown's website, "Because most of the nation's leading policymakers on privacy and surveillance can be found within 10 to 20 blocks of Georgetown Law" (Georgetown Law Center on Privacy and Technology 2021). Faculty bios do not

include CVs and profiles frame scholars as influencers in media, governmental organizations and Congress. At American University, there are again no CVs, the Technology, Law and Security Program is described as a "think tank," and diving into the faculty profiles, there are significant ties to DC lobby groups (e.g., R Street) and US national security organizations. At George Washington, we again find connection to lobbying firms, think tanks (e.g., Brookings, Heritage) and faculty profiles amplifying their cache in social and print media (e.g., TikTok advisory chair, editor at Atlantic), tech corporations (e.g., Microsoft) and government. The faculty profile photos are more or less traditional: grey suits, solid ties, smart haircuts, and sober descriptions that stick to the most salient professional facts.[8]

Boston and New York are culturally iconoclastic in the US as the hubs for ideas and innovation at home and abroad – including when it comes to digital technology. The first programming language initiatives and computer-oriented companies like Bell Labs started in 1950s New York, and the revitalization and gentrification of the Manhattan district in the 90s and the wake of the financial crash in 2007 was built on wooing money and talent in science and technology to New York, promising a more exciting cosmopolitan existence to the suburban strip mall West Coast scene. By 2017, over 130,000 tech employees lived in the city, usually working in the financial district (the largest tech employer) or around the Manhattan Flatiron District (dubbed Silicon Alley), and under Bloomberg's guidance Roosevelt Island became home to a new science campus, Cornell Tech (Jones 2019). On the NYU website for the Engelberg Center on Innovation Law and Policy we see exactly this persona being marketed: we learn that what makes NYU special is not only the "world-class faculty and scholars it attracts," but that it "draws on the diversity of New York City, which is a center for creativity in advertising, art, cuisine, entertainment, fashion …" (Engelberg Center on Innovation Law and Policy 2021a, 2021b). On the AI Now website, we can see this distinctly heterodox, playful vibe on full display: the pages are highly stylized, profile photos are artistically curated and the cohort include their personal interests, ranging from dance to poetry, with the organization even hosting an artist in residence. And while many of the prominent CIs have a healthy community of

8 Unlike the prevalent liberal inclinations within law and technology communities at the leading law schools, DC's proximity to law enforcement, military and federal government and lobby interests seem to open certain conservative inroads to the law and technology field. It is difficult to imagine where else the Anthony Scalia Law School, the most conservative anti-liberal law school in the country, could effectively run its law and technology program. A look into their recorded events reveals some interesting institutional networks between government agencies (e.g., Comptroller, FDIC), think tanks and societies (e.g., Cato Institute, Federalist Society), private sector actors and wealthy donors (e.g., Carlyle Group, Eccles family), and the GOP establishment (e.g., Mike Pence's Office).

science-oriented researchers, NYU leads the pack with core tenured staff holding science based degrees; for instance, 4 out of 10 faculty at the Information Law Institute are attached to Cornell Tech.

The Berkman Klein Centre administrative staff also express an eclectic flair, perhaps seizing upon the fact that tech is itself identified with counter-cultural, disruptive trends. We learn that their cohort are committed to making power feel uncomfortable, supporting the Green New Deal, and enjoy a diverse array of hobbies, from graphic novels and poetry to professional rowing. "The Berkman Klein Center is in fact a special place, and we're saving the whimsy for your arrival," the website tells potential residential fellowship applicants, "[W]e look for …. traits including intellectual rigor, vision, research skills, curiosity, openness, kindness, commitment to the public interest, and much more" (Berkman Klein Center for Internet and Society 2021a, 2021b, 2021c).[9] This is the home, in other words, not of government lobbyists or corporate suits, but for thinkers, the idea makers of society. And continuing the Harvard Law School heritage of shaping foreign policy, the Center also has broad international ambitions: hosting open online courses (since the late 90s), launching an online open access academy in summer 2020, leading the Global Network of Internet and Society Research Centers, and recently helping establish the Digital Asia Hub (non-profit think tank).

In California, the tech dynamism is almost exclusively in the northern coastal area of the state – where the first wave of engineers in the 1950s migrated, working on the microprocessors and advanced electronics to service the growing private industries around the nuclear arms race and East Coast mainframe computers. This was a conservative community, the silent generation, which fit perfectly with the dream of railroad tycoon, Leland Stanford, who wished to set up a university dedicated toward practical (business-friendly) aims. Unlike Boston and New York, Palo Alto was home to farmland and shipyards that could be bought up cheaply by Stanford University and turned into industrial parks to entice technology-oriented firms with the promise of office space, a talent pool of graduates and university research labs (O'Mara 2019: 14–42). To this day, Stanford's law and technology initiatives reflect this business minded approach; for instance, many faculty and affiliates are tied to the large Silicon Valley law firms, general counsel and c-suites of the major tech companies, and venture capital offices. And equally, the other law schools in the area all have explicit relationships with these industries to varying degrees, a virtue of proximity and heritage.

9 The Centre's application also requires candidates are self-funded and make an in-residence full academic year commitment.

Stepping back from specific localities, the growth of the law and technology field within law schools seems to generally coincide with the broader shifts in the US political and economic climate of the 1980s. As professional services and products centered on digital technologies became the answer to globalization and outsourced manufacturing jobs, relaxed tax incentives and patent law reforms opened the door for universities to automatically own patents resulting from federal government grants. The university became patent holding companies and began to develop a complex infrastructure to conduct commercially viable research and cultivate corporate ties that became slowly internalized within the management structure and daily protocols of the university (Noble 1998). We live today in the post-Cold War computer based regimes of market triumphalism and technological evangelicalism. In a sense, the law and technology field within the US law schools is a long time in design.

4 One Step Forward, Two Steps…

The law and technology field within US academia is not only shaped by digital technological innovations, but by the institutional arrangements, business models and cultural practices that surround the law school. The law and technology scene in US law schools is less shaped by some abstract dynamic of creativity and innovation, and more a reflection of concentrations in wealth and social bias and cultural power specific to law professors and legal education institutions. In this paper, we have tried to reflect on the methodological approaches required for this sort of study and, through application, to generate original data and draw some tentative conclusions about the character of the field today. And here we have only scratched the surface of how and what constitutes the US scene. But the stakes for this sort of research are potentially high. The struggle of democratic systems will very likely take place at the intersection of digital technologies, money and regulation. To understand current blind spots and lost opportunity costs, it is imperative that we begin to better grapple with these organizational complexities. There is so much more empirical and qualitative work to be done mapping the feedback loops, people and dreams that drive technological change. We look forward to seeing you in the field.

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