

DEVELOPING AN E-CURRICULUM: REFLECTIONS ON THE FUTURE OF
LEGAL EDUCATION AND ON THE IMPORTANCE OF DIGITAL
EXPERTISE

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INTRODUCTION: THE VIEW FROM LEGAL TECH

Early this year, I attended the 2013 New York version of the event called “LegalTech.”¹ This three-day showcase of computerized services is one of the principal marketplaces in the U.S. for legal practice technology. Along with its Los Angeles companion event² and the Chicago-based ABA Techshow,³ LegalTech New York is a jamboree of competing companies. There are more than 230 of them listed in the program, selling all kinds of hardware, software and services, ranging from Accounting /Finance to Website/Marketing, with dozens of categories in between.⁴ The biggest sectors include e-discovery, internet access, case management, and document management. The maze of booths ranges from the simple cubical of a new start-up to the multiple-station mini-fairgrounds of established companies like LexisNexis and Thompson West.

Taken together, there is, by my estimate, roughly twenty to thirty billion dollars in commerce on display at the show. This was the third year that I attended LegalTech in New York, and, thanks in part to promptings from Indiana’s Bill Henderson, I came away with a new insight. In the past I was deeply impressed by all of this activity, which I saw as supporting legal work. This year, however, I realized that this

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1. *Save the Date! January 29-31, 2013*, LEGALTECH, http://www.legaltechshow.com/r5/cob_page.asp?category_id=73341&initial_file=cob_page-ltech.asp (last visited Apr. 15, 2013).

2. *LegalTech West Coast 2013*, LEGALTECH, http://www.legaltechshow.com/r5/cob_page.asp?category_code=ltech (last visited Apr. 15, 2013).

3. *ABA Techshow 2013: Conference and Expo, April 4-6, 2013*, AMERICAN BAR ASSOCIATION, <http://www.techshow.com/> (last visited Apr. 15, 2013).

4. *LegalTech New York 2013 Exhibitor List, January 29-31*, LEGALTECH, http://www.legaltechshow.com/r5/cob_page.asp?category_id=73341&initial_file=cob_page-exhibitors.asp (last visited Apr. 15, 2013).

activity *is legal work*. The “modern” law firm came into being in the early twentieth century through the efforts of innovators like Paul Drennan Cravath. The firm structure that evolved, with a pyramid of associates and partners and a wide range of expertise bundled into a single business organization, solved a number of problems of incentive and scale.⁵ The aggregation of talent and the development of human capital that the firm accomplished permitted the deployment of teams of expert resources onto large transactional or litigation events at a high level of capability. The last part of the twentieth century saw the further mushrooming of firms into increasingly vast and concentrated armies of legal talent⁶—and the first decade of the twenty-first has seen a sudden reversal in their fortunes and size.⁷ Why? The firm is no longer the best game in town for delivering high quality legal service through scaling and flexibility. Rather, we are developing even more concentrated engines of efficiency and scale, often technologically enabled, in the new service companies like those on the floor of LegalTech. Legal practice isn’t going away; it is just going to forms of delivery that can combine the competence and flexibility of an old fashioned firm with the efficiency and scale of a just-in-time cloud-computing company.

Nor is this change only the province of the wealthiest of clients pursuing deals and bringing law suits with billion dollar price tags. As we will discuss more fully below, the capability of e-discovery and litigation management tools can make legal Davids, like citizen action groups, the equal of massive governmental and corporate Goliaths. The under-met needs of individuals of limited means for legal services can also be ameliorated through technological assistance.⁸ And where there are expanding legal services, there are also expanding legal jobs. Thanks to the support of the Vermont Law School (VLS) placement office, we were able to bring down a number of students from our Digital Drafting class to meet and greet folks on the floor. Writing just a few

5. Marc S. Galanter & William D. Henderson, *The Elastic Tournament: The Second Transformation of the Big Law Firm*, 60 STANFORD L. REV. 102 (2008); see also MARC GALANTER & THOMAS PALAY, *TOURNAMENT OF LAWYERS: THE TRANSFORMATION OF THE BIG LAW FIRM* 99-102 (1991).

6. Galanter & Henderson, *supra* note 5, at 102.

7. Thomas S. Clay and Eric A. Seeger, *2012 Law Firms in Transition: An Altman Weil Flash Survey*, ALTMAN WEIL(2012), http://www.altmanweil.com/dir_docs/resource/1667e5c8-b99e-4557-93ac-73174118ea29_document.pdf.

8. Ronald Staudt, *All the Wild Possibilities: Technology that Attacks Barriers to Access to Justice*, 42 LOY. L.A. L. REV. 1117 (2009); Ronald Staudt, *Cyberclinics: Law Schools, Technology and Justice*, in *EDUCATING THE DIGITAL LAWYER* (Oliver R. Goodenough & Marc Lauritsen, eds., 2012), available at http://www.law.harvard.edu/programs/plp/pdf/009-03358_03358-ch0008.pdf.

weeks later, I can report interviews going forward, and at least one job offer.

LegalTech is the commercial bazaar for this new way of practicing law, and like most bazaars, it is loud, messy, and fun. There is lots of “swag” being given away, from free thumb-drives to car-coffee mugs, and there are nearly continuous programs of speakers. The list of presenters included executives from the companies on display, partners and administrators from law firms, even several judges and prosecutors, and one professor of law, Daniel Katz from Michigan State University. This underrepresentation of the academy persisted on the floor of the show—I did run into a few of my colleagues from other law schools, but only a few. This disconnect is striking. A technology-driven revolution is overturning how America practices law, runs its government, and dispenses justice, and the revolution has so far gone almost completely unnoticed by the people who teach aspiring lawyers. This has to change.

I. THREE GUIDING PRINCIPLES FOR REDESIGNING LAW SCHOOL CURRICULA

Advances in legal technology are not the only set of new developments challenging how and what law schools teach in their J.D. programs. We are in the midst of the greatest period of ferment in legal education since C.C. Langdell and his colleagues set the pattern for a university-level law school in the last decades of the nineteenth Century.⁹ Many schools are looking to revamp their programs, and whether the goal is increased education on law practice technology or on dispute resolution as an integrated process, it is useful to remind ourselves of the overarching principles that should be kept in mind as the redesign goes forward. I offer three candidates for this exercise: value added, values added, and economic sustainability. Before returning to law and technology, let me explore these background principles in moderate detail.

A. *Value Added*

Legal education must take as a starting point that we need to create useful capacities in our students. While there are many more abstracted fields of study, from sociology and literature to economics, which can help inform a capable understanding of law, law itself is an

9. See generally BRUCE KIMBALL, *THE INCEPTION OF MODERN PROFESSIONAL EDUCATION: C. C. LANGDELL, 1826-1906* (Univ. of North Carolina Press, 2009).

applied discipline involved in the creation and operation of critical institutions through which humans order many of their most important social activities. It is time to get over the old canard about not being a “trade school.” If teaching our graduates how to be effective within the law’s critical work is teaching them a trade, then we should embrace the label, not shun it.

And, for the vast majority of our students, such training is exactly why they come to us. In a first year class I recently asked students to indicate which of the following approaches better represented their reason for choosing to come to law school: (A) to learn a set of knowledge and skills that would enable them to have an effective and rewarding career in the American and global legal profession, or (B) to learn a set of policy, argumentation and analytic approaches that would enable them to have an advanced knowledge of the social, political and legal institutions that shape America and the world.

It will come as no surprise that most of the students chose A, or that a reasonable, but relatively small minority chose B. Of course, the law-professor answer is that A and B are not antithetical, and by teaching B we enable A. I personally like high theory as much as the next legal academic, as my research and writing in fields such as law and neuroscience, game theory, and mechanism design confirms.¹⁰ But B should serve A, not replace it. Unless we are talking about, maybe, Yale Law School, A is what most of our customers really want, and adding capability to our students as they pursue that goal should be the primary undertaking for adding the value that allows us to charge for our services as legal educators.

A corollary of this approach is that we should be educating our students with legal-market opportunities in mind—opportunities that will let them enter into that career within that sphere of law related work that will provide them with satisfaction over the years. Employability is a critical avenue for the recognition of usefulness, and we should seek feedback from those who hire our graduates—including the companies showing and the firms shopping at LegalTech—about what a law professional needs to know. While creating the fully “practice ready” graduate is probably unachievable in even a redesigned

10. See e.g., Oliver Goodenough and Michaela Tucker, *Neuroscience Basics for Lawyers*, 62 *MERCER L. REV.* 945, 945-58 (2011); Oliver Goodenough and Michaela Tucker, *Law and Cognitive Neuroscience*, 6 *ANN. REV. OF L. & SOC. SCI.* 61 (2010); Oliver R. Goodenough & Gregory Decker, *Why Do Good People Steal Intellectual Property?*, in *LAW, MIND AND BRAIN* (Michael Freeman and Oliver R. Goodenough, eds., 2009); Oliver Goodenough, *Values, Mechanism Design, and Fairness*, in *MORAL MARKETS: THE CRITICAL ROLE OF VALUES IN THE ECONOMY* 228-55 (Paul J. Zak, ed., 2008).

three-year program, that does not mean that the goal is a bad one to aim our efforts towards.

If we are to meet the third criteria of economic sustainability, we must, as a starting point, offer an education that is worth the tuition we charge. Of course, worth is not just measured in economic return and increased earning capacity—there are important, hard to measure factors of gratification in doing a job that can help society improve itself, that creates an often deserved status of leadership within the community, and that, in the words of a wise older lawyer giving me career advice years ago, consists of “clean, indoor work.”¹¹ But whatever the mix that our students bring to the calculus of added value that they seek, we need to deliver on the promise to help create it for and in them.

B. Values Added

Fostering *values* in our students is a second necessary element in how and what we teach in legal education. Law is an inherently normative exercise, which prescribes behavior and consequences and dispenses judgment, and the law itself and those who work within it need to approach their duties with a commitment to certain standards that transcend short term expediency—in short, values. The motto of my own source of legal education, the University of Pennsylvania, expressed it in Horatian Latin “Leges sine Moribus Vanæ,” or, as I might translate it for this discussion, “law without values is useless.”

This does not mean that the question of *what* values should be taught is fully or easily settled. At VLS, where I teach, we have a strong commitment to environmental preservation and social and environmental justice, and this commitment informs a great deal of what we focus on and of how we encourage our students to think about legal problems. The vision of the good that informs the education at NYU, George Mason, Notre Dame, Chicago, or UCLA may overlap or diverge in certain respects with ours and with each other’s. Nonetheless, the rule of law is at its core a public good, and some commitment to the mission of law beyond mere private gain is a necessary piece of keeping that public good functioning.

11. The attorney the author refers to is Arthur Solmssen, a lawyer and novelist. For a brief biography of Solmssen, see *Arthur R. G. Solmssen*, WIKIPEDIA, http://en.wikipedia.org/wiki/Arthur_R.G._Solmssen; see generally Richard W. Painter, *Irrationality and Cognitive Bias at a Closing in Arthur Solmssen’s The Comfort Letter*, 69 *FORDHAM L. REV.* 1111 (2000).

A commitment to the instrumental integrity of the legal system may be enough. Belief in, and the fostering of, such core elements as due process, equal protection, and free speech can and should often transcend results-based expediency, even when the cause of the moment is itself a worthy one. Educating “citizen lawyers,” deeply steeped in the mission of the law itself, is a good way to add values.

In addition to justice-based values, we should also foster other forms of commitment, including intellectual values, such as a commitment to learning, to openness of thought, and to a willingness to let reality inform us, even when the lessons are uncomfortable and challenging. Here is a chance, by the way, to put some of path “B” in the “value added” discussion back in the mix. Intellectual breadth and sophistication grow from exposure to wider fields of inquiry, including international and comparative experience, interdisciplinary study, and other steps beyond the immediately instrumental.

Let me finally, however, return to the instrumental as a basis for values as well, and suggest that we put “high effectiveness” on our list. This can be hard for some academics to envision as a value. With our frequent focus on abstracted knowledge in our own daily work, we can sometimes be dismissive of “mere” instrumental competence. But law in society is not simply about *knowing*; rather, the field of accomplishment is really in the *doing*. Of course, effective doing is itself a matter for study and practice, but this is not sufficiently recognized at most law schools. Individual skills get attention, but their competent and cost-effective deployment as part of a lawyer’s duty is not always emphasized. Whether in financial literacy, practice and project management, or, germane to this essay, digital and technological capacity, curriculum reform should view competence not just as an economic trait, but as a moral one as well.

C. *Economic Sustainability*

Any enterprise must, over time, be economically sustainable. A viable curriculum for legal education needs to be cost effective. Through much of the past century, this was not a problem. The classic approach of the large Socratic classroom was very efficient, and produced enough free cash to support both a high-end academic salary and considerable research and writing time for the instructor, with plenty left

for institutional surplus. In the good old days, this model often made law schools “cash cows” for the universities that housed them.¹²

Even before the downturn in jobs and admissions that we are currently weathering, this model had begun to shift, in part because of the pedagogical reforms of the late twentieth century. The move over the last 30 years has been towards increased skills and experiential training, along with adding more and smaller doctrinal classes. This shift has generally required more intensive involvement of faculty in individual instruction, with a commensurate increase in the cost of each credit hour. Rises in tuition, at least in part, can be seen as a fiscally necessary response to the shift away from the 100+ student class in evidence, corporations, and sales as the dominant mode of instruction. When a buffet restaurant offers more protein and less pasta, its prices will rise, and a similar process has been at play in legal education.

The model is now between a rock and a hard place, as the increasing expectations for more intensive and value-adding instruction to make practice ready attorneys run into the boundaries of sustainable tuition outlays by students facing an increasingly uncertain future. At the very least, the old deal of using tuition dollars to support professorial research and scholarship is likely to erode even further. The financial basis of legal scholarship may come to look increasingly like that in the sciences, where grants and project fees support labs run by entrepreneurial professors, and where the overhead fees levied by the institutions on these grants and fees go to support instruction, rather than the other way around.

The available responses to the fiscal limits are essentially means to create better efficiency, either through lowering costs or adding even higher value, if not both. Scale is a classic means of increasing productivity, and we are already seeing incentives to seek methods to scale the expensive offerings involving skills and experience. At VLS, we have programs like our very successful “Semester in Practice” that allow us to outsource a significant amount of quality, supervised skills training into the world of willing practitioners, at a cost per credit hour that is competitive with lecture teaching.¹³ Clinical teaching has also

12. Greg Lamm, *UW law dean: tuition not a 'cash cow' for university*, PUGET SOUND BUSINESS JOURNAL (Oct. 2, 2012), <http://www.bizjournals.com/seattle/blog/2012/10/uw-law-dean-tuition-not-a-cash-cow.html?page=all>; ERIC OWENS, THE BEST 117 LAW SCHOOLS 29 (2005); see also George Leef, *The New York Times Versus Law Schools, Round 2*, NATIONAL REVIEW (July 18, 2011), <http://www.nationalreview.com/phi-beta-cons/272085/inew-york-times-versus-law-schools-round-2-george-leef>; LAURA KALMAN, YALE LAW SCHOOL AND THE SIXTIES: REVOLT AND REVERBERATIONS 18 (2005).

13. *JD Externship Programs*, VERMONT LAW SCHOOL,

been at the forefront in attracting grant and contract funding, which can often defray significant portions of the costs while providing values-enhancing opportunities for service and access to justice for the broader community.¹⁴

Distance learning is another means of offering scale, with the advantage of engaging the potential of new technology. The challenge here is that quality distance education is not inherently inexpensive, and the cost per credit hour of well-staffed, effective teaching is still significant.¹⁵ Some savings will be possible from the ability to undertake curriculum exchange between institutions, which will allow specialty courses to be offered through importing a distance course from a school with particular expertise in the subject matter, rather than by having an expensive and potentially under-utilized professor in the home institution; such arrangements are starting to emerge in the law school marketplace.

The other alternative is to add greater value to the student, which brings us back to our first goal. Looking into the future, the need for greater instruction in the field of law and technology as a source of value to our graduates looms large.

II. ADDING SUFFICIENT VALUE: "THEN"

In the not very distant past—just a few years back, in fact—the expectations for what a new lawyer needed to know on graduation were pretty well established. As the 2007 Carnegie Report described it:

The curriculum at most schools follows a fairly standard pattern. The juris doctor (JD) degree is the typical credential offered, requiring three years of full-time or four years of part-time study. Most states require the degree for admission to practice, along with a separate bar examination. Typically, in the first year and a half, students take a set of core courses: constitutional law, contracts, criminal law, property law, torts, civil procedure and legal writing. After that, they choose among courses in particular areas of the law, such as tax, labor or corporate law. The school-sponsored legal clinics, moot court competition, supervised practice trials and law journals give the stu-

http://www.vermontlaw.edu/Academics/Clinical_and_Externship_Programs/JD_Externship_Programs.htm (last visited April 18, 2015)

14. *About the Fee-Generating Model in Clinical Legal Education*, IIT CHICAGO-KENT COLLEGE OF LAW, <http://www.kentlaw.iit.edu/seeking-legal-help/fees/fee-generating-model> (last visited Apr. 15, 2013); see also Deborah S. Kenn, *Community Development Law and Legal Education*, in *ACADEMIC ENTREPRENEURSHIP AND COMMUNITY ENGAGEMENT* 61, 71 (Bruce Kingma ed., 2011).

15. *Distance Learning in Legal Education*, THE WORKING GROUP FOR DISTANCE LEARNING IN LEGAL EDUCATION 14 (2012), http://www.law.harvard.edu/programs/plp/pdf/Distance_Learning_in_Legal_Ed.pdf.

dents who participate opportunities to practice the legal skills of working with clients, conducting appellate arguments, and research and writing.¹⁶

A. *Bar Passage and Doctrinal Knowledge*

The overarching need for any law school has been to train people who could pass a bar exam. While most schools with scholarly ambition eschew the idea that they are “bar passage factories” with the same vigor that they resist being called “trade schools,” even the most impractically oriented still argue that their teaching, together with an appropriate bar-prep course, was a necessary, or at least useful, element in producing someone who could intelligently take, and probably pass, the bar exam. The corollary of this bar passage goal is educating students into a working familiarity with a reasonable selection of the substantive doctrine of American law. We in the academy routinely refer to the “bar courses” as a corpus that students will probably want to take, even if we argue whether or not our own specialty should be included in the list.

B. *A Shared Language of Argumentation*

The second most ubiquitous goal was to create competence in the accepted modes of argumentation, through which the American common lawyer determines (and convinces others) what the law *is*. This is the task set in the nearly universal first year curriculum, where the case method is applied in all its Langdellian glory, and the intellectual exercise of textual abstraction from holdings, statutes, and regulations is transmitted to the next generation.

Of course, there is nothing remotely absolute in this method as the means by which rules are determined and applied. No bearded deity descended on Cambridge, Massachusetts in the 1870s to touch the fingers of the new Dean and faculty at Harvard Law School and impart, once and for all, the spark of jurisprudence. Rather, with spread of cheaper, mechanized printing, text became more widely available just as German textual criticism techniques provided a way to bring “science” to the task of pulling meaning from the opaque language and groping explanation of classical appellate decisions.¹⁷ Complementing

16. William M. Sullivan et al., *Educating Lawyers*, THE CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING 4 (2007), http://www.carnegiefoundation.org/sites/default/files/publications/elibrary_pdf_632.pdf.

17. See generally KIMBALL, *supra* note 9.

these advances, in the same decade as Langdell and his colleagues were at work, John B. West was founding the West Publishing Company.

Over time, the case method has changed and evolved, incorporating the lessons of realism, the Brandeis brief, and even critical studies—the first year curriculum is not just Langdell’s corpus. But the case method and its progeny have created a set of techniques of thought and argument that are now so widely shared across the profession that they are the secret handshake of belonging that any J.D. is expected to be able to reproduce and apply, and that every J.D. program is expected to help perpetuate.

C. *Skills and Experiential*

More recently, our standard curriculum has added the need for some mastery of the “skills” and competencies of legal practice.¹⁸ A succession of reformist reports has tried to spell out what those skills might consist of.¹⁹ In 1992, the American Bar Association (ABA) Task Force on Law Schools and the Profession: Narrowing the Gap issued its *Statement of Fundamental Lawyering Skills and Professional Values*, commonly known as the MacCrate Report after the lead chair of the committee.²⁰ As the name of the committee suggests, there was increasing concern that legal education had become separated from the actual needs of the profession, and that law schools should be helped/encouraged in “the creation of courses of instruction and materials designed to teach entry-level lawyers the skills and values they need in order to represent clients.”²¹ The report went on to identify ten “fundamental” skills a practice-capable attorney should have²²

18. Graham C. Lilly, *Skills, Values, and Education: The MacCrate Report Finds a Home in Wisconsin*, 80 MARQ. L. REV. 753, 755, 757 (1997).

19. NATIONAL ORGANIZATION OF BAR COUNSEL & ASSOCIATION OF PROFESSIONAL RESPONSIBILITY LAWYERS, JOINT NOBC/APRL COMMITTEE ON COMPETENCY 10 (2010), available at www.nobc.org/uploadedFiles/Announcements/Final%20Report.doc.

20. TASK FORCE ON LAW SCHOOLS AND THE PROFESSION, AMERICAN BAR ASSOCIATION, STATEMENT OF FUNDAMENTAL LAWYERING SKILLS AND PROFESSIONAL VALUES iii (1992); see also Jonathan Rose, *The MacCrate Report’s Restatement of Legal Education: The Need for Reflection and Horse Sense*, 44 J. LEGAL EDUC. 548, 550 (1994).

21. TASK FORCE ON LAW SCHOOLS AND THE PROFESSION, *supra* note 20, at 1–2.

22. As presented in the report, problem solving, legal analysis and reasoning, legal research, factual investigation, communication, counseling, negotiation, litigation and alternative dispute-resolution procedures, organization and management of legal work, and recognizing and resolving ethical dilemmas. *Id.* at v.

along with four “fundamental values of the profession.”²³ Each of these topics was set out with elaboration and commentary that provided a partial blueprint for significantly increasing the amount of time which legal education could devote to each topic. While the second skill listed, legal analysis and reasoning, overlapped with much of traditional doctrinal teaching under the Langdellian model, the clear message was that the old ways needed significant change.

Since the time of the MacCrate Report, the skills/doctrine debate has largely been reconciled, if not fully settled. Skills related courses are a standard part of the classroom curriculum, and most law schools now point with pride to a suite of clinical and experiential offerings aimed at teaching through doing. A *2010 Survey of Law School Experiential Learning Opportunities and Benefits* from NALP²⁴ provides several interesting data points on this transition. The survey participants were associates in firms, recently graduated.²⁵ The survey showed that slightly under a third of them had participated in a clinic experience in law school, slightly more than a third in an externship or field placement, and more than 70% in one or more practice skills course.²⁶ The list set out in the *Chart of Legal Education Reform*, available through The Institute for Law Teaching and Learning, is full of skills and experiential offerings.²⁷

Experiential learning is not just about skills mastery; it also creates opportunities for doctrinal teaching in contexts that better suit the “learning styles” of many students and provides a context for understanding how to integrate instrumental effectiveness with the ethical and social contexts within which lawyering exists.²⁸

D. Perspectives

As a further element in the current state of play, many law schools seek to educate their students on different perspectives of legal issues. At VLS, where I teach, for instance, we require students to take at least

23. As presented in the report, provision of competent representation, striving to promote justice, fairness and morality, striving to improve the profession, and professional self-development. *Id.*

24. NALP & THE NALP FOUNDATION, 2010 SURVEY OF LAW SCHOOL EXPERIENTIAL LEARNING OPPORTUNITIES AND BENEFITS (2011), available at <http://www.nalp.org/uploads/2010ExperientialLearningStudy.pdf>.

25. *Id.* at 6, 10.

26. *Id.* at 6.

27. *Chart of Legal Education Reform*, INSTITUTE FOR LAW TEACHING AND LEARNING (May 2009), <http://lawteaching.org/publications/ILTchartoflegaleducationreform200905.pdf>.

28. Sullivan, *supra* note 16, at 9-10.

one “Perspectives” course, which is intended to “substantially and systematically expose students to the broader foundations of law, including its social, cultural, historical, philosophical, comparative, or scientific contexts.”²⁹ Many of these courses have an interdisciplinary or international/comparative flavor to them, and often tie into the research interests of the individual professor. The trend in legal hiring towards J.D./Ph.D.³⁰ reflects the increasing expectation that professors will be able to add just such perspectives at a high level of attainment. Perspectives approaches have also provided a means for digesting the troubling insights of various “critical” approaches into the existing educational paradigm. International and comparative programs, increasingly popular with schools and students, can also be included in this category, although they increasingly serve direct doctrinal purposes in a globalizing world.

My own periodic contribution to the VLS offerings is the course called “Human Nature and the Law,” which has allowed me to teach about my interdisciplinary interests in behavioral science, game theory, and neuroscience law.³¹

29. VERMONT LAW SCHOOL 2010-11 CATALOG 5, available at http://www.vermontlaw.edu/Documents/Admissions/20101119_catologue20102011.pdf.

30. *JD-PhD*, NORTHWESTERN LAW, <http://www.law.northwestern.edu/academics/jdphd/> (last visited Apr. 15, 2013); Brian Leiter, *For a JD/PhD, Does the Caliber of the Law School Matter?*, LEITER REPORTS: A PHILOSOPHY BLOG (Sept. 28, 2011, 7:16 PM), <http://leiterreports.typepad.com/blog/2011/09/for-a-jdphd-does-the-caliber-of-the-law-school-matter.html>.

31. By way of illustration on what a reasonably typical law school offers, the current list of authorized Perspectives courses at Vermont Law School is set out. It should be noted that these are the authorized offerings; only a selection of the courses on the list is offered in a given academic term or year: Animal Welfare and Agricultural Trade, Capital Punishment Seminar, Civil Rights Seminar, Race and the Law Seminar, Sexual Orientation and the Law, Native Americans & the Law, Indian Tribes as Governmental Stewards of the Environment, Ecology of Food and Agriculture, Environmental Ethics Seminar, Environmental Health Law Seminar, Environmental Justice Seminar, Frontier Issues in Environmental Law, Risk Assessment, Scientific Controversies, Climate Change: The Power of Taxes, Animal Rights Jurisprudence Law, Biodiversity Protection, Human Rights and the Environment, Environmental Justice and Sustainable Development, Environmental Economics and Markets, Animals & the Law, Frontier Issues in Environmental Law and Policy, Global Energy and Climate Policy, MedLaw Seminar: Medical Legal Issues and Our Changing Concepts of Reproduction and the Family, GPP: International Intellectual Property, French Legal Methods, French Corporate Law, Comparative Law: Comparative Legal Systems, European Union: Emerging Constitutional Law, International Environmental Law & Policy, International Human Rights, Spanish Constitutional Law, Genocide, Introduction to Chinese Law, Comparative U.S.-China Environmental Law, International and Comparative Environmental Law, European Community Environmental Law, Study Abroad Seminar: Canadian Legal System, Culture and the Environment, Human Nature and the Law, The Law & Popular Culture, Moral Philosophy for Professionals Seminar, Women & the Law Seminar, Jurisprudence Tutorial, Law, Lawyers and Religion, and National Security Law.

E. The Carnegie Report, The End of Lawyers?, and Emerging Expectations

This mix—bar passage and doctrinal knowledge, the shared language of argumentation, skills and experiential training, and access to some greater perspectives—should be a relatively familiar summary for most students and teachers in law schools across the U.S. The grafting of such “progressive” aspects as skills and perspectives onto the Langdellian model is now pretty widespread. The most recent “industry-wide” summary was provided in the Carnegie Report.³² Published in 2007, it just preceded the current “crisis” in legal education. As such, it gave articulation to a kind of malaise that many felt about how we taught law, but did not fully anticipate the challenges that are coming into clearer focus as the downturn accentuated the changes in the profession and the employment market resulting from factors such as legal technology, outsourcing, and the need for increased efficiency and better management.

The Carnegie Report focuses on five “key observations” about legal education, a diplomatic way to offer critiques. They are: (1) “Law School Provides Rapid Socialization into the Standards of Legal Thinking;” (2) “Law Schools Rely Heavily on One Way of Teaching to Accomplish the Socialization Process;” (3) “The Case-Dialogue Method of Teaching Has Valuable Strengths but Also Unintended Consequences;” (4) “Assessment of Student Learning Remains Underdeveloped;” (5) “Legal Education Approaches Improvement Incrementally, Not Comprehensively.”³³

To rectify the problems inherent in the “observations,” the Report offered seven recommendations: (1) “Offer an Integrated Curriculum,” (2) “Join ‘Lawyering,’ Professionalism and Legal Analysis from the Start,” (3) “Make Better Use of the Second and Third Years of Law School,” (4) “Support Faculty to Work Across the Curriculum,” (5) “Design the Program so that Students—and Faculty—Weave Together Disparate Kinds of Knowledge and Skill,” (6) “Recognize a Common Purpose,” and (7) “Work Together, Within and Across Institutions.”³⁴

At this general level, these recommendations are relatively prosaic and obvious, although, to do them justice, there is enough granularity within the discussions that follow to provide some useful

32. Sullivan, *supra* note 16.

33. *Id.* at 5, 7.

34. *Id.* at 8-10.

suggestions. On the whole, however, they are a somewhat different packaging of the skills/doctrine/analysis debates that have been going on for some time, summed up with an “all of the above” approach and linked with a plea that we should all play nicely and cooperate. They failed to anticipate the crisis in legal education we are currently experiencing.

More troubling and prophetic was Richard Susskind’s 2008 book, *The End of Lawyers? Rethinking the Nature of Legal Services*.³⁵ This jeremiad by one of Britain’s most original thinkers about legal practice outlined a set of challenges that were already disrupting the market in legal services. He cited factors such as commoditization and technology as already putting pressure on what lawyers needed to know and do.³⁶ Within technologies, he specifically enumerated automated document assembly, connectivity, an electronic legal marketplace, e-learning, online legal guidance, legal open-sourcing, closed legal communities, workflow and project management, and embedded legal knowledge as factors to be reckoned with.³⁷

The predictions of change have come home with a vengeance over the past two years, with the bursting of the law school enrollment bubble and significant pressures for a more relevant, practice-oriented education for our students. The settled ways of “adding value” for our students no longer hold. What must the legal academy do with its curriculum to justify its claims of worth to students in the coming decade or two?

III. ADDING SUFFICIENT VALUE: NOW AND IN THE FUTURE

The answer, distressingly, both includes “all of the above” and requires us to add more, all in a time when there are calls by some in the Bar, the academy, and the popular press for shortening our training period from three to two years. While daunting, this is doable. As someone who makes his living as a Law Professor, for me personally, it has to be—and helping that “has to be” come into being is a significant part of my own professional program for the foreseeable future. Before turning to a list of suggested targets (and, in the process getting to the core subject matter of the technology of law), allow me to offer three cautions that should underlie our thinking.

35. RICHARD SUSSKIND, *THE END OF LAWYERS? RETHINKING THE NATURE OF LEGAL SERVICES* (2008).

36. *Id.* at 1.

37. *Id.* at 99-146.

A. *Three Cautions*

The first of the cautions derives from the work of my VLS colleague, Carl Yirka. Among many attainments, he has gained some notoriety, particularly among law librarians, for asking the “Yirka Question.”³⁸ Recognizing that there are simply too many worthy activity targets, particularly when we contemplate innovation, he asks, “What can we stop doing in order to do higher priority things?”³⁹ The common sense lesson of limited resources and capacities imbedded in the Yirka Question does not sit easily with the aspirations of more and better that many of us in legal education share and that we have been able to indulge over years of expansion and financial plenty.

Since my own conclusion is that we need to keep doing “all of the above,” I would seem to be at odds with this idea myself. It is my belief, however that there is a lot of low-hanging fruit for increased efficiency of teaching and learning, both through some shrinkage in redundancy, such as the pedagogical overkill of repeating the case method in so many first year classes, and in improved multitasking, such as layering in lessons of technology with lessons of doctrine and practice skills. Nonetheless, the reforms we are facing will not come free, and we should be willing to recognize the necessity that we need to stop doing some things that we do well and are proud of.

The second caution is what I call the “Academic Specialty Trap.” When academics design curricula, we all too often fail to remember that what we need to teach is distinct from what we like to study. As mentioned above, I have a strongly established line of research into the impact of neuroscience on law and law related policy.⁴⁰ While I am proud of this work, and believe it informs my teaching and adds value to the enterprise of legal scholarship, I recognize that it should not be the centerpiece of how we might re-imagine legal education with the goal of creating maximum value for our students. In making choices about what to add, we should listen (intelligently) to the marketplace for our graduates, and we should not confuse research value for an academic with lawyer value, in practice, policy, and beyond.

Finally, we should avoid the “Current Expertise Trap.” It is no secret, and no sin, that legal academics like to be in positions where their hard-won expertise can be shown to advantage. There are cognitive

38. Carl A. Yirka, *The Yirka Question and Yirka's Answer*, 12 AALL SPECTRUM 28 (2008).

39. *Id.*

40. See sources cited *supra* note 10.

and effort obstacles to be overcome when we need to learn new things. Many of us are, as the saying goes, old dogs, and new tricks come at a cost. Adding a really new topic, like technology, to the curriculum may require significant retooling, and many of us came into law in part because it did not involve science or math. Even here, however, when the focus is doctrine, the law professor is intellectually in charge: studying the *law of technology* puts the law in a controlling position in the discussion. But it is also an area of law that a majority of our graduates at most schools will never have a chance to practice.

The vast majority, by contrast, will deal with the *technology of law*, and this is a subject that really does require its law-trained teachers to master new ways of thinking, new realms of knowledge, and new domains of performance. But this unfamiliarity can only increase the value of learning such a new field to our students. Let's help them to invert the expertise pyramid. Imagine a cohort of law school graduates who can teach their employers—and maybe even their law professors—the new tricks that are coming to be the commonplace necessities of every day practice. If our students can go out into the world and demonstrate competence in essential things the partner/executive director/head of the agency doesn't know yet, that is a road to jobs, effectiveness, and increased reputational advantage for the school itself.

IV. SUGGESTED TARGETS FOR CURRICULAR INNOVATION

So what are these areas of innovation in doctrine and teaching that have promise to add both value and values in ways that are economically sustainable? I don't claim to have a crystal ball, or, perhaps more practically, to have undertaken the kind of systematic market research on most of my suggestions that should be a prelude to any serious move towards adoption. Nonetheless, there are a number of ideas that have traction in our discussions within the academy, and, before turning to one of them—legal technology—for the final portion of this essay, it is worth considering a wider list of possibilities.

A. *Financial Literacy*

Many commentators have pointed to the need for law school graduates to have greater training in, and sophistication about, the workings of money and finance. Whether calculating the present value of tort damages, creating a business plan for a small practice, or doing

legal work for a proposed wind farm, the ability to work with financial numbers and concepts is critical. Most schools offer some kind of training, whether in a dedicated class like accounting for lawyers or in smaller segments like a unit in a Corporations class. In many cases, however, the offerings are elective and uncoordinated. Most schools could and should do better.

B. Dispute Resolution as a Process

Most schools still teach formal litigation topics, like Civil Procedure, in a manner unconnected to the ways in which most civil disputes in the United States develop and get resolved—i.e., through some kind of settlement reached under the shadow of law, but not necessarily within a formal legal process. Even in schools with strong “alternate” dispute resolution offerings, there is sometimes an excessive atomization of the various parts of the law governing disputes into separate courses on mediation, trial practice, evidence, etc., so that students have a hard time getting a view of the arc of a dispute from offense to settlement. Teaching a reasonably coherent framework of expectation, strategy and tactics for resolving conflicts within the bounds of procedural and evidentiary law requires an integrated approach.

C. Transactional Processes

If we fail as legal educators to create a broad understanding of disputes, we do even worse with transactions. The classic contracts course is much more about the modes of Langdellian analysis and argumentation than it is about how to construct and document a. While schools often have some kind of upper level course on transactions, once again atomization among various aspects of corporate and commercial law offerings create hit-or-miss challenges for coverage and synthesis. If the subject were more systematically addressed, students could be exposed in an integrated way to the logic of contracts, the dynamics of a deal, and the use of such drafting tools as affirmative and negative covenants, representations and warranties, indemnification and conditions of default.

D. Public Advocacy/Policy Formation

There is a long tradition of lawyers as key players in formulating policy choices and in managing their adoption through courts, legislatures, regulatory bodies and, increasingly, public opinion. Our tradi-

tional pedagogical fixation on appellate opinions has tended to skew our instruction toward judicial rule making. Worthy reform could aim at creating both a broader understanding of the sources of law and a wider competence in the ways that policy advocacy is conducted in an age of social media, Internet, and mobile devices. The first branch is already underway as many schools, including Harvard, add “Leg/Reg” style courses to the first year corpus.⁴¹ The second will be discussed more fully later in this essay. As always, our teaching in this field should not just be instrumental. Making good policy requires us also to identify and implement the values that underlie deliberations in a political context and/or adjudicative context.

E. Project and Practice Management

Another quiet revolution going on in practice that has yet to draw much attention in the academy is the increased attention to intentional—and competent—management of particular cases and projects and of legal service organizations generally.⁴² Project Management is a label applied to a cluster of techniques for bringing productive order to taking a task from conception to completion. The approach is widely applied in business and engineering—and widely taught in business and engineering schools. Organizations like the 650,000-member Project Management Institute (PMI) offer certification standards that have helped to bring standardization and professionalism to the field.⁴³ The application of the approach to legal projects has been gathering momentum and the PMI now has a legal classification in its activities and “knowledge shelf.”⁴⁴ There are a number of software offerings that

41. For examples of Legislation courses being offered in first year curricula, see *J.D. Program*, HARVARD LAW SCHOOL, <http://www.law.harvard.edu/academics/degrees/jd/index.html> (last modified Apr. 15, 2013); see also *Academics: Curriculum*, EMORY LAW SCHOOL, <http://www.law.emory.edu/academics/academic-catalog/curriculum.html> (last visited Apr. 15, 2013); see also *Legislation and Regulation*, PITTSBURGH LAW SCHOOL, <http://www.law.pitt.edu/academics/courses/catalog/5032> (last visited Apr. 15, 2013). For a scholarly analysis on the proliferation of Legislation courses in law schools, see Ethan J. Leib, *1L Legislation and Regulation Courses*, 58 J. LEGAL EDU. 166 (2008); see also Ethan Leib, *1L Legislation and Regulation Courses*, PRAWFSBLAWG (November 5, 2007, 12:11 PM), <http://prawfsblawg.blogs.com/prawfsblawg/2011/11/1l-legislation-.html>.

42. See, e.g., STEVEN B. LEVY, LEGAL PROJECT MANAGEMENT: CONTROL COSTS, MEET SCHEDULES, MANAGE RISKS, AND MAINTAIN SANITY (2009), PMI LEGAL PROJECT MANAGEMENT COMMUNITY OF PRACTICE, <http://legalpm.vc.pmi.org/Public/Home.aspx> (last visited Apr. 15, 2013); LEGAL PROJECT MANAGEMENT <http://www.legalprojectmanagement.info/blog/> (last visited Apr. 15, 2013).

43. *About Us*, PROJECT MANAGEMENT INSTITUTE, <http://www.pmi.org/About-Us.aspx> (last visited Apr. 15, 2013).

44. *Legal*, PROJECT MANAGEMENT INSTITUTE, <http://www.pmi.org/Knowledge-Center/Knowledge-Shelf/Legal.aspx> (last visited Apr. 15, 2013).

help support project and practice management initiatives in law firms. So far, only a few law schools, including Indiana Bloomington,⁴⁵ have initiated courses in legal project management to their J.D. offerings. It is field ripe for further development.

F. *e-Lawyering*

The final suggestion in this list of possible targets, and the focus of the remainder of this essay, is the cluster of knowledge and activities around the application of computer and communications technology to the practice of law, the delivery of governmental services (including justice), and law school teaching that we may collectively call “e-Lawyering.” I concede that there is some danger that I may be falling into the Academic Specialty Trap—this area is a specialty of mine. Nonetheless, I firmly believe that this is one of the real areas for growth in law, and one that all schools should consider giving at least some coverage. For a few, it is also a possible area of concentration that has the potential to attract students, to help provide legal services more equitably across society, and to be a fascinating and productive area of academic study and reflection.

V. E-LAWERING (FINALLY)

So why is e-Lawyering—i.e., the application of technology to the delivery of legal services and processes—important enough to be a principal target for curriculum reform in legal education? I offer four principal justifications: (i) widespread activity in practice, (ii) promoting access to justice and legal services, (iii) scholarly importance, and (iv) providing jobs for our graduates.

A. *Law and Lawyer Activity*

As the view from the LegalTech show suggests, e-Lawyering is a burgeoning area of activity. Competence in legal technology is becoming a recognized element in the duties of a lawyer. Under the Commis-

45. Paul C. Easton, *Indiana University Maurer School of Law Offers Project Management Course*, LEGAL PROJECT MANAGEMENT (May 14, 2010, 1:13 AM), <http://legalprojectmanagement.info/blog/2010/05/indiana-university-maurer-school-of-law-offers-project-management-course.html>; see also Patrick G. Lee, *Law Schools Get Practical*, WALL ST. J. (July 10, 2011, 7:02 PM), <http://online.wsj.com/article/SB10001424052702304793504576434074172649718.html>.

sion on Ethics 2020 process,⁴⁶ the ABA is proceeding to add reference in the comments to rule 1.0 specifying that lawyer competence includes an understanding of the technology of practice:

[6] To maintain the requisite knowledge and skill, a lawyer should keep abreast of changes in the law and its practice, *including the benefits and risks associated with technology*, engage in continuing study and education and comply with all continuing legal education requirements to which the lawyer is subject.⁴⁷

The New York Bar Association, in its 2011 Report of the Task Force on the Future of the Legal Profession⁴⁸ focused extensively on the role of technology on changes in practice:

Technology is a driving force for many of these changes. Technology is a double-edged sword that helps lawyers to work faster and more efficiently, yet enables them to work constantly. It permits them to find better solutions to legal problems, yet increases the expectations of clients; assists them to compete more effectively in the marketplace, but opens the door to more competition. Technology has revolutionized the practice of law over the past quarter century. All signs indicate that technology will continue to impact the way lawyers are educated and practice, and will impact the traditional skills associated with lawyering and how lawyers interact with their clients.⁴⁹

The Report concluded by strongly recommending that law schools significantly increase their offerings on law and technology:

Given the importance of technology to the practice of law, the legal profession shares the burden of finding a way to help lawyers understand and use technology more effectively. The Task Force recommends that law schools and firms increase (or begin) the education and training of lawyers about practical ways to use technology in their practices. Law schools throughout the state should place greater emphasis on practical courses in various aspects of legal technology such as eDiscovery, document management technology, advanced online legal research, legal technology in the courtroom, and project management. Although many schools currently offer elective courses in some of these areas, or invite vendors

46. Joan C. Rogers, *Ethics 20/20 Rule Changes Approved by ABA Delegates With Little Opposition*, BLOOMBERG BNA (August 15, 2012), <http://www.bna.com/ethics-2020-rule-n12884911245/>.

47. ABA Committee On Ethics, *20/20 Initial Draft Proposals-Technology and Confidentiality* (May 2, 2011), http://www.americanbar.org/content/dam/aba/administrative/professional_responsibility/20110502_technology.authcheckdam.pdf

48. NEW YORK STATE BAR ASSOCIATION, REPORT OF THE TASK FORCE ON THE FUTURE OF THE LEGAL PROFESSION (April 2, 2011), *available at* http://www.nysba.org/AM/Template.cfm?Section=Task_Force_on_the_Future_of_the_Legal_Profession_Home&Template=/CM/ContentDisplay.cfm&ContentID=48108.

49. *Id.* at 3.

on campus to provide training, law schools can better serve their students and the profession by offering instruction in a broader range of technological subjects and integrating such classes into the requirements for graduation.⁵⁰

Any program claiming to adequately train potential lawyers for the twenty-first century must take this activity into account in its curriculum. The following is but a partial list of the areas of practice and doctrine that should be considered for inclusion or upgrading in the curriculum of the present, let alone the future. For those seeking additional views on what the e-lawyer needs to do, I also recommend many of the chapters in *Educating the Digital Lawyer*,⁵¹ and in particular the work by Brian Donnelly,⁵² Marc Lauritsen,⁵³ Jeanne Eicks,⁵⁴ and Stephanie Kimbro.⁵⁵ Richard Susskind's prescient views of legal practice in *The End of Lawyers? Rethinking the Nature of Legal Services* (2008)⁵⁶ and his recent, more hopeful, update in *Tomorrow's Lawyers: An Introduction to Your Future* (2013)⁵⁷ are also excellent sources for understanding the impact of technology on law. And finally, the other articles in this issue address many of the lawyer functions that should be seen as part of any complete list germane to e-lawyering curriculum design.

Litigation and dispute resolution more generally have already prompted significant technological development. Courts themselves are busy automating their processes. The federal bankruptcy courts have been leaders in this, adopting e-filing procedures in the past decade.⁵⁸ Just about the entire federal court system has followed suit, and

50. *Id.* at 99.

51. EDUCATING THE DIGITAL LAWYER, *supra* note 8, available at http://www.law.harvard.edu/programs/plp/pages/digital_lawyer_book.php.

52. Brian Donnelly, *What Does "Digital Lawyer Mean?"*, in EDUCATING THE DIGITAL LAWYER, *supra* note 8, available at http://www.law.harvard.edu/programs/plp/pdf/002-03358_03358-ch0001.pdf.

53. Marc Lauritsen, *Lawyering in an Age of Intelligent Machines*, in EDUCATING THE DIGITAL LAWYER, *supra* note 8, available at http://www.law.harvard.edu/programs/plp/pdf/003-03358_03358-ch0002.pdf.

54. Jeanne Eicks, *Educating Superior Legal Professionals: Successful Modern Curricula Join Law and Technology*, in EDUCATING THE DIGITAL LAWYER, *supra* note 8, available at http://www.law.harvard.edu/programs/plp/pdf/006-03358_03358-ch0005.pdf.

55. Stephanie Kimbro, *What Should Be In a Digital Curriculum: A Practitioner's Must Have List*, in EDUCATING THE DIGITAL LAWYER, *supra* note 8, available at http://www.law.harvard.edu/programs/plp/pdf/011-03358_03358-ch0010.pdf.

56. Susskind, *supra* note 5.

57. RICHARD SUSSKIND, *TOMORROW'S LAWYERS: AN INTRODUCTION TO YOUR FUTURE* (2013).

58. For a scholarly analysis of e-filing, see William A. Fenwick & Robert D. Brownstone, *Electronic Filing: What Is It-What Are Its Implications?*, 19 SANTA CLARA COMPUTER & HIGH TECH. L.J. 181 (2003). For an example of a typical e-filing procedure, see *Electronic Case Filing Procedures*, U.S. BANKRUPTCY COURT: NORTHERN DISTRICT OF CALIFORNIA (Feb. 1, 2010),

many states are onboard as well.⁵⁹ But progressive as this has seemed to many, most e-filing systems currently act as repositories for documents in an existing form. Movement to a structured data filing will be the next logical step. The traditional paper filing is, after all, a specified format for structuring expected data fields in the world of written text. Why not extract these data fields into some kind of tagged or otherwise identified fashion and submit them to the court without the wrapper of a traditional prose filing? A number of scholars have proposed such systems,⁶⁰ and moves to develop a judicial XML schema and taxonomy have been started by such diverse organizations such as Oasis,⁶¹ xmlLegal,⁶² and the Minnesota courts.⁶³

The management of litigation processes by the lawyers involved is also now highly automated. E-discovery, a portion of this field, is a fully developed activity, with numerous vendors,⁶⁴ wide acceptance in practice, published texts,⁶⁵ reasonably broad teaching law schools, and even an “e-Discovery for Dummies” reference book.⁶⁶ Other aspects of litigation process management have received a lot of support from software vendors (e.g. the LexisNexis suite of CaseMap,⁶⁷ Concordance,⁶⁸ and Law PreDiscovery⁶⁹) but haven’t made much mark on the academic front, other than in some forward-thinking clinical programs.

<http://www.canb.uscourts.gov/procedures/dist/electronic-case-filing-procedures>.

59. See *Courts Accepting Electronic Filings*, U.S. COURTS,

<http://www.uscourts.gov/FederalCourts/CMECF/Courts.aspx> (last visited Apr. 15, 2013), see also NEW YORK STATE BAR ASSOCIATION, *supra* note 488, at 109.

60. See, e.g., Alessandra Villecco Bettelli, *The Employment of XML Standards in Electronic Judicial Proceedings*, 2005 ACM SYMPOSIUM ON APPLIED COMPUTING 297 (2005); see also *Global Justice XML (Archive)*, U.S. DEPARTMENT OF JUSTICE, OFFICE OF JUSTICE PROGRAMS, <http://www.it.ojp.gov/default.aspx?area=nationalInitiatives&page=1013> (last visited Apr. 15, 2013).

61. *Oasis LegalXML Electronic Court Filing TC*, OASIS, https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=legalxml-courtfiling (last visited Apr. 15, 2013).

62. XMLLEGAL, <http://www.xmllegal.org/CourtXML/> (last visited Apr. 15, 2013).

63. *CourtXML Development*, MINNESOTA JUDICIAL BRANCH, <http://www.mncourts.gov/?page=2089> (last visited Apr. 15, 2013).

64. See *supra* note 4.

65. SHIRA A. SCHEINDLIN & DANIEL J. CAPRA, *ELECTRONIC DISCOVERY AND DIGITAL EVIDENCE: CASES AND MATERIALS* (2009); MICHAEL R. ARKFELD, *ELECTRONIC DISCOVERY AND EVIDENCE* (3rd ed. 2006).

66. LINDA VOLONINO & IAN REDPATH, *E-DISCOVERY FOR DUMMIES* (2010).

67. LexisNexis® CaseMap®, LEXISNEXIS, <http://www.lexisnexis.com/casemap/casemap.aspx> (last visited Apr. 15, 2013).

68. *Concordance® e-discovery management software*, LEXISNEXIS, <http://www.lexisnexis.com/en-us/litigation/products/concordance.page> (last visited Apr. 15, 2013).

69. *LAWPreDiscovery™Imaging and Electronic Discovery Software*, LEXISNEXIS <http://www.lexisnexis.com/en-us/litigation/products/law-prediscovery.page> (last visited Apr. 15, 2013).

Project management and firm management processes, while not necessarily tech based, have sparked a number of software solutions,⁷⁰ which make them a natural element in the expanded tech curriculum as well.

Litigation and dispute resolution are only the beginning of lawyer activity. Negotiating, documenting, and overseeing agreements, both for intentional transactions and as the endpoint for most disputes, is a major element in what lawyers do. Document assembly generally and contractual drafting more particularly are already served by software products⁷¹ from companies such as Exari,⁷² HotDocs,⁷³ and SmoothDocs,⁷⁴ just to name a few from a broad set of possibilities. More complex contractual automation projects are in the works as well, through initiatives such as the Financial Industry Business Ontology, a project under the wing of the EDM Council.⁷⁵

A different field of activity, and one that the academy has much more broadly embraced, is the law governing technology and the digital world. This includes intellectual property, communications law, information policy, privacy, etc. Interestingly, this field has many academic centers devoted to it,⁷⁶ but it will, in the end, involve relatively few of our graduates as practitioners, at least outside tech hotspots like Silicon Valley, Boston, and, increasingly, New York City. Legal technology by contrast, will affect practice and law much more broadly. Like sports or entertainment law (which I have also taught and practiced), the law of tech is a fun and potentially student-attracting addition to the law school mix, but is likely to have limited actual career value. As discussed above, the fact that this field puts law in the position of permissive/preventative power over the developments of tech may be part of the reason for its relative popularity among law teachers.

70. See *supra* note 4.

71. *FYI: Document Assembly*, AMERICAN BAR ASSOCIATION, http://www.americanbar.org/groups/departments_offices/legal_technology_resources/resources/charts_fyis/docassembly.html (last visited Apr. 15, 2013).

72. EXARI, exari.com (last visited Apr. 15, 2013).

73. HOTDOCS, <http://www.hotdocs.com/> (last visited Apr. 15, 2013).

74. SMOOTHDOCS, <http://www.smoothdocs.com/> (last visited Apr. 15, 2013).

75. *Financial Industry Business Ontology*, ENTERPRISE DATA MANAGEMENT EDM COUNCIL, <http://www.edmcouncil.org/financialbusiness1> (last visited Apr. 15, 2013).

76. See, e.g., *Law and Technology*, BERKELEY LAW, <http://www.law.berkeley.edu/401.htm> (last visited April 18, 2013); *Law, Science and Technology*, HARVARD LAW SCHOOL, <http://www.law.harvard.edu/academics/degrees/jd/pos/lawscitech/> (last visited April 18, 2013); *High Tech Law Institute*, SANTA CLARA LAW SCHOOL (last visited April 18, 2013); *Stanford Program in Law, Science & Technology*, STANFORD LAW SCHOOL, <http://www.law.stanford.edu/organizations/programs-and-centers/stanford-program-in-law-science-technology/> (last visited April 18, 2013).

A subject matter that has been at least partially embraced in law schools is automated search and research processes. Legal research platforms such as the familiar LexisNexis and Westlaw and more recent or upstart arrivals Bloomberg⁷⁷ and Fastcase⁷⁸ have been widely used for more than 30 years, and their use is ubiquitously taught, generally as a part of first year legal writing and research curriculum. The academy has been slower to come to grips with the jurisprudential implications of what is now an information overload, and its potential impact on the classic modes of case argumentation. As smart search tools like WestLaw Next and LexisNexis Advance integrate search and advocacy at a new level of intensity and added value, and as more general tools like Google, Bing, and Yahoo increasingly enter into the mix, the need to bring additional academic and pedagogic attention to search becomes more compelling.

Anyone who has tried to contact the government recently, whether renewing a driver's license, seeking guidance on a tax issue, or making a sophisticated securities filing, knows that most government service delivery has a significant, if not predominant, online/automated component. Driven in part by the hope of containing costs and in part by the convenience and efficiency of online access, federal, state and local authorities are rushing to convert to "e-government" approaches. Representative of this trend is the establishment of the Office of E-Government and Information Policy at the White House.⁷⁹ In Vermont, the family court system has funded and administered a program to automate almost all of its filings for use by *pro se* litigants.⁸⁰ A visit to the website <http://www.vtlawhelp.org/FamilyCourtFormPrep> gives a question and answer format interview using the A2J software platform developed by the Center for Computer Assisted Legal Instruction (CALI) that leads, in most cases, to a completed document in a format acceptable for filing with the court, a development that ties back into the e-courts discussion above.

77. Alyssa Altshuler, *An Overview of Five Internet Legal Research Alternatives to Westlaw and LexisNexis*, VIRGINIA LAWYER 10 (Oct. 2001), <http://www.vsb.org/publications/valawyer/oct01/altshuler.pdf>.

78. FASTCASE, <http://www.fastcase.com/> (last visited Apr. 15, 2013).

79. *Office of E-Government & Information Technology*, THE WHITE HOUSE, <http://www.whitehouse.gov/omb/e-gov> (last visited Apr. 15, 2013).

80. *Memorandum to the Office of the Administrative Judge for Trial Courts*, VERMONT SUPERIOR COURT (Sept. 20, 2010), <http://www.vermontjudiciary.org/eforms/Domestic%20FormsOnlineMemo.pdf>; *CourtFormPrep: Vermont Court Forms Made Easy*, VERMONT LAW HELP, <http://www.vtlawhelp.org/CourtFormPrep>.

On a personal level, through the Law Lab project at Harvard's Berkman Center, I have been involved in a project to create software to automate the formalities of business organization formation and operation with the support of the Kauffman Foundation.⁸¹ In a promising public/private partnership, the State of Nevada, with leadership from Secretary of State Ross Miller, has adapted this software to fit Nevada legal requirements and has incorporated it into Nevada's SilverFlume portal as a free service open to the public.⁸² Interactive advice and implementation engines of this kind are often termed "expert systems," and they are the way of the future, not just for governments, but also for private legal services in many instances as well.

As the administration of the "modern" bureaucratic state moves from paper and personal interaction to tech-based systems, the law as experienced by most citizens will increasingly be the rules that are baked into the technology with which they interact. In order to provide legal accuracy as part of technological due process,⁸³ the involvement of tech-savvy lawyers is of fundamental importance. Writing regulations and writing code are becoming linked processes, and it should not be left for engineers to have the final say on the synthesis presented to the citizens as law.

Communications technology is also revolutionizing how public advocacy is conducted. The role of mobilizing public opinion as an element in changing law through legislative or even judicial action is becoming better and better understood by advocates on the left, right and center. And, increasingly, such mobilization comes through technologically mediated means like social media. Whether it is the anti-climate change mobilization of Bill McKibben through 350.org⁸⁴ or the social media-using promoters of the Arab Spring,⁸⁵ Facebook, Twitter, and other, less prominent web and mobile device applications can justly claim to be central to public advocacy. Such avenues are integral parts of social-justice activism in the digital age—how we put our values into action—and teaching our students how to use them is a critical part of their education.

81. Oliver Goodenough, *Digital Firm Formation*, in RULES FOR GROWTH: PROMOTING INNOVATION AND GROWTH THROUGH LEGAL REFORM 343 (2011).

82. *DIGITAL OA*, SILVERFLUME, <https://www.nvsilverflume.gov/digitaloa/home> (last visited Apr. 15, 2013).

83. Danielle K. Citron, *Technological Due Process*, 85 WASH. U. L. REV. 1249 (2008).

84. See 350.ORG, 350.org (last visited Apr. 15, 2013).

85. Cory Doctorow, *The internet is the best place for dissent to start*, THE GUARDIAN (Jan. 3, 2012), <http://www.guardian.co.uk/technology/blog/2012/jan/03/the-internet-best-dissent-start>; but see EVGENY MOROZOV, THE NET DELUSION: THE DARK SIDE OF INTERNET FREEDOM (2011).

Big data and related analytics⁸⁶ are yet another place technology is intersecting with law with important consequences. *Big Data Now: 2012 Edition*, published by O'Reilly Media, Inc., a leading technology consulting group, introduces big data in the following terms: "The hot IT buzzword of 2012, big data has become viable as cost effective approaches have emerged to tame the volume, velocity, and variability of massive data. Within this data lie valuable patterns and information, previously hidden because of the amount of work required to extract them."⁸⁷

In the digital world, all of our human activities generate data—shopping, socializing, working, litigating, etc. A recent analysis of Twitter messages, for example, was used to conclude which cities and states were the happiest. Hawaii won. Vermont came in fifth.⁸⁸ Furthermore, measurements about the physical world are piling up as well, sparking better medical treatments, climate science, and financial risk management. This data is being gathered, analyzed and put to use by a variety of public and private actors, with significant legal questions and implications at each stage along the way. Privacy of collection and use looms large, with significantly different approaches between the U.S. and the E.U. already creating issues across the Atlantic.⁸⁹ *Data protection and retention policies* are a must for any organization, with education and health care subject to particularly stringent US laws.⁹⁰ Legal practitioners are themselves actors with uses for the new information and analytic tools, whether to build a case about pollution sources and related epidemiology in an environmental health law suit, to work with a human-resources department on a system to track employee effectiveness, to help create a just-in-time component ordering

86. David Brooks, *What Data Can't Do*, N.Y. TIMES (Feb. 18, 2013), http://www.nytimes.com/2013/02/19/opinion/brooks-what-data-cant-do.html?_r=0.

87. Edd Dumbill, *What is Big Data?*, in *BIG DATA NOW 3* (O'Reilly Media, ed., 2012).

88. Heather Kelly, *The Happiest and Saddest States According to Twitter*, CNN TECH (Feb. 20, 2013), <http://www.cnn.com/2013/02/19/tech/social-media/twitter-happiness>.

89. *E.g.*, W Kuan Hon et al., *Data Protection Jurisdiction and Cloud Computing—When are Cloud Users and Providers Subject to EU Data Protection Law?*, 26 INT'L REV. L. COMPUTER & TECH. 129 (2012).

90. For education privacy, *see, e.g.*, *Family Educational Rights and Privacy Act (FERPA)*, U.S. DEPARTMENT OF EDUCATION, <https://www.ed.gov/policy/gen/guid/fpco/ferpa/index.html> (last visited April 18, 2013). For health care privacy, *see, e.g.*, *Summary of the HIPAA Privacy Rule*, U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES, <http://www.hhs.gov/ocr/privacy/hipaa/understanding/summary/> (last visited April 18, 2013).

system for an industrial client, or to predict outcomes in law suits themselves.⁹¹

Legal service providers, from sole practitioners through firms and on to non-profits and companies, must master the tools of Internet and mobile device presentation and interaction to clients, funders, and their peers. At the intake side, online shopping is how much of our daily commerce goes forward—and the law is no exception. At the extreme is the so-called “virtual” practice, where there is no formal office, and perhaps even no intention of meeting physically with the client.⁹² In addition to a web presence that attracts clients, such a practice also needs fully automated—and ethically compliant—means of communicating with the client, including secure systems designed to give adequate protection to client confidences.⁹³ There are a number of commercially available software packages that help to manage many of these aspects of practicing online.⁹⁴ Educating our students about the intelligent use of such packages—and their design—is another element we must cover.

Shaping the programs and platforms that are the foundation for much of this is another layer of activity that needs to be available to our graduates. Although this has been an implicit message in the list so far, it should be explicit. Some of our students can run the legal technology projects of the future and start and run the companies that undertake them. As a recently released video from Code.org suggests,⁹⁵ the ability to be on the design end of the software that increasingly runs our lives is an important piece of shaping that process, both for public and private good. The O’Reilly Big Data report says, “If you’re not contemplating the advantages of taking more of your operation digital, you can bet your competitors are. As Marc Andreessen wrote last year, ‘software is eating the world.’ Everything is becoming programmable.”⁹⁶

91. Daniel Martin Katz, *Quantitative Legal Prediction – or – How I Learned to Stop Worrying and Start Preparing for the Data Driven Future of the Legal Services Industry*, 62 EMORY L.J. (forthcoming 2013).

92. STEPHANIE L. KIMBRO, VIRTUAL LAW PRACTICE 141 (2010).

93. *Id.* at 158; Eicks, *supra* note 544.

94. Examples include www.totalattorneys.com, <https://lawloop.com/>, and www.abacuslaw.com.

95. *Every student in every school should have the opportunity to learn to code*, CODE.ORG, www.code.org (last visited Apr. 21, 2013) (video presentation).

96. Dumbill, *supra* note 877, at 17.

B. *Promoting Access to Justice and Legal Services*

And speaking of working for the public good, exciting progress is already being made through digitizing legal services for increasing the access to justice, legal services and advice to people, organizations, and causes that have all too frequently been at the mercy of legal process and policy decisions that they could neither understand nor control. At the level of individual legal concerns, there is significant potential for automation to increase the reach of services like our law school legal clinics, a process compellingly articulated by Ronald Staudt in a number of works, including *Access to Justice and Technology Clinics: A 4% Solution* in this issue.⁹⁷ The Vermont project to automate *pro se* filing, described above, is another example of creating opportunities for better access to justice.

There are, of course, concerns that these automated tools are not a full substitute for a live lawyer, and that providing them may lessen pressure for funding additional legal aid-style availability of such live representation. While such a debate has no single answer, I personally am comfortable that automated services will be an increasingly important part of the mix for providing better access to the law for many, many people in the U.S. and around the world. Turbotax and other software preparation programs have revolutionized tax filing, and made cheap, accurate help available to millions. Similar quality services for reasonably routine legal matters will be a boon across a wide swath of our population.

In some cases, private enterprise may be able to provide these scaled, free or low cost services, as the activity around online divorce sites demonstrates.⁹⁸ Quality is a question that may need to sort itself out. Helping foster the creation of such opportunities—which will often be public goods that require non-commercial support—is one way that legal education can make sure that values are added to the mix as well.

97. Ronald W. Staudt & Andrew P. Medeiros, *Access to Justice and Technology Clinics: A 4% Solution*, 88 CHI.-KENT L. REV. 695; see also Stephanie Kimbro, *What Should Be In a Digital Curriculum: A Practitioner's Must Have List*, in EDUCATING THE DIGITAL LAWYER, *supra* note 8, available at http://www.law.harvard.edu/programs/plp/pdf/011-03358_03358-ch0010.pdf.

98. See, e.g., *Online Divorce*, TOPCONSUMERREVIEWS.COM, <http://www.topconsumerreviews.com/online-divorce/> (last visited Apr. 15, 2013).

C. *Digital Jurisprudence – Technology and Legal Scholarship*

Setting aside the “trade school” justifications of mere practicality in a changing reality, law schools can also embrace the study of legal technology and its impact on how we make and view law as a matter of intellectual urgency. The study of the changes which computing, the Internet, and related inventions are making in society has gone fully mainstream, with centers of inquiry at such institutions as Harvard,⁹⁹ Stanford,¹⁰⁰ and Oxford.¹⁰¹ Even those who hate the developments being wrought by digital advances cannot deny their effects, or the conclusion that these effects are a matter for academic inquiry at the highest level.

Law is particularly ripe for study in the context of the technology that enables it. As suggested above, the Langdellian revolution, whose legacy we still inhabit within the legal academy, was technologically grounded. If we build outward from Lessig’s insight that “code is law,”¹⁰² we encounter a whole landscape of topics for investigation. In *Educating the Digital Lawyer*, Michael Bennett, Barbara Bernier, and Dennis Greene suggested some interesting starting points, but the field is vast.¹⁰³ An area that I personally find compelling is looking into how we can begin to restate rules, whether publically determined through legal strictures or privately through contract, into representations that are directly computable, with the goal of creating computational law.

“Computational law” has history at Stanford,¹⁰⁴ and “Computational Legal Studies” provides the title for the blog authored by Daniel Katz, Mike Bommarito and Jon Zelner, and their work is well worth exploring.¹⁰⁵ One way to envision what computational law might mean, suggested to me by Peter Riesen at the Department of the Treasury, is to recall the advance that was made with the development

99. BERKMAN CENTER FOR INTERNET AND SOCIETY, <http://cyber.law.harvard.edu/> (last visited Apr. 15, 2013).

100. THE CENTER FOR INTERNET AND SOCIETY, <http://cyberlaw.stanford.edu/> (last visited Apr. 15, 2013).

101. OXFORD INTERNET INSTITUTE, www.oii.ox.ac.uk (last visited Apr. 15, 2013).

102. Lawrence Lessig, *Code 1* (2006), <http://codev2.cc./download+remix/Lessig-Codev2.pdf>.

103. Barbara Bernier & Dennis Greene, *Law School Reset-Pedagogy, Andragogy & Second Life*, in EDUCATING THE DIGITAL LAWYER, *supra* note 8, available at http://www.law.harvard.edu/programs/plp/pdf/012-03358_03358-ch0011.pdf; Michael Bennett, *A Critical Embracing of the Digital Lawyer*, in EDUCATING THE DIGITAL LAWYER, *supra* note 8, available at http://www.law.harvard.edu/programs/plp/pdf/013-03358_03358-ch0012.pdf.

104. STANFORD COMPUTATION LAW, <http://complaw.stanford.edu/> (last visited Apr. 15, 2013).

105. COMPUTATIONAL LEGAL STUDIES, <http://computationallegalstudies.com> (last visited Apr. 15, 2013).

of algebra. Before algebra, one could state various problems involving factors such as time, rate, and speed in words, and then seek to figure out their solutions through trial and error or brute force logic application. As most of us learned sometime in middle or early high school, however, we can frequently restate those problems in algebraic equations that become open to computation using mathematical operations and rules to reach conclusions as a relatively direct process. Imagine restating our rules of decision and consequence that we imbed in contracts, regulations and statutes into a form that is equally subject to computation, although through different operations, with the ability to embed that computation along with the rules into a software package.

The work undertaken at the Harvard Law Lab on LLC operating agreements is a step in that direction, but it was a purpose-built engine. A more general approach to computational law will eventually provide a flexible tool-kit for creating templates and specific clauses that, when combined with tagging approaches like XML,¹⁰⁶ can be the basis for extensive automation of not only information on the rule, but the execution of the rule as well. Efforts along this line, which I term the “Big Project” in my own thinking, are already advancing on several fronts in academia, commerce, and government. I fully expect that we will have produced usable and useful approaches well before the end of this decade.

D. *Jobs for Our Graduates*

As a final demonstration of its importance, we should view law and technology education as helping to make our graduates more employable in a difficult market. As mentioned in my introduction, there are jobs available with the providers of legal technology. It is a large, growing industry, and many of the companies are hiring. A J.D. with a demonstrated educational background on topics like e-discovery or document assembly becomes an interesting candidate for such employment. One impediment is students’ own expectations about what legal work means. If they come to agree that these companies are law practice too, then some of those internal barriers may fall.

106. See, e.g., Lawrence A. Cunningham, *Language, Deals and Standards: The Future of XML Contracts*, 84 WASH. U. L. REV. 313 (2006); Benjamin Grosf, et al., *A Declarative Approach to Business Rules in Contracts: Courteous Logic Programs in XML* (MIT Sloan Sch. Mgmt. Working Paper 4187-01, 2001), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=290094; Eliza Mik, *From Clay Tablets to AJAX: Replicating Writing and Documents in Internet Transactions*, 15, No. 8, J. INTERNET L. 1 (2012).

Additionally, more traditional legal employers, such as firms, businesses, government, and NGOs, are increasingly looking for people who come with a background in legal technology, in part to oversee internal work and in part to provide intelligent interaction with the outside specialist companies. These opportunities can include classic legal jobs like associates at a firm, but they can also consist of new occupations such as knowledge or discovery management.

At the risk of pointing out the secret sauce we hope to be adding at VLS, it is astonishing how few law schools are clued into this field yet, and how relatively open it is at this point for the institutions and students willing to make the push into it. Our goal is both to increase overall placement and to teach our graduates to be the designers and managers of a changing practice landscape, and not its casualties.

E. Embracing Creative Destruction

Before turning to what a curriculum might look like, we should address not only the reasons why legal technology should have a significant place in our curriculum, but also the obstacles to such a change. Some I have alluded to already—difficulties in learning new tricks, preferences for our own expertise, etc. But one of the greatest obstacles is the fact that our traditional legal curriculum has been productive, and we, as a general matter, have learned to teach it well. The answer to the Yirka question of what we need to give up in order to do something new may point to something we have held justifiably dear.

Such “creative destruction” is often very hard to embrace. But, as Arthur Levitt famously opined in his 1960 article, *Market Myopia*: “To survive, [organizations] will have to plot the obsolescence of what now produces their livelihood.”¹⁰⁷ Because if the organizations themselves don’t do it, someone else surely will. Or, as W. Edwards Deming is said to have put it in even starker terms: “It is not necessary to change. Survival is not mandatory.”¹⁰⁸

VI. TEACHING E-LAWYERING

So, how do we go about teaching all of this e-lawyering? What does it look like in the curriculum? We are not working without mod-

107. Theodore Levitt, *Marketing Myopia*, 38 Issue 4, HARV. BUS. REV. 45 (1960).

108. This quote is widely attributed to Deming, a noted 20th Century mathematician and pioneer in the science of quality management. See, e.g., *W. Edwards Deming Quotes*, BRAINYQUOTE, http://www.brainyquote.com/quotes/authors/w/w_edwards_deming.html (last visited Apr. 20, 2013).

els—there are examples already out there. Pioneering work was started at Chicago-Kent in the late 1970s and at Brigham Young University's Law School in the 1980s on early-stage document assembly approaches. The Center for Computer Assisted Legal Instruction, also based at Chicago-Kent, has been a longtime supplier of ideas, materials, and software at the intersection of law and computer technology. Recently, Daniel Katz has called for thinking about an "MIT School of Law" as a thought experiment for legal education reform incorporating technology.¹⁰⁹ In a useful chapter in *Educating the Digital Lawyer*, Brock Rutter has provided a "Survey of Existing Courses in Digital Technology,"¹¹⁰ which I will not repeat here. Rather, I will offer my own suggestions on approaches that might be taken and elements that might be included.

To begin with, aspects of legal technology need to be taught "across the curriculum." For instance, such litigation-oriented subjects as civil procedure and evidence need to be taught with appropriate reference to the theory and practice of e-courts and e-discovery. Transactional courses should incorporate document assembly and contract automation. Family law courses can offer units on *pro se* documentation, like that made available by the Vermont Courts. Clinics, even of the traditional live client kind, will, of necessity, increasingly adopt practice-oriented software to provide competent representation, and will therefore need to teach students about its use.

Secondly, there is a place for a suite of specialty courses, directed specifically at legal technology issues. At VLS we are developing a set that includes an introductory survey and then in-depth courses around:

- Document Assembly/Expert Systems/Transactions
- Data and e-Discovery
- Practice/Project/Litigation Management
- "Virtual" Practice
- Advanced Online Search
- Law of Technology

109. Daniel Katz, *The MIT School of Law: A Perspective on Legal Education in the 21st Century*, COMPUTATIONAL LEGAL STUDIES (Oct. 14, 2011), <http://computationallegalstudies.com/2011/10/13/the-mit-school-of-law-a-perspective-on-legal-education-in-the-21st-century-presentation-slides-version-1-01>.

110. Brock Rutter, *Survey of Existing Courses in Lawyer Use of Technology*, in EDUCATING THE DIGITAL LAWYER, *supra* note 8, http://www.law.harvard.edu/programs/plp/pdf/007-03358_03358-ch0006.pdf.

While we believe this suite will provide a fair bit of coverage across the activity targets we have enunciated, the divisions among these topics are somewhat blurry, and there is some arbitrariness in how we have grouped topics together. As the field develops further over the coming years, we anticipate that new topics will be added, and existing ones may need treatment in greater depth.

In addition to developing a good selection of courses, a legal technology curriculum should consider how they are to be delivered. Arranging access to software products for the students to learn on is a must for most of the offerings. Delivery modes should also be considered, including whether or not the courses should be offered in residential classes, through distance learning, or in some kind of hybrid or “blended” format. A “cyber clinic” which adopts law and technology approaches to serving client needs can also offer a successful model for that elusive goal of an effective, live-client clinical experience made available to distance education students. Internships, externships, and other experiential placements are also possible. When the suite of courses is developed enough, certificates or new degree possibilities can be considered, such as a possible “MLT,” a Master of Legal Technology.

In addition to curricular offerings, a good legal tech program should create opportunities for student activities, such as a possible “apps club,” a game design lab, or a law Wiki on particular points of doctrine. As part of the placement efforts, each student should develop a professional website, where the student’s resume and particularly successful academic projects can be posted. The school, through a center or institute, can also create paid opportunities for students to undertake contract research, an opportunity for faculty involvement as well. There can also be grant-driven research, looking to the models of most science departments in research universities.

In implementing such programs, law schools may usefully return to my introductory goals of value added, values added, and economic sustainability for guidance. The value added goal requires us to keep track of the needs of the world of legal practice, understood expansively. Because of the rapidly changing nature of the tech field, those who teach law and technology will need to keep updating their goals, materials, and approaches. Involving practitioners and providers in the teaching process can be helpful in keeping a course up to date. Adding values also requires intention and attention. Instructors should keep underserved populations and issues in mind when determining the

issues to be addressed and the software to be built. Getting, and keeping, a school's clinical program involved with the technology program will enrich them both. And the value of competency will be advanced as students learn the skills, knowledge, and perspectives that will be necessary for every young lawyer aiming to provide services to a law-hungry world in the digital age.

CONCLUSION

Legal education is at a clear inflection point, where much of how and what we have taught is under scrutiny. As we reform our curriculums in this moment of change, we should be guided by considerations of value added, values added, and economic sustainability. Law and technology is an area that is ripe for expansion, with the possibility of satisfying all of these criteria. It also provides ample room for scholarly examination. Creating opportunities for learning how technology is shaping legal practice should be a priority for any school looking to provide a useful education for the lawyers of the present, let alone the future.