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## Legal Education: A New Growth Vision Part I—The Issue: Sustainable Growth or Dead Cat Bounce? A Strategic Inflection Point Analysis

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Hilary G. Escajeda\*

## Legal Education: A New Growth Vision

### Part I—The Issue: Sustainable Growth or Dead Cat Bounce? \*\* A Strategic Inflection Point Analysis

#### ABSTRACT

*Legal education programs now face strategic inflection points. To survive and thrive long-term, education programs must embrace entrepreneurship, technology, innovation, platforms, and customer service as the means by which to navigate through strategic inflection points. Imagination, adaptability, agility, determination, and speed will separate market leaders from laggards. Scrappy, entrepreneurial, and action-oriented programs that deliver omni-channel, lifelong knowledge and skills development solutions are the movers that will radically redefine and likely dominate the legal education industry. Slow, tradition-bound programs resistant to change are non-movers that face extinction.*

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\*\* "A dead cat bounce is a temporary recovery from a prolonged decline or a bear market that is followed by the continuation of the downtrend." *Dead Cat Bounce*, INVESTOPEdia, <https://www.investopedia.com/terms/d/deadcatbounce.asp> [<https://perma.unl.edu/J37A-QRE6>].

*Entrepreneurial education leaders committed to program growth know that since competitive advantages are transitory, they must create and nurture opportunities for continuous innovation. They also recognize the nexuses between customer satisfaction, institutional relevance, program solvency, and employee job security. These mindset shifts, coupled with a bias for action and modernization, will provide fruitful paths for new doctrinal and skill transfer services by legal education programs.*

*While tinkers to student admissions and traditional business models may temporarily buffer the forces of creative destruction, the market will ultimately sort winners and losers. Because technology does not respect reputations or legacies, incumbent institutions face significant risks from flexible, adaptive and shape-shifting competitors that exploit emerging technologies. These shape-shifters rapidly respond to market changes by re-engineering and reinventing their business models, platforms, systems, and processes to capitalize on emerging trends—with an end goal of human-AI integration.*

*Bottom line: innovation represents the only firewall to obsolescence.*

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#### SERIES OVERVIEW

This three-part *Legal Education: A New Growth Vision* series introduces the overarching hypothesis that when a strategic inflection point threatens traditional law schools, the strongest survivors will be led by forward-focused, innovative, and agile education entrepreneurs.

*Part I* of this series questions whether law schools are in the midst of a dead cat bounce, and it also completes a strategic inflection point analysis of the current legal education ecosystem. *Part I* concludes that law schools indeed face a strategic inflection point and argues that the spiraling downward trajectory can only be upturned through digital, business model, and education services innovation.

To capitalize on the opportunities uncovered by the combined market forces of creative destruction and strategic inflection points, *Parts II* and *III* then lay the groundwork for developing customer satisfying innovation ecosystems, transforming business and teaching models, and building organizational dexterity so that survival-oriented law schools can move toward an end goal of being human and digital.

## I. INTRODUCTION: CREATIVE DESTRUCTION AND DIGITAL CONVERGENCE

*Entrepreneurship rests on a theory of economy and society. The theory sees change as normal and indeed as healthy. . . . [T]he entrepreneur upsets and disorganizes. As Joseph Schumpeter formulated it, his task is “creative destruction.”*

—Peter F. Drucker<sup>1</sup>

Law schools have enjoyed long and, until recently, positive and productive relationships with law, accounting, and other professional service firms. Now, turbulent economic, demographic, and technology changes threaten the traditional education business model.<sup>2</sup> Borrowing from the language of business, a “strategic inflection point”<sup>3</sup> (SIP) has arrived for legal education programs. The “business as usual” approach no longer presents a viable path forward as legal education becomes increasingly digital and global.<sup>4</sup>

Over the last three decades, information and communication technologies (ICTs)<sup>5</sup> have delivered a new era of “digital convergence.”<sup>6</sup>

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1. PETER F. DRUCKER, *INNOVATION AND ENTREPRENEURSHIP* 26 (1985).
  2. Tim Bajarin, *This Will Be the Most Disruptive Technology Over the Next 5 Years*, TIME (Jan. 12, 2015), <http://time.com/3663909/technology-disruptive-impact/?iid=sr-link1> [<https://perma.unl.edu/9AEX-P82S>] (“[M]ore people will come online for the first time over the next five to ten years than ever before[,] [which] will have disruptive global implications.”); see generally Jon Marcus, *Graduate Programs Have Become a Cash Cow for Struggling Colleges. What Does that Mean for Students?* HECHINGER REP. & PBSNEWSHOUR (Sept. 18, 2017), <http://www.pbs.org/newshour/updates/graduate-programs-become-cash-cow-struggling-colleges-mean-students/> [<https://perma.unl.edu/S9UZ-8CNM>].
  3. ANDREW S. GROVE, *ONLY THE PARANOID SURVIVE: HOW TO EXPLOIT THE CRISIS POINTS THAT CHALLENGE EVERY COMPANY* 3 (1999) (“[A] strategic inflection point is a time in the life of a business when its fundamentals are about to change. That change can mean an opportunity to rise to new heights. But it may just as likely sign the beginning of the end.”); see generally RICHARD S. TEDLOW, *ANDY GROVE: THE LIFE AND TIMES OF AN AMERICAN* (2006).
  4. Paul Caron, *Allard: The Future of the Legal Profession*, TAXPROF BLOG (June 20, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/06/allard-the-future-of-the-legal-profession.html](http://taxprof.typepad.com/taxprof_blog/2018/06/allard-the-future-of-the-legal-profession.html) [<https://perma.unl.edu/8CEW-EQFM>] (“Law schools from all countries will compete with each other for students in a global market of legal education.”).
  5. Information and Communications Technology (ICT) refers to “the technology used to handle telecommunications, broadcast media, intelligent building management systems, audiovisual processing and transmission systems, and network-based control and monitoring functions.” *Information and Communications Technology (ICT)*, TECHOPEDIA, <https://www.techopedia.com/definition/24152/information-and-communications-technology-ict> [<https://perma.unl.edu/D9W5-NVJ4>]. The scope of ICT is broader than just “information technology” (IT); it describes “the convergence of several technologies and the use of common transmission lines carrying very diverse data and communication types and formats.” *Id.* For a remarkably durable view of the power and limitations of the Internet, see

Digital convergence denotes “an essential, pervasive and interactive reconfiguration of the technical and social information infrastructures of modern society.”<sup>7</sup> ICTs are uprooting once-stable industries, allowing dynamic, value-creating digital ecosystems to blossom in their place.<sup>8</sup> These digital ecosystems often exist as platforms—“a group of technologies that are used as a base upon which other applications, processes, or technologies are developed.”<sup>9</sup> Digital ecosystems bring together people, institutions, businesses, and other social groups to connect, create, and exchange value.<sup>10</sup> As platforms become more sophisticated and complex, their capabilities expand.<sup>11</sup> Whatever their

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Michael E. Porter, *Strategy and the Internet*, HARV. BUS. REV. (Mar. 2001), <https://hbr.org/2001/03/strategy-and-the-internet> [<https://perma.unl.edu/ZQ2C-6PZ3>] (stating that the Internet is “an enabling technology—a powerful set of tools that can be used, wisely or unwisely, in almost any industry and as part of almost any strategy”). Porter explains that “[t]he openness of the Internet, combined with advances in software architecture, development tools, and modularity, makes it much easier for companies to design and implement applications.” *Id.* Porter presciently predicted in 2001: “The internet per se will rarely be a competitive advantage. Many of the companies that succeed will be ones that use the Internet as a complement to traditional ways of competing, not those that set their Internet initiatives apart from their established operations.” *Id.* He adds that the established organizations “will be most successful when they deploy Internet technology to reconfigure traditional activities or when they find new combinations of Internet and traditional approaches.” *Id.*

6. Thorsten Koch & Josef Windsperger, *Seeing Through the Network: Competitive Advantage in the Digital Economy*, J. ORG. DESIGN 6 (2017), <https://jorgdesign.springeropen.com/articles/10.1186/s41469-017-0016-z> [<https://perma.unl.edu/A2LU-RJJN>].
7. *Id.* (quoting David Tilson, Kalle Lyytinen & Carsten Sorenson, *Desperately Seeking the Infrastructure in IS Research: Conceptualization of “Digital Convergence” as Co-Evolution of Social and Technical Infrastructures*, 43 HAW. INT’L CONF. ON SYS. SCI. (2010)).
8. *Id.* at 7.
9. *Platform*, TECHOPEDIA, <https://www.techopedia.com/definition/3411/platform> [<https://perma.unl.edu/H25V-T58S>]. For example, a laptop running a Windows or Mac OS X operating system is a computing platform. *Id.*
10. DAVID S. EVANS & RICHARD SCHMALENSEE, MATCHMAKERS: THE NEW ECONOMICS OF MULTISIDED PLATFORMS 103 (2016); see generally James C. Anderson and James A. Narus, *Business Marketing: Understand What Customers Value*, HARV. BUS. REV. (Nov.–Dec. 1998), <https://hbr.org/1998/11/business-marketing-understand-what-customers-value> [<https://perma.unl.edu/4RTG-KBEL>] (acknowledging the difficulty in defining and measuring value). *Legal Education: A New Growth Vision Part II*, subsection III.A.4 examines value in legal education.
11. For example, multisided platforms like Facebook are those that permit multiple groups—the “sides” of the platform—to interact. *Id.* at 210. In turn, foundational platforms, such as internet service providers, are “multisided platforms that provide[] core services to other multisided platforms.” *Id.* at 208. Evans and Schmalensee expand on this concept as follows: “[Foundational platform] . . . Comcast makes it possible for end users to connect over the Internet to Google’s search engine. Foundational platforms also include computer operating systems, or invisible engines, which provide a standard platform for app developers and end users . . .” *Id.*

target market, successful multisided platforms<sup>12</sup> are diverse, open, networked, nimble, and intertwined.<sup>13</sup> Because ICTs and platforms have triggered profound shifts in personal, social, and commercial interactions,<sup>14</sup> legal education programs that survive and thrive in the decades ahead must find ways to balance and harness these transformative technologies in their delivery of relevant, market-valued knowledge and skills development services.

Enterprise sustainability guides the analysis and informs the recommendations throughout this three-part Article series. This Article (*Legal Education: A New Growth Vision Part I*) posits that legal education programs must grab hold of the forces of “creative destruction”<sup>15</sup> and embrace innovation, digital technologies, a startup mindset, and modern business models as the means by which to navigate through SIPs and differentiate their education services in the marketplace.<sup>16</sup> Part II of this Article begins with an assessment of the

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12. See GEOFFREY G. PARKER ET AL., PLATFORM REVOLUTION: HOW NETWORKED MARKETS ARE TRANSFORMING THE ECONOMY AND HOW TO MAKE THEM WORK FOR YOU 1 (2016) (identifying Facebook, Apple, Amazon, and Twitter as successful platforms); see also EVANS & SCHMALENSEE, *supra* note 10, at 9–12, 47, 167–81, (describing multisided platforms OpenTable, M-PESA [mobile money/financial services app in Kenya], and Tinder).
  13. Koch & Windsperger, *supra* note 6, at 20–21, 24.
  14. CALESTOUS JUMA, INNOVATION AND ITS ENEMIES: WHY PEOPLE RESIST NEW TECHNOLOGIES 91 (2016); see also ANDREW MCAFEE & ERIK BRYNJOLFSSON, MACHINE PLATFORM CROWD: HARNESSING OUR DIGITAL FUTURE 8 (2017) (citing strategist Tom Goodwin’s observation that Facebook has become a “global utility of communication” with 936 million daily visitors who spend an average of “fifty minutes a day” on the social platform).
  15. EVANS & SCHMALENSEE, *supra* note 10, at 49 (quoting economist Joseph A. Schumpeter) (“[The] process of industrial mutation . . . incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one . . . . [This process] must be seen in its role in the perennial gale of creative destruction.”). Creative destruction involves never-ending cycles of renewal, which means “‘transformation’ in the Hindu tradition” rather than “‘death’ in the Judeo-Christian tradition.” RICK WARTZMAN, THE END OF LOYALTY 269 (2017) (quoting Professor Sarah Kaplan and consultant Richard Foster). Wartzman also observes that dynamic economies thrive when “innovative upstarts” challenge incumbents. *Id.*
  16. HENRY CHESBROUGH, OPEN SERVICES INNOVATION: RETHINKING YOUR BUSINESS TO GROW AND COMPETE IN A NEW ERA 3, 10–11 (2011) (discussing how organizations must cultivate growth opportunities by continuously reinventing their services in order to differentiate their offerings and gain competitive advantages). ERIC RIES, THE LEAN STARTUP: HOW TODAY’S ENTREPRENEURS USE CONTINUOUS INNOVATION TO CREATE RADICALLY SUCCESSFUL BUSINESSES 27 (2011) (“A startup is a human institution designed to create a new product or service under conditions of extreme uncertainty.”). Ries also notes that “[e]ntrepreneurs who operate inside an established organization sometimes are called ‘intrapreneurs’ because of the special circumstances that attend building a startup within a larger company.” *Id.* at 26–27; see JUMA, *supra* note 14, at 39 (“The ability to identify emerging technological opportunities and harness their benefits is an essential aspect of entrepreneurship, business development, and public policy.”). Juma also notes the

current legal services ecosystem by examining the stressors facing legal education and the practice of law, which stem from rapidly changing technologies. Part III introduces the concept of strategic inflection points: how to identify and respond to them, the advantages of moving quickly in doing so, and what separates winners from losers in the face of industry upheaval. Part IV performs an SIP analysis of legal education programs, followed by a recommendation that program leaders start planting the seeds of truly sustainable growth. Part V offers conclusions. To assist the reader, Appendices I–III visually depict the T-shaped skills for knowledge professionals, consolidate the multimedia sources referenced, and provide a glossary of key terms.

Last, a broad definition of “customers” roots the analysis in this three-part series. Specifically, these Articles assert that legal education serves a wide range of interconnected customers, including students, graduates, employers, and the professional community.<sup>17</sup>

## II. ASSESSMENT OF THE CURRENT LEGAL SERVICES ECOSYSTEM

An assessment of the current legal services ecosystem sets the stage for this Article’s central premise: the world is digitizing at an astonishing rate, and all industries need to acknowledge and embrace technology if they want to survive. Millennials and members of Gener-

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importance of “adopt[ing] business strategies and policies that take into account the importance of emerging technological opportunities.” *Id.* at 40. See *Competing in the AI Economy: An Interview with MIT’s Andrew McAfee*, MCKINSEY & CO. (Mar. 2018), <https://www.mckinsey.com/Videos/video?vid=5759955614001&plyrid=HkOJqCPWdb> [<https://perma.unl.edu/JA6A-NKXP>]; see also *Redefining Competition: Insights from the Global C-suite Study—the CEO Perspective*, IBM 2016 CEO C-SUITE STUDIES 8 (Jan. 2016), [http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?subtype=XB&infotype=PM&htmlfid=GBE03719USEN&attachment=GBE03719USEN.pdf&cm\\_mc\\_uid=36788419335514540780823&cm\\_mc\\_sid\\_50200000=1454423499](http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?subtype=XB&infotype=PM&htmlfid=GBE03719USEN&attachment=GBE03719USEN.pdf&cm_mc_uid=36788419335514540780823&cm_mc_sid_50200000=1454423499) [<https://perma.unl.edu/YBL9-B3JG>] [hereinafter IBM 2016 CEO C-SUITE STUDIES] (“[C]reating online customer communities is one of the best ways of detecting what the markets really want.”).

17. Anticipating an argument that education is inherently different from other consumer relationships and, therefore, the “student as customer” analysis is patently wrong, please note the specific type of education discussed in this Article: professional legal education (not undergraduate education). Students attend professional schools to obtain doctrinal knowledge and technical skills for a career as a legal professional. See BHARAT ANAND, *THE CONTENT TRAP: A STRATEGIST’S GUIDE TO DIGITAL CHANGE* xxv (2016) (identifying three types of critical connections that form a “Connections Triad”). The Triad includes: “connections between users, connections between products, and connections across an organization’s activities.” *Id.* Forward-focused innovation strategies will identify and leverage these relational, functional, and organizational connections to provide customers with integrated, holistic solutions.



ation Z<sup>18</sup> who were raised in front of computer screens are becoming young professionals with buying power and decisional authority. Technology has become ubiquitous, affordable, and increasingly user-friendly. In this new climate, the expectations and capabilities of the legal world are shifting dramatically. This Part will discuss ongoing technological transformations within the legal services industry; illustrate the way these transformations destabilize the status quo of the tradition-bound legal profession; and establish that higher education, particularly legal education, is a referral-based service business at its heart and thus is subject to the same pressures facing the marketplace.

### A. Technology Will Transform the Knowledge Professions

The full force of digital technologies has only begun to grow deep, expansive root systems that will eventually buckle law school foundations.<sup>19</sup> In 2017, McKinsey & Company estimated that in selected industries—including professional and financial services—“less than 40 percent [are] digitized, despite the relatively deep penetration of these technologies in media, retail, and high tech.”<sup>20</sup> The research report then asserted that “[b]old, tightly integrated digital strategies” will serve as the differentiator between the organizations that thrive and survive and those that languish and cease to exist.<sup>21</sup> Aggressive shifts to digitization result in better projected revenues and growth, especially if the organization changes its strategies, makes fundamental changes to business models, and embraces platforms.<sup>22</sup> Successful, bold action demands (1) dexterous organizational cultures liberated

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18. Laura P. Graham, *Generation Z Goes to Law School: Teaching and Reaching Law Students in the Post-Millennial Generation*, 41 U. ARK. LITTLE ROCK L. REV. 9 (forthcoming 2019) (“Most generational theorists agree that Gen Z encompasses persons born between 1995 and 2010.”).

19. JOSEPH E. AOUN, ROBOT-PROOF: HIGHER EDUCATION IN THE AGE OF ARTIFICIAL INTELLIGENCE xv (2017) (“I have come to realize that the existing model of higher education has yet to adapt to the seismic shifts rattling the foundations of the global economy.”).

20. Jacques Bughin et al., *The Case for Digital Reinvention*, MCKINSEY & CO. (Feb. 2017), <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/the-case-for-digital-reinvention> [<https://perma.unl.edu/8TGV-YPQ5>] (referring to financial services, professional services, healthcare, telecom, high tech, travel/transport, retail, media/entertainment, automotive, and consumer packaged goods).

21. *Id.*

22. *Id.* (“[W]inners exceed laggards in both the *magnitude* and the *scope* of their digital investments . . . .”); see also Jacques Bughin & Nicolas van Zeebroeck, *New Evidence for the Power of Digital Platforms*, MCKINSEY & CO. (Aug. 2017), <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/new-evidence-for-the-power-of-digital-platforms> [<https://perma.unl.edu/3D5P-5DHK>] (describing how platforms can redefine customer value propositions by providing access to unique content and connectivity).

from siloed mindsets; (2) a holistic understanding of customer needs; (3) laser focus on meeting customer needs; (4) full-throttle adoption of data and new technologies; and (5) synchronized alignment of organization strategies and operations with innovation mission trajectories.<sup>23</sup>

Augmenting these perspectives, IBM's 2012 study of 1,700 CEOs and public sector leaders over six years found that "technology is now driving more organizational change than any other force—even the economy."<sup>24</sup> The IBM study specifically asked the leaders for their

23. See generally *Reinventing Innovation: Five Findings to Guide Strategy Through Execution*, KEY INSIGHTS FROM PwC'S INNOVATION BENCHMARK (2017), <https://www.pwc.com/us/en/advisory-services/business-innovation/assets/2017-innovation-benchmark-findings.pdf> [<https://perma.unl.edu/Q62U-9NN3>] [hereinafter *Reinventing Innovation*]; see Bughin et al., *supra* note 20 ("A strong organizational culture is important for several reasons: it enhances the ability to perceive digital threats and opportunities, bolsters the scope of actions companies can take in response to digitization, and supports the coordinated execution of those actions across functions, departments, and business units."); see also Katrina Lake, *Stitch Fix's CEO on Selling Personal Style to the Mass Market*, HARV. BUS. REV. (May–June 2018), <https://hbr.org/2018/05/stitch-fixs-ceo-on-selling-personal-style-to-the-mass-market> [<https://perma.unl.edu/9ZQG-7EQY>] (explaining Stitch Fix's application of technologies to clothes shopping). On the topic of humans and technology, Lake explains: "A good person plus a good algorithm is far superior to the best person or the best algorithm alone. We aren't pitting people and data against each other. We need them to work together." *Id.* Innovation mission trajectories are briefly introduced *infra* note 200. *Legal Education: A New Growth Vision Part III*, section II.A provides more detail.

24. *Leading Through Connections: Insights from the Global Chief Executive Officer Study*, IBM 2012 CEO C-SUITE STUDIES 6, 11–12 (May 2012) [hereinafter IBM 2012 CEO C-SUITE STUDIES], [https://www-935.ibm.com/services/multimedia/anz\\_ceo\\_study\\_2012.pdf](https://www-935.ibm.com/services/multimedia/anz_ceo_study_2012.pdf) [<https://perma.unl.edu/P2KF-HY5X>]; see JUMA, *supra* note 14, at 316 (quoting Albert A. Bartlett, Professor of physics at the University of Colorado Boulder: "The greatest shortcoming of the human race is our inability to understand the exponential function."); see also JERRY KAPLAN, HUMANS NEED NOT APPLY 25–26 (2015) (explaining power of exponential growth). Kaplan states:

The term *exponential growth* is thrown around so often (and so imprecisely) that most people don't really understand what it means. It's easy to define—a quantity that changes in proportion to a fixed number raised to a changing power—but it's hard for the human mind to grasp what that means. The powers 100, 1,000, 10,000 (powers of 10), and 32, 64, 128 (powers of 2), are numeric examples. But these numbers can get mind-bogglingly large very quickly. In just eighty steps in the first of these example sequences, the figure is larger than the estimated number of atoms in the entire universe.

*Id.*

For example, Moore's Law represents a doubling of transistor density, computer speed, and memory capacity, which is "an exponential pace (power of 2)." *Id.* Some background on Moore's law: In 1965, Gordon Moore (Intel co-founder) observed that "the number of transistors placed in an integrated circuit (IC) or chip doubles approximately every two years." *Moore's Law*, TECHOPEDIA, <https://www.techopedia.com/definition/2369/moores-law> [<https://perma.unl.edu/CHY2-QN55>]. While some theorists argue that Moore's law will soon reach its limit, other industry leaders believe that Moore's Law will control for the foreseeable future

views on how technology may reinvent their businesses.<sup>25</sup> In response, CEO attitudes ranged from excitement and inspiration to fear of falling behind and making technology blunders.<sup>26</sup> When navigating business and technology shifts, the CEOs noted the delicate balance between organizational controls and organizational openness in order to foster innovation<sup>27</sup>—especially since innovation thrives in ecosystems which are expansive, collaborative, creative, flexible, and adaptive.<sup>28</sup> Consistently, the CEOs viewed technology as enabling essential human connection, collaboration, and relationships that “fuel creativity and innovation” and create new market opportunities to serve unmet customer needs.<sup>29</sup> Further, they recognized that “innovation is a team sport” that involves multigenerational collaborations and personal relationships—spanning diverse industries, companies, and institutions—working together to foster flourishing collaborative ecosystems that support “perpetual reinvention.”<sup>30</sup>

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given the skillfulness of engineers who have found ways to circumvent the laws of physics (e.g., by layering integrated circuits and “wavelength division multiplexing (WDM)” techniques). ERIK BRYNJOLFSSON & ANDREW MCAFEE, *THE SECOND MACHINE AGE: WORK, PROGRESS, AND PROSPERITY IN A TIME OF BRILLIANT TECHNOLOGIES* 42–43 (2014).

25. IBM 2012 CEO C-SUITE STUDIES, *supra* note 24, at 14; *see also Redefining Boundaries: Insights from the Global C-suite Study*, IBM 2015 CEO C-SUITE STUDIES 3 (Nov. 2015) [hereinafter IBM 2015 CEO C-SUITE STUDIES], <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=GBE03695USEN> [<https://perma.unl.edu/MCH3-FHG4>] (identifying “key initiatives” to prepare for the future: “prepare for digital invaders,” “create a panoramic perspective,” and “[b]e first, be best, or be nowhere”). *But see infra* section III.B (discussing timing of moves and the mover’s advantage).
26. IBM 2012 CEO C-SUITE STUDIES, *supra* note 24, at 12–14.
27. *Id.* at 18.
28. *Id.* at 20.
29. *Id.* at 14; *see Reinventing Innovation*, *supra* note 23, at 17 (“Increasingly, companies are looking to technology to help create markets for novel products and services that don’t yet exist and to meet needs that customers don’t yet know they have (e.g., the previously unknown/unmet need for smartphones or wearables).”).
30. *Id.* at 8, 14, 25 (emphasizing the importance of multidisciplinary team collaborations); LESLIE BERLIN, *TROUBLEMAKERS: SILICON VALLEY’S COMING OF AGE* xii, xv (2017) (describing the “generational handoff” between Silicon Valley pioneers and up-and-coming technology innovators). *Incumbents Strike Back: Insights from the Global C-suite Study*, IBM 2018 GLOBAL C-SUITE STUDY 1, 3–4 (Feb. 2018) [hereinafter IBM 2018 GLOBAL C-SUITE STUDY], [https://public.dhe.ibm.com/common/ssi/ecm/98/en/98013098usen/incumbents-strike-back\\_98013098USEN.pdf](https://public.dhe.ibm.com/common/ssi/ecm/98/en/98013098usen/incumbents-strike-back_98013098USEN.pdf) [<https://perma.unl.edu/8EWL-WQJW>] (identifying three organizational archetypes: “the Reinventors, the Practitioners, and the Aspirationalists”). The IBM report evaluates these organizational archetypes based on multi-point criteria to determine whether the organization has a “dynamic vision,” “open culture,” and “agile operations.” *Id.* at 31. The Reinventors scored highest and the Aspirationalists ranked lowest. *Id.* The report recommends the following actions to reinvent organizations:
  - “Interrogate your environment” which involves avoiding complacency on past successes by scanning market landscape for disruptions;

The legal profession currently faces significant technology disruptions. The 2018 Autman Weil Flash Survey “Law Firms in Transition” identifies “the sweeping force of technology” as a serious threat that will result in the continued “commoditization and commercialization of more and more legal services.”<sup>31</sup> Specifically, eighty-six percent (86%) of the 398 law firm leaders surveyed believe that the trend of “technology replacing human resources” has become permanent and thus represents the “new normal.”<sup>32</sup> Despite being aware of the shifting landscape, sixty-nine percent (69%) of partners continue to resist modernization efforts.<sup>33</sup> The Autman Weil report concisely concludes: “Change moves in one direction. There is no going back.”<sup>34</sup>

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evaluating and experimenting with new business models, and connecting and collaborating with customers, partners, and potentially competitors.

- “Commit with frequency” which includes divesting, investing, and re-allocating capital and human resources to promote innovation and high potential opportunities as well as focusing on customer co-creation to create trust and develop brand value instead of generic advertising.
- “Experiment deliberately” which means recognizing that competitive advantages are transitory, creating open and collaborative cultures, and working with customers and possibly competitors to co-create new services and products.

*Id.* at 33.

31. Thomas S. Clay & Eric A. Seeger, *2018 Law Firms in Transition*, ALTMAN WEIL FLASH SURVEY ii, <http://www.altmanweil.com/LFIT2018/> [<https://perma.unl.edu/LSA2-M9VP>]. The report also found that in “69% of law firms, partners resist most change efforts.” *Id.*
32. *Id.* at i, 95 app. 3. The Survey polled “managing partners and chairs at 801 US Law firms with 50 or more lawyers.” *Id.* at i. The Survey reports the participation of “398 firms (50%) including 45% of the 500 largest US law firms and 52% of the AmLaw 200 participated.” *Id.*
33. *Id.* at ii; *see also* Nicole Black, *Law Firms, Artificial Intelligence, and the Fork in the Road*, ABOVE THE LAW (July 26, 2018), <https://abovethelaw.com/2018/07/law-firms-artificial-intelligence-and-the-fork-in-the-road/> [<https://perma.unl.edu/FPU2-YP2X>] (explaining that slow law firm AI adoption is often due to cost concerns and change and risk averse cultures).
34. Clay & Seeger, *supra* note 31, at iv; *see US Survey Finds Big Legal Tech Knowledge Gap Among Lawyers*, ARTIFICIAL LAW. BLOG (July 20, 2018), <https://www.artificiallawyer.com/2018/07/20/us-survey-finds-big-legal-tech-knowledge-gap-among-lawyers/> [<https://perma.unl.edu/H2YH-A8UF>] (“[S]ome lawyers are still not sufficiently up to date with legal tech to make informed decisions about where to focus their firm’s resources and staff’s attention, and that will impact their strategic position in the future.”); *see also* Mark A. Cohen, *Lawyers and Technology: Frenemies or Collaborators?*, FORBES (Jan. 15, 2018), <https://www.forbes.com/sites/markcohen1/2018/01/15/lawyers-and-technology-frenemies-or-collaborators/#584ce1a422f1> [<https://perma.unl.edu/R7WR-3DRP>]. Legal innovator Cohen writes:

Technology is an integral resource in the legal delivery process. It is *not* replacing lawyers but it is contributing to the demise of traditional legal culture, replacing it with a diverse, competitive, customer aligned, accessible, and cost-effective one where ‘legal professionals’ deploy technology

The decomposing barriers between the physical and digital world require new, contemporary strategies to capitalize on opportunities and adapt to the changing marketplace. Because innovating in established organizations presents numerous challenges, multidisciplinary expertise can provide strategies for identifying and implementing needed changes. Business, technology, and process experts may be valuable resources when identifying areas of customer friction and opportunities for growth.<sup>35</sup> A few intriguing and potentially fecund strategies include “omni-channel experiences,” platform-based education services, hybrid human-artificial intelligence<sup>36</sup> (AI) services, and virtualization.

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and process to solve business challenges. The legal industry is entering a brave new world, and the old one is not coming back.

*Id.*

35. EVANS & SCHMALENSSEE, *supra* note 10, at 56–57 (discussing friction and platforms). They explain that multisided platforms have the best opportunity to thrive in environments where the platform can resolve substantial customer friction points. They further note that when considering whether to launch a multi-sided platform, entrepreneurs should carefully consider (1) the friction points that the platform would address, (2) the amount of friction that the platform would eliminate, (3) the amount and kinds of value that the platform could create, and (4) whether the platform could “ignite” and become a sustainable venture. *Id.* at 58; *see also* MCAFEE & BRYNJOLFSSON, *supra* note 14, at 175 (noting that “[m]any platforms are two-sided, with one type of customer and a different type on the other side”). *See Legal Education: A New Growth Vision Part II*, section III.C for a friction audit analysis for students, employers, practitioners, and community professionals.
36. Artificial intelligence (AI) is “an area of computer science that emphasizes the creation of intelligent machines that work and react like humans” in areas including “speech recognition, learning, planning, [and] problem solving.” *Artificial intelligence (AI)*, TECHOPEDIA, <https://www.techopedia.com/definition/190/artificial-intelligence-ai> [<https://perma.unl.edu/7BWA-ECU6>]. Artificial Intelligence has been described as a key technology of the “fourth industrial revolution.” *See generally* KLAUS SCHWAB, *THE FOURTH INDUSTRIAL REVOLUTION* 7 (2016); Alan Cramer, *Artificial Intelligence: The Fourth Industrial Revolution*, INFORMATION AGE (Oct. 3, 2018), <https://www.information-age.com/artificial-intelligence-fourth-industrial-revolution-123475170/> [<https://perma.unl.edu/V54E-SCNP>]; *see* EXEC. OFFICE OF THE PRESIDENT, *ARTIFICIAL INTELLIGENCE, AUTOMATION, AND THE ECONOMY* 2 (Dec. 2016) [hereinafter *ARTIFICIAL INTELLIGENCE, AUTOMATION, AND THE ECONOMY*], <https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/Artificial-Intelligence-Automation-Economy.pdf> [<https://perma.unl.edu/4XPK-L2XX>] (“AI is not a single technology, but rather a collection of technologies that are applied to specific tasks . . . .”); *see also* KAPLAN, *supra* note 24, at 4–6 (discussing two forms of AI system advancements: (1) “synthetic intellects,” which includes machine learning, big data, algorithms, etc., and (2) “forged laborers,” which includes robots and other configurations). Kaplan also argues that over time, “Forged laborers will displace the need for most skilled labor; synthetic intellects will largely supplant the skilled trades of the educated.” *Id.* at 134; PEDRO DOMINGOS, *THE MASTER ALGORITHM: HOW THE QUEST FOR THE ULTIMATE LEARNING MACHINE WILL REMAKE OUR WORLD* 235 (2015) (“Machine learning is both a science and a technology.”); *see generally* *An Executive’s Guide to AI*, MCKINSEY ANALYTICS (2018), <https://www.mckinsey.com/business-functions/mc>

### 1. *Omni-channel Experiences*

Omni-channel experiences integrate “high tech” with “high touch”<sup>37</sup> in personalized customer interactions—a visionary approach first articulated more than thirty years ago that has now been embraced by inventive retailers.<sup>38</sup> The “high tech, high touch” concept recognizes that as technology becomes more prevalent in society, humans still crave personal interaction and connection.<sup>39</sup> The customer experience—that is, the intersection of technology, content, and human connection—critically determines whether users view the overall experience as good, bad, or unremarkable.<sup>40</sup> With this in mind,

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kinsey-analytics/our-insights/an-executives-guide-to-ai [https://perma.unl.edu/8NXZ-QPH7]; *Notes from the AI Frontier: Insights from Hundreds of Use Cases*, MCKINSEY GLOBAL INST. (Apr. 2018), https://www.mckinsey.com/global-themes/artificial-intelligence/notes-from-the-ai-frontier-applications-and-value-of-deep-learning [https://perma.unl.edu/3UP4-XGWC] (“Artificial Intelligence stands out as a transformational technology of our digital age.”); Amy Larson, *7 Things Lawyers Should Know About Artificial Intelligence*, ABOVE THE LAW: SMALL FIRM CENTER (May 11, 2018), https://abovethelaw.com/small-firm-center/2018/05/7-things-lawyers-should-know-about-artificial-intelligence/ [https://perma.unl.edu/K2BD-4V24].

37. JOHN NAISBITT, MEGATRENDS 52 (1984) (describing how “high tech/high touch” is important to human happiness).
38. *Cognitive Catalysts: Reinventing Enterprises and Experiences with Artificial Intelligence*, IBM GLOBAL C-SUITE STUDY 17–18 (Sept. 2017) [hereinafter IBM 2017 GLOBAL C-SUITE STUDY], https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=GBE03877USEN& [https://perma.unl.edu/KTH3-SD7Y] (“AI’s greatest competitive advantage will come from its ability to personalize the customer experience” by understanding and meeting the needs of the individual customer in real time.); see *Bot.Me: A Revolutionary Partnership: How AI Is Pushing Man and Machine Closer*, PwC.COM/CISAI 9 (2017), https://www.pwc.com/us/en/industry/entertainment-media/publications/consumer-intelligence-series/assets/pwc-botme-booklet.pdf [https://perma.unl.edu/6PGZ-P4MD] [hereinafter *Bot.Me*] (describing Lowe’s Home Improvement pilot “LoweBot” that assists customers in finding and scanning products as well as providing recommendations); see also Omar Abbosh et al., *How Likely Is Your Industry to Be Disrupted? This 2x2 Matrix Will Tell You*, HARV. BUS. REV. (Jan. 29, 2018), https://hbr.org/2018/01/how-likely-is-your-industry-to-be-disrupted-this-2x2-matrix-will-tell-you [https://perma.unl.edu/P4SH-Z6CL] (describing Lowe’s Innovation Labs’ efforts to appeal to the “rising generation of so-called digital natives” with its mixed reality experience “Holoroom” and “LoweBot”); Darrell K. Rigby, *The Amazon-Whole Foods Deal Means Every Other Retailer’s Three-Year Plan Is Obsolete*, HARV. BUS. REV. (June 21, 2017), https://hbr.org/2017/06/the-amazon-whole-foods-deal-means-every-other-retailers-three-year-plan-is-obsolete [https://perma.unl.edu/3UDA-AF8Z] (stating it is no surprise “that the future of retailing is moving toward a fusion of digital and physical experiences”).
39. NAISBITT, *supra* note 37, at 51.
40. ANAND, *supra* note 17, at 278 (asserting that improving customer experiences requires content, technology [data and user interface], and marketing expertise). He adds: “It’s also a debate between those trying to preserve content and those trying to improve experiences—between those with a product-centered mindset and those with a user-centered one.” *Id.* at 279; see generally *Artificial Intelligence and Life in 2030: One Hundred Year Study on Artificial Intelligence*, STAN.

retailer “omni-channel” strategies focus on providing customers with unified, seamless, integrated, consistent, coherent, and personalized user experiences<sup>41</sup> in physical and digital environments.<sup>42</sup> These strategies include training employees to use social, mobile, computer, and other technologies to deliver uniform in-person or digital con-

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REP. 2015 STUDY PANEL, at 6 (Sept. 2016), [https://ai100.stanford.edu/sites/default/files/ai100report10032016fnl\\_singles.pdf](https://ai100.stanford.edu/sites/default/files/ai100report10032016fnl_singles.pdf) [<https://perma.unl.edu/KSG3-RTS6>] [hereinafter *Artificial Intelligence and Life in 2030*] (“Many people have already grown accustomed to touching and talking to their smart phones. People’s future relationships with machines will become ever more nuanced, fluid, and personalized as AI systems learn to adapt to individual personalities and goals.”).

41. HaeJung Kim et al., *Shifting Paradigms for Fashion: From Total to Global to Smart Consumer Experience*, FASHION & TEXTILES 1:15 (2014), at 6, 8, 11, <https://fashionandtextiles.springeropen.com/articles/10.1186/s40691-014-0015-4> [<https://perma.unl.edu/7QSV-VSE7>]; see also Sarah Fallon, *Angry Nerd: Thank You, Mr. Bezos*, WIRED (Sept. 2017) (describing how Amazon’s purchase of Whole Foods and customer-focused, data-driven strategies may reinvent the grocery shopping experience); EVANS & SCHMALENSEE, *supra* note 10, at 194 (describing Macy’s “organizational changes to help tear down the walls between its physical and online efforts[ ]”); ANAND, *supra* note 17, at 169, 172, 254–55 (describing how distinct brands with a curated portfolio of products and services can help customers “sort through clutter” using a “less is more” innovation philosophy); see generally Julien Boudet et al., *What Shoppers Really Want from Personalized Marketing*, MCKINSEY & CO. (Oct. 2017), <https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/what-shoppers-really-want-from-personalized-marketing> [<https://perma.unl.edu/7R6F-GQ2E>] (explaining that delivery of “timely, relevant, and truly personal messages” can “drive growth”); Alfonso Pulido et al., *The Three Cs of Customer Satisfaction: Consistency, Consistency, Consistency*, MCKINSEY & CO. (Mar. 2014), <https://www.mckinsey.com/industries/retail/our-insights/the-three-cs-of-customer-satisfaction-consistency-consistency-consistency> [<https://perma.unl.edu/6LYU-K32S>].
42. Daniel Newman, *The Omni-Channel Experience: Marketing Meets Ubiquity*, FORBES (July 22, 2014), <https://www.forbes.com/sites/danielnewman/2014/07/22/the-omni-channel-experience-marketing-meets-ubiquity/#5aaf23b02c8e> [<https://perma.unl.edu/4LGA-Y6L2>]; *Multichannel vs. Omnichannel Marketing: Is There a Difference, and What Does It Mean to You?*, ENSIGHTEN NEWSROOM, <https://www.ensighten.com/company/newsroom/multichannel-vs-omnichannel-marketing-difference-mean-to-you/> [<https://perma.unl.edu/66S3-ERM8>]; see also Porter, *supra* note 5 (anticipating the emergence of current omni-channel strategies). Porter writes:

The more robust competitive advantages will arise instead from traditional strengths such as unique products, proprietary content, distinctive physical activities, superior product knowledge, and strong personal service and relationships. Internet technology may be able to fortify those advantages, by tying a company’s activities together in a more distinctive system, but it is unlikely to supplant them . . . . On the demand side, most buyers will value a combination of on-line services, personal services, and physical locations over stand-alone Web distribution. They will want a choice of channels, delivery options, and ways of dealing with companies.

*Id.*

sumer experiences.<sup>43</sup> Personalization also presents exciting education service opportunities because schools can provide “individualized learning experiences based on existing skills, learning styles, and interests” and enable faculty interventions for students that fall behind in coursework.<sup>44</sup>

Some omni-channel tactics involve offering digitally immersive experiences or providing “multichannel customer experiences.”<sup>45</sup> Current digitally immersive experiences include augmented (AR), virtual (VR), extended (XR), or mixed (MR) reality.<sup>46</sup> For example, indoor cy-

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43. HaeJung Kim et al., *supra* note 41, at 8, 11; Andrew J. Farren et al., *Omnichannel Retail Helps Cos. Keep Up with Shoppers*, LAW360 (Oct. 30, 2015) (explaining that an integrated digital presence requires organizations to unite multiple technologies so that consumers experience frictionless movement between physical and digital environments); *see also* IBM 2016 CEO C-SUITE STUDIES, *supra* note 16, at 4 (noting the importance of outside collaborations since “few enterprises can single-handedly provide the compelling, individualized experiences customers now demand.”).
44. Nicolaus Henke et al., *The Age of Analytics: Competing in a Data-Driven World*, MCKINSEY GLOBAL INST. 63, 69 (Dec. 2016), <https://www.mckinsey.com/-/media/McKinsey/Business%20Functions/McKinsey%20Analytics/Our%20Insights/The%20age%20of%20analytics%20Competing%20in%20a%20data%20driven%20world/MGI-The-Age-of-Analytics-Full-report.ashx> [https://perma.unl.edu/CAZ2-SGC5] (describing (1) components of student personalized learning experiences and (2) how Arizona State and Virginia Commonwealth Universities currently use data and analytics to improve graduation rates).
45. KEVIN KELLY, *THE INEVITABLE: UNDERSTANDING THE 12 TECHNOLOGICAL FORCES THAT WILL SHAPE OUR FUTURE* 211 (2016) (“Virtual reality [VR] is a fake world that feels absolutely authentic.”); JOHN MARKOFF, *MACHINES OF LOVING GRACE: THE QUEST FOR COMMON GROUND BETWEEN HUMANS AND ROBOTS* 274–75 (2015) (describing AR as a “profoundly human-centered version of computing”). Markoff adds: “Augmented reality would also make the idea of telepresence far more compelling. Two people separated by great distance could gain the illusion of sharing the same space.” *Id.*; *see* IBM 2012 CEO C-SUITE STUDIES, *supra* note 24, at 40 (recommending use of AR as a way to blend the physical and digital worlds); IBM 2017 GLOBAL C-SUITE STUDY, *supra* note 38, at 19–20 (describing how industry leaders use VR and AR to provide “immersive experiences” that “infuse the physical world with digital interactions of countless kinds”). “Multichannel” experiences include technologies and tools such as audio or video content, blogs, and discussion forums. *See* Loic Ple & Jacques Angot, *Teaching and Learning a Multichannel Experience of HRM* (2008), [http://www.ufhrd.co.uk/wordpress/wp-content/uploads/2008/06/517-teaching-a-multichannel-hrm-experience\\_ple-et-al.pdf](http://www.ufhrd.co.uk/wordpress/wp-content/uploads/2008/06/517-teaching-a-multichannel-hrm-experience_ple-et-al.pdf) [https://perma.unl.edu/HR7S-YVPU]; ENSIGHTEN NEWSROOM, *supra* note 42 (noting Brenna Holmes’s observation that multichannel reflects “a more tactical effort”).
46. In its *2018 Technology Vision* series, Accenture provides the following definitions:
- Virtual reality (VR): VR visually takes the user out of their real-world environment and into a virtual environment, typically using a headset for viewing coupled with hand-held controllers to navigate the virtual space.
  - Augmented reality (AR): AR overlays digital objects (information, graphics, sounds) on the real world, allowing the user to experience the relationship between digital and physical worlds.



cling company Peloton currently sells a \$2,000 Wi-Fi enabled stationary bike with a 22-inch screen which enables riders to remotely stream live spin classes.<sup>47</sup> To provide customers with a more engaging exercise experience, in 2016, Peloton partnered with Oculus Rift to create a virtual reality headset which will eventually replace the digital screen.<sup>48</sup>

Several industries currently experiment with and move toward incorporating new technologies. For example, in anticipation of a VR-enhanced future, the law firm White & Case installed the aforementioned Peloton bikes along with other VR conferencing technologies in its new office at the Stanford Research Park (Palo Alto, California).<sup>49</sup> In the education space, multichannel experiences like videos and discussions enable students to engage, explore, and expand their knowledge as well as make personal and professional connections.<sup>50</sup> Modern university recruitment strategies also routinely employ omni-channel

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- Extended reality (XR): XR refers to the spectrum of experiences that blurs the line between the real world and the simulated world. The technology immerses the user through visuals, audio, and potentially olfactory and haptic cues. The two major types of XR are virtual reality and augmented reality.

*See Redefine Your Company Based on the Company You Keep. Intelligent Enterprise Unleashed*, ACCENTURE 30–38 (2018), [https://www.accenture.com/t20180227T215953Z\\_w\\_/us-en/\\_acnmedia/Accenture/next-gen-7/tech-vision-2018/pdf/Accenture-TechVision-2018-Tech-Trends-Report.pdf#zoom=50](https://www.accenture.com/t20180227T215953Z_w_/us-en/_acnmedia/Accenture/next-gen-7/tech-vision-2018/pdf/Accenture-TechVision-2018-Tech-Trends-Report.pdf#zoom=50) [https://perma.unl.edu/XQV9-STGC]. Further, “Extended reality (XR) is the first technology to let people experience omni-present abilities, relocating them in both time and space—bringing about the end of distance.” *Technology Vision for Oracle: Bringing Five Key Technology Trends to Life*, ACCENTURE 12 (2018) [https://www.accenture.com/t20180504T214122Z\\_w\\_/us-en/\\_acnmedia/PDF-77/Accenture-Technology-Vision-Oracle-2018.pdf#zoom=50](https://www.accenture.com/t20180504T214122Z_w_/us-en/_acnmedia/PDF-77/Accenture-Technology-Vision-Oracle-2018.pdf#zoom=50) [https://perma.unl.edu/Y7EL-8MC9]. In the education space, XR-enabled virtual travel will enable students and instructors to collaborate and facilitate both learning concepts and practical training. *Id.* Mixed reality can be in both the real and digital world. For example, the user can (1) remain in a real-world environment with digital content added to the space or (2) enter a digital environment that replaces the real world. Quora, *The Difference Between Virtual Reality, Augmented Reality and Mixed Reality*, FORBES (Feb. 2, 2018), <https://www.forbes.com/sites/quora/2018/02/02/the-difference-between-virtual-reality-augmented-reality-and-mixed-reality/#213997282d07> [https://perma.unl.edu/D3M2-GSW4] (providing answer by Julia Tokareva, Software Development Consultant at Ruby Garage); see also Gleb B., *VR vs AR vs MR: Differences and Real-Life Applications*, RUBY GARAGE, <https://rubygarage.org/blog/difference-between-ar-vr-mr> [https://perma.unl.edu/TV8P-WDCP] (explaining the difference between VR, AR, and MR).

47. MCAFEE & BRYNJOLFSSON, *supra* note 14, at 177.

48. *Id.*

49. Xiumei Dong, *White & Case's New Silicon Valley Office Includes Virtual Reality*, RECORDER (May 29, 2018), <https://www.law.com/therecorder/2018/05/29/white-cases-new-silicon-valley-office-includes-virtual-reality> [https://perma.unl.edu/QT6H-XNMN].

50. IBM 2012 CEO C-SUITE STUDIES, *supra* note 24, at 54.

marketing<sup>51</sup> and social media (Twitter, Facebook, YouTube, etc.) to showcase program offerings and cultivate student interest.<sup>52</sup>

However, the launch of high quality, coherent, consistent, and seamless knowledge and skill development services for law students and legal professionals has yet to materialize because traditional education providers generally do not keep pace with rapidly changing digital technologies.<sup>53</sup> This largely uninhabited and fertile marketplace opens exciting omni-channel teaching—and personal branding—opportunities for forward-focused knowledge entrepreneurs.<sup>54</sup> Some recent creative tech developments include (1) the Maryland Volunteer Lawyers Service’s VR training videos designed to “demystify the courtroom” and encourage more volunteer lawyers to represent clients in civil cases;<sup>55</sup> (2) UC Irvine School of Law’s deployment of a robot for a pregnant student confined to bed rest;<sup>56</sup> (3) University of Missouri Kansas City School of Law’s incorporation of 360-degree panoramic

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51. See Linda Emma, *Omnichannel for Education: Are You There Yet?*, ESM DIGITAL’S HIGHER EDUC. MARKETING BLOG (Sept. 7, 2016), <https://esmdigital.com/blog/omnichannel-for-education-are-you-there-yet/> [https://perma.unl.edu/J7RT-NKYX].
  52. Kristina Shin, *Omni-Channel Education*, 7 INT’L J. FASHION DESIGN, TECH. & EDUC. 143, 143 (2014).
  53. MARKOFF, *supra* note 45, at 79 (referencing MIT Sloan School economists Erik Brynjolfsson and Andrew McAfee’s 2011 self-published essay *Race Against the Machine: How the Digital Revolution Is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy*); see generally Stefan Hall & Ryo Takahashi, *Augmented and Virtual Reality: The Promise and Peril of Immersive Technologies*, MCKINSEY & CO. (Oct. 2017), <https://www.mckinsey.com/industries/media-and-entertainment/our-insights/augmented-and-virtual-reality-the-promise-and-peril-of-immersive-technologies> [https://perma.unl.edu/8WGG-JU6S] (“There is also promise for AR and VR to provide immersive learning experiences.”).
  54. See, e.g., Randy Barnett & Josh Blackman, *Introducing the Constitutional Canon Video Series*, REASON.COM: VOLOKH CONSPIRACY (Mar. 5, 2018), <https://reason.com/volokh/2018/03/05/introducing-the-constitutional-canon-vid> [https://perma.unl.edu/JAH7-7JBUI]; Josh Blackman, YOUTUBE, <https://www.youtube.com/user/JoshBVideos> [https://perma.unl.edu/DDS3-3TSS3]; see generally Stefan Hall & Ryo Takahashi, *Augmented and Virtual Reality: The Promise and Peril of Immersive Technologies*, MCKINSEY & CO. (Oct. 2017), <https://www.mckinsey.com/industries/media-and-entertainment/our-insights/augmented-and-virtual-reality-the-promise-and-peril-of-immersive-technologies> [https://perma.unl.edu/UF8C-X9LG] (“There is also promise for AR and VR to provide immersive learning experiences.”).
  55. Stephen Babcock, *These Attorneys Are Using Virtual Reality to ‘Demystify the Courtroom,’* TECHNICALLY BALT. (Apr. 3, 2017), <https://technical.ly/baltimore/2017/04/03/virtual-reality-attorney-training-mvls/> [https://perma.unl.edu/S7Y4-7JFK].
  56. Staci Zaretsky, *Pregnant Law Student Attends Class Via Robot Thanks to This Law School’s Unique Tech Intervention*, ABOVE THE LAW (Mar. 2, 2018), <https://abovethelaw.com/2018/03/pregnant-law-student-attends-class-via-robot-thanks-to-this-law-schools-unique-tech-intervention/> [https://perma.unl.edu/2246-AUEK].

imaging videos into trial advocacy classes, which capture both the actions of the law student and the responses of mock jurors for smooth post-performance review and critique;<sup>57</sup> (4) the in development Brooklyn Law Smart LAB™ Virtual Courtroom Simulator that will eventually provide students with “decision-making and mistake-making opportunities in a low stakes-learning environment”;<sup>58</sup> (5) early versions of workplace harassment training using VR;<sup>59</sup> and (6) games designed for law firm candidates, employees, and pro se litigants.<sup>60</sup>

In the near future, when legal education programs harmoniously integrate AR, VR, MR, XR, and robots into interactive, omni-channel education experiences, these digital innovations will substantially erase the boundaries between in-person and online education.<sup>61</sup> Fur-

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57. Geraldo Alvarez, *Law Schools Dive into Virtual Reality Experiences for their Students*, A.B.A. J. (Mar. 9, 2018), [http://www.abajournal.com/news/article/law\\_schools\\_dive\\_into\\_virtual\\_reality\\_experiences\\_for\\_their\\_students](http://www.abajournal.com/news/article/law_schools_dive_into_virtual_reality_experiences_for_their_students) [https://perma.unl.edu/EB95-4D5S].
58. Nicholas W. Allard & Heidi K. Brown, *The Future of Training Powerful Legal Communicators*, N.Y. ST. BAR ASS'N J. 13 (Sept. 2018) (explaining that the Smart Lab™ works to “enhance legal education by allowing students to practice a diverse array of legal skills and experience real-life circumstances in a virtual-reality setting”); see also Keshia Clukey, *Hofstra, Touro Law Schools Advance in Technology*, NEWSDAY (Nov. 27, 2018), <https://www.newsday.com/long-island/education/hofstra-law-school-technology-1.23808441> (describing Hofstra’s high-tech mock courtroom and digital document management system and Touro’s technology program, which involves creating algorithms, sorting data, and using AI in e-discovery); see generally Christine N. Cimini et al., *Creative Initiatives at U.S. Law Schools*, 7 ELON L. REV. 1–2, 57–89 (2015) (describing law school initiatives such as experiential education opportunities, simulation and observation courses, labs and practicums, and project-based learning programs).
59. Peter Rubin, *Why Your Next Workplace Harassment Training Might be in VR*, WIRED (May 24, 2018), <https://www.wired.com/story/vr-sexual-harassment-training/> [https://perma.unl.edu/LL45-B2TJ] (explaining how immersive VR simulations can provide employees opportunities to identify harassment, take action, examine bias, and explore workplace power dynamics).
60. Zach Warren, *Game on: 6 Ways Attorney Have Used Video Games in Their Practice*, LEGAL TECH NEWS (July 23, 2018), <https://www.law.com/legaltechnews/2018/07/23/game-on-6-ways-attorneys-have-used-video-games-in-their-practice/> [https://perma.unl.edu/XG73-AAKR] (describing how legal innovators use games to (1) train employees on conducting internal investigations and HR compliance, (2) evaluate potential new hires, and (3) acquaint pro se litigants with court proceedings).
61. Alexander Hübner et al., *Distribution Systems in Omni-Channel Retailing*, 9 BUS. RES. 255, 258 (2016); Sean Gallagher, *How Amazon’s Purchase of Whole Foods Highlights the Hybrid, ‘Omnichannel’ Future of Higher Ed*, EDSURGE NEWS (Jun. 22, 2017), <https://www.edsurge.com/news/2017-06-22-how-amazon-s-purchase-of-whole-foods-highlights-the-hybrid-omnichannel-future-of-higher-ed> [https://perma.unl.edu/U5PY-ZLQX] (“As student demand continues to grow for experiences that are integrated across offline and online channels, colleges and universities must move beyond a focus on their “online education” strategy—and instead position themselves for a more student-centered, personalized approach that integrates both digital delivery and the richness of in-person experiences.”); see IBM 2017 GLOBAL C-SUITE STUDY, *supra* note 38, at 27; THE NEXT ERA OF

ther, because over time new technologies will supplant the old, forward-looking, nimble programs, currently shifting to omni-channel strategies will anticipate, and be ready to adapt to, a marketplace increasingly populated with platforms and AI assistants such as Alexa.<sup>62</sup>

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HUMAN—MACHINE PARTNERSHIPS: EMERGING TECHNOLOGIES' IMPACT ON SOCIETY AND WORK IN 2030, INST. FOR FUTURE/DELL TECHS. 14 (2017), [https://www.delltechnologies.com/content/dam/delltechnologies/assets/perspectives/2030/pdf/SR1940\\_IFTFforDellTechnologies\\_Human-Machine\\_070517\\_readerhigh-res.pdf](https://www.delltechnologies.com/content/dam/delltechnologies/assets/perspectives/2030/pdf/SR1940_IFTFforDellTechnologies_Human-Machine_070517_readerhigh-res.pdf) [<https://perma.unl.edu/X2MR-TLQF>] [hereinafter HUMAN—MACHINE PARTNERSHIPS] (“By 2030, in-the-moment learning will become the modus operandi, and the ability to gain new knowledge will be valued higher than the knowledge people already have.”). The report also predicts that AR and VR will function as common learning technologies. *Id.*; see also Erik Brynjolfsson et al., *New World Order: Labor, Capital, and Ideas in the Power Law Economy*, FOREIGN AFFAIRS, July/Aug. 2014, <https://www.foreignaffairs.com/articles/united-states/2014-06-04/new-world-order> [<https://perma.unl.edu/FKA9-TBGD>] (discussing the changing economy as a result of increased IT usage). Thinking about the future of education, Brynjolfsson et al. write:

Fortunately, the same digital revolution that is transforming product and labor markets can help transform education as well. Online learning can provide students with access to the best teachers, content, and methods regardless of their location, and new data-driven approaches to the field can make it easier to measure students' strengths, weaknesses, and progress. This should create opportunities for personalized learning programs and continuous improvement, using some of the feedback techniques that have already transformed scientific discovery, retail, and manufacturing.

*Id.*

62. See Niraj Dawar & Neil Bendle, *Marketing in the Age of Alexa*, HARV. BUS. REV. (May–June 2018), <https://hbr.org/2018/05/marketing-in-the-age-of-alexa> [<https://perma.unl.edu/6CGC-3RYR>] (“Marketers' current obsession with creating an omnichannel customer experience will fade as AI platforms become a powerful marketing medium, sales and distribution channel, and fulfillment and service center—all rolled into one.”). In the future to compete against Alexa, brands will need to understand algorithms, maintain direct contact with customers, maintain and continuously improve brand differentiation and value, and consistently monitor and adapt to customer behaviors. *Id.*; see, e.g., Daniel B. Kline, *Can Artificial Intelligence Improve Customer Service?*, MOTLEY FOOL (Oct. 4, 2018), <https://www.fool.com/investing/2018/10/04/can-artificial-intelligence-improve-customer-servi.aspx> [<https://perma.unl.edu/3SAD-N4RK>] (describing how retailers will increasingly use AI to connect with consumers, provide personalized shopping recommendations, and raise revenues by microtargeting shopper preferences); see also Zach Warren, *You Think Legal Education Can't Change? 8 Innovative Ideas from Law Schools*, LEGAL TECH NEWS (Nov. 20, 2018), <https://www.law.com/legaltechnews/2018/11/20/you-think-legal-education-cant-change-8-innovative-ideas-from-law-schools/> [<https://perma.unl.edu/N9M5-CUSZ>] (describing law school technology initiatives); see generally CLAYTON M. CHRISTENSEN, *THE INNOVATOR'S DILEMMA: THE REVOLUTIONARY BOOK THAT WILL CHANGE THE WAY YOU DO BUSINESS* 45, 61–63 (2011) (embracing technologies provides strategic offensive marketplace advantages). Christensen writes: “The inability to anticipate new technologies threatening from below and switch to them in a timely way has often been cited as the cause of failure of established firms and as a source of advantage for entrant or attacking firms.” *Id.* at 45.

To make this once imagined future a coherent reality, visionary leaders will focus organization resources on inventing novel, interactive education experiences because they recognize that over time, technology-experienced customers will view products and services that are “not intensively interactive” as defective.<sup>63</sup> When education programs design, test, iterate, and launch these immersive knowledge and skills development experiences, data should be collected on both user engagement and user satisfaction when interacting with content.<sup>64</sup> That way, future versions will deliver more pedagogically sound and fulfilling learning opportunities.<sup>65</sup> Given the exciting capabilities of these new technologies, education entrepreneurs will recognize unexplored market openings to serve law students and professionals committed to lifelong learning.<sup>66</sup> As education entrepreneurs venture forward, they should remember the wise insights of Boston University Business and Management Professor Venkat Venkatraman: “We need digital models of learning and teaching. Not just a technology overlay on old modes of teaching and learning.”<sup>67</sup>

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63. KELLY, *supra* note 45, at 236 (“In the coming 30 years, anything that is not intensively interactive will be considered broken.”).

64. Hall & Takahashi, *supra* note 53; *see generally* Niko Mohr & Holger Hürtgen, *Achieving Business Impact with Data*, DIGITAL MCKINSEY (Apr. 2018), <https://www.mckinsey.com/business-functions/mckinsey-analytics/our-insights/achieving-business-impact-with-data> [<https://perma.unl.edu/U5L8-RSW7>] (“The confluence of data, storage, algorithms, and computational power today has set the stage for a wave of creative disruption.”).

65. Hall & Takahashi, *supra* note 53.

66. *See Artificial Intelligence and Life in 2030*, *supra* note 40, at 34 (describing new education service and revenue opportunities). The Stanford report states:

Online learning systems will also expand the opportunity for adults and working professionals to enhance their knowledge and skills (or to retool and learn a new field) in a world where these fields are evolving rapidly. This will include the expansion of fully online professional degrees as well as professional certifications based on online coursework.

*Id.* at 34.

67. BRYNJOLFSSON & MCAFEE, *supra* note 24, at 211. Brynjolfsson and McAfee also advise that the best approach for using new technologies involves restructuring the process, instead of substitution. *Id.* at 138. They also warn that these restructuring and organizational changes may have “a lag of five to seven years before seeing the full performance benefits.” *Id.*; *see* Darrell K. Rigby et al., *Agile at Scale*, HARV. BUS. REV. (May–June 2018), <https://hbr.org/2018/05/agile-at-scale> [<https://perma.unl.edu/YBQ9-VV5E>] (noting how Agile can accelerate product development, but acknowledging Jeff Bezos’s view that financial improvements may lag five and seven years); *see also* Brian Gregg et al., *The Most Perfect Union: Unlocking the Next Wave of Growth by Unifying Creativity and Analytics*, MCKINSEY & Co. (June 2018), <https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/the-most-perfect-union> [<https://perma.unl.edu/E6ED-UDRD>] (warning of the dangers of repurposing traditional content and arguing that a digital-first approach provides opportunities for “heightened customer engagement” and “personalized experiences”).

Last, despite their digital roots, successful omni-channel strategies depend on the development of interpersonal relationships to ensure customer satisfaction.<sup>68</sup> In fact, human relationships “represent the greatest opportunities—and greatest barriers—to creating a true omnichannel experience.”<sup>69</sup> Positive customer engagement—no matter the form—remains vital to competitive success in the marketplace because satisfied customers are more likely to remain loyal and make additional purchases.<sup>70</sup> The words of legendary General Electric CEO Jack Welch should firmly embed in the minds and guide the career strategies of organization leaders and individual employees who are navigating rapid technology changes in their industry: “Only satisfied customers can give people job security.”<sup>71</sup>

## 2. Platform-Based Services

Entrepreneurs seeking to implement omni-channel experiences will find digital technology-based platforms to be especially adept at connecting people and organizations in interactive ecosystems.<sup>72</sup> Although the proliferation of platforms may seem like a new phenomenon, platform business models have been long-used by stock exchanges, department stores, media companies, and large technology firms like Microsoft, Apple, and Google.<sup>73</sup> As platforms blossom in

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68. ENSIGHTEN NEWSROOM, *supra* note 42; *see also* Lindsay McKenzie, *Imagining an Apple Store for Online Degrees*, INSIDE HIGHER ED (Nov. 26, 2018), <https://www.insidehighered.com/digital-learning/article/2018/11/26/coming-shopping-mall-near-you-georgia-tech> [<https://perma.unl.edu/5CCP-8HFW>] (describing Georgia Tech’s plans to “create storefronts for its online education programs”).

69. *Id.* (quoting Scott Houchin, managing principal of eClerx, a knowledge process outsourcing company); *see also* IBM 2016 CEO C-SUITE STUDIES, *supra* note 16, at 14 (quoting Carlo Mazzantini, CEO of Sonepar, Italy) (“People skills are the first ingredient of new business model implementation.”).

70. CHESBROUGH, OPEN SERVICES INNOVATION, *supra* note 16, at 103; *see also* ANAND, *supra* note 17, at 232 (emphasizing that in order to be successful in the marketplace, it is necessary to “[f]igure out which customers to go after and what they really want. Then deliver on it in a unique way.”).

71. WARTZMAN, *supra* note 15, at 242. Welch also stated that companies and other organizations cannot guarantee job security and rejected the idea of “lifetime employment.” *Id.* Similarly, when documenting Kodak’s decline and 2012 bankruptcy, Wartzman wrote that “the social contract between an employer and employee can only function when a company is doing well. An unprofitable business isn’t a stable place to work.” *Id.* at 351.

72. PARKER ET AL., *supra* note 12, at 3; *see also* EVANS & SCHMALENSEE, *supra* note 10, at 40 (“The platform age is upon us because of the development of powerful information and communication technologies [ICTs] that have lowered the cost and increased the reach of connecting platform sides.”).

73. Junghee Han & Okjoo Cho, *Platform Business Eco-Model Evolution: Case Study on KakaoTalk in Korea*, J. OPEN INNOVATION: TECH, MKT. & COMPLEXITY 1:6 (2015), at 6, <https://link.springer.com/article/10.1186/s40852-015-0006-8> [<https://perma.unl.edu/ZP5U-TAS9>]; *see also* PARKER ET AL., *supra* note 12, at 3 (discussing “Apple, Google, and Microsoft[s]” use of the platform business model); EVANS

other industries, they bring together vibrant communities of content producers and users who create and exchange value in the form of ideas, services, products, or “social currency.”<sup>74</sup> Popular platforms include Facebook, Amazon, YouTube, Twitter, Instagram, Uber and Lyft, Airbnb, Instagram, Etsy, and Pinterest.<sup>75</sup> In financial and professional services, platforms include Kickstarter, Lending Club, Upwork, 99designs, Sittercity, LegalZoom, Schwab.com,<sup>76</sup> and Wealthfront.com.<sup>77</sup> In the education industry, Coursera, Khan Academy, Canvas, and Blackboard continue to grow, change, and alter teaching processes and models.<sup>78</sup> While many or most of these names are probably familiar to readers, they represent a fraction of the platforms available or in development to simplify and integrate every facet of present-day life.

Platforms that flourish take advantage of technology to harvest the wealth of data available from their users.<sup>79</sup> Successful platforms are “sticky”—that is, they attract and retain users.<sup>80</sup> Sticky platforms

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& SCHMALENSSEE, *supra* note 10, at 8 (discussing how “Apple, Google, and Microsoft” use a multisided platform business model).

74. PARKER ET AL., *supra* note 12, at 5. Social currency includes attention, fame, reputation, and leadership status. *Id.* at 36–37.

75. *Id.* at 3, 73.

76. *Id.* at 13. CHESBROUGH, *supra* note 16, at 14 (noting that Schwab.com has become a platform because it provides market data and analysis to customers, prospective customers, and the public).

77. RIES, *supra* note 16, at 164–69 (describing Wealthfront’s progression from the KaChing game with 450,000 players testing money management strategies and performance into a technology-based, professional investment services platform); see also ERIC RIES, *THE STARTUP WAY: HOW MODERN COMPANIES USE ENTREPRENEURIAL MANAGEMENT TO TRANSFORM CULTURE & DRIVE LONG-TERM GROWTH* 109 (2017) (reviewing Wealthfront’s startup history).

78. PARKER ET AL., *supra* note 12, at 13. Canvas is a K-12 and higher education learning management system. See *About Us*, CANVAS, <https://www.canvaslms.com/about-us/> [<https://perma.unl.edu/F5WY-2ZAH>]. Blackboard offers K-12, higher education, government, and business learning management systems. See *Products*, BLACKBOARD, <http://www.blackboard.com/products.aspx> [<https://perma.unl.edu/JP9P-NR3K>].

79. See IBM 2018 GLOBAL C-SUITE STUDY, *supra* note 30, at 4 (highlighting how organizations that are Reinventors extract value through continuous collaboration, systematic experimentation, constant adaptation, strategic disruption, thoughtful data leveraging, and deliberate orchestration of “compelling customer experiences”). The study also notes that “[p]ractitioners [rather] than Reinventors are considering one of the most radical of the new business models—the platform business model.” *Id.* at 5. Important note: given recent data breaches (e.g., Facebook, Equifax, etc.), platform administrators must implement strong data privacy controls, monitor, and perform continuous security updates.

80. Carlos Denner dos Santos Jr., *Changes in Free and Open Source Software Licenses: Managerial Interventions and Variations on Project Attractiveness*, *J. INTERNET SERVS. & APPLICATIONS* 8:11 (2017), at 3; see also Porter, *supra* note 5, at 12 (“When people talk about the [‘stickiness’] of Web sites, what they are often talking about is high switching costs.”).

continuously facilitate user exchanges, distribute valuable content, evolve by addressing customer needs, and improve technologies.<sup>81</sup> This requires that they offer well-designed “intuitive navigation”; fresh, high-quality content; and satisfying user engagement opportunities.<sup>82</sup> Ensuring platform vitality and relevance involves seeking user input on current and future services; collecting and analyzing data to determine how to improve user interactions; consistently monitoring platform use; and making technical and content upgrades and adjustments.<sup>83</sup> Platform data yields valuable metrics—like number of contributors, visitors, views, time spent, rewinds or fast-forwards, downloads, links, tweets, posts, or shares on a particular platform<sup>84</sup>—that inform strategic content decisions and resource allocation to enhance stickiness. ICTs also provide the speed and convenience necessary for digital platform innovators to create new business models;<sup>85</sup> eliminate hurdles to human connection by converging the physical and digital realms;<sup>86</sup> and fuel radical and rapid changes in how value is exchanged within and across organizations and industries.<sup>87</sup> In the years ahead, businesses and organizations that fail to adapt, embrace, and maximize the power of platforms run the risk of becoming obsolete.<sup>88</sup>

### 3. *Hybrid Human-AI Services and Virtualization*

To prosper in an age of rapidly changing technologies, the CEOs surveyed in IBM’s 2012 study emphasized the importance of being “fu-

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81. Han & Cho, *supra* note 73, at 2 (discussing “PSE” of platforms which means “Preparation, Spread, [and] Evolution”).

82. Jayson DeMers, *20 Sticky Features Your Website Needs to Convert Visitors*, FORBES (July 29, 2014), <https://www.forbes.com/sites/jaysondemers/2014/07/29/20-sticky-features-your-website-needs-to-convert-visitors/#b113b547bd91> [<https://perma.unl.edu/EB9G-AT8Q>]. For students, a poorly designed platform can cause immense frustration. See *Legal Education: A New Growth Vision Part II*, subsection III.C.1 for a discussion of student friction points.

83. Han & Cho, *supra* note 73, at 3, 4, 8, 10.

84. Santos, *supra* note 80, at 3 (explaining the “more eyeballs effect”).

85. PARKER ET AL., *supra* note 12, at 60–61, 64 (explaining how platforms have transformed industries in short periods of time (e.g., physical stock exchanges replaced by electronic marketplaces, current taxi industry being uprooted by Uber, etc.)). *Legal Education: A New Growth Vision Part III*, subsection III.A.1 describes platform business models.

86. *Id.* at 64–66.

87. Han & Cho, *supra* note 73, at 1.

88. Marshall W. Van Alstyne et al., *Pipelines, Platforms, and the New Rules of Strategy*, HARV. BUS. REV. (Apr. 2016), <https://hbr.org/2016/04/pipelines-platforms-and-the-new-rules-of-strategy> [<https://perma.unl.edu/9MH3-E6R5>]; see also EVANS & SCHMALENSEE, *supra* note 10, at 190–92 (describing Blockbuster’s death spiral and extinction and Netflix’s digital disruption and dominance); see generally David D. Brown, *Business Wars: Netflix vs. Blockbuster* (multipart series), WONDERY (Feb. 2018), <https://wonderly.com/shows/business-wars/> [<https://perma.unl.edu/3JK9-XGKG>].



ture-proof.”<sup>89</sup> They explained that “future-proof” job candidates are critical thinkers who are creative, adaptive, flexible, open-minded, collaborative, communicative, and capable of working effectively with emerging technologies.<sup>90</sup> These candidates already possess doctrinal knowledge and basic technology skills—but importantly, they are committed to lifelong learning and skills development.<sup>91</sup> Sought-after candidates must exhibit an entrepreneurial spirit because “entrepreneurial adaptability” and the gritty capacity for invention—and reinvention—represent the keys to professional growth, career satisfaction, and longevity.<sup>92</sup>

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89. IBM 2012 CEO C-SUITE STUDIES, *supra* note 24, at 20–21, 25; *see also* RITA GUNTER MCGRATH, THE END OF COMPETITIVE ADVANTAGE: HOW TO KEEP YOUR STRATEGY MOVING AS FAST AS YOUR BUSINESS 37 (2013) (quoting Kris Gopalakrishnan, former Infosys CEO) (“We hire for learnability—we deliberately select people for their capacity to learn new things.”); ERIC SCHMIDT & JONATHAN ROSENBERG, HOW GOOGLE WORKS 16–17 (2014) (explaining that successful businesses in the “Internet Century” will hire “smart creatives” who are “multidimensional” in that they combine “technical depth with business savvy and creative flair.”).
90. *Id.* at 25 (noting that “future-proof employees” have unconventional or diverse thought, training, backgrounds, experiences, and social networks); *see* Robert Safian, *This Is Generation Flux: Meet the Pioneers of the New (and Chaotic) Frontier of Business*, FAST COMPANY (Jan. 9, 2012), <https://www.fastcompany.com/1802732/generation-flux-meet-pioneers-new-and-chaotic-frontier-business> [<https://perma.unl.edu/9HCD-DVWZ>]; Lydia Dishman, *Forget Learning to Code, Bosses Value Collaboration and Communication*, FAST COMPANY (Feb. 27, 2018), <https://www.fastcompany.com/40536361/soft-skills-take-the-top-spot-in-employers-ranking-for-developing-talent> [<https://perma.unl.edu/ULN3-H3CH>]; *see also* RICHARD SUSSKIND & DANIEL SUSSKIND, THE FUTURE OF THE PROFESSIONS: HOW TECHNOLOGY WILL TRANSFORM THE WORK OF HUMAN EXPERTS 114 (2015) (“[T]here is a catch-all capability that tomorrow’s professionals will need to embrace—that of being *flexible*. There will be very few jobs for life, much less security, and very little predictability. There will be an emphasis instead on being able to learn, develop, and adapt rapidly as new roles and tasks arise.”); Harry Surden, *What to Teach Law Students About Artificial Intelligence and the Law*, NW. L. REV. ONLINE (BRIDGES II) (2017), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3120123](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3120123) [<https://perma.unl.edu/H3GS-9G6B>].
91. *Getting Ready for the Future of Work*, MCKINSEY Q. (Sept. 2017), <https://www.mckinsey.com/business-functions/organization/our-insights/getting-ready-for-the-future-of-work> [<https://perma.unl.edu/CJM4-NQ5S>]; *see* ANAND, *supra* note 17, at 307 (highlighting the importance of “lifelong learning—upgrading or replacing employees’ human capital”); *see also* Curt Nickisch, *The Future of MBA Education*, HBR IDEACAST (Feb. 14, 2018), <https://hbr.org/ideacast/2018/02/the-future-of-mba-education> [<http://perma.unl.edu/78UR-G36F>] (interviewing Scott DeRue, Dean of the University of Michigan Ross School of Business) (stating that modern professionals must be committed to “lifelong learning”).
92. *Id.*; *see* DANIEL W. DREZNER, THE IDEAS INDUSTRY 144 (2017); JUMA, *supra* note 14, at 145 (“Entrepreneurship is often associated with technological discontinuities driven by novelty and associated emergence of new economic properties. The discontinuities, especially when championed by new entrepreneurs, pose great challenges to incumbent industries.”); *see also* JOSH LINKNER, THE ROAD TO REINVENTION: HOW TO DRIVE DISRUPTION AND ACCELERATE TRANSFORMATION 9, 11

To this point, two interesting emerging and related trends merit close study: hybrid human-AI services and virtualization. First, a 2017 report by PricewaterhouseCoopers (PwC) identified a fascinating data point and significant market-shaping trend: 43% of millennials and 28% of business executives are willing to pay “premium” prices for hybrid human-AI services (in contrast to “human-only service”).<sup>93</sup> This insight suggests that at least some consumers (1) value the prospect of twenty-four hour “cyborg concierge” service,<sup>94</sup> (2) are comfortable with blurring the line between humans and robots, (3) prefer quick and efficient transactions and information exchanges, and (4) view AI assistants as providing personalized experiences.<sup>95</sup> Overall, the PwC survey suggests a growing optimism around AI’s ability to provide more benefits than detriments in terms of solving complex problems and enabling people to live more fulfilling and satisfied lives.<sup>96</sup>

Further, a recent twelve-country study of more than 6,500 taxpayers by Accenture reinforces market demand for AI assistants in the preparation of tax filings.<sup>97</sup> Because almost seventy percent (70%) of those surveyed said they want personalized service in their interactions with tax authorities, AI-based digital tax assistants may prove instrumental in satisfying customer needs.<sup>98</sup> Accenture’s David Regan predicts: “With artificial intelligence starting to permeate nearly every aspect of our daily life, from digital voice assistants to smart home devices . . . [i]t won’t be long before citizens will be able to talk to tax expert automated bots to understand and pay their taxes.”<sup>99</sup> It is

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(2014) (stating that the “creative act isn’t some magical inspiration that arrives in the form of a lightning bolt”). He explains that innovation springs from “a series of experiments and techniques, trials and errors.” *Id.* at 11. He observes that successful innovators consistently exhibit “ruthless determination and unwavering persistence.” *Id.*

93. *Bot.Me*, *supra* note 38, at 10, 12. The report also highlights that “63% of business execs [sic] believe AI can offer a superior one-to-one personalized experience.” *Id.* at 11.

94. *Id.* at 9.

95. *Id.* at 11.

96. *Id.* at 8. According to AI developer, Kaza Razat, “In 10 years, if you’re not using some sort of AI-enhanced assistant, it will be like not being on the Internet today.” *Id.* at 10.

97. Ranica Arrowsmith, *Majority of Taxpayers Want AI*, ACCT. TODAY (Feb. 21, 2018), <https://www.accountingtoday.com/news/majority-of-taxpayers-want-ai> [<https://perma.unl.edu/APS2-9YL5>].

98. *Id.*

99. *Id.* For some thoughtful insights on potential taxpayer challenges once governments fully embrace robotics and other technologies as well as some ideas on possible regulatory solutions, see generally Susan C. Morse, *Government-to-Robot Enforcement*, 2019 IL. L. REV. (forthcoming 2019); see also Orly Mazur, *Weekly SSRN Tax Article Review and Roundup: Mazur Reviews Morse’s Government-to-Robot Enforcement*, TAXPROF BLOG (Apr. 13, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/04/weekly-ssrn-tax-article-review-and-roundup-mazur-reviews-morses-government-to-robot-enforcement.html](http://taxprof.typepad.com/taxprof_blog/2018/04/weekly-ssrn-tax-article-review-and-roundup-mazur-reviews-morses-government-to-robot-enforcement.html) [<https://perma.unl.edu/874>].

noteworthy that executives in particular believe that AI represents “the business advantage of the future”—including in the legal and tax professions—because it will improve productivity, inform strategies, and stimulate growth.<sup>100</sup>

Second, there appears to be a trend of “self-selection”<sup>101</sup> of young, tech-savvy customers who prefer “virtualization,” which involves blending digital interfaces with human action only as needed.<sup>102</sup> For example, since 2011, Wealthfront—“which began as the online gaming business KaChing”<sup>103</sup>—has challenged the traditional wealth management model by eliminating fancy offices and well-dressed financial advisors in favor of an online investment platform.<sup>104</sup> Some businesses now actively tailor their offerings based on customer prefer-

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9-PRNU] (“[An] automated law system . . . should be held directly liable for compliance errors made by its users.”).

100. *Bot.Me*, *supra* note 38, at 14; see Matthew Hutson, *Artificial Intelligence Prevails at Predicting Supreme Court Decisions*, SCI. (May 2, 2017), <http://www.sciencemag.org/news/2017/05/artificial-intelligence-prevails-predicting-supreme-court-decisions> [<https://perma.unl.edu/R4VV-ECLQ>] (“From 1816 until 2015, the algorithm correctly predicted 70.2% of the court’s 28,000 decisions and 71.9% of the justices’ 240,000 votes.”). Law Professor, Daniel Katz, (study’s lead author) added that “knowledgeable legal experts are only about 66% accurate at predicting cases . . .” *Id.*; see also Patrick F. Gleason, *Socratic AI Is Changing the Face of Legal Knowledge*, A.B.A. L. PRAC. TODAY (Jan. 12, 2018), <http://www.lawpracticetoday.org/article/socratic-ai-changing-face-legal-knowledge/> [<https://perma.unl.edu/75T5-TTWG>] (discussing that the “human-AI collaboration” may “advance the lawyer’s counseling”).
101. MCAFEE & BRYNJOLFSSON, *supra* note 14, at 91 (explaining that self-selection involves people identifying preferences and sorting themselves into corresponding groups).
102. *Id.* at 88–89 (describing some examples of virtualization, including airport bag check-in at kiosks, digital check bank deposits, and Amazon Go’s virtual grocery checkout counter completed via app). In January 2018, King Soopers/City Market announced the launch of its “Scan, Bag, Go” app to be tested in Colorado stores. *King Soopers to Launch New Mobile Checkout System in 2018*, DENVER POST (Dec. 29, 2017), <https://www.denverpost.com/2017/12/29/king-soopers-mobile-checkout-system-2018/> [<https://perma.unl.edu/8LLS-VY4M>]; see also Spencer Soper, *Amazon Will Consider Opening Up to 3,000 Cashierless Stores by 2021*, BLOOMBERG (Sept. 19, 2018), <https://www.bloomberg.com/news/articles/2018-09-19/amazon-is-said-to-plan-up-to-3-000-cashierless-stores-by-2021> [<https://perma.unl.edu/F7YB-V9LR>] (“Adding 3,000 convenience stores would make AmazonGo among the biggest chains in U.S. The internet giant is considering plans to have about 10 locations open by the end of this year, about 50 locations in major metro areas in 2019, and then as many as 3,000 by 2021, said the people, who requested anonymity discussing internal plans.”); Rachel Metz, *Amazon’s Cashier-less Seattle Grocery Store Is Opening to the Public*, MIT TECH. REV. (Jan. 21, 2018), <https://www.technologyreview.com/s/610006/amazons-checkout-free-grocery-store-is-opening-to-the-public/> [<https://perma.unl.edu/2C68-V8HN>].
103. REIS, *supra* note 77, at 109.
104. MCAFEE & BRYNJOLFSSON, *supra* note 14, at 91–92 (stating that Wealthfront has \$3 billion in deposits from 35,000 households since inception).

ences for or against virtualization.<sup>105</sup> The question presented is how long the “anti-virtualization market” will be sufficiently large to attract enough customers to survive.<sup>106</sup> As time passes, the population will consist of more “digital natives”<sup>107</sup> and machines will become more capable. Customers may increasingly elect virtualization, especially if the human option is unpleasant or more time-consuming.<sup>108</sup> Given the foregoing, legal education programs that have decided to focus on tech-oriented customers should actively monitor, study, and integrate the AI-human hybrid and virtualization service models to ensure that their education offerings satisfy market demands.<sup>109</sup>

## B. Status Quo Under Threat

Complex combinations of ICTs, computer chip minimization, nanotechnologies, quantum computing, the cloud, computer operating systems, and computer programming languages form the primordial digital environment for profound technological transformations of social interactions, education, and the workplace.<sup>110</sup> Knowledge service

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105. *Id.* at 92 (describing Discover Card’s emphasis on human touch in its services).

106. *Id.* (describing the decline in bank tellers since the advent of ATMs and online banking).

107. “A digital native is an individual who was born after the widespread adoption of digital technology” such as computers, internet, and mobile devices. *Digital Native*, TECHOPEDIA, <https://www.techopedia.com/definition/28094/digital-native> [<https://perma.unl.edu/PDG5-AQAM>]; Eric Almquist, *How Digital Natives Are Changing B2B Purchasing*, HARV. BUS. REV. (Mar. 14, 2018), <https://hbr.org/2018/03/how-digital-natives-are-changing-b2b-purchasing> [<https://perma.unl.edu/2AYF-D4SC>] (explaining that digital natives are those who “grew up with the Internet and smartphones”).

108. MCAFEE & BRYNJOLFSSON, *supra* note 14, at 92, 107. McAfee and Brynjolfsson pose the following question: “If completely automated and equally safe and private airport security suddenly became available, how many of us would choose to stand in line and be screened by a human TSA agent?” *Id.* at 92.

109. *See, e.g.*, ANAND, *supra* note 17, at 337 (describing Harvard Business School’s new online education initiative HBX). Anand writes, “Online learning can be highly engaging for some of the most demanding learners from elite institutions—even in a fully automated experience, without any live faculty interaction.” *Id.*

110. EVANS & SCHMALENSEE, *supra* note 10, at 40–45 (describing “six turbocharging technologies”: (1) computer chip miniaturization, (2) the internet, (3) the world wide web, (4) the cloud, (5) broadband communications, and (6) computer operating systems and programming languages); *see* Mark Harris, *Google Has Enlisted NASA to Help Prove Quantum Supremacy Within Months*, MIT TECH REV. (Nov. 5, 2018), <https://www.technologyreview.com/s/612381/google-has-enlisted-nasa-to-help-it-prove-quantum-supremacy-within-months/> [<https://perma.unl.edu/Q3U9-L558>]; Will Knight, *Serious Quantum Computers Are Finally Here. What Are We Going to Do with Them?*, MIT TECH. REV. (Feb. 21, 2018), <https://www.technologyreview.com/s/610250/serious-quantum-computers-are-finally-here-what-are-we-going-to-do-with-them/> [<https://perma.unl.edu/C42T-V7AE>]; *see also* Orion Jones, *IBM: Nanotech Computer Chips Soon After 2020*, BIG THINK, <http://bigthink.com/ideafeed/ibm-nanotech-computer-chips-soon-after-2020> [<https://perma.unl.edu/45GW-58RV>] (discussing nanotechnology); Rory Cellan-

providers have only just begun to identify the growing competition from AI, machine learning applications, and platform-based business models. In January 2017, the McKinsey Global Institute issued a report warning that AI, intelligence amplification or augmentation (IA),<sup>111</sup> and robotic advances<sup>112</sup> have the potential to automate more

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Jones, *Microsoft Gambles on Quantum Leap in Computing*, BBC NEWS (Mar. 31, 2018), <http://www.bbc.com/news/technology-43580972> [https://perma.unl.edu/77KM-YV6H] (discussing upcoming technology breakthroughs); see generally David Grossman, *Newsnight: Future of Quantum Computers*, BBC NEWS (Dec. 17, 2014), <http://www.bbc.com/news/av/technology-30515236/newsnight-future-of-quantum-computers> [https://perma.unl.edu/9HS3-ZFUV]; Michael Cohn, *CFOs Spending More on Digital Transformation*, ACCT. TODAY (Feb. 28, 2018), <https://www.accountingtoday.com/news/cfos-and-finance-leaders-spending-more-on-digital-transformation> [https://perma.unl.edu/P56A-GG28]; see also THE WORK AHEAD: MACHINES, SKILLS, AND U.S. LEADERSHIP IN THE TWENTY-FIRST CENTURY, COUNCIL ON FOREIGN RELATIONS 12 (2018), [https://cfrd8-files.cfr.org/sites/default/files/The\\_Work\\_Ahead\\_CFR\\_Task\\_Force\\_Report.pdf](https://cfrd8-files.cfr.org/sites/default/files/The_Work_Ahead_CFR_Task_Force_Report.pdf) [https://perma.unl.edu/BSL3-GYKE] [hereinafter THE WORK AHEAD] (comparing computer and digital technologies to steam and electric power since they currently reorient “the entire economy and tenor of life”); SCHMIDT & ROSENBERG, *supra* note 89, at 11 (identifying three technology trends that will reshape most industries: internet, mobile, and cloud computing); SCHWAB, *supra* note 36, at 9 (“The premise of this book is that technology and digitization will revolutionize everything, making the over-used and often ill-used adage ‘this time is different’ apt. Simply put, major technological innovations are on the brink of fueling momentous change throughout the world—inevitably so.”).

111. Intelligence augmentation—known interchangeably as assistive intelligence, augmented intelligence, cognitive augmentation, or machine-augmented intelligence—is the process by which technology enhances a human being’s own intelligence or decision-making skills rather than creating an “independent artificial intelligence.” *Intelligence Amplification*, TECHOPEDIA, <https://www.techopedia.com/definition/32577/intelligence-amplification-ia> [https://perma.unl.edu/B3E8-QQPBI]; see also EXEC. OFFICE OF THE PRESIDENT, NAT’L SCI. & TECH. COUNCIL, COMM. ON TECH., PREPARING THE FUTURE OF ARTIFICIAL INTELLIGENCE 10–11 (Oct. 2016), [https://obamawhitehouse.archives.gov/sites/default/files/whitehouse\\_files/microsites/ostp/NSTC/preparing\\_for\\_the\\_future\\_of\\_ai.pdf](https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/microsites/ostp/NSTC/preparing_for_the_future_of_ai.pdf) [https://perma.unl.edu/NT3E-MS8M] (discussing how human-machine teaming “can be more effective than either one alone, using the strengths of one to compensate for the weaknesses of the other” and providing two examples: chess playing and reading radiology images). The report explains:

In one recent study, given images of lymph node cells, and asked to determine whether or not the cells contained cancer, an AI-based approach had a 7.5 percent error rate, where a human pathologist had a 3.5 percent error rate; a combined approach, using both AI and human input, lowered the error rate to 0.5 percent, representing an 85 percent reduction in error.

*Id.*

112. Robotics refers to “the engineering, construction, and operation of robots” to perform tasks or play a role in various commercial and consumer uses. *Robotics*, TECHOPEDIA, <https://www.techopedia.com/definition/32836/robotics> [https://perma.unl.edu/55KS-GY6Y] The robotics field has been transformed by the increased programming capability made possible by the rise of big data; the opportunities presented by sensors and devices that measure environmental factors;

than 2,000 work activities across 800 occupations, which may affect forty-nine percent (49%) of the activities people are paid to do in the global economy.<sup>113</sup> In sixty percent (60%) of the studied occupations, including in the United States, at least thirty percent (30%) of job activities eventually may be automated.<sup>114</sup> Significantly, highly educated professionals are not immune from this threat<sup>115</sup> as AI and machine learning develop rapid and comprehensive content and analysis capabilities.<sup>116</sup>

Another career threat comes from digital, platform-based professional service business models that may significantly change the performance and delivery of white-collar work. For example, Axiom Law's \$200 million platform business uses a "combination of data-mining software and freelance law talent to provide legal guidance and services to business clients."<sup>117</sup> Similarly, InCloudCounsel offers basic legal documents at a fraction of the fees charged by traditional law firms.<sup>118</sup> Further, law entrepreneurs David Perla of Pangea3 and Dan Reed at UnitedLex continue to reimagine and restructure the delivery

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and the recent strides made in artificial intelligence that make robots capable of more sophisticated uses. *Id.*

113. James Manyika et al., *A Future That Works: Automation, Employment, and Productivity*, MCKINSEY GLOBAL INST. 4–5 (Jan. 2018), <https://www.mckinsey.com/global-themes/digital-disruption/harnessing-automation-for-a-future-that-works> [<https://perma.unl.edu/Z2H2-PG9V>] (“[W]e estimate that 49 percent of the activities that people are paid to do in the global economy have the potential to be automated by adapting currently demonstrated technology.”). The report also notes prior significant workplace shifts in the United States. Specifically, “the share of farm employment fell from 40 percent in 1900 to 2 percent in 2000, while the share of manufacturing employment fell from approximately 25 percent in 1950 to less than 10 percent in 2010.” *Id.* at 12.

114. *Id.* at 5; see also *Getting Ready for the Future of Work*, *supra* note 91 (“[A]t least 30 percent of the activities associated with the majority of occupations in the United States could be automated—including knowledge tasks previously thought immune.”).

115. *Id.*; see also *Artificial Intelligence and Life in 2030*, *supra* note 40, at 38 (“AI is also creeping into [the] high end of the spectrum, including professional services not historically performed by machines.”).

116. MARTIN FORD, *RISE OF THE ROBOTS: TECHNOLOGY AND THE THREAT OF A JOBLESS FUTURE* 96–104 (2015) (describing the development of IBM Watson technology and the threat to “human knowledge workers”). Ford also explains:

Machine learning—a technique in which a computer churns through data and, in effect, writes its own program based on the statistical relationships it discovers—is one of the most effective means of extracting all that value. Machine learning generally involves two steps: an algorithm is first trained on known data and is then unleashed to solve similar problems with new information.

*Id.* at 89; see also *Preparing the Future of Artificial Intelligence*, *supra* note 111, at 10–11 (noting the growing use of intelligence augmentation technology in radiology practices and how human-AI teaming has the potential to lower error rates in cancer diagnostic studies).

117. PARKER ET AL., *supra* note 12, at 279.

118. *Id.*

of legal services by uniting “technology, business acumen, process, and labor arbitrage to compress delivery time, reduce cost, mitigate risk, and scale tasks that once required high-priced firm lawyers.”<sup>119</sup>

Last, professionals whose livelihoods depend on statutory-based knowledge—such as tax—may be at greater risk from both AI and IA.<sup>120</sup> For instance, if proposals to formalize the language of the Code

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119. Mark A. Cohen, *The Golden Age of the Legal Entrepreneur – Why Now and Why It Matters*, FORBES (June 1, 2018), <https://www.forbes.com/sites/markcohen1/2018/06/01/the-golden-age-of-the-legal-entrepreneur-why-now-and-why-it-matters/#18a13e347803> [<https://perma.unl.edu/N2PN-YHDG>] (“Perla and Reed, both large [law] firm alumni, recognized the importance of capital, technology, and scale. Operating outside the regulatory constraints confronting law firms, they created corporate structures and economic models that rewarded output (efficiency/results), not input (hours/origination).”); *see also* Miriam Rozen, *GE Inks Legal Outsourcing Deal with UnitedLex, Eying Big Savings*, AM. LAW. (Mar. 22, 2018), <https://www.law.com/americanlawyer/2018/03/22/ge-inks-legal-outsourcing-deal-with-unitedlex-eying-big-savings> [<http://perma.unl.edu/2VVK-U777>] (describing the GE-UnitedLex deal). According to Kent Zimmermann (consultant with Zeughauser Group), “The legal sector is going through its own version of the industrial revolution, 250 years after the fact . . . . This development is evidence of an ongoing trend; led by clients, the market is forcing a more efficient allocation of resources to get legal work done.” *Id.* *But see* Mark A. Cohen, *Legal Innovation Is the Rage, but There’s Plenty of Resistance*, FORBES (Aug. 30, 2018), <https://www.forbes.com/sites/markcohen1/2018/08/30/legal-innovation-is-the-rage-but-theres-plenty-of-resistance/#5187639e7cdd> [<http://perma.unl.edu/8YCC-7884>] (“Legal culture is the biggest obstacle to industry change.”).
120. Richard Binder, *Welcome to the Machine: How an Education in Tech Can Prepare the Next Generation of Law Students*, LAW.COM (Aug. 3, 2017), <http://www.law.com/sites/almstaff/2017/08/03/welcome-to-the-machine-how-an-education-in-tech-can-prepare-the-next-generation-of-law-students/> [<http://perma.unl.edu/5BT3-DSPM>]; *see* SUSSKIND & SUSSKIND, *supra* note 90, at 85–89, 113–17, 121–22, 130–31, 200–07, 235, 279, 295. The Susskinds reference Carl Benedikt Frey and Michael Osborne’s 2013 report, *The Future of Employment*, which estimates that “only [one percent] of ‘tax preparation’ work is safe from computerization. Of the 700 occupations they review, this is among the ten ‘most at risk.’” *Id.* at 88; *see also* Amy Pitter (CEO of Mass. Society of CPAs), *Job Disruption Is Quickly Coming to Accounting, Too*, ACCT. TODAY (Mar. 19, 2018), <https://www.accountingtoday.com/opinion/job-disruption-is-quickly-coming-to-accounting-too> [<http://perma.unl.edu/DA6B-5KHC>] (“The accounting profession is experiencing similar changes, and the pace and pressure of that change is exploding into a major disruption. Robotics is expected to eliminate 40 percent of basic accounting work by 2020.”); Daniel Hood, *Melancon: It’s Time to Reimagine Accounting*, ACCT. TODAY (June 18, 2018), <https://www.accountingtoday.com/news/aicpas-barry-melancon-its-time-to-reimagine-accounting> [<http://perma.unl.edu/3ZPS-BV6W>].

come to fruition,<sup>121</sup> AI may displace vast categories of tax professionals—especially those who do not possess emotional intelligence.<sup>122</sup>

For new graduates and mid-career professionals, platform-based professional services coupled with AI-performed routine tasks will radically reshape the workplace and may result in “technological unemployment” or underemployment.<sup>123</sup> Consider that the PwC study found “80% of consumers say it’s more important to have access to more affordable legal advice than to preserve the jobs of lawyers.”<sup>124</sup> This same study reported that more than half of those surveyed believe AI assistants will replace the human jobs of tax preparers and education tutors in the next five years. Given the foregoing, adaptabil-

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121. See Sarah B. Lawskey, *Formalizing the Code*, 70 TAX L. REV. 377, 394 (2017) (proposing that “[t]o formalize legislation is to translate legislation into logical symbols that lay bare the structure of the Code and the way the sections interact”); see also *id.* at 396–97 (noting how “formalizing statutes would help the project of applying artificial intelligence to law”); Sarah B. Lawskey, *A Logic for Statutes*, 21 FLA. TAX REV. 60 (2017) (explaining that “default logic makes it easier to translate (legal) code into (computer) code, which is particularly important given the growing use of artificial intelligence in legal practice”); SUSSKIND & SUSSKIND, *supra* note 90, at 279 (“When the knowledge required for a given professional service is an intimate familiarity with a large, complex web of interrelated rules—as it often is—then [AI] systems are often better placed than human experts to meet the need.”).
122. Mark A. Cohen, *The Future Lawyer*, FORBES (May 30, 2017), <https://www.forbes.com/sites/markcohen/2017/05/30/the-future-lawyer/#59568b201d18> [http://perma.unl.edu/6V5S-RN23]. According to Betsy Ziegler, chief innovation officer at the Kellogg School of Management, professionals should “think of AI or the machine as a team member rather than as a competitive threat.” See *Getting Ready for the Future of Work*, *supra* note 91. Notwithstanding Ms. Ziegler’s nonchalance, a reasonably prudent person would wisely hone their uniquely human capabilities should it prove necessary in the future to “race with the machines.” See BRYNJOLFSSON & MCAFEE, *supra* note 24, at 241–42 (arguing that it is better “to race with machines, instead of against them”); see also MCAFEE & BRYNJOLFSSON, *supra* note 14, at 102 (discussing that humans working with robots must have verbal and math skills, the ability to troubleshoot, and the ability to work as a team); Alfred S. Konefsky & Barry Sullivan, *Essay: In This, the Winter of Our Discontent: Legal Practice, Legal Education, and the Culture of Distrust*, 62 BUFF. L. REV. 659, 706–07 (2014) (discussing the importance of professionals having strong understandings of legal issues, practicalities of the real world, and the complexity of human interactions [e.g., psychology, accounting, practical, social, technical, etc.]); see generally Dov Seidman, *From the Knowledge Economy to the Human Economy*, HARV. BUS. REV. (Nov. 12, 2014), <https://hbr.org/2014/11/from-the-knowledge-economy-to-the-human-economy> [http://perma.unl.edu/G5KZ-KH3F].
123. SUSSKIND & SUSSKIND, *supra* note 90, at 284 (discussing John Maynard Keynes’s concept of “technological unemployment,” which means that “new technologies might put people out of work.”). The Susskinds state that automation poses the greatest risks to jobs that can be “routinized” via “checklists, protocols, standard-form documents, algorithms, [and] online services.” *Id.* at 119.
124. *Bot.Me*, *supra* note 38, at 6, 8.



ity, creativity, and an entrepreneurial mindset<sup>125</sup> are necessary to ensure career longevity in a future of increasingly capable machines and harsh marketplace realities.

### C. The Business of Legal Education

In the United States, public, private nonprofit,<sup>126</sup> and for-profit institutions deliver educational goods, programs, and services.<sup>127</sup> Public and private nonprofit education institutions generally change slowly because they embody a complex system of culture, norms, traditions, principles, and organizational arrangements.<sup>128</sup> According to Clark Kerr, former president of the University of California education system, higher education “is not really private and it is not really public; it is neither entirely of the world nor entirely apart from it. It is unique.”<sup>129</sup> Public and private nonprofit educational organizations retain their social position by balancing adherence to traditional norms and ideals with adaptation to changes occurring in the community, professions, business world, and elsewhere.<sup>130</sup> When educational organizations fall out of alignment with specific community needs, students and employers will respond by finding alternative providers who

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125. See *BYU Law Develops Free Online Tool to Address Debt Collection*, BYU LAW (Jan. 24, 2018), <https://law.byu.edu/news/byu-law-develops-free-online-tool-to-address-debt-collection/> [http://perma.unl.edu/AD8K-64NG]; see also Elaine McArdle, *HLS Students Harness Artificial Intelligence to Revolutionize How Lawyers Draft and Manage Contracts*, HARV. L. TODAY (Dec. 20, 2018), <https://today.law.harvard.edu/evisort/> [http://perma.unl.edu/FL2T-NXYY] (discussing how AI could be automated to perform labor-intensive tasks such as document review); see generally McDonald R. Stewart & Elias G. Carayannis, *Dystechnia: A Model of Technology Deficiency and Implications for Entrepreneurial Opportunity*, 2 J. INNOVATION & ENTREPRENEURSHIP 1 (2013). The authors explain entrepreneurship as “the recognition and exploitation of opportunity” and “the envisioning, planning, and implementing of mechanisms to create economic opportunity.” *Id.* at 4. It further “seeks to shift the established means of economic creation and control, strategically reappointing economic resources from established pathways to innovative pathways.” *Id.*
126. Nonprofit education organizations are exempt under I.R.C. § 501(c)(3).
127. Henry Hansmann, *Understanding Education in the United States: The Evolving Economic Structure of Higher Education*, 79 U. CHI. L. REV. 159, 162–65 (2012).
128. Jón Torfi Jónasson, *Educational Change, Inertia and Potential Futures*, EUR J. FUTURES RES. 4:7 (2016), at 5.
129. Jacob H. Rooksby, *Defining Domain: Higher Education’s Battles for Cyberspace*, 80 BROOK. L. REV. 857, 938 (2015) (quoting Kerr’s 1963 writings); see also Grace Hechinger, *Obituary, Clark Kerr, Leading Public Educator and Former Head of California’s Universities, Dies at 92*, N.Y. TIMES (Dec. 2, 2003), <http://www.nytimes.com/2003/12/02/us/clark-kerr-leading-public-educator-former-head-california-s-universities-dies-92.html?mcubz=1> [http://perma.unl.edu/A5NP-N89Q] (discussing Kerr’s passion and plans for higher education).
130. Leonard J. Waks, 57 *The Concept of Fundamental Educational Change*, EDUC. THEORY 277, 286–87 (2007).

are “better adapted to the times.”<sup>131</sup> Put more succinctly: innovative institutions thrive; sclerotic institutions fail.<sup>132</sup>

### 1. *Education and the Marketplace*

In the twentieth century, the perceived value of higher education shielded it from harsh marketplace realities.<sup>133</sup> After World War II, the financial support available from the GI Bill and, later, from federal loans resulted in reliable streams of students and money to public, private, and for-profit schools.<sup>134</sup> Because graduates enjoyed increased social status and economic opportunities, a long-term, seemingly virtuous alignment developed between schools and students.<sup>135</sup>

However, the economic crisis of the Great Recession that began in 2007 changed the education landscape and rocked the once-symbiotic relationship between schools and students.<sup>136</sup> Yearly tuition hikes, student loan debt burdens,<sup>137</sup> and technological displacement of

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131. *Id.* at 288–89 (describing misalignment).

132. *Id.* at 289–90 (outlining eight stages of institutional change: “Stage 1: Misalignment”; “Stage 2: Protest”; “Stage 3: Ad hoc alternatives”; “Stage 4: Entrepreneurship”; “Stage 5: Responsible innovation”; “Stage 6: Social construction”; “Stage 7: Institutionalization”, and “Stage 8: Reorganization”).

133. Hansmann, *supra* note 127, at 182; *see also* THE WORK AHEAD, *supra* note 110, at 26 (discussing how GI Bill and federal student loans resulted in soaring college enrollments and completed degrees).

134. *Id.* at 165. *But see* Paul D. Carrington, *The Price of Legal Education*, 127 HARV. L. REV. 54 (2013) (linking the availability of guaranteed student loans provided under the Higher Education Act of 1965 to law school tuition inflation).

135. Konefsky & Sullivan, *supra* note 122, at 663 (discussing legal education as a means to promote upward social mobility); *see generally* Michael Spence, *Job Market Signaling*, 87:3 Q.J. ECON. 355, 358 (1973) (discussing how individuals will pursue education if there is a perceived sufficient return on the time and monetary investment incurred). *But see* Stephen Daniels, *The Perennial (and Stubborn) Challenge of Cost, Affordability, and Access in Legal Education: “We Will Continue to Muddle Through,”* 10, 15 (A.B.A. Res. Paper No. 6-17, 2017), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3058392](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3058392) [<http://perma.unl.edu/FWS4-CU8B>] (noting that in the late 1980s, there were lively debates between legal educators about whether a law degree constituted a “worthwhile” investment).

136. *See generally* Hansmann, *supra* note 127; Jeffrey R. Brown & Caroline M. Hoxby, *Introduction to “How the Financial Crisis and Great Recession Affected Higher Education*, NAT’L BUREAU ECON. RES. (Dec. 2014), <http://www.nber.org/chapters/c12855.pdf> [<http://perma.unl.edu/43LZ-LLYQ>]; *see* Judith Areen, *Legal Education Reconsidered*, 50 IND. L. REV. 1087, 1089 (2017) (discussing the effect of the Great Recession on law school applications and the legal job market); *see also* Adam Cohen, *Opinion: With the Downturn, It’s Time to Rethink the Legal Profession*, N.Y. TIMES (April 1, 2009), <http://www.nytimes.com/2009/04/02/opinion/02thu4.html?emc=eta1> [<http://perma.unl.edu/97UL-QEKA>] (discussing the impact the recession had on the legal profession).

137. Shannon Achimalbe, *One Day, Law School Will Cost \$100,000 Per Year*, ABOVE THE LAW (Jan. 31, 2018), <https://abovethelaw.com/2018/01/one-day-law-school-will-cost-100000-per-year> [<http://perma.unl.edu/T2RX-WLEV>] (reporting the to-

white-collar workers illuminated the flaws in the traditional legal education model and have caused students to question the return on investment of a legal education.<sup>138</sup>

For law school leaders, this harsh and unstable economic landscape offers significant obstacles and complex challenges. In a soon to be released paper by Bernard A. Burk, Jerome M. Organ, and Emma B. Rasiel titled *Competitive Coping Strategies in the American Legal Academy: An Empirical Study*,<sup>139</sup> the authors found that between 2010 and 2017, the “overall average tuition revenue fell over one-third (-35%).”<sup>140</sup> They further calculated that during this time, the “aggregate annual tuition revenue for all accredited American law schools fell over \$1.5 billion in current dollars”—an average decrease in annual tuition revenue per law school of \$9 million.<sup>141</sup> In this changed marketplace, if educational offerings do not attract consistent flows of paying customers (i.e., qualified students), program leaders have two options: change or close.<sup>142</sup>

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tal cost of attendance for the following schools: “Harvard – \$92,450, Columbia – \$93,740, Stanford – \$92,622, and NYU – \$92,906”).

138. FORD, *supra* note 116, at 59 (discussing technological displacement of high-skill workers). For some recent discussions on this issue, see *Is Legal Education in or Nearing a Crisis?*, YOUR A.B.A. (Mar. 2018), [https://www.americanbar.org/news/abanews/aba-news-archives/2018/02/is\\_legal\\_education.html](https://www.americanbar.org/news/abanews/aba-news-archives/2018/02/is_legal_education.html) [http://perma.unl.edu/E6ZT-ZH4S] (summarizing varied perspectives of a panel of researchers and education leaders at the ABA Midyear Meeting in the session titled “The Perennial (and Stubborn) Challenge of Cost, Affordability and Access in Legal Education: Has It Finally Hit the Fan?”). *But see* Karen Sloan, *Higher Law School Tuition Actually Boosts Enrollment, Study Finds*, LAW.COM (Sept. 13, 2018), <https://www.law.com/2018/09/13/higher-law-school-tuition-actually-boosts-enrollment-study-finds/> [http://perma.unl.edu/HRQ8-745P] (noting “counterintuitive” finding by University of Northern Colorado Professor, Amy Li, that law school “enrollment tends to get bigger when schools charge more for tuition and fees”); Amy Y. Li, *Dollars and Sense: Student Price Sensitivity to Law School Tuition* (AccessLex Inst. Res. Paper No. 18-09), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3216204](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3216204) [http://perma.unl.edu/L2GS-PCUK] (finding that students are willing to “apply to and enroll at law schools despite increases in tuition and fees. At private law schools and at law schools in third and fourth tiers, first-year students are even willing to pay higher net costs. This study reveals that there is in fact, a lack of price sensitivity in legal education.”).
139. Bernard A. Burk et al., *Competitive Coping Strategies in the American Legal Academy: An Empirical Study*, 19 NEV. L.J. (forthcoming 2019).
140. *Id.* at 12. The authors explain their comparison time periods: (1) 2010–2011 represented “an historical high-water mark for law-school admissions in terms of size and qualifications of the entering class”; and (2) 2016–2017 reflects the time period “by which the market shock and its effects had for the most part stabilized, and schools generally had adjusted to a ‘new normal’ in demand.” *Id.* at 15.
141. *Id.* at 12. This paper also includes a table showing that each law school tier experienced differing tuition revenue declines: top third \$5.9 million, middle third \$11.6 million, and bottom third \$12.2 million. *Id.*
142. *Id.* at 39–40 (“But the one thing we feel sure of is that, for most American law schools, the only thing worse than changing will be not changing. So let’s get busy.”); *see also* Karen Sloan, *Study Finds Law Schools Are Losing \$1.5 Billion*

The inevitable result of failing to embrace the former choice has continued to play out in the legal education field over the past few years. The growing list of closing law schools includes Charlotte, Whittier, Indiana Tech, Savannah, Arizona Summit, and potentially Thomas Jefferson, which currently tries to avert a death spiral.<sup>143</sup> In fall 2018, after a failed attempt to transfer the law school as a “gift” to Middle Tennessee State University, Valparaiso Law School announced that it will close in May 2020.<sup>144</sup> Valparaiso University President Mark Heckler stated that the “law school has been operating at a

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*Annually in Tuition*, LAW.COM (Oct. 4, 2018), <https://www.law.com/2018/10/04/study-finds-law-schools-are-losing-1-5-billion-annually-in-tuition> (quoting co-author Bernard Burk) (warning that, in view of the recent eight percent (8%) uptick in law applicants, law school leaders who have only a short-term perspective without a long-term strategy that can quickly adapt to the future market conditions are “terrible” managers).

143. Elizabeth Olson, *For-Profit Charlotte School of Law Closes*, N.Y. TIMES (Aug. 15, 2017), <https://www.nytimes.com/2017/08/15/business/dealbook/for-profit-charlotte-school-of-law-closes.html?mcubz=1&r=0>; Deborah Cassens Weiss, *Savannah Law School Will Close, Students and Faculty Are Told*, A.B.A. J. (Mar. 22, 2018), <http://www.abajournal.com/news/article/savannah-law-school-will-close-students-and-faculty-are-told> [<http://perma.unl.edu/TJT7-7AR8>]; Lyle Moran, *Beset by Problems, Thomas Jefferson Is Trying to Avoid a Death Blow*, VOICE SAN DIEGO (Nov. 26, 2018), <https://www.voiceofsandiego.org/topics/education/beset-by-problems-thomas-jefferson-law-school-is-trying-to-avoid-a-death-blow>; Anne Ryman, *Arizona Summit Law School Won't Offer Classes This Fall; Students Told to Transfer*, AZ REPUBLIC (Aug. 14, 2018), <https://www.azcentral.com/story/news/local/arizona-education/2018/08/14/arizona-summit-law-school-wont-offer-classes-fall-2018/988268002/> [<http://perma.unl.edu/8RT5-BLKG>]; <https://www.azcentral.com/story/news/local/arizona-education/2018/08/14/arizona-summit-law-school-wont-offer-classes-fall-2018/988268002/>; Anne Ryman, *Struggling Law School Now Told They Can't All Finish Degrees at ASU*, AZ REPUBLIC (Oct. 5, 2018), <https://www.azcentral.com/story/news/local/arizona-education/2018/10/05/arizona-summit-law-school-teach-out-plan-asu-off-table/1538931002/> [<https://perma.unl.edu/9R4X-GRLV>]; Staci Zaretsky, *Law School Admits Defeat, Plans to Close After Losing Accreditation*, ABOVE THE LAW (Oct. 29, 2018), <https://abovethelaw.com/2018/10/law-school-admits-defeat-plans-to-close-after-losing-accreditation/>; see also Staci Zaretsky, *Struggling Law School Will Not Accept New Students This Spring*, ABOVE THE LAW (Oct. 27, 2018), <https://abovethelaw.com/2018/10/struggling-law-school-will-not-accept-new-students-this-spring/> [<https://perma.unl.edu/WR2V-GKC9>] (reporting that Thomas Jefferson will not enroll new students in Spring 2019).
144. Scott Broden, *MTSU in Talks with Valparaiso University to Move Law School to Murfreesboro*, MURFREESBORO DAILY NEWS J. (June 22, 2018), <https://www.dnj.com/story/news/2018/06/22/mtsu-talks-valparaiso-university-move-law-school-murfreesboro/726670002/> [<http://perma.unl.edu/D7QH-TB9S>]; *MTSU, Valparaiso Discuss Transfer of Law School to Murfreesboro*, MTSU NEWS (June 22, 2018), <http://mtsunews.com/mtsu-valparaiso-law-school-talks/> [<http://perma.unl.edu/Z7UM-NMPU>]; Sara Randazzo, *Valparaiso Law School Suspends Admissions*, WALL ST. J. (Nov. 16, 2017), <https://www.wsj.com/articles/valparaiso-law-school-to-close-citing-plummeting-enrollment-1510860102> [<http://perma.unl.edu/6GWP-2MDS>].

deficit for two or three years and ran through its reserve.”<sup>145</sup> Despite Valparaiso’s \$40,000-per-year tuition and a reorganization plan that included faculty buyouts and curriculum revamps, the leadership could not stop the financial hemorrhaging.<sup>146</sup>

In 2016, Emory Law School Professor Dorothy A. Brown predicted that other schools—including top ranked state schools—may face similar risk.<sup>147</sup> The unfolding narratives at the University of Minnesota, Northwestern, Vermont, and South Dakota law schools validate Professor Brown’s prediction and illustrate the challenges ahead as larger class sizes, cost cutting, faculty buyouts or layoffs, and tenure restructuring (or perhaps elimination) become standard law school operating procedure.<sup>148</sup> While the Regents for the University of Minnesota ap-

145. Randazzo, *supra* note 144.

146. *Id.* (quoting Valparaiso University President Heckler) (“When it hit us, it came fast.”).

147. Dorothy A. Brown, *Which Top Law School Will Close? Follow the Money*, FORBES (Mar. 17, 2016), <https://www.forbes.com/sites/schoolboard/2016/03/17/which-top-law-school-will-close-follow-the-money/#48e92a4a56cd> [http://perma.unl.edu/6W4L-CA87] (describing Minnesota Law School’s steep decline in student enrollments and large deficits); see also Staci Zaretsky, *Law School Will Slash Faculty by 25 Percent to Free Up Funds for Recruiting Better Students*, ABOVE THE LAW (Mar. 12, 2018), <https://abovethelaw.com/2018/03/law-school-will-slash-faculty-by-25-percent-to-free-up-funds-for-recruiting-better-students/> [http://perma.unl.edu/A5V3-MJB3] (describing ongoing faculty cuts and buyouts at University of the Pacific, McGeorge School of Law); see generally ROBERT K. TOUTKOUSIAN & MICHAEL B. PAULSEN, *ECONOMICS OF HIGHER EDUCATION: BACKGROUND, CONCEPTS, AND APPLICATIONS* 257–58 (2016).

148. Paul Caron, *University of Minnesota Increases Law School’s Annual Subsidy to \$12 Million Amidst Declining Applications, Enrollment (On Top of \$40 Million Subsidy Since 2012–2013)*, TAXPROF BLOG (May 11, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/05/university-of-minnesota-increases-law-schools-annual-subsidy-to-12-million-amidst-declining-applicat.html](http://taxprof.typepad.com/taxprof_blog/2018/05/university-of-minnesota-increases-law-schools-annual-subsidy-to-12-million-amidst-declining-applicat.html) [http://perma.unl.edu/EWT5-KK2C]; Paul Caron, *University of Minnesota Law School Seeks \$3.6 Million Increase in Subsidy to Maintain Top 20 Ranking*, TAXPROF BLOG (May 29, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/05/university-of-minnesota-seeks-increase-in-annual-subsidy-to-12-million-to-maintain-top-20-ranking.html](http://taxprof.typepad.com/taxprof_blog/2018/05/university-of-minnesota-seeks-increase-in-annual-subsidy-to-12-million-to-maintain-top-20-ranking.html) [http://perma.unl.edu/B3GV-R68H]; Dick Dahl, *U of M Regents Subsidize Law School for Another Year*, MINN. L. (June 19, 2018), <https://minnlawyer.com/2018/06/19/u-of-m-regents-subsidize-law-school-for-another-year/> [http://perma.unl.edu/P94J-P7BK]; Paul Caron, *University of Minnesota Approves \$3.6 Million Subsidy for Law School; Regent Urges School to Drop Quest to Retain Top 20 Ranking Due to Projected \$100 Million 10-Year Subsidy*, TAXPROF BLOG (June 22, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/06/university-of-minnesota-approves-1-year-36-million-subsidy-for-law-school-one-regent-urges-school-to.html](http://taxprof.typepad.com/taxprof_blog/2018/06/university-of-minnesota-approves-1-year-36-million-subsidy-for-law-school-one-regent-urges-school-to.html) [http://perma.unl.edu/L2LY-UZ6W]; Paul Caron, *Vermont Law School Plans Faculty Cuts*, TAXPROF BLOG (June 2, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/06/vermont-law-school-plans-faculty-cuts.html](http://taxprof.typepad.com/taxprof_blog/2018/06/vermont-law-school-plans-faculty-cuts.html) [http://perma.unl.edu/HZP3-XTKZ]; Katy Savage, *Vermont Law School Restructuring Faculty*, VT DIGGER (June 25, 2018), <https://vtdigger.org/2018/06/25/vermont-law-school-restructuring-faculty/> [http://perma.unl.edu/ZE8V-CMKD] (“More than a dozen faculty at Vermont Law School will lose tenure this year as the institution struggles to level its budget”); Colleen Flaherty, *Restructuring Tenure Away*, INSIDE

proved a \$3.6 million subsidy for the next two years, reports suggest that in coming years subsidies will end.<sup>149</sup> For example, Regent Michael Hsu commented that based on his calculations, the law school has received \$40 million in subsidies since 2014 and warned that by the year 2023, if these subsidies continue, they could total nearly \$100 million.<sup>150</sup> Hsu then suggested that the law school “drop its admission standards, attract more students, and not place as much emphasis on the rankings.”<sup>151</sup> Board of Regents Chair, David J. McMillian, said “we can’t continue [these subsidies] much longer. It’s extremely expen-

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HIGHER ED (June 26, 2018), <https://www.insidehighered.com/news/2018/06/26/vermont-law-school-cut-tenure-deal-budgetary-concerns-skeptics-wonder-how-it-will> [<http://perma.unl.edu/U8GF-CQW3>]; Paul Caron, *Catholic University Board Approves Plan to Cut 35 Profs, Increase Teaching Loads*, TAXPROF BLOG (June 10, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/06/catholic-university-board-approves-plan-to-cut-35-profs-increase-teaching-loads.html](http://taxprof.typepad.com/taxprof_blog/2018/06/catholic-university-board-approves-plan-to-cut-35-profs-increase-teaching-loads.html) [<http://perma.unl.edu/E3UE-6W4Q>]; Paul Caron, *University of Montana to Lay Off 50 Faculty to Close Budget Deficit*, TAXPROF BLOG (May 10, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/05/university-of-montana-to-layoff-50-faculty-to-close-budget-deficit.html](http://taxprof.typepad.com/taxprof_blog/2018/05/university-of-montana-to-layoff-50-faculty-to-close-budget-deficit.html) [<http://perma.unl.edu/P6VY-3TRH>]; Bart Pfankuch, *University of South Dakota Law School Facing Challenges but Seeing Opportunities*, CAPJOURNAL.COM (May 18, 2018), [https://www.capjournal.com/news/university-of-south-dakota-law-school-facing-challenges-but-seeing/article\\_ac522b08-5a61-11e8-a323-3f8f955b6e62.html](https://www.capjournal.com/news/university-of-south-dakota-law-school-facing-challenges-but-seeing/article_ac522b08-5a61-11e8-a323-3f8f955b6e62.html) [<http://perma.unl.edu/7QUV-U8XQ>] (“Applications are historically down. The balance sheet is barely in the black. More marginally qualified students have been admitted in recent years. And the school, which produces most of South Dakota’s lawyers, is on the watch list with its main accreditation agency.”); Stephanie Francis Ward, *14 of 19 Vermont Law Professors Lose Tenure, Retention Chair Tells Professors’ Organization*, A.B.A. J. (July 12, 2018), [http://www.abajournal.com/news/article/14\\_out\\_of\\_19\\_vermont\\_law\\_professors\\_lose\\_tenure\\_retention\\_chair\\_tells\\_professors\\_lose\\_tenure\\_retention\\_chair\\_tells\\_professors](http://www.abajournal.com/news/article/14_out_of_19_vermont_law_professors_lose_tenure_retention_chair_tells_professors) [<http://perma.unl.edu/C29P-SDF3>]; Staci Zaretsky, *Law School Facing ‘Financial Exigencies’ Strips 14 Professors of Tenure*, ABOVE THE LAW (July 12, 2018), <https://abovethelaw.com/2018/07/law-school-facing-financial-exigencies-strips-14-professors-of-tenure> [<http://perma.unl.edu/V5FM-U62M>]; Mark A. Cohen, *When the Numbers Don’t Add Up: Vermont Law School’s Tenured Faculty Purge and What It Portends*, FORBES (July 18, 2018), <https://www.forbes.com/sites/markcohen/2018/07/18/when-the-numbers-dont-add-up-vermont-law-schools-tenured-faculty-purge-and-what-it-portends> [<http://perma.unl.edu/7ZBC-U9A4>]; Karen Sloan, *Future of Independent Law Schools Is in Peril*, LAW.COM (July 25, 2018), <https://www.law.com/2018/07/25/future-of-stand-alone-law-schools-is-in-peril/> [<http://perma.unl.edu/X92T-F8DZ>]; see also R.J. Wolcott, *Dean: Making MSU College of Law Part of the University Will Stabilize Us*, LANSING STATE J. (Nov. 8, 2018), <https://www.lansing-statejournal.com/story/news/local/2018/11/08/msu-law-school-michigan-state/1892547002/> [<https://perma.unl.edu/LWW6-M88G>] (“By 2020, the Michigan State University College of Law will no longer be a private law school located in the heart of the East Lansing campus. It will be a part of the university.”).

149. Caron, *supra* note 148.

150. *Id.*

151. *Id.*; see generally JERRY Z. MULLER, *THE TYRANNY OF METRICS* 75–78 (2018) (discussing the pernicious effects of the U.S. News and World Report and other rankings on legal education).

sive for the rest of the university.”<sup>152</sup> Incidentally, an interesting trend to watch involves higher education mergers that would enable a bottom-line focused university to recalibrate its education portfolio offerings by potentially (1) cultivating and consolidating access to new student-customers, (2) developing synergies between and extracting efficiencies from the merged programs, (3) shedding financially non-viable programs, and (4) investing strategically in more profitable programs.<sup>153</sup>

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152. Caron, *supra* note 148.

153. Bernard T. Ferrari & Phillip H. Phan, *Universities and the Conglomerate Challenge*, MCKINSEY Q. (Sept. 18, 2018), <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/universities-and-the-conglomerate-challenge> [<https://perma.unl.edu/AS4X-99H9>] (“[A] university can be viewed as a diversified conglomerate of independent strategic business units (SBUs): colleges, divisions, and schools. Each of these SBUs has a business-level strategy that is driven by its intellectual traditions, educational objectives, and professional disciplinary norms. The corporate strategy of a university supports these strategic intents by serving as a platform for attracting and allocating resources across its academic units.”). The article then discusses the challenges of “carrying” “economically inefficient academic units” and argues for the sale or restructuring of “fringe or unprofitable” units. *Id.* McKinsey further recommends that university leaders “start thinking of the university not as a collection of individual SBUs but as a portfolio of revenue-producing or cost-incurring assets, each with different risk profiles and possibilities for navigating disruptive change in the sector [e.g., online learning]” in order to ensure long-term education enterprise sustainability. *Id.* For reporting on the recently completed UIC-John Marshall merger, see Lynn Marek, *UIC, John Marshall Law School on Track to Merge*, CRAIN’S CHI. BUS. (June 8, 2018), <http://www.chicagobusiness.com/article/20180608/ISSUE01/180609880/uic-john-marshall-law-school-on-track-to-merge> [<https://perma.unl.edu/N8D4-CWML>] (noting the likelihood of more higher education mergers in the future); Dawn Rhodes, *UIC Approves Merger with John Marshall Law School*, CHI. TRIB. (July 19, 2018), <http://www.chicagotribune.com/news/ct-met-john-marshall-law-school-uic-20180719-story.html> [<https://perma.unl.edu/8FC4-FDKF>]; Stephanie Francis Ward, *ABA Greenlights University of Illinois System Acquiring John Marshall Law School*, A.B.A. J. (Dec. 6, 2018), <http://www.abajournal.com/news/article/uics-proposed-acquisition-of-chicagos-john-marshall-law-school-gets-green-l> [<https://perma.unl.edu/ZG9G-JCSW>]; Paul Caron, *University of Illinois-Chicago/John Marshall Merger Is Approved, Creating Chicago’s First Public Law School*, TAXPROF BLOG (Dec. 9, 2018), [https://taxprof.typepad.com/taxprof\\_blog/2018/12/university-of-illinois-chicagojohn-marshall-merger-is-approved-creates-chicagos-first-public-law-sch.html](https://taxprof.typepad.com/taxprof_blog/2018/12/university-of-illinois-chicagojohn-marshall-merger-is-approved-creates-chicagos-first-public-law-sch.html) [<https://perma.unl.edu/Q9TJ-PNKQ>]. For additional insights on law school mergers, see Jack Crittenden, *What UI Chicago and John Marshall Law School Merger Will Mean for Legal Ed*, NAT’L JURIST (July 24, 2018), <http://www.nationaljurist.com/national-jurist-magazine/what-ui-chicago-and-john-marshall-law-school-merger-will-mean-legal-ed> [<https://perma.unl.edu/L86W-ANBL>] (noting other law school mergers: Texas A&M and Texas Wesleyan University in 2012; University of Massachusetts and Southern New England School of Law in 2010; Franklin Pierce Law Center and University of New Hampshire in 2010; Dickinson School of Law and Penn State in 2000; Michigan State University and Detroit College of Law in 1995); see generally Michael Simkovic, *Which Law Schools Could Merge?*, BRIAN LEITER’S L. SCH. REP. (July 20, 2018), <http://leiterlawschool.typepad.com/leiter/2018/07/which-law-schools-could-merge-michael-simkovic.html> [<https://perma>

Down the way at another Midwestern school, the new Dean Kimberly Yuracko of eleventh ranked Northwestern Pritzker School of Law announced in November 2018 that due to its “challenging financial position,” the law school will make faculty cuts to address “budget shortfalls.”<sup>154</sup> While Dean Yuracko’s faculty letter did not elaborate on the size of the budget shortfall or the number of faculty positions to be eliminated, she said the “school’s operating expenses this year are expected to outpace its revenues. The school will draw on its reserves to cover the difference this year, but [Dean] Yuracko said Northwestern Law needs to make bigger adjustments to bring its expenses in line with revenue for its long-term health.”<sup>155</sup> Northwestern’s focus on reducing expenses further amplifies the reality that even elite schools are subject to the destructive forces of a “soft legal education market,” especially if the schools are geographically located in a region where there is fierce competition for the same highly qualified first-year law applicants.<sup>156</sup> The clear lessons here are that top national rankings cannot protect elite Midwest law schools like Minnesota or Northwestern from a contracting legal education marketplace. Creative destruction targets all.

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.unl.edu/N4RJ-6NJS] (posting a general map of ABA approved law schools with some schools missing). Another trend involves the launch of new medical schools under a business theory that health care revenues along with alumni donations will provide the university with “long-term financial security.” See, e.g., Greg Toppo, *What the Doctor Ordered: Medical Schools*, INSIDE HIGHER ED. (Oct. 19, 2018), <https://www.insidehighered.com/news/2018/10/19/medium-size-institutions-look-medical-schools-future-stability> [<https://perma.unl.edu/QD2K-H778>].

154. Karen Sloan, *Northwestern Law Dean Cite School’s ‘Difficult Time’ As Reason for Faculty Cuts*, LAW.COM (Nov. 5, 2018), <https://www.law.com/2018/11/05/northwestern-law-dean-cites-schools-difficult-time-as-reason-for-faculty-cuts/> [<https://perma.unl.edu/6QD9-5RRTT>].
155. Karen Sloan, *Northwestern Law Is Paring Back Amid Budget Woes. Are Other Elite Schools Next?*, LAW.COM: RECORDER (Nov. 8, 2018), <https://www.law.com/therecorder/2018/11/08/northwestern-law-is-paring-back-amid-budget-woes-are-other-elite-schools-next> [<https://perma.unl.edu/9CA5-YVXR>].
156. *Id.* (noting Professor Jerome Organ’s theory “that Northwestern’s financial problems may be the result of fierce competition for highly qualified students among high ranked law schools in the Midwest—at least partially”); Staci Zaretsky, *Elite Law School to Cut Faculty Due to Its ‘Challenging Financial Position’*, ABOVE THE LAW (Nov. 6, 2018), <https://abovethelaw.com/2018/11/elite-law-school-to-cut-faculty-due-to-its-challenging-financial-position/> [<https://perma.unl.edu/8DEA-Z2QY>]; Emma Whitford, *Northwestern’s Law School Will Cut Faculty*, INSIDE HIGHER ED (Nov. 8, 2018), <https://www.insidehighered.com/quicktakes/2018/11/08/northwesterns-law-school-will-cut-faculty> [<https://perma.unl.edu/MT7G-RFPC>]; Jack Crittenden, *Northwestern Cutting Back on Staff After Years of Adding Faculty*, NAT’L JURIST (Nov. 12, 2018), <http://www.nationaljurist.com/national-jurist-magazine/northwestern-cutting-back-staff-after-years-adding-faculty> [<https://perma.unl.edu/T72W-CYZW>]; see also *Legal Education: A New Growth Vision Part II*, Part II (discussing the financial sustainability of multiple law schools in geographically compressed regions).



As of writing this in the fall of 2018, market forces have culled only five law schools, leaving 200 ABA-accredited law schools still operating in the United States.<sup>157</sup> Pushing aside the situations at the University of Minnesota, Northwestern, Vermont, and South Dakota law schools, it is not unreasonable to ask why law school leadership and faculty should be even remotely concerned about the future viability of their education institutions, given that they have successfully weathered the Great Recession. Consider the following factors when evaluating potential answers to this question: (1) how uncertain student interest in legal education impacts the mid- and long-term economic outlook of legal education programs; (2) how proposed congressional changes to the federal student loan program may halt reliable flows of education funding; (3) whether adjustments to the admission process can generate real, sustained interest in legal education; (4) how personal, professional, and financial well-being enter into potential applicants' career decisions; (5) how schools respond to employer dissatisfaction with graduates' skills; (6) how transformative technologies are reshaping and redefining the meaning, scope, and need for work performed by knowledge professionals; and (7) that the marketplace will weed out programs that fail to meet the changing expectations of students, employers, and consumers of professional services. Remember too that these factors co-exist with the ongoing reconfiguration of professional demographics as multiple generations work side-by-side, transition to new roles, or leave practice.<sup>158</sup>

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157. Compare *supra* subsection II.C.1 (describing closure of Charlotte, Whitter, Indiana Tech, Arizona Summit, and Savannah law schools), with *ABA-Approved Law Schools*, A.B.A., [https://www.americanbar.org/groups/legal\\_education/resources/aba\\_approved\\_law\\_schools.html](https://www.americanbar.org/groups/legal_education/resources/aba_approved_law_schools.html) [<http://perma.unl.edu/Z5Z4-GABT>].
158. Rebecca Knight, *Managing People from 5 Generations*, HARV. BUS. REV. (Sept. 25, 2014), <https://hbr.org/2014/09/managing-people-from-5-generations> [<http://perma.unl.edu/9UK8-LYLB>]; Desda Moss, *5 Generations + 7 Values = Endless Opportunities*, SHRM (June 20, 2018), <https://www.shrm.org/hr-today/news/hr-news/conference-today/pages/5-generations-7-values-endless-opportunities.aspx> [<http://perma.unl.edu/R4WP-ML58>] (explaining the following ages that accompany each generation: Silent generation: ages 71–89; baby boomers: ages 54–70; Generation X: ages 34–53; Generation Y/Millennials: ages 21–33; Generation Z: under age 20); see generally Debra Cassens Weiss, *Lawyer Population 15% Higher than 10 Years Ago, New ABA Data Shows*, A.B.A. J. (May 3, 2018), [http://www.abajournal.com/news/article/lawyer\\_population\\_15\\_higher\\_than\\_10\\_years\\_ago\\_new\\_aba\\_data\\_shows](http://www.abajournal.com/news/article/lawyer_population_15_higher_than_10_years_ago_new_aba_data_shows) [<http://perma.unl.edu/ZNT5-2C3L>]; Lauren Still Rikleen, *How Will Generation X Lead Big Law?*, AM. LAW. (Jan. 4, 2018), <https://www.law.com/americanlawyer/sites/americanlawyer/2018/01/04/how-will-generation-x-lead-big-law> [<http://perma.unl.edu/FW37-F75K>]; Meghan Tribe, *Law Firm Survey Says Millennial Era Is Here, but Change Has Just Begun*, AM. LAW. (May 18, 2018), <https://www.law.com/americanlawyer/2018/05/18/law-firm-survey-says-millennial-era-is-here-but-change-has-just-begun> [<http://perma.unl.edu/5WXA-GFZL>] (stating that fifty-percent (50%) of attorneys in 2025 will be millennials); see generally *The Rise of the Social Enterprise: 2018 Deloitte Global Human Capital Trends*, DELOITTE INSIGHTS 49–54 (2018), <https://www2.deloitte.com/content/>

This Article argues that these factors signal a moment of reckoning for legal education, discussed further *infra* Part IV. It puts a particular emphasis on how technological advances and changing customer expectations present opportunities for nimble, flexible education programs—and peril for rigid, inflexible organizations.<sup>159</sup> Before looking ahead, however, a brief history of traditional legal education provides a baseline from which one can identify areas for reinvention and differentiation.

## 2. Langdell Model for Legal Education

Traditional legal education dates back to 1870, when Harvard Law Professor Christopher Columbus Langdell introduced the “case method.”<sup>160</sup> This method involves students reading cases and unpacking them during “Socratic question-and-answer sessions in class.”<sup>161</sup> Langdell’s original pedagogic vision sought to introduce scientific rigor into the study of case law—like botanists studying botanical gardens.<sup>162</sup> Interestingly, this vision is absolutely congruent with the modern data collection and analytics tools offered by learning management systems like Canvas and Blackboard. Specifically, data and analytics—and eventually AI—can provide insights into the specific components of high-quality teaching because they move abstractions into verifiable, replicable, and sustainable action.<sup>163</sup>

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dam/insights/us/articles/HCTrends2018/2018-HCTrends\_Rise-of-the-social-enterprise.pdf [http://perma.unl.edu/RX8H-3AUL] [hereinafter *The Rise of the Social Enterprise*] (examining “[t]he longevity dividend: work in an era of 100-year lives”); Graham, *supra* note 18, at 9 (“Most generational theorists agree that Gen Z encompasses persons born between 1995 and 2010.”).

159. See Erik Brynjolfsson et al., *Unpacking the AI-Productivity Paradox*, MIT SLOAN MGMT. REV. (Jan. 16, 2018), <https://sloanreview.mit.edu/article/unpacking-the-ai-productivity-paradox> [http://perma.unl.edu/8UBL-PTFL] (“[Organizations] that can best adapt to the new environment will find great opportunities, while competitive pressure awaits those that do not respond nimbly enough.”).
160. *The Case Study Teaching Method*, HARV. L. SCH., <http://casestudies.law.harvard.edu/the-case-study-teaching-method/> [http://perma.unl.edu/K5S4-Q2JK] (distinguishing between Langdell’s original “case method” pioneered at Harvard Law School and the “case study method” used by Harvard Business School).
161. *Id.* But see Deborah J. Merritt, *The Strange Case of the Case Method*, <https://www.lawschoolcafe.org/2018/06/29/the-strange-case-of-the-case-method/> [http://perma.unl.edu/K6YQ-QUY5] (June 29, 2018) (questioning pedagogical effectiveness of the case method given the bounty of modern study aids).
162. ROBERT STEVENS, LAW SCHOOL: LEGAL EDUCATION IN AMERICA FROM THE 1850S TO THE 1980S 52–53 (1983).
163. Gleason, *supra* note 100 (discussing how data and AI can bring to fruition Langdell’s vision that law can be studied and applied with scientific rigor). For a 2018 report on how AI is transforming industrial operations, see *The Artificial Intelligence Effect on Industrial Products: Profiting from an Abundance of Data*, IBM INST. FOR BUS. VALUE 3 (Feb. 2018) <https://www-935.ibm.com/services/us/gbs/thoughtleadership/industrialai/> [http://perma.unl.edu/3ETQ-KE2N] (“AI enables organizations to synthesize vast amounts of structured and unstructured data,

Nearly 150 years later, however, Langdell's case method remains the pinnacle of most legal education programs<sup>164</sup> and is seemingly oblivious to outside technological advancements and financial adversities. While attempts to graft new branches onto the Langdell tree in the form of clinical and experiential learning opportunities show promise,<sup>165</sup> these grafting efforts may yield meager harvests unless the education ecosystem intentionally cultivates biodiversity and aligns education offerings with modern technologies and marketplace demands. In 2009, University of Denver Law Professor David I.C. Thomson predicted: "The current forms of teaching in law schools are not sufficient to prepare students for the technological challenges they will face in the 21st Century."<sup>166</sup>

In June 2018, Lucy Endel Bassli, former assistant general counsel at Microsoft and current chief legal strategist for LawGeex, warned of the ongoing technology and structural shifts reshaping the legal ecosystem.<sup>167</sup> She then observed legal education's continuing failure to adapt by writing: "Meanwhile, law schools struggle with declining enrollment and pressures from hiring firms to educate graduates on new skills while tenured professors resist changing long-held curriculum."<sup>168</sup>

The SIP analysis *infra* Part IV echoes and amplifies Professor Thomson and Attorney Bassli's calls to action: law school leaders must immediately embark on a radical rethink, re-imagination, and restructuring of legal education that continuously adapts to changing technologies and responds to evolving market conditions.<sup>169</sup> Transfor-

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query results in natural language and apply machine-learning capabilities to data analysis. Together, these capabilities can significantly enhance insights, efficiency and speed."). For those organizations working toward AI, the IBM report recommends the following actions: (1) "Pinpoint a small number of high-value opportunities that AI technologies can help address, and make the appropriate investments"; (2) "Confirm the data strategy targets the information and skills needed to address identified opportunities"; and (3) "Adopt an agile approach to execution." *Id.* at 13–14; *see also* Hutson, *supra* note 100 (discussing studies that have used AI to successfully predict holdings from the U.S. Supreme Court).

164. Areen, *supra* note 136, at 1091.

165. *Id.* at 1099.

166. DAVID I.C. THOMSON, *LAW SCHOOL 2.0: LEGAL EDUCATION FOR A DIGITAL AGE* 22 (2009).

167. Lucy Endel Bassli, *The Legal Ecosystem: A Look at Tension Points for an Industry in Turmoil (Part 1)*, THOMSON REUTERS: LEGAL EXEC. INST. (June 20, 2018), <http://www.legalexecutiveinstitute.com/legal-ecosystem-tension-points-part-1/> [<http://perma.unl.edu/7HY3-TL3M>].

168. *Id.*

169. THOMSON, *supra* note 166, at 23–24. In 2009, Professor Thomson wrote:

The change that is needed in legal education is not just another form of the same place we have already been, with a few tweaks here and there. It is more along the lines of the space shuttle – we need to harness more complex technology than we are currently familiar with to get legal edu-

mation to a financially sustainable education enterprise begins with a clear understanding of what services are being sold, followed by an examination of relevant and more productive business models.

### 3. *Business Model Shift to a Referral-Based Service Provider*

This Article defines the business of legal education as the discovery, framing, transfer, application, integration, and exchange of doctrinal knowledge;<sup>170</sup> transmission of cultural-professional norms;<sup>171</sup> and development of market-valued skills (or “know-how” transfer)<sup>172</sup> via in-person and/or online interactions, experiential learning opportunities, and digital technology platforms. This Article further asserts that modern legal education is not a product business, but a service business—one that develops customer knowledge and skills know-how through a series of interactions between the provider and customer.<sup>173</sup>

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cation to the very different place it needs to be before the end of this century.

*Id.*

170. See generally AOUN, *supra* note 19, at 80–90 (explaining the experiential learning model, the process of knowledge formation, and that the “most robot-proof” people are those who are “self-directed, lifelong learner[s]”).
171. Konefsky & Sullivan, *supra* note 122, at 688–90 (discussing the importance of education that transmits community values of truth and morality as articulated in Philip W. Jackson’s book *WHAT IS EDUCATION* (2012)). Jackson observes:  
 [T]he goal of education is to effect beneficial changes in humans, not just in what they know and can do but, more important, in their character and personality, in the kind of persons they become. Moreover, the beneficiaries of that process are not just the individuals being served but also the society at large. Ultimately, the world in general stands to benefit from such an effort.
- Id.* at 688–89.
172. Mikus Dubickis & Elina Gaile-Sarkane, *Transfer of Know-How Based on Learning Outcomes for Development of Open Innovation*, 3 J. OPEN INNOVATION: TECH., MKT. & COMPLEXITY 4 (2017); see also SUSSKIND & SUSSKIND, *supra* note 90, at 194 (discussing the various categories of knowledge, including “know-who” (information about who has subject matter expertise); “know-what” (technical knowledge and ideas); “know-how” (procedural knowledge); “know-where” (knowledge of where to go for expertise on a particular topic); “know-why” (understanding underlying rationales), and “know-when” (insight to take action or refrain from action)).
173. CHESBROUGH, *supra* note 16, at 32. Chesbrough explains that “services refers to ‘a change in the condition of a person, or a good belonging to some other economic entity, brought about as a result of the activity of some other economic entity, with the approval of the first person or economic entity.’” *Id.* But see ANAND, *supra* note 17, at xi, 299, 304 (2016) (explaining that education is a “non-rivalrous” and “non-excludable” “information good” because it now involves the “moving [of] information, bits, and bytes” like other entertainment or media products). He explains “[e]ducation is ‘non-rivalrous’—any piece of knowledge can be consumed simultaneously by millions of users. Education is also ‘non-excludable’—access is increasingly hard to restrict, given mechanisms for free, instantaneous worldwide [digital] distribution (and other times piracy).” *Id.* at 304.

Until recently, academic study of service innovations was underexplored due to its “inherently interdisciplinary” nature.<sup>174</sup> For example, accounting systems historically have tracked product inventories but did not similarly track service performance metrics such as customer satisfaction, renewal rates, on-time delivery, and staff turnover.<sup>175</sup> In addition, universities historically have remained distanced from the realities of business and trade.<sup>176</sup> Peter Drucker’s classic observation is relevant here: “What the customer buys and considers value is never a product [or service]. It is always utility—that is, what a product [or service] does for him.”<sup>177</sup>

While faculty may see their work as imparting and building on the wisdom of educational giants like Socrates and Langdell, students want to know how that information is useful to them. If its utility is not apparent, both sides lose. Technology can play an important role in diffusing these tensions, however. For example, digital platforms enable students and faculty to seamlessly exchange ideas; share questions, insights, and experiences; discern quality and focus their attention in an era of information overload;<sup>178</sup> and develop and refine market-valued skills without the traditional constraints of a brick-and-mortar classroom. Platforms can thus harmonize faculty demands for academic inquiry and excellence with student expectations for usable and marketable skills.<sup>179</sup>

Reframing traditional product-based mindsets of process and production towards a more service-based orientation necessarily requires time and adjustment. Academic garden walls and silos must be broken

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174. *Id.* at 193–95; *see also* REIS, *supra* note 16, at 280–82 (advocating private-public partnerships with universities to study entrepreneurship and innovation in startup labs where cross-functional and multidisciplinary teams experiment and identify practices that are confirmed by data and science).

175. CHESBROUGH, *supra* note 16, at 193.

176. JANE AUSTEN, *PRIDE AND PREJUDICE* (1813). *See* Chapters 8 and 25, where Austen notes the social class distinctions between the landed gentry and lawyers in trade. *Id.*

177. CHESBROUGH, *supra* note 16, at 34 (citing PETER DRUCKER, *MANAGEMENT: TASKS, RESPONSIBILITIES, PRACTICES* 57 (1999)); *see also* REIS, *supra* note 77, at 68 (stating customers “only care if we make their lives better”); RICHARD S. TEDLOW, *DENIAL: WHY BUSINESSES FAIL TO LOOK FACTS IN THE FACE—AND WHAT TO DO ABOUT IT* 19 (2010) (“Any product or service is a combination of what the business provides and what the customer wants and expects.”). *See Legal Education: A New Growth Vision Part II*, subsection III.A.4 for a discussion of law school value.

178. KELLY, *supra* note 45, at 176 (quoting Herbert Simon, Nobel Prize-winning social scientist comments in 1971) (“In an information-rich world, the wealth of information means the dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention.”).

179. *Id.* at 171 (“Great teachers have a knack for conveying unsavory packages to the unwilling in a way that does not scare them off.”).

down so that service innovations can be systemically and thoughtfully examined.<sup>180</sup> When legal education programs engage in this reframing, data and analytics will eventually provide important insights for improving education services.<sup>181</sup>

Moving to a service-based framework requires a new business model for legal education programs.<sup>182</sup> A business model “articulates the logic and provides data and other evidence that demonstrates how a business creates and delivers value to customers.”<sup>183</sup> An organization’s business model establishes a unified framework for action, but it can also stagnate over time.<sup>184</sup> To break inertia and stimulate growth, leaders must develop alternative business models and embrace a “bias for action”—meaning that it is far better to collect and act on data with novel initiatives rather than simply studying, talking, and theorizing.<sup>185</sup> In the spirit of Darwin, Haas Business Professor Henry

180. CHESBROUGH, *supra* note 16, at 193–95.

181. As more data is collected over time, education service providers will eventually have access to performance metrics that provide critical insights for improving the delivery and quality of knowledge and skills development services. See *Legal Education: A New Growth Vision Part III*, section III.B for additional information.

182. IBM 2012 CEO C-SUITE STUDIES, *supra* note 24, at 47 (noting the differences in how market underperformers and outperformers approach business model innovation). “While underperformers focus more on improving operations and redefining their own enterprise models, outperformers have more ambitious innovation targets. They intend to upset entire industries.” *Id.* The IBM report identifies three types of business model innovation: (1) Enterprise model innovation: “Redefining the organization’s role in the value chain, where it collaborates, how it operates;” (2) Revenue model innovation: “Changing the way the organization monetizes value;” (3) Industry model innovation: “Changing the way a whole industry works or creating an entirely new industry.” *Id.*

183. Han & Cho, *supra* note 73, at 2; see HENRY CHESBROUGH, OPEN BUSINESS MODELS: HOW TO THRIVE IN THE NEW INNOVATION LANDSCAPE (2006). Chesbrough states:

A business model performs two important functions: it creates value, and it captures a portion of that value. It creates value by defining a series of activities from raw materials through to the final customer that will yield a new product or service with value being added throughout the various activities. The business model captures value by establishing a unique resource, asset, or position within that series of activities, where the firm enjoys a competitive advantage.

*Id.* at 2; see also RITA GUNTHER McGRATH & IAN C. MACMILLAN, DISCOVERY DRIVEN GROWTH 96 (2009) (“Sometimes, radically new opportunities open up when you can think of ways to change the unit of business, particularly if you can link the way customers pay you to an outcome that is desirable or salient to them.”). McGrath and MacMillan then explain, “Many innovations today are essentially business model, or unit-of-business, innovation.” *Id.*

184. CHESBROUGH, *supra* note 16, at 96.

185. *Id.* at 100; see also GROVE, *supra* note 3, at 130 (stating that organizations “can’t suddenly start experimenting when you realize that you’re in trouble unless you’ve been experimenting all along” and that [i]t’s too late to do it once things have changed in your core business”); SCHMIDT & ROSENBERG, *supra* note 89, at

Chesbrough observes, “It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change.”<sup>186</sup>

The referral business model is particularly relevant to legal education programs because professional communities are interconnected, with practitioners who seek or have specialized knowledge and skills.<sup>187</sup> Referrals have been likened to matchmaking services because they bring together people with similar interests and goals.<sup>188</sup> A referral from a trusted source can enhance the prospective customer’s perceived value of and interest in a product or service.<sup>189</sup> Referrals can also generate loyalty and may result in future referrals and steady streams of returning, lifelong learners.<sup>190</sup>

Satisfied customers who become advocates for education services function as important community partners.<sup>191</sup> The practical insights and observations by YouTube CEO, Susan Wojcicki, *Time* magazine’s

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156–58 (explaining that to achieve the best outcomes, leaders should balance “a bias for action” with the “PIA” rule). “PIA” means patience, information, and alternatives. *Id.* at 157.

186. CHESBROUGH, *supra* note 16, at 101. Note that, according to the Darwin Correspondence Project at the University of Cambridge, the quote is actually a 1963 paraphrase by Leon C. Meggison, Professor of Management and Marketing at Louisiana State University in Baton Rouge. See University of Cambridge, *The Evolution of a Misquotation*, DARWIN CORRESPONDENCE PROJECT, <https://www.darwinproject.ac.uk/people/about-darwin/six-things-darwin-never-said/evolution-misquotation> [<http://perma.unl.edu/CJ7B-7CTE>].
187. An idea to consider is whether the referral model (especially if digital platforms are used) can be combined with an “open business model” to capture value. See CHESBROUGH, *supra* note 183, at 2–3; see also Win Vanhaverbeke & Henry Chesbrough, *A Classification of Open Innovation and Open Business Models*, in *NEW FRONTIERS IN OPEN INNOVATION* 55 (Henry Chesbrough et al., eds., 2014) (“*Open or linked business models* thus refer to the situations where the innovating company relies on its partners’ competencies to jointly create value for customers and share that value according to the agreements they have negotiated prior to the collaboration.”). While the specifics of how to structure a university joint venture with for-profit platform collaborators is outside the scope of this Article, education entrepreneurs may find this concept worthy of further examination.
188. Philipp Schmitt et al., *Why Customer Referrals Can Drive Stunning Profits*, *HARV. BUS. REV.* (June 2011), <https://hbr.org/2011/06/why-customer-referrals-can-drive-stunning-profits> [<http://perma.unl.edu/LY6X-YMSK>]; see also Stephen Fairley, *How to Build Referral-Driven Law Practice in 2016*, *NAT’L L. REV.* (Dec. 15, 2015), <https://www.natlawreview.com/article/how-to-build-referral-driven-law-practice-2016> [<http://perma.unl.edu/CN4L-8ZKH>] (explaining how lawyers can induce more customer referrals); see generally EVANS & SCHMALENSSEE, *supra* note 10.
189. KELLY, *supra* note 45, at 67 (“Trust cannot be reproduced in bulk . . . Trust must be earned over time. It cannot be faked.”). Kelly adds “trust is an intangible that has increasing value in a copy-saturated world.” *Id.*
190. Schmitt et al., *supra* note 188.
191. Hsin Hsin Chang, *Critical Factors and Benefits in the Implementation of Customer Relationship Management*, 18:5 *TOTAL QUALITY MGMT.* 483, 487 (2007) (“Satisfaction is an emotional state that occurs in response to a positive evalua-

“most powerful woman on the internet,” deserve serious consideration because they illuminate a clear path forward.<sup>192</sup> She explains that because “[i]t’s easier to expand a relationship than to get a new one started,”<sup>193</sup> efforts should be concentrated on improving current customer relationships. Entrepreneurial leaders will thus recognize the importance of cultivating relationships with current law students and alumni when embracing the referral business model.

To make this shift to a referral-based business model, the program must obsessively focus on identifying customer needs and design and deliver knowledge and skills development solutions that serve these customer needs.<sup>194</sup> Leaders should further heed the sage advice of Joseph E. Aoun, President of Northeastern University. Aoun strongly encourages leaders to begin by reimagining and redefining the customer spectrum to include students, alumni, and community practitioners.<sup>195</sup> He then recommends creating innovative education services for lifelong learners that are dynamic, relevant, cost-effective, and easily accessible.<sup>196</sup> As will be discussed in *Legal Education: A New Growth Vision Part III*, subsection III.D.2, this critical reframing of the law school mission from only training law students to providing lifelong learning for a range of customers provides innovative legal entrepreneurs myriad business service opportunities in adjacent and

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tion of these interaction experiences.”); *see also* ANAND, *supra* note 17, at 170 (linking loyalty and success).

192. JOHN DOERR, *MEASURE WHAT MATTERS* 154–55 (2018).

193. *Id.* at 167.

194. *Reinventing Innovation*, *supra* note 23, at 20 (“An open ‘innovation sandbox’ can help innovating companies meet these challenges. How? By engaging customers early on, teaming with business and technology partners, and bringing together the right business leaders, strategists, and employees from across the organization to develop an innovation culture and operating models that close the strategy-to-execution gap.”).

195. AOUN, *supra* note 19, at 110, 113. Aoun encourages leaders to elevate lifelong learning to first-class status, instead of second-class ancillary programming. *Id.* at 117. He warns, “By choosing not to adapt to—and prioritize—the needs of lifelong learners, colleges and universities are overlooking a vital educational need, especially in our hyper technological reality.” *Id.* at 118; *see also* Elizabeth Mann Levesque, *Report: The Role of AI in Education and the Changing Workforce*, BROOKINGS (Oct. 18, 2018), <https://www.brookings.edu/research/the-role-of-ai-in-education-and-the-changing-u-s-workforce/> [<https://perma.unl.edu/X3PA-KZUU>] (examining how emerging technologies will reshape education and the workplace, thus necessitating that workers commit to lifelong learning). The Report then recommends that (1) education incorporate “21st century skills such as critical thinking, problem solving, communication, and teamwork” into the K-12 and post-secondary curricula, (2) laws and programs should support public-philanthropic-business “workforce development partnerships,” and (3) governmental policies should support workers in their lifelong “search for new career pathways.” *Id.*

196. *Id.*



complementary markets. Successful law schools of the future will be in the business of lifelong learning.

In sum, the legal landscape is undergoing radical changes. Satisfaction with the status quo is shriveling. Both law schools and law firms must look for new ways to serve customers. Legal education, despite its historically insulated status, is not immune from the pressures of technological advancement and market realities. Law schools should initially reconceive their business model as a referral-based service enterprise operating in both the human and digital world.<sup>197</sup> The next Part of this Article gives a name to the precipice at which many industries find themselves, discusses the importance of examining the market with an outsider's objectivity, and advocates taking strong, deliberate, and timely action.

### III. STRATEGIC INFLECTION POINTS

Every organization with any kind of staying power will face strategic inflection points (SIPs) as shifts in technology, demographics, the economy, or other factors destabilize the way things have always been done. In his brilliantly-titled book, *Only the Paranoid Survive*, former Intel CEO, Andrew S. Grove, explains that a "strategic inflection point is a time in the life of a business when its fundamentals are about to change."<sup>198</sup> SIPs are often long in the making and mostly invisible.<sup>199</sup>

197. While this Article initially recommends the referral business model, each education program will need to evaluate its unique assets (e.g., financial, social, geographical, and reputational), determine which parts of the existing business model should be retained or discarded, and identify any changes necessary to align its mission with local or regional marketplace demands. As discussed in *Legal Education: A New Growth Vision Part III*, subsections III.A.1, 3, and 4, education entrepreneurs should consider platform and open business models. See generally GREG SATELL, *MAPPING INNOVATION: A PLAYBOOK FOR NAVIGATING A DISRUPTIVE AGE* 136 (2017).

198. GROVE, *supra* note 3, at 3; see also Adam M. Brandenburger & Barry Nalebuff, *Inside Intel*, HARV. BUS. REV. (Nov.–Dec. 1996), <https://hbr.org/1996/11/inside-intel> [<http://perma.unl.edu/N84L-SJDT>] (summarizing Grove's six part model for identifying strategic inflection points). Brandenburger and Nalebuff explain how Grove expands on Michael E. Porter's "five-forces model: customers, suppliers, competitors, potential competitors, and providers of substitutes" by adding a sixth force: "complementors." *Id.* Grove notes that SIPs also affect the careers of individual employees when technology changes, layoffs occur, and businesses and industries close. GROVE, *supra* note 3, at 6; see also Porter, *supra* note 5 ("Whether an industry is new or old, its structural attractiveness is determined by five underlying forces of competition: [1] the intensity of rivalry among existing competitors, [2] the barriers to entry for new competitors, [3] the threat of substitute products or services, [4] the bargaining power of suppliers, and [5] the bargaining power of buyers."). For thoughts on how to price complements and substitutes, see ANAND, *supra* note 17, at 135.

199. IBM 2018 GLOBAL C-SUITE STUDY, *supra* note 30, at 8. Part IV of this Article conducts an SIP analysis of legal education.

Recognizing the SIP for what it is, and then navigating through it, requires organizations to be astute, nimble, and proactive. This Article posits that acting fast and creating innovation mission trajectories in the face of an SIP hold myriad advantages.<sup>200</sup> Ultimately, where major industry shake-ups loom, there are always winners and losers.

### A. Identifying and Responding to SIPs

Grove suggests engaging in a two-step process to traverse—and capitalize on—“the narrow line between catastrophe and opportunity”<sup>201</sup> that SIPs present. This process involves (1) identifying whether an SIP has arrived, and (2) analyzing and making decisions with an outsider’s perspective—that is, with no allegiance to the status quo.<sup>202</sup> Grove argues that organizations prone to nostalgia develop

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200. As will be discussed in more detail in *Legal Education: A New Growth Vision Part III*, section II.A, the term “innovation mission trajectory” represents a fusion of modern innovation theories. An innovation mission trajectory encourages entrepreneurs to imagine and design the future. This process of ideation, innovation, and implementation occurs through open collaborations between multidisciplinary knowledge experts, technology professionals, and diverse entities (e.g., education, business, nonprofits, non-governmental organizations, and government) that systematically and continuously experiment with prototypes and minimum viable products to create, identify, and nurture seeds of inspiration. Innovation mission trajectories are designed to be flexible in conception and application but are always iterative, dynamic, and forward-moving. They require curiosity, nimbleness, agility, and adaptability. In the context of higher education, innovation mission trajectories spring from customer collaborations, defined broadly to include students, graduates, employers, and community professionals. For examples, examine Agile and Lean Startup’s continuous improvement methodologies; Andrew Grove’s spirit of adventure and his concept of “articulated end result”; Theodore Levitt’s penetrating and illuminating questions about business definition and how to satisfy customers; Rita Gunther McGrath’s challenge-driven innovation and discovery-driven growth approaches and especially her insight that fragile, new innovations require patience and tenderness; Gary Hamel’s heralding of the brilliance of free-thinkers; Martin Weitzman’s recombinant seed ideas; Clayton M. Christensen’s disruptive innovation; Henry Chesbrough’s open innovation; W. Chan Kim and Renée Mauborgne’s value innovation; Bharat Anand’s insights on the strategic value of holistic connections (relational, functional, and organizational); Michael E. Porter’s wise strategic insights and distinctions; Eric Reis’s startup vision and ideas on how to modernize and innovate; Andrew McAfee and Eric Brynjolfsson’s “geeky leadership” concept; design thinking, and the leadership examples of Louis Gerstner (IBM), Jeff Bezos (Amazon), Steve Jobs (Apple), and Larry Page, Sergey Brin, and Eric Schmidt (Google). Combining innovation mission trajectories with Objectives and Key Results (OKRs) can make the once “impossible possible.” SCHMIDT & ROSENBERG, *supra* note 89, at 11. See *Legal Education: A New Growth Vision Part III*, subsection IV.B.3 for a brief introduction of the OKR structured goal setting approach.

201. Brandenburger & Nalebuff, *supra* note 198.

202. *Id.* Grove likewise warns that established leaders who have enjoyed career success may develop a dangerous propensity that he calls “the inertia of success.” GROVE, *supra* note 3, at 127. This propensity leads them to reflexively respond

rigidities that slow their ability to adapt.<sup>203</sup> In addition, organizations that have enjoyed past successes and developed specific knowledge, processes, and proficiencies may find themselves unable to see emerging threats of technological change.<sup>204</sup> When examining an organization's culture, proponents for maintaining the status quo may "overestimate the resilience of the status quo and underestimate the driving need for innovation" and optimistically interpret modest growth spurts as evidence of a return to past sustainability.<sup>205</sup> Doing so, however, could be a grievous mistake because the growth surge may instead be a dead cat bounce.<sup>206</sup>

### 1. Step 1: Determine Whether SIP Has Arrived

The first step in Grove's process involves determining whether a business faces an SIP. SIPs typically emerge due to external influences in the market that represent a "subtle but profound shift in the operating environment."<sup>207</sup> According to Grove, SIPs "approach on little cat feet" instead of with a loud bang.<sup>208</sup> He adds that SIPs often only become visible over time and in retrospect.<sup>209</sup> Because an SIP may seem amorphous at the present time, leaders might first only notice, "Things are different. Something has changed."<sup>210</sup> Demographic changes—like customers becoming increasingly tech-savvy, or even

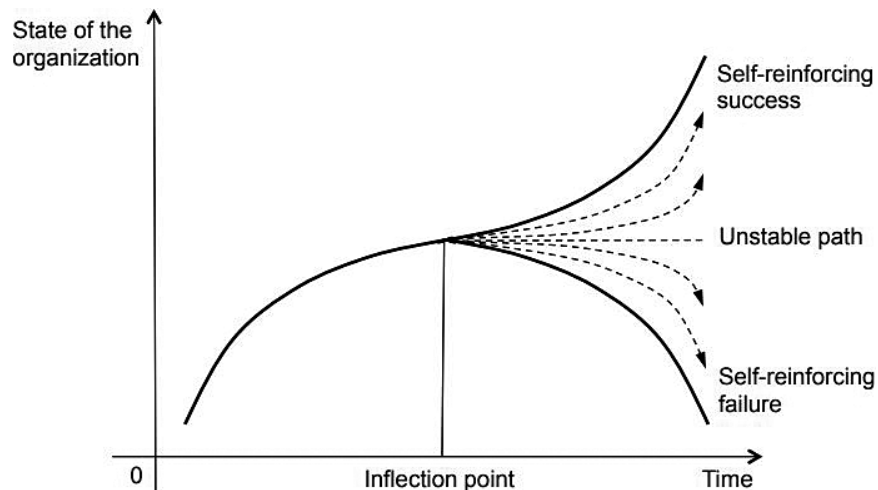
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with the "same strategic and tactical moves" which are no longer suitable for changing conditions. *Id.*

203. Brandenburger & Nalebuff, *supra* note 198; see also JUMA, *supra* note 14, at 28 ("The challenge lies in balancing between the long-term benefits arising from innovation and the short-term benefits of maintaining the status quo."). Juma identifies two common behavioral biases that forestall the adoption of new technologies. The first, "status quo bias," denotes the human tendency to select the familiar option when choosing between alternatives. *Id.* at 35. The second, "omission bias," is the "tendency to favor inaction over action." *Id.*; see also Safian, *supra* note 90 (describing tension between the efficient-stable organizations built in the twentieth century and the adaptive-dynamic organizations developing in the twenty-first century).
204. McAfee & Brynjolfsson, *supra* note 14, at 21 (describing this phenomenon as the "curse of knowledge" and "status quo bias"); see Anand, *supra* note 17, at 233–34 ("The reason that traditional organizations often fail is that they hold onto what they currently have. And they do that because they haven't quantified the risk of the status quo. And they haven't quantified the risk of the status quo because they don't have a worldview.").
205. Linkner, *supra* note 92, at 10. Linkner also quotes Rupert Murdoch: "Big will not beat small anymore. It will be the fast beating the slow." *Id.*
206. Dead cat bounce is discussed *infra* subsection IV.B.1.
207. Grove, *supra* note 3, at 189.
208. *Id.* at 107 (echoing Carl Sandburg's poem *Fog*, Poetry Found. ("The fog comes on little cat feet.")), <https://www.poetryfoundation.org/poems/45032/fog-56d2245d7b36c> [<http://perma.unl.edu/7KGV-JH57>].
209. Grove, *supra* note 3, at 107.
210. *Id.* at 33.

tech-dependent—can cause exactly this kind of destabilization.<sup>211</sup> An unsettled environment may manifest in the form of customer disinterest and disengagement, which may indicate an impending SIP.<sup>212</sup>

Adam Brandenburger, Professor at New York University Stern School of Business, illustrates Grove's SIP theory as follows:<sup>213</sup>



Brandenburger explains that, if a business or industry is truly at an SIP, “the status quo path is highly unlikely. The business will either go way up or way down.”<sup>214</sup> Which trajectory the business ultimately follows depends largely on its astuteness and receptivity to SIP market indicators.

211. *Id.* at 67.

212. *Id.* at 65.

213. Adam Brandenburger, *Higher Education at a Strategic Inflection Point*, OPPORTUNITY: NYU STERN GRADUATE STUDENT NEWSPAPER (Oct. 16, 2013), <http://sternoppy.com/2013/10/higher-education-at-a-strategic-inflection-point/> [<http://perma.unl.edu/NXH6-RER9>]. Professor Brandenburger graciously authorized reproduction of his graphic in this Article.

214. *Id.* He notes the interesting opportunities that digital technologies may bring to higher education. *Id.* Brandenburger goes on to identify unsustainable tuition increases as indicative of the biggest SIP imaginable in higher education. *Id.* Some potentially effective responses to these dramatic price increases include alternative pricing and digital education models currently offered by Georgia Tech and Northern Arizona University. See *Legal Education: A New Growth Vision Part III*, section III.C (discussing different pricing models).

## 2. Step 2: Analyze and Act with an Outsider's Objectivity

Given that the status quo is unsustainable in the face of an SIP, subsequent upward growth requires an organization to shed its preconceived notions of what works and approach its business model or action plan with unbiased eyes. Specifically, leaders must study, analyze, and act with an outsider's objectivity. To discern future trends and opportunities, organizations should "adopt an eco-centric—not egocentric—perspective, drawing on the insights of their customers and ecosystem partners to monitor the landscape from multiple vantage points."<sup>215</sup> Organizations must be open to "shape-shifting"<sup>216</sup> and infusions of "fresh blood" delivered through collaborations with people who have outsider perspectives,<sup>217</sup> exhibit experimental mindsets, and are dedicated to developing novel ideas and solutions.<sup>218</sup>

In addition, leaders should consider contrarian approaches—that is, doing the opposite of the norm and perhaps strategically cannibalizing some traditional products and services—when developing differentiated customer offerings and innovation mission trajectories.<sup>219</sup>

215. IBM 2015 CEO C-SUITE STUDIES, *supra* note 25, at 21; see McGRATH, *supra* note 89, at 113 (discussing the importance of trendspotting across knowledge and functional silos). McGrath notes the macro trends of "personalization" (individualized experiences) and "visualization" (preference for 3D and tactile engagement [e.g., haptics]). *Id.* at 114; see also Melissa Schilling, *What's Your Best Innovation Bet?*, HARV. BUS. REV. (July–Aug. 2017), <https://hbr.org/2017/07/whats-your-best-innovation-bet> [<http://perma.unl.edu/NXH6-RER9>] (articulating a multi-step process to identify innovation opportunities: (1) "identify key dimensions," (2) "locate your position," (3) "determine your focus," and (4) shift efforts and resources to market opportunities).

216. McGRATH, *supra* note 89, at 41.

217. McAfee & Brynjolfsson, *supra* note 14, at 252 ("When things get really complex, don't look to the experts. Instead, call in the outsiders."); see also Bradley R. Staats, *Never Stop Learning: Stay Relevant, Reinvent Yourself, and Thrive 72–73* (2018) (recommending that leaders constantly ask "Why?" to overcome limits of perception, regularly solicit "outsider" perspectives, and routinely pursue disconfirming information).

218. Brandenburger & Nalebuff, *supra* note 198 (stating that fresh blood is necessary to sever attachment to the status quo); see also *Reinventing Innovation*, *supra* note 23, at 8–9 (emphasizing the importance of (1) breaking down organizational and thought silos, (2) bringing together diverse talents/perspectives into the "innovation sandbox," and (3) "incorporating the customer throughout the innovation process").

219. Linkner, *supra* note 92, at 37–39, 87 (describing the powers of disruptive and divergent thinking as well as "brainstorming a 180-degree opposite approach"). Linkner explains that "divergent thinking—approaching problems from a radically non-traditional perspective—has led to many of civilization's most important breakthroughs." *Id.* at 87; see Anand, *supra* note 17, at 219 (quoting New York Times CEO Mark Thompson) ("In modern media, you could make the case that the best way forward is to listen carefully to what the industry has to say and then do the exact opposite."). In addition, Linkner suggests considering whether "cannibalizing your own product" can in fact position an organization for the future by recounting the failures at Polaroid. *Id.* at 49–51; see *id.* at 138 (find-

Some of the biggest breakthroughs have occurred when leaders upend expectations, blast through boundaries, and run toward threats instead of away.<sup>220</sup> Dynamic organizations recognize the value of disruptive and divergent thinking when scrutinizing systems, processes, and procedures.<sup>221</sup>

Importantly, an entrepreneurial, “scrappy startup” mindset is essential for navigating through SIPs because decisions involve risk and uncertainty and must be made without complete knowledge.<sup>222</sup> Pairing disruptive and divergent thinking with what Grove describes as a “touch of paranoia—a suspicion [and fear] that the world is changing around you” can be immensely valuable for organizations in the midst of SIPs.<sup>223</sup> Last, despite the heroic myth of a lone genius whose mind effortlessly sprouts vast fields of new innovations, the reality of nurturing novel ideas into seedlings requires patience, care, and collaboration among all levels and generations in an organization.<sup>224</sup>

Timely identifying and responding to SIPs is crucial for any business that wants to survive and flourish. SIPs can create opportunities for new market entrants or innovation-minded incumbents.<sup>225</sup> For example, after losing \$475 million in 1994 due to a Pentium chip flaw, Grove and Gordon Moore realized the following: (1) Intel faced an SIP because of the chip flaw and vigorous price competition from Japanese

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ing new opportunities in disruption and cannibalization); *see also Legal Education: A New Growth Vision Part III*, subsection III.C.1 (discussing strategic cannibalization).

220. LINKNER, *supra* note 92, at 37–38 (highlighting the incredible success of Dove soap’s “Real Women” marketing campaign—i.e., “doing the opposite”—because it focused on the beauty of actual women instead of artificial constructs of female beauty [e.g., size, age, color, etc.]). Linkner also discusses the power of seeking and finding “10x” solutions (i.e., does the new solution solve a customer problem ten times better than the current market leader does?). *Id.* at 64–67.
221. *Id.* at 139. Linkner states that “fighting words” include: “That’s just the way that we do it around here” and “That is how it’s done in our industry.” *Id.* He argues that these phrases show blind allegiance to the past without recognition of changing circumstances. *Id.* In his view, “The most dynamic organizations challenge their core beliefs on a regular basis and refuse to accept policies, processes, or procedures solely based on tradition.” *Id.*
222. GROVE, *supra* note 3, at 6, 35; *see also* REIS, *supra* note 16, at 27 (“[A] startup is a human institution designed to create a new product or service under conditions of extreme uncertainty.”). Reiss advocates that organizations “Think big. Start small. Scale fast.” REIS, *supra* note 77, at 323.
223. GROVE *supra* note 3, at 3, 118; *see* ANAND, *supra* note 17, at 20; Brandenburger & Nalebuff, *supra* note 198; *see also* McGRATH, *supra* note 89, at 151 (“Leaders need to be constructively paranoid—always looking for evidence of change in their markets and in the state of their advantages, rather than seeking comforting, but misleading, information that makes things look better than they are.”).
224. BERLIN, *supra* note 30, at xii, xiv–xv. SATELL, *supra* note 197, at 7 (debunking the “single brilliant flash” genius myth and explaining that innovation consists of “discovery, engineering, and transformation”).
225. GROVE, *supra* note 3, at 4.

manufacturers, (2) maintaining the status quo was not sustainable, and (3) radical change provided the only path forward.<sup>226</sup> Moore and Grove then transformed Intel's \$10 billion business from a declining memory company into a thriving microprocessor powerhouse.<sup>227</sup> Specifically, after some initial customer relations missteps, Intel offered replacement Pentium processors for all customers who requested them and revamped its culture to better serve customers. In addition, over the next two decades Intel deliberately shifted its operational focus and resources from flash memory chips to the development of high-performance, low-power microprocessors. It continues to focus on emerging technologies for wireless computing, semiconductors, micron technologies, technology platforms, and the like.<sup>228</sup> It owes much of its current success to its leaders' willingness to recognize and address the precipice on which Intel stood.

Conversely, failure to attend to SIPs can prove fatal.<sup>229</sup> Once-strong businesses that refuse to adapt to changing circumstances seldom return to prior prominence and often fail.<sup>230</sup> New market entrants who offer substitute, yet similar, services via innovative techniques, technology, and approaches can be fatal to incumbents because they disrupt the status quo, upend the rules, and change operating conditions.<sup>231</sup>

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226. *Id.* at 11–17.

227. *Id.* at 94–97; see also *Intel Timeline: A History of Innovation*, <https://www.intel.com/content/www/us/en/history/historic-timeline.html> [<http://perma.unl.edu/5ZPJ-D2XP>] (showing Intel's history on a timeline).

228. *Id.* (providing Intel's timeline, which notes its technology accomplishments and innovations); see also Rob Verger, *Intel's New Chip Puts a Teraflop in Your Desktop. Here's What That Means*, *POPULAR SCI.* (June 1, 2017), <https://www.popularsci.com/intel-teraflop-chip> [<http://perma.unl.edu/GMQ9-WXFH>] (“With 18 cores and a price tag of \$1,999, the [Intel Core i9 Extreme Edition] processor is known as a teraflop chip, meaning it can accomplish a trillion computational operations every second.”).

229. GROVE, *supra* note 3, at 4; see also *IBM 2015 CEO C-SUITE STUDIES*, *supra* note 25, at 3 (stating financial survival requires incumbents to “prepare for digital invaders, create a panoramic perspective, and be first, be best or be nowhere”).

230. GROVE, *supra* note 3, at 4.

231. *Id.* at 28; see ANAND, *supra* note 17, at 134 (defining substitute). Anand writes: “A substitute is . . . any product or service that, when cheaper or more widely available, reduces demand for your core product. On the face of it, it's a seemingly benign definition of competition. But the reason it's insidious is that the definition says nothing about what the substitute product is.” *Id.* Substitutes can be especially terrifying because they force content providers to apply a customer-centric perspective instead of viewing the landscape from the organizational/content perspective to which leaders are accustomed. *Id.*; see also Porter, *supra* note 5, at 8 (discussing the threat of substitution); Clayton M. Christensen, *What Is Disruptive Innovation?*, *HARV. BUS. REV.* (Dec. 2015), <https://hbr.org/2015/12/what-is-disruptive-innovation> [<http://perma.unl.edu/6FB6-YDEB>] (stating that complete substitution can take decades); see generally CHRISTENSEN, *THE INNOVATOR'S DILEMMA*, *supra* note 62.

In contrast to Intel's success story, Sears's slow demise—and Amazon's kudzu-like growth<sup>232</sup> in its place—illustrates the dangers of institutional ossification. Sears's original business model sought to make the company “an inextricable part of consumers' lives.”<sup>233</sup> In the 1920s, under the visionary leadership of retired World War I general Robert Wood, Sears strategically located and built stores based on the demographic trends revealed in U.S. census data, making Sears a household name for decades.<sup>234</sup> But as suburban malls were sleeping, the digital world grew exponentially. In 2014, a “gale of creative destruction” swept over American retail stores and pushed suburban malls and thousands of brick-and-mortar businesses into “death spirals.”<sup>235</sup> Despite its ubiquity, Sears could not withstand the barrage. It shuttered 339 stores in 2014, including its Chicago flagship.<sup>236</sup> In October 2018, Sears filed for bankruptcy protection under Chapter 11, listing \$11.3 billion in liabilities and \$7 billion in assets.<sup>237</sup> Sears's bankruptcy also puts at risk the jobs of 68,000 workers.<sup>238</sup>

The force that threatens to devastate the traditional retail sector originated from a once-tiny—but ambitious—company called Amazon, which took Sears's original nineteenth century business model and re-engineered it for the modern era by steadily and deliberately growing into a digital “everything store.”<sup>239</sup> Amazon's vision is “to be the Earth's most customer-centric company; to build a place where people can come to find and discover anything they might want to buy online.”<sup>240</sup> Under CEO Jeff Bezos, Amazon combines sophisticated algo-

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232. *Kudzu – A Very Wicked Plant*, BIOPHILIA, <https://www.youtube.com/watch?v=0-Hbl0bV8FA> [<https://perma.unl.edu/T3C5-7RRZ>] (explaining that Kudzu is a damaging, invasive vine that grows one foot per day).

233. Derek Thompson, *The History of Sears Predicts Nearly Everything Amazon Is Doing*, ATLANTIC (Sept. 25, 2017), <https://www.theatlantic.com/business/archive/2017/09/sears-predicts-amazon/540888/> [<http://perma.unl.edu/8XV2-PCWP>].

234. *Id.*

235. EVANS & SCHMALENSSEE, *supra* note 10, at 183–96. A “virtual cemetery” depicting the wreckage exists at [www.deadmalls.com](http://www.deadmalls.com) [<http://perma.unl.edu/MP3D-TDBT>]. *Id.* at 193.

236. *Id.* at 184.

237. Michael Corkery, *Sears, the Original Everything Store, Files for Bankruptcy*, N.Y. TIMES (Oct. 14, 2018), <https://www.nytimes.com/2018/10/14/business/sears-bankruptcy-filing-chapter-11.html> (“[Sears was an] early version of Amazon. It used the Postal Service to reach the most remote parts of a growing nation and sorted and shipped products from a three million-square-foot warehouse in Chicago.”). According to Craig Johnson, president of Customer Growth Partners (retail consulting and research firm), “It's a sad day for retail. There are generations of people who grew up on Sears and now it's not relevant. When you are in the retail business, it's all about newness. But Sears stopped innovating.” *Id.*

238. *Id.*

239. Thompson, *supra* note 233.

240. Patrick Hull, *Be Visionary. Think Big.*, FORBES (Dec. 19, 2012), <https://www.forbes.com/sites/patrickhull/2012/12/19/be-visionary-think-big/#412869163c17> [<http://perma.unl.edu/W2S7-6GYZ>].



rithms,<sup>241</sup> demographic data, and operational efficiencies to deliver customer convenience at low prices.<sup>242</sup> Amazon continues its mission to become embedded in consumer-purchasing habits through convenient shopping apps and personal AI assistants.<sup>243</sup> Today, Amazon represents an expanding part of the average consumer's daily life,<sup>244</sup> while once-dominant Sears sheds assets and closes stores.<sup>245</sup>

Escaping the death spiral of a declining business is difficult, but possible. It requires a business to pragmatically accept the harsh landscape, limitations, and circumstances that it faces, while still finding creative ways to maximize opportunities for growth. For example, Best Buy responded to e-commerce headwinds by shrinking its physical store footprint, building speedy customer fulfillment operations (i.e., shipping products within hours), and smartly offering in-home media consultation, design, installation, and other digital and computer repair services via the Geek Squad.<sup>246</sup>

Sears's downfall was not imminent; a bounty of management fiascos preceded its demise. A short list of Sears's management blunders included failures to innovate, embrace trends, develop a compelling customer service vision, and deliver positive customer shopping experiences.<sup>247</sup> By contrast, when Bezos was presented with the challenge of turning around *The Washington Post* during a time of calamitous newspaper industry decline, he identified trends, developed a broad vision, and then made the critical organizational changes and capital investment necessary for the newspaper to grow.<sup>248</sup> To that end, he

241. Christopher Mims, *The High-Speed Trading Behind Your Amazon Purchase*, WALL ST. J. (Mar. 27, 2017), <https://www.wsj.com/articles/the-high-speed-trading-behind-your-amazon-purchase-1490532110> [http://perma.unl.edu/6SAR-MNW7].

242. Thompson, *supra* note 233.

243. *Id.*

244. *Id.*

245. Lauren Gensler, *Sears Is Closing 28 More Stores as Sales Continue to Decline*, FORBES (Aug. 24, 2017), <https://www.forbes.com/sites/laurengensler/2017/08/24/sears-closing-kmart-stores/#2a0007811e47> [http://perma.unl.edu/EJU6-LKVM].

246. Kevin Kelleher, *How the Geek Squad Could Be Best Buy's Secret Weapon*, TIME (July 19, 2016), <http://time.com/4411333/best-buy-amazon-geek-squad-hubert-joly/> [http://perma.unl.edu/W5CY-Y58M].

247. Adam Hartung, *Innovation: Why Bezos Succeeded, While Lampert Failed at Sears*, FORBES (May 15, 2016), <https://www.forbes.com/sites/adamhartung/2016/05/15/innovation-why-bezos-succeeded-while-lampert-failed-at-sears/#2b8f76f37d38> [http://perma.unl.edu/92BC-PKZT]. For some ideas on how Sears can salvage its business and brand, see Denise Lee Yohn, *Is It Too Late for Sears to Save Itself?*, HARV. BUS. REV. (Mar. 30, 2017), <https://hbr.org/2017/03/is-it-too-late-for-sears-to-save-itself> [http://perma.unl.edu/U8K3-4VD2] (recommending “big, bold, visible move[s]” and describing Marvel’s 1996 bankruptcy and remarkable transformation into a multimedia empire by focusing and building on its iconic Captain America and Iron Man brands).

248. In the mid-1990s, 2,400 print newspapers reached nearly every community and generated forty-six billion dollars in annual revenue. Magazines (weekly and

hired engineers to build digital apps and tools while bringing on more writers and editors, transforming the *Post* into a multi-format, platform news source that both readers and advertisers value.<sup>249</sup> Rather than lashing themselves to the mast of a sinking business model, successful leaders sever ties to failing processes and scrutinize their organizations with a critical eye. This is essential to successfully navigate through an SIP.

### B. The Mover Advantage

During economically turbulent times, an organization's ability to adapt quickly to market changes and to deploy customer-centric and convenient technologies often determines whether they survive and thrive.<sup>250</sup> Here, chaos breeds opportunity.<sup>251</sup> Organizations that exhibit agility, flexibility, nimbleness, strength, stamina, and willingness to move can seize and create market opportunities.<sup>252</sup> In contrast, ossified organizations shrivel and decline. An ability to move thus distinguishes winners from losers.

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monthly) generated nineteen billion dollars. Print media made money from both subscriptions and advertisement sales. In particular, newspapers made thirty percent (30%) of their revenues from classified ads. MCAFEE & BRYNJOLFSSON, *supra* note 14, at 130. By 2013, total U.S. newspaper printed advertisement revenue plummeted by seventy percent (70%) from the previous decade. The print industry lost forty billion dollars in annual sales. Between 2007 and 2011, 13,400 newspaper newsroom jobs were eliminated. *Id.* at 132. For example, Colorado's oldest newspaper, *The Rocky Mountain News*, ceased printing in 2009 after losing sixteen million dollars in 2008; see Richard Pérez-Peña, *Rocky Mountain News Fails to Find Buyer and Will Close*, N.Y. TIMES (Feb. 26, 2009), <http://www.nytimes.com/2009/02/27/business/media/27paper.html> [<http://perma.unl.edu/44RL-GSCZ>]. On August 5, 2013, Jeff Bezos acquired *The Washington Post* and began his attempt at revival. MCAFEE & BRYNJOLFSSON, *supra* note 14, at 132.

249. Hartung, *supra* note 247. Bezos "focused on trends" and made the necessary investments to support growth trajectories. *Id.* Recognizing the incredible power of technology, the Post's invigorated leadership teams introduced "streaming content, live content, user generated content, 24x7 posting (vs. deadlines), user response tracking, reader interactivity, social media connectivity, mobile access, and mobile content." *Id.* Hartung concludes his winner versus loser analysis of Amazon and Sears by recommending that proactive leaders will "invert their strategic planning time" by spending "80% on trends and scenario planning, and 20% on historical analysis." *Id.*; see also Abbosh et al., *supra* note 38 (describing New York Times's transformation into a digital news platform).
250. GROVE, *supra* note 3, at 76; see also MCAFEE & BRYNJOLFSSON, *supra* note 14, at 129 (quoting Joseph Schumpeter) ("Economic progress, in a capitalist society, means turmoil."); MCAFEE & BRYNJOLFSSON, *supra* note 24, at 159–60 ("The great economist Joseph Schumpeter wrote of 'creative destruction,' where each innovation not only created value for consumers but also wiped out the previous incumbent. The winners scaled up and dominated their markets, but were in turn vulnerable to the next generation of innovators.").
251. See generally SUN TZU, *THE ART OF WAR* (2014).
252. PARKER ET AL., *supra* note 12, at 210 ("[F]lexibility provides the crucial competitive edge, competition is perpetual motion, and advantage is evanescent.").

The current debate revolves around the timing of such movement: is it better to be a first mover or later mover? Grove roots himself firmly in the “first-mover” camp, warning that dithering in the midst of SIPs can be catastrophic.<sup>253</sup> He argues that “first movers”—the first businesses to make available a particular product or service<sup>254</sup>—often have the best outcomes during an industry-wide SIP.<sup>255</sup> Recognizing that fighting change destroys momentum and squanders time, Grove recommends immediate action,<sup>256</sup> observing:

[O]ppportunity knocks when a technology break or other fundamental change comes your way. Grab it. The first mover and only the first mover, the company that acts while the others dither, has a true opportunity to gain time over its competitors—and time advantage, in this business, is the surest way to gain market share.<sup>257</sup>

Due to fleeting competitive advantages, first movers have an opportunity to shape the market landscape by developing and differentiating their capabilities, changing the rules, creating space for the organization’s unique strengths, and building market share.<sup>258</sup> Because first mover advocates view the marketplace as “winner-take-all,” they strongly argue that swift, bold, and decisive action must be taken to

253. GROVE, *supra* note 3, at 18–21, 50–51 (emphasizing the importance of recognizing changes in market conditions and adapting promptly to capitalize on new opportunities and avoid disaster).

254. *First Mover*, INVESTOPEDIA, <https://www.investopedia.com/terms/f/firstmover.asp> [<http://perma.unl.edu/43YE-B7FR>].

255. GROVE, *supra* note 3, at 50–52. The advantages of being a “first mover” include strong brand recognition, customer loyalty, limited (or no) competition, larger market share, and the opportunity to perfect or improve the product or service while other companies scramble for initial production. *First Mover*, *supra* note 254; see also Michele R. Pistone & Michael B. Horn, *Disrupting Law School: How Disruptive Innovation Will Revolutionize the Legal World*, CHRISTENSEN INST. (2016), at 4, <https://www.christenseninstitute.org/wp-content/uploads/2016/03/Disrupting-law-school.pdf> [<http://perma.unl.edu/95AJ-NWR3>] (arguing that an incumbent’s reluctance to change in a disruptive environment can be a fatal error). But see David S. Evans & Richard Schmalensee, *Why Winner-Takes-All Thinking Doesn’t Apply to the Platform Economy*, HARV. BUS. REV. (May 4, 2016), <https://hbr.org/2016/05/why-winner-takes-all-thinking-doesnt-apply-to-silicon-valley> [<http://perma.unl.edu/VDK6-X4XT>] (“[B]eware of the siren song of network effects, winner-takes-all, and first mover advantages. Network effects can create great value rapidly, but they can destroy it just as fast.”); see also EVANS & SCHMALENSEE, *supra* note 10, at 21–30 (questioning first mover advantages and network effects); Porter, *supra* note 5 (discussing “[t]he Myth of the First Mover”).

256. GROVE, *supra* note 3, at 51–52.

257. *Id.* at 51.

258. Gary Hamel & C.K. Prahalad, *Strategic Intent*, HARV. BUS. REV. (July-Aug. 2005), <https://hbr.org/2005/07/strategic-intent> [<http://perma.unl.edu/TX5M-6722>] (observing that the first to act on insights often enjoy the best return on their efforts); see also McGRATH, *supra* note 89, at xi (describing strategies “based on the idea of transient competitive advantage: that to win in volatile and uncertain environments, executives need to learn how to exploit short-lived opportunities with speed and decisiveness”).

develop and maintain market leadership.<sup>259</sup> Grove credits Intel's business survival to his and Moore's "forceful move[s]" to see and seize new opportunities.<sup>260</sup>

On the other hand, later movers (who nonetheless are always in motion) can focus on better meeting the needs of their customers than overeager first movers.<sup>261</sup> For example, pioneering social networks like SixDegrees.com, Friendster, and MySpace were first movers who bloomed early in the social media space but eventually withered and died.<sup>262</sup> Facebook, a later mover that took a measured, flexible, and observant approach, ultimately triumphed over all these early movers by providing an easy, comfortable, and particularly user-friendly environment for digital interactions.<sup>263</sup> Likewise, Vimeo's video hosting platform arrived later than YouTube, but it found success through quality differentiation in the form of better hosting services and more bandwidth, as well as sophisticated user and playback tools for its niche market.<sup>264</sup>

Later movers may find it beneficial to focus on multiple customers by employing a two-sided (or more) market strategy. A multi-sided strategy is more complex and takes longer to implement than a first mover's often single-sided strategy,<sup>265</sup> but it presents the opportunity to capture a greater market share, while avoiding the pitfalls a first mover may not have foreseen. The early videotape battle between Betamax and VHS illustrates the importance of taking the time to build multiple customer relationships when launching new prod-

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259. EVANS & SCHMALENSEE, *supra* note 10, at 23–24 (describing first mover philosophy).

260. GROVE, *supra* note 3, at 95.

261. Bughin et al., *supra* note 20 (explaining how digitally mature "fast-followers" that have the financial, organizational, and innovation capabilities [often incumbents] can quickly capitalize on emerging opportunities identified by startups).

262. EVANS & SCHMALENSEE, *supra* note 10, at 28–29; MCAFEE & BRYNJOLFSSON, *supra* note 14, at 170. Among the early platforms' many challenges, Friendster had speed and performance issues as it grew; meanwhile, MySpace gave its users too much design freedom, which resulted in pages where "nothing is usable, legible or tolerable." *Id.* Facebook, on the other hand, "has chosen to restrict at least the foundational framework of the site." *Id.*

263. EVANS & SCHMALENSEE, *supra* note 10, at 28–29. In January 2018, Facebook founder, Mark Zuckerberg, announced ecosystem changes to foster more meaningful interactions by "showing fewer news articles, and less marketing content and ads." Jonathan Vanian, *Everything to Know About Facebook's Big News Feed Changes*, FORTUNE (Jan. 12, 2018), <http://fortune.com/2018/01/12/facebook-news-feed-change/> [<http://perma.unl.edu/NE65-2GQB>].

264. PARKER ET AL., *supra* note 12, at 88, 223; *see also* LASZLO BOCK, WORK RULES! INSIGHTS FROM GOOGLE THAT WILL TRANSFORM HOW YOU LIVE AND LEAD 62 (2015) ("Google was also late to the search game, as Yahoo, Excite, Infoseek, Lycos, AltaVista, AOL, and Microsoft were already major players.").

265. EVANS & SCHMALENSEE, *supra* note 10, at 14–16; *see generally* Michael E. Porter, *What Is Strategy?*, HARV. BUS. REV. (Nov.–Dec. 1996), <https://hbr.org/1996/11/what-is-strategy>.

ucts.<sup>266</sup> VHS ultimately prevailed because it successfully convinced both video content producers and customers—not one or the other—to use its videotape standard.<sup>267</sup>

In all of these examples, nimbleness, agility, creativity, determination, and forward-action distinguish market winners from losers. Innovation and business strategists in both the “first mover” and “later mover” camps agree that being the last mover is disastrous—and often deadly.<sup>268</sup> Whether an organization moves first or merely soon probably matters less than whether an organization moves at all. Forward movement and action represent essential characteristics of dynamic and adaptable organizations that generate the momentum for sustainable growth.<sup>269</sup>

### C. Navigating Through SIPs

Grove likens the process of navigating through SIPs as “venturing into . . . the valley of death, the perilous transition between the old and the new ways of doing business.”<sup>270</sup> Tradition-minded leaders may find this time especially unsettling, whereas outsiders find the challenges invigorating.<sup>271</sup> Responding to an SIP requires more than a shift in an organization’s business model; it also requires growing a diverse, innovation ecosystem where future ideas can germinate and take root. Some potential stems of an appropriate SIP response are discussed below.

Rapid technology changes have transformed how organizations must formulate strategy and take action. To transform its business model, an organization must scrutinize all aspects of current operations, consider various business models, develop innovation mission trajectories, and commence the difficult reinvention and reboot process necessary for successfully navigating through SIPs.

Nimbleness, not necessarily consistency, is the calling card of today’s most successful companies. According to entrepreneur and au-

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266. EVANS & SCHMALENSSEE, *supra* note 10, at 26–27.

267. *Id.*

268. MCAFEE & BRYNJOLFSSON, *supra* note 14, at 169 (“[Platform winners are] early to the space. They don’t have to be the first (Android certainly wasn’t), but they had better not be so late that many potential participants have already chosen a platform and network effects have taken hold.”).

269. See LINKNER, *supra* note 92, at 14–17, 69–72, 92–94 (examining how Amazon, Disney, and other dynamic companies achieved sustaining growth, differentiated their product offerings from the competition, and gained market share by (1) consistently providing superior user experiences, (2) continuously innovating and improving products and services, and (3) constantly identifying and incorporating nascent trends and technologies into their customer offerings). Linkner also observes that “most things worth accomplishing involve a persistent stream of small advances that lead to something transformational over time.” *Id.* at 10.

270. GROVE, *supra* note 3, at 34.

271. *Id.* at 48.

thor, Josh Linkner, “[P]laying it safe has become recklessly dangerous.”<sup>272</sup> Traditional, hierarchical management structures with slow, methodical decision-making processes must now give way to modern, flexible, team-based systems that can capitalize on technologies and opportunities to create “transient” competitive advantages.<sup>273</sup> Nimble, innovative organizations operate on a presumption of action and adaptability instead of inaction and stability.<sup>274</sup> Dynamic organizations also understand that “prediction and being ‘right’ will be less important than reacting quickly and taking corrective action.”<sup>275</sup> Market pioneers, therefore, move fast to reconfigure people, assets, and capabilities<sup>276</sup> and embrace nascent technologies because even the newest innovations rapidly become obsolete.<sup>277</sup> During times of upheaval—that is, SIPs—freedom from slow management structures allows growth opportunities to emerge.

Simultaneously, organizations must create a culture that embraces an “ethos of reinvention”<sup>278</sup> in order to nurture the growth of an innovation ecosystem.<sup>279</sup> Developing an innovation-focused culture requires deep organizational commitment, dedicated resources, and

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272. LINKNER, *supra* note 92, at 22.

273. McGRATH, *supra* note 89, at 5, 13. McGrath discusses riding the “wave from one transient advantage to another,” which involves the launch, ramp-up, exploitation, and reconfiguration of one product, while simultaneously “disengaging” to begin the process over with the next service or product. *Id.* at 13; *see also* LINKNER, *supra* note 92, at 139 (“One of the biggest traps in both business and life is imagining that success is a permanent condition.”).

274. McGRATH, *supra* note 89, at 5–7 (analyzing how once-great companies such as Research In Motion-Blackberry, Blockbuster, and Circuit City became sclerotic and ultimately failed). McGrath writes:

Think about it: the presumption of stability creates all the wrong reflexes. It allows for inertia and power to build upon along the lines of an existing business model. It allows people to fall into routines and habits of mind. It creates conditions for turf wars and organizational rigidity. It inhibits innovation. It tends to foster the denial reaction rather than proactive design of a strategic next step.

*Id.* at 7–8.

275. *Id.* at 23 (“[I]n a world of transient advantage the most valuable information is often disconfirming—it helps highlight where the greatest risks in being wrong are . . .”).

276. *Id.* at 27.

277. IBM 2015 CEO C-SUITE STUDIES, *supra* note 25, at 29.

278. LINKNER, *supra* note 92, at 28–29, 135 (articulating “Eight Principles” of a reinvention ethos: “[1] Let go of the past. [2] Encourage courage. [3] Embrace failure. [4] Do the opposite. [5] Imagine the possibilities. [6] Put yourself out of business. [7] Reject limits. [8] Aim beyond.”).

279. Martin Hirt, *If You’re Not Building an Ecosystem, Chances Are Your Competitors Are*, MCKINSEY & CO. (June 12, 2018), <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-strategy-and-corporate-finance-blog/if-youre-not-building-an-ecosystem-chances-are-your-competitors-are> [http://perma.unl.edu/7ML6-EUZJ].

input from outside experts.<sup>280</sup> Organizations should build multidisciplinary and cross-functional<sup>281</sup> digital innovation teams and a dynamic innovation “growth factory”<sup>282</sup> that can spot and analyze trends, assess market conditions, design and launch prototypes and minimum viable products, execute pilot programs, scale-up innovations, and leverage opportunities (discussed in *Legal Education: A New Growth Vision Parts II and III*).<sup>283</sup> All of these activities take time, effort, professional staff, resources, and experience to develop organizational nimbleness and adaptability.

Growing an innovation ecosystem and transforming an organization’s business model in response to SIPs require leaders to act intentionally and expeditiously, but neither can be achieved by some quick fix. Grove recalls Intel’s transformative journey through the “valley of death” as “a long, torturous struggle” that took three years.<sup>284</sup> Whirlpool’s dramatic turnaround, led by Dave Whitwam and Nancy Snyder, took five years.<sup>285</sup> Similarly, when IBM faced peril in the early 1990s, it took six years and the leadership of CEO for IBM, Louis Gerstner, to

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280. REIS, *supra* note 77, at 259 (quoting the definition of culture articulated by Ben Horowitz, co-founder of the VC firm Andreessen Horowitz) (“[It’s] the collective behavior of everyone in the organization. It’s what people do when left to their own devices. It’s the organization’s way of doing things.”); *see also* IBM 2018 GLOBAL C-SUITE STUDY, *supra* note 30, at 30 (“You can’t force culture, but you can create the atmosphere for change.”).

281. REIS, *supra* note 77, at 259. REIS, *supra* note 16, at 255 (recommending strongly that “startup teams be completely cross-functional, that is, have full-time representation from every functional department in the company that will be involved in the creation or launch of their early products”).

282. McGRATH, *supra* note 89, at 124.

283. *Id.* at 116.; *see also* IBM 2018 GLOBAL C-SUITE STUDY, *supra* note 30, at 11 (discussing some of McGrath’s recommendations: the transitory nature of marketplace advantages, the need for experimentation and rapid prototyping (e.g., “fast failure and successful innovation”), and how agile organizations embrace continuous change). Also, according to FORBES writer, Adam Hartung:

Every company must understand critical trends, and how they will apply to their business. Nobody can hope to succeed by just protecting the core business, as it can be made obsolete very, very quickly. And nobody can hope to change a trend. It is more important than ever that organizations spend far less time focused on what they did, and spend a lot more time thinking about what they need to do next. Planning needs to shift from deep numerical analysis of the past, and a lot more in-depth discussion about technology trends and how they will impact the business in the next 1, 3 and 5 years.

Hartung, *supra* note 247.

284. GROVE, *supra* note 3, at 94–95.

285. Gary Hamel, *The Why, What, and How of Management Innovation*, HARV. BUS. REV. (Feb. 2006), <https://hbr.org/2006/02/the-why-what-and-how-of-management-innovation> [<http://perma.unl.edu/4B8P-RJ7E>].

reconstruct itself from “a besieged box maker to a dominant [Internet and networking] service provider.”<sup>286</sup>

For organizations not used to Silicon Valley’s fast-paced culture, the total time to navigate through SIPs may take even longer. History shows that fundamental social and technological transformations occur over several years, if not decades—not in what has been dubbed “Internet time.”<sup>287</sup> Therefore, an organization embarking on the daunting journey of building an innovation growth factory and radically transforming its business model should be prepared for the process to develop over a matter of years, not months. Patience and fortitude are critical. Narrow timeframes and unrealistic goals invite disappointment and disaster.<sup>288</sup> At the same time, however, leaders must be attuned to market shifts and be willing to initiate the growth process in a much more immediate manner. Grove reminds leaders that maneuvering through SIPs involves fundamental transformations of your organization “from what you were to what you will be.”<sup>289</sup> So, while the solution itself may take time to materialize, amending the organizational soil and planting the seeds of innovation should begin as soon as leaders identify the need for change.

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286. Gary Hamel, *Waking Up IBM: How a Gang of Unlikely Rebels Transformed Big Blue*, HARV. BUS. REV. (July–Aug. 2000), <https://hbr.org/2000/07/waking-up-ibm-how-a-gang-of-unlikely-rebels-transformed-big-blue> [<http://perma.unl.edu/P4V2-RG43>]. Now, under Ginny Rometty’s leadership, IBM “is betting the company” on AI-Watson, Cloud, and Blockchain technologies. See *Preparing for the Future of Artificial Intelligence*, NAT’L SCI. & TECH. COUNCIL, COMM. ON TECH. (Oct. 2016), at 6, [https://obamawhitehouse.archives.gov/sites/default/files/whitehouse\\_files/microsites/ostp/NSTC/preparing\\_for\\_the\\_future\\_of\\_ai.pdf](https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/microsites/ostp/NSTC/preparing_for_the_future_of_ai.pdf) [<http://perma.unl.edu/25WB-JL8E>]; Jason Bloomberg, *IBM Bets the Company on Cloud, AI and Blockchain*, FORBES (Mar. 22, 2017), <https://www.forbes.com/sites/jasonbloomberg/2017/03/22/ibm-bets-the-company-on-cloud-ai-and-blockchain/#5bcfd782776d> [<http://perma.unl.edu/7H2A-2MX3>] (noting also that H&R Block has been collaborating with IBM Watson). According to H&R Block CEO, Bill Cobb, “Watson has ingested about 600 million data points” in its process of learning the Internal Revenue Code. *Id.*

287. EVANS & SCHMALENSSEE, *supra* note 10, at 196.

288. Hamel & Prahalad, *supra* note 258; see also Eric A. Chiappinelli, *Just Like Pulling Teeth: How Dental Education’s Crisis Shows the Way Forward for Law Schools*, 48:1 SETON HALL L. REV. 55 (2017), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2825813](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2825813) [<http://perma.unl.edu/V5TY-MKZL>] (stating that it takes time for schools to move forward on new paths); McGRATH & MACMILLAN, *supra* note 183, at 27 (creating a growth framework involves a time horizon of “three to seven years”).

289. GROVE, *supra* note 3, at 143; see, e.g., Dominic Barton et al., *Finally, Evidence that Managing for the Long Term Pays Off*, HARV. BUS. REV. (Feb. 9, 2018), <https://hbr.org/2017/02/finally-proof-that-managing-for-the-long-term-pays-off> [<http://perma.unl.edu/7ECY-QCUI>] (discussing the benefits of a long-term vision and strategy and the need to balance near-term achievement targets with long-term goals).



#### D. Winners and Losers

Honesty, adaptability, open-mindedness, and humility separate winners from losers following SIPs.<sup>290</sup> Employee morale slumps when obvious threats appear on the horizon and leaders fail to either acknowledge the problem or unite employees in finding solutions. In addition, unless meticulously checked, leadership preconceptions can stifle innovation, especially if leaders discourage curiosity, experimentation, and non-traditional perspectives.<sup>291</sup> Finally, education leaders who dismiss or fail to investigate the methods used by purportedly “lower-tier” (including for-profit) entities often end up on the losing end of the success spectrum by missing opportunities to fill market “voids.”<sup>292</sup> Such prejudice can undercut growth because different de-

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290. GROVE, *supra* note 3, at 76, 130, 145 (emphasizing the importance of humility, adaptability and curiosity when exploring and moving toward new innovation pathways); see REIS, *supra* note 16, at 163 (quoting Silicon Valley entrepreneur Don Morin) (“We humbly test our theories and our approach to see what the market thinks. Listen to feedback honestly. And continue to innovate in the directions we think will create meaning in the world.”); see also WARTZMAN, *supra* note 15, at 352 (discussing the need for leaders of incumbent organizations to be humble and learn lessons from competitors when identifying and leading organizations on new paths forward).

291. Hamel & Prahalad, *supra* note 258 (discussing how executives with “mature” conceptions and quick-reflex responses to emerging ideas and opportunities can severely undercut potential innovations). Note that there is a natural tension for leaders between the desire for experimentation and the comfort of standardization. When struggling with this tension, leaders should consider whether the project or process is a core function or an emerging function. See GROVE, *supra* note 3, at 121–35 (discussing the need for transformative leaders to “Let Chaos Reign” so that new growth opportunities may sprout). Grove explains that “Resolution comes through experimentation” because “stepping out of the old ruts will bring new insights.” *Id.* at 121. Grove then recommends that after a time of experimentation, leaders “Reign in Chaos” in the late stages of a strategic transformation by refining the organization’s “clarity of direction.” *Id.* This includes identifying what methods and strategies the organization will and will not pursue going forward. *Id.* at 137–64. McGrath follows a similar analysis in Chapter 4: “Using Resource Allocation to Promote Deftness.” McGRATH, *supra* note 89, at 75–100. There, she discusses the value of standardizing core functions to extract efficiencies; liberating resources for promising projects; requiring parsimony and valuing industriousness when developing seedling ideas (e.g., prototypes and minimum viable products); and leveraging internal and external resources (e.g., open innovation). *Id.* McGrath emphasizes the importance of making innovation “continuous, ongoing, and systematic” which requires consistent funding and making innovation a required component of employee advancement and compensation. *Id.* at 102.

292. LINKNER, *supra* note 92, at 161–62 (recommending that when reinventing program services, it is important to both “reach up” and “reach down” in status to determine what elements should be expanded, eliminated, modified, and developed); see generally CHRISTENSEN, *INNOVATOR’S DILEMMA: WHEN NEW TECHNOLOGIES CAUSE GREAT FIRMS TO FAIL* 39–42 (2016) (explaining “Technology S-Curves and Value Networks”). Christensen then explains how downmarket competitors (with “downward vision and mobility”) can reshape the playing field and fill mar-

signs and approaches may reveal industry trends and innovation pathways.<sup>293</sup>

Revitalization, on the other hand, begins when leaders are honest about the difficulties the organization faces and call upon employees to develop renewal strategies. Grove observes that innovative organizations exhibit several attributes: (1) debates are encouraged and are indifferent to rank,<sup>294</sup> (2) decisions are actually made, and (3) forward action is supported with determination and resources.<sup>295</sup> Change requires ownership and commitment by all members and levels of the organization.<sup>296</sup> Leaders who demonstrate humility, are willing to engage with customers about their concerns, seek advice from experts in other disciplines, and listen to younger colleagues can discover valuable innovation insights and co-create value.<sup>297</sup> Employees, for their part, are often more energized and motivated to support the transfor-

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ket “voids” given their lean cost structures that enable them to “achieve profitability at lower gross margins.” *Id.* at 24, 46–47, 87. As a result, downmarket players enjoy profitability and growth, while incumbents face “severe price war[s].” *Id.*

293. GROVE, *supra* note 3, at 23. For example, in the tax industry, H&R Block and Jackson Hewitt’s digital training techniques merit serious study. Because for-profit players must innovate to survive and thrive, their approaches may yield valuable ideas.
294. *Id.* at 23, 162; see McGRATH, *supra* note 89, at 139 (“[T]he people who see changes coming are not those in charge of making major organizational decisions. They are technologists, scientists, and pattern recognizers”); *Reinventing Innovation*, *supra* note 23, at 15 (“Frontline employees often see problems and solutions more clearly than their cost-conscious managers.”); see also McAfee & Brynjolfsson, *supra* note 14, at 323 (emphasizing the importance of “egalitarianism, especially of ideas,” which means that ideas from junior employees deserve a hearing).
295. GROVE, *supra* note 3, at 162; see McGRATH, *supra* note 89, at 75–100 (describing the importance of “using resource allocation to promote deftness”). She defines “deftness” as “the ability to reconfigure and change processes with a certain amount of ease, quickly.” *Id.* at 75–76; see also REIS, *supra* note 77, at 315–18 (explaining that continuous innovation and organizational transformation requires human cross-functional and multidisciplinary teams, secure funding, top-level management support, well-designed accountability standards, and “a commitment to the truth” (i.e., data-driven not HiPPO-based decisions)); DOMINGOS, *supra* note 36, at 39 (defining “HiPPO” as the “highest paid person’s opinion”); *Legal Education: A New Growth Vision Part II*, subsection IV.C.2 (discussing information over instinct).
296. See Jónasson, *supra* note 128 (discussing inertia in educational organizations). Jónasson notes that “ownership of ideas is a precondition for their successful implementation.” *Id.* at 11.
297. GROVE, *supra* note 3, at 145; see Lars Frølund & Morten Ziethen, *The Wisdom of the Intermediary: The Role, Function, and Ways-of-Being of the Intermediary in a Strategic Program for University-Industry Relations*, *TRIPLE HELIX* 3:9 (2016), at 6, <https://triplehelixjournal.springeropen.com/articles/10.1186/s40604-016-0039-4> [<http://perma.unl.edu/C4ML-JS3J>]; see also REIS, *supra* note 77, at 293 (explaining the importance of humility and diversity of thought and experience when evaluating budding innovations and building streamlined processes); TEDLOW, *supra* note 177, at 127–28 (explaining that since “[g]reat brands are

mation if they can see how their individual contributions may help renewal and regeneration efforts.<sup>298</sup> Last, radical solutions may appear if stakeholders work together to identify efficiencies, cost savings, and restructuring opportunities.<sup>299</sup>

To summarize, the two-step process for identifying SIPs requires (1) careful attention to market factors, trends, and customer behavior and (2) a subsequent willingness to relinquish preconceptions about the organization in order to assess what changes are necessary. Potential market advantages of moving quickly include the ability to reap greater market share and to set the standard that competitors must meet. When navigating through SIPs, organizations must balance competing interests, like acting quickly and responding nimbly, while still being patient enough to cultivate ecosystems in which ongoing innovation can flourish. Ultimately, the market will sort winners from losers based on which organizations are willing to abandon preconceptions and pridefulness, acknowledge their shortcomings, and engage all levels of their talent to find solutions.

Before viewing the potential buds and blooms of the innovation ecosystem, the next Part of this Article argues that higher education is ripe for disruption and applies Grove's SIP insights to scrutinize the current state of legal education.

#### IV. SIP ANALYSIS OF LEGAL EDUCATION

AI visionary Seymour Papert's<sup>300</sup> time machine thought-experiment imagines two modern professionals, a surgeon and a teacher,

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cocreated" over time between the buyer and seller, a breach of customer trust can trigger business catastrophe).

298. McGRATH, *supra* note 89, at 154. According to Alcoa CEO Kleinfeld:

You can't successfully restructure a company just focusing on cost without also having growth on the agenda. People only become passionate when they feel part of a great foundation and envision an even brighter future that motivates them to fight through tough times. The very idea of growth is an important emotional dimension for employees as well as for your investors and other stakeholders. That's what gets people through these massive disappointments, and focused on what they *can* influence. It gives them the confidence to make difficult decisions without hesitation.

*Id.* at 158.

299. *Id.* at 152–57 (describing how Alcoa CEO, Klaus Kleinfeld, and his team navigated through an aluminum freefall during the 2008 global economic downturn, which led to a stronger, more efficient enterprise).

300. See *Seymour Papert: Works by Papert*, <http://www.papert.org/> [<http://perma.unl.edu/DK37-RCVM>]; *Professor Emeritus Seymour Papert, Pioneer of Constructionist Learning, Dies at 88*, MIT NEWS (Aug. 1, 2016), <http://news.mit.edu/2016/seymour-papert-pioneer-of-constructionist-learning-dies-0801> [<http://perma.unl.edu/8JFH-JCUH>]; Paul Blikstein, *Seymour Papert's Legacy: Thinking About Learning, and Learning About Thinking*, STAN. GRADUATE SCH. EDUC., TRANSFORMATIVE LEARNING TECHS. LAB (2013), <https://tltl.stanford.edu/content/seymour->

who are transported from the mid-nineteenth century to the present.<sup>301</sup> The surgeon would immediately find the modern operating room, with all of its computerized monitors, instruments, and robots, incomprehensible and beyond recognition.<sup>302</sup> The teacher, on the other hand, could easily assume center stage and lecture, with the only difference being a dry-erase board instead of a chalkboard upon which to write.<sup>303</sup>

This vignette raises the question of why some educational methods have remained stagnant and illustrates the alternative paths available for legal educators: (1) they can embrace modern digital tools like AI and IA technologies to prepare students for a future of working with specialized technologies (e.g., robots), or (2) they can cling to the status quo, reject modernization, romanticize the past, and then lament the decline of the profession and closure of law schools. Here, it pays to remember that tradition for the sake of tradition halts forward movement.<sup>304</sup> Educational programs that can thoughtfully synthesize the best of their traditions with modern technologies—and maintain human connection throughout—can generate the momentum essential for forward progress, program relevance, economic growth, and long-term sustainability.

### A. Legal Education Ripe for Disruption

The higher education system, especially in legal and professional fields, is ripe for disruption. A 2013 Stanford report titled “An Avalanche is Coming: Higher Education and the Revolution Ahead” calls for the “radical and urgent transformation” of higher education.<sup>305</sup>

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paper-t-s-legacy-thinking-about-learning-and-learning-about-thinking [http://perma.unl.edu/5G5G-8UGS].

301. NICHOLAS NEGROPONTE, BEING DIGITAL 219–20 (1995).

302. *Id.*; see also *Medicine: New Surgical Robots Are About to Enter the Operating Theatre: Surgeons Will Soon Have Helping Mechanical Hands*, ECONOMIST (Nov. 16, 2017), <https://www.economist.com/news/science-and-technology/21731378-surgeons-will-soon-have-more-helping-mechanical-hands-new-surgical-robots-are?fsrc=scn/tw/te/bl/ed/newsurgicalrobotsareabouttoentertheoperatingtheatremedicine> [http://perma.unl.edu/KX56-34AY].

303. NEGROPONTE, *supra* note 301, at 220.

304. EVANS & SCHMALENSSEE, *supra* note 10, at 73 (describing the importance of momentum when “turn[ing] things around” and making platform or organizational changes); see MCAFEE & BRYNJOLFSSON, *supra* note 14, at 168 (describing how Research in Motion [RIM] lost its dominant early leader position with its BlackBerry because RIM clung to its tiny QWERTY keyboard instead of moving to touch screens and only offered late, lackluster apps); see also Michal Lev-Ram, *RIM: What the Hell Happened?*, FORTUNE (May 30, 2012), <http://fortune.com/2012/05/30/rim-what-the-hell-happened/> [http://perma.unl.edu/9TCP-7SHD] (same).

305. Michael Barber et al., *An Avalanche Is Coming: Higher Education and the Revolution Ahead*, INST. FOR PUB. POL’Y RES. 3 (Mar. 2013), [http://med.stanford.edu/smili/support/FINAL%20Avalanche%20Paper%20110313%20\(2\).pdf](http://med.stanford.edu/smili/support/FINAL%20Avalanche%20Paper%20110313%20(2).pdf) [http://

The report urgently warns that institutional “complacency, caution or anxiety, or a combination of all three” which forestalls education reforms will eventually trigger an avalanche of market destruction—leaving a barren, deforested landscape that may never recover.<sup>306</sup> Further, the CEOs in IBM’s 2012 C-suite study noted their frustration with the education and skills training provided by conventional educational programs because many of the skills taught are outdated.<sup>307</sup> They assert that modern curricula should include skills and competencies such as critical thinking, creativity, initiative, communication, collaboration, entrepreneurship,<sup>308</sup> technology competence and pri-

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[perma.unl.edu/ZG7N-KZ56](http://perma.unl.edu/ZG7N-KZ56)]; see also *A Revolution Has Begun, Creative Destruction*, ECONOMIST (June 28, 2014), <https://www.economist.com/leaders/2014/06/28/creative-destruction> [<http://perma.unl.edu/72BC-FEFD>] (asserting that universities face revolution, which will result in the reinvention of higher education).

306. *Id.*

307. IBM 2012 CEO C-SUITE STUDIES, *supra* note 24, at 21 (noting lag times between course design and delivery); see KAPLAN, *supra* note 24, at 152–53 (asserting that education programs are hindered in their ability to respond to economic trends because faculty/administrators are so far removed from the practical realities of the profession that they are unable to develop curriculum aligned with a rapidly changing economy); THE WORK AHEAD, *supra* note 110, at 28, 30 (“Educational institutions will need to get better at tailoring certain programs to labor market signals.”); see also *Learning Innovation in the Digital Age*, MCKINSEY Q. (Sept. 2017), <https://www.mckinsey.com/business-functions/organization/our-insights/learning-innovation-in-the-digital-age> [<https://perma.unl.edu/234Y-VEN4>] (quoting Jason Palmer, general partner, New Markets Venture Partners) (“Our higher-education system is 25 years behind the curve. There needs to be a new set of institutions or programs that are jointly owned and managed by corporations or industry.”); Mark A. Cohen, *How Will Legal Education and Training Keep Pace with Change?*, FORBES (Sept. 10, 2018), <https://www.forbes.com/sites/markcohen1/2018/09/10/how-will-legal-education-and-training-keep-pace-with-change/#14f5249d7055> [<https://perma.unl.edu/XV5A-Z87H>] (recommending that legal professionals embrace lifelong learning and augment their knowledge and skills in the areas of technology, project/process management, data analytics, and collaboration). See *Legal Education: A New Growth Vision Part II*, subsection IV.B.4 for a discussion on how both open innovation and open business models may support such education enterprises.

308. Disruption currently occurs in the tax and legal professions as more technologies upend the demand for client-tailored and customized services. See Pistone & Horn, *supra* note 255, at 5–6. Rising costs of personal services—especially for legal and tax professionals—has prompted entrepreneurs to offer clients digital and generic alternatives. *Id.* Online services such as Legal Zoom and TurboTax challenge the hegemony of lawyers and certified public accountants. *Id.* at 6. For those with low or moderate incomes, technology may be especially important in providing access to justice. See Robert Ambrogi, *Startup Launching Today Provides Automated Legal Help to Those with Low and Moderate Incomes*, LAWSITES BLOG (Dec. 13, 2018), <https://www.lawsitesblog.com/2017/12/startup-launching-today-provides-automated-legal-help-low-moderate-incomes-starting-domestic-violence.html> [<http://perma.unl.edu/FFU5-MMBV>]; Carolyn Elefant, *A Lawyer to the Stars Brings Divorce Down to Earth with a Legal Tech Startup*, ABOVE THE LAW (Jan. 31, 2018), <https://abovethelaw.com/2018/01/a-lawyer-to-the-stars-brings-divorce-down-to-earth-with-a-legal-tech-startup/> [<http://perma.unl.edu/>

vacy protection (e.g., data analytics, e-discovery, encryption, dual-factor authentication, metadata removal, and cybersecurity),<sup>309</sup> “systems’ perspectives,”<sup>310</sup> cultural awareness,<sup>311</sup> risk and compliance

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25QB-3LQG]; see also THOMSON, *supra* note 166, at 54–55 (noting the do it yourself [DIY] customer trend for basic legal services and predicting that over time new graduates will have fewer opportunities to develop basic legal skills that are now available online); Victoria Hudgins, *Survey: Nearly 70 Percent of Americans Would Choose Online Legal Services Over Attorneys*, RECORDER (Dec. 12, 2018), <https://www.law.com/therecorder/2018/12/12/survey-69-percent-of-people-would-use-online-legal-services-over-attorneys-403-27120> [<https://perma.unl.edu/KQE4-RWQK>] (describing Harris Poll results showing strong market demand for low cost legal service alternatives); Carolyn Elefant, *Which Solo and Small Legal Practice Areas Will Go the Way of the Dry-Cleaning Industry?*, ABOVE THE LAW (Mar. 22, 2018), <https://abovethelaw.com/2018/03/which-solo-and-small-legal-practice-areas-will-go-the-way-of-the-dry-cleaning-industry> [<http://perma.unl.edu/P9VG-JJUA>] (“[O]ver the past five years, many lawyers handling basic trust and estate or small business matters failed to recognize that the significant improvement of DIY digital tools combined with nearly universal consumer reliance on the Internet would result in a significant loss of business.”). Despite digital disruptions, business opportunities remain for the ample clean-up work generated by self-helpers who randomly checked boxes on digital forms or looked first to Google for answers rather than seeking advice from qualified legal and tax professionals. In order to capture these business opportunities, modern curriculum must include modules on business development, marketing, and entrepreneurship. See generally WILLIAM J. BAUMOL, *THE COST DISEASE: WHY COMPUTERS GET CHEAPER AND HEALTH CARE DOESN’T* 39–42 (2012) (discussing “Automation Revolution and the Do-It-Yourself Incentive”); TOM NICHOLS, *THE DEATH OF EXPERTISE: THE CAMPAIGN AGAINST ESTABLISHED KNOWLEDGE AND WHY IT MATTERS* (2017).

309. Significantly, CEOs view technology skills as “foundational” comparable to whether one “can . . . read and write.” IBM 2012 CEO C-SUITE STUDIES, *supra* note 24, at 22; see also MODEL RULES OF PROF’L CONDUCT r. 1.1, cmt. 8 (AM. BAR ASS’N 1983), [https://www.americanbar.org/groups/professional\\_responsibility/publications/model\\_rules\\_of\\_professional\\_conduct/rule\\_1\\_1\\_competence/comment\\_on\\_rule\\_1\\_1.html](https://www.americanbar.org/groups/professional_responsibility/publications/model_rules_of_professional_conduct/rule_1_1_competence/comment_on_rule_1_1.html) [<http://perma.unl.edu/3T26-YJD4>] (emphasizing the importance of an attorney continuously maintaining technology competence); Ivy B. Grey, *Not Competent in Basic Tech? You Could be Overbilling Your Clients—and be on Shaky Ethical Ground*, A.B.A. J.: LEGAL REBELS (May 15, 2017), [http://www.abajournal.com/legalrebels/article/tech\\_competence\\_and\\_ethical\\_billing/](http://www.abajournal.com/legalrebels/article/tech_competence_and_ethical_billing/) [<http://perma.unl.edu/3VJ5-8HGG>]; JILL D. RHODES & ROBERT S. LITT, *THE ABA CYBERSECURITY HANDBOOK: A RESOURCE FOR ATTORNEYS, LAW FIRMS, AND BUSINESS PROFESSIONALS* (2d ed. 2018); see also *The Business of Law: A Market Research Study to Explore Opportunities for New York Law School Students*, N.Y. L. SCH. 10–19 (July 2018), <https://www.nyls.edu/academics/centers/business-of-law-institute/> [<http://perma.unl.edu/NYH5-427A>] [hereinafter *The Business of Law*] (analyzing the impact of technological advances from the perspective of partners in law firms).
310. Fred Phillips et al., *Business Schools in Crisis*, J. OPEN INNOVATION: TECH., MKT. & COMPLEXITY 2:10 (2016) <https://jopeninnovation.springeropen.com/articles/10.1186/s40852-016-0037-9> [<http://perma.unl.edu/24HR-HSMG>]; cf. Gary Hohbein, *10 Competencies of Top Staff Accountants*, J. ACCT. NEWSL. (Feb. 27, 2017), <https://www.journalofaccountancy.com/newsletters/2017/feb/10-competencies-top-staff-accountants.html> [<http://perma.unl.edu/9GFZ-LVDL>].
311. Jónasson, *supra* note 128, at 2, 5.

management,<sup>312</sup> project and knowledge management,<sup>313</sup> and legal operations.<sup>314</sup> In response to these demands, two law schools recently announced new legal education programs: (1) New York Law School launched its Business of Law Institute with curriculum specifically designed to prepare students for careers in the rapidly evolving legal tech industry,<sup>315</sup> and (2) Hofstra University Law School announced the upcoming debut of its Center for Applied Legal Technology and Innovation, which will teach law students how to use “current and emerging technology, and to apply those skills and expertise to provide cutting-edge legal services while taking advantage of interdisciplinary opportunities.”<sup>316</sup>

Employers want “future-proof” graduates,<sup>317</sup> yet many traditional legal programs remain stuck in the past. Current curricula fails to account for accelerating global, demographic, technological, social, economic, and professional changes.<sup>318</sup> A mismatch thus exists between education and the workplace in terms of (1) the traditional education curriculum; (2) the need for curriculum updates that include employer-valued knowledge, skills, and competencies; (3) unsatisfactory

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312. *The Business of Law*, *supra* note 309, at 10–14, 17.

313. *Id.*

314. *Id.*

315. Press Release, N.Y. Law Sch., New York Law School Launches Business of Law Institute to Prepare Law Students and Lawyers for Careers in the Burgeoning Legal Tech Sector (July 16, 2018) (on file with author).

316. Gail A. Prudenti, *Law Schools Facing New Demands for Innovative Education*, LONG ISLAND BUS. NEWS/LIBN.COM (July 23, 2018), <https://libn.com/2018/07/23/prudenti-law-schools-facing-new-demands-for-innovative-education/> [<http://perma.unl.edu/WT25-PZFH>].

317. IBM 2012 CEO C-SUITE STUDIES, *supra* note 24, at 25.

318. See BRIAN Z. TAMANAHA, *FAILING LAW SCHOOLS* 59 (2012) (“Most law school graduates are not sufficiently competent to provide legal services to clients or even to perform the work expected of them in large firms.”); Chiappinelli, *supra* note 288, at 50 (“The profession . . . derides legal education as three years of ivory tower philosophizing that leaves graduates almost completely unprepared to practice law, even with the support of a large firm, let alone in sole or small firm practice.”); *Legal Operations Defined & Core Competencies*, CLOC, <https://cloc.org/what-is-legal-operations> [<http://perma.unl.edu/MED3-BTZQ>] (identifying as core legal competencies strategic planning; data analytics; financial, technology, and knowledge management; litigation support; communications; team building and professional development, data/records management; and cross-functional alignments between enterprise functions); Sarah Ovaska-Few, *What Large Firms Expect from New Accounting Grads*, J. ACCT. (Mar. 1, 2017), <https://www.journalofaccountancy.com/issues/2017/mar/what-large-cpa-firms-expect-from-new-graduates.html> [<http://perma.unl.edu/3DLN-9S2Z>]; *Working to Close the Skills Gap*, J. ACCT. (Apr. 13, 2015), <https://www.journalofaccountancy.com/issues/2015/apr/closing-the-skills-gap.html> [<http://perma.unl.edu/FE3W-9HF6>] (including a detailed graphic). The detailed graphic shows how firms seek talent with experience in different geographies and industries and who have broad experiences and backgrounds. *Id.* Candidates who continuously update their skills are especially valued. *Id.*

knowledge and skill capabilities—that is, immediate billables—of graduates joining the workforce; and (4) the vital adaptive attitudes and skills necessary to thrive in times of rapid technology and social change.<sup>319</sup> Curing this mismatch requires law school leaders and faculties to engage with “critical external constituencies, within the university as well as beyond” its ivy-covered walls.<sup>320</sup>

## B. The SIP Facing Legal Education

The Great Recession that began in December 2007<sup>321</sup> changed the landscape of legal education, thereby revealing organic defects in the traditional education and business models. Starting in 2011, criticisms of legal education sprung up like yellow dandelions that continue to spread far and wide.<sup>322</sup> National newspapers and legal journals regularly report the high costs of legal education, the uncertain employment prospects of new lawyers, and the personal and professional struggles of graduates with crushing student loan debt.<sup>323</sup>

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319. ANDREW J. POLICANO, FROM IVORY TOWER TO GLASS HOUSE: STRATEGIES FOR ACADEMIC LEADERS DURING TURBULENT TIMES 76 (2016) (recounting a conversation with a dean of humanities where the dean agreed it was unethical to admit new students to programs with inadequate graduate employment prospects); see TAMANAHA, *supra* note 318, at 153–54 (examining criticisms of law school employment and salary data under the lens of Rule 7.1 of the ABA Model Rules of Professional Conduct, communications concerning a lawyer’s services); THE WORK AHEAD, *supra* note 110, at 32 (emphasizing the importance of student confidence in value of particular degrees and timely update and alignment of curriculum with employer needs); see also *Learning Innovation in the Digital Age*, *supra* note 307 (describing how employers want verification of potential new hire competence in specific job functions and not automatically requiring academic degrees).

320. Chiappinelli, *supra* note 288, at 15, 70.

321. *Determination of Dec. 2007 Peak in Economic Activity*, NAT’L BUREAU ECON. RES., <http://www.nber.org/cycles/dec2008.html> [<http://perma.unl.edu/5N55-E2F4>].

322. TAMANAHA, *supra* note 318, at 160 (describing 2011 as legal education’s “*annus horribilis* of unflattering public exposure”).

323. See, e.g., Paul Campos, *Served*, NEW REPUBLIC (Apr. 24, 2011), <https://newrepublic.com/article/87251/law-school-employment-harvard-yale-georgetown?page=0,0> [<http://perma.unl.edu/82VJ-L2F2>] (discussing misleading employment data for law school graduates and stating “adjusted for inflation, public law school tuition has quintupled, and private law school tuition has nearly tripled, since the mid-1980s.”); David Segal, *Is Law School a Losing Game*, N.Y. TIMES (Jan. 8, 2011), <http://www.nytimes.com/2011/01/09/business/09law.html> [<http://perma.unl.edu/8KXF-R8FN>]; Noam Scheiber, *An Expensive Law Degree, and No Place to Use It*, N.Y. TIMES, (June 17, 2016), <https://www.nytimes.com/2016/06/19/business/dealbook/an-expensive-law-degree-and-no-place-to-use-it.html> [<http://perma.unl.edu/EN2N-PA2T>] (profiling recent graduates “caught up in a broad transformation of the legal profession,” examining the financial struggles and strategic miscalculations made at Valparaiso Law School, and questioning the economic structures of lower-tier law schools charging “Harvardesque prices”); Karen Sloan, *Summer Associate Hiring Slowed at Largest Firms*, AM. LAW. (Jan. 25, 2018), <https://www.law.com/americanlawyer/sites/americanlawyer/2018/01/25/summer-associate-hiring-slowed-at-largest-firms/> [<http://perma.unl.edu/7U3P->



Calling the law school economic model “broken,” in summer 2017, Harvard Law graduate, Martin Pritkin, (now the Dean of fully online, for-profit Concord Law School) proclaimed that twenty-five percent (25%) of law schools should “just close their doors.”<sup>324</sup>

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XBA7] (referencing recent survey by Citi Bank) (“[C]lients are unwilling to pay for young associates, causing some firms to reduce their rates or simply not charge clients for their work.”); Stephanie Francis Ward, *Law Schools Should Make Students’ Borrowing Data Public, Include with Admissions Offers, Report Says*, A.B.A. J. (Feb. 1, 2018), [http://www.abajournal.com/news/article/make\\_law\\_school\\_borrowing\\_data\\_public\\_and\\_include\\_it\\_with\\_admissions\\_offers](http://www.abajournal.com/news/article/make_law_school_borrowing_data_public_and_include_it_with_admissions_offers) [<http://perma.unl.edu/2E99-R7SE>]; see generally Steven J. Harper, *Symposium: Bankruptcy and Education: Bankruptcy and Bad Behavior the Real Moral Hazard: Law Schools Exploiting Market Dysfunction*, 23 AM. BANKR. INST. L. REV. 347–65 (Winter 2015); Staci Zaretsky, *Experts Say the Future of Law School Is Looking Bleak*, ABOVE THE LAW (Apr. 12, 2018), <https://abovethelaw.com/2018/04/experts-say-the-future-of-law-school-is-looking-bleak/> [<http://perma.unl.edu/ZW4U-5ZAK>] (noting the opinion of James Leipold, executive director of the National Association for Law Placement, that there are not enough jobs for new lawyers even if law school applications increase, and it was only lower numbers of law school grads that improved employment statistics); see also Karen Sloan, *Legal Education in ‘Perilous Moment’ as Leaders Gather to Examine Its Future*, NAT’L L.J. (Apr. 12, 2018), <https://www.law.com/nationallawjournal/2018/04/12/legal-education-in-perilous-moment-as-leaders-gather-to-examine-its-future> [<http://perma.unl.edu/GX5J-LJ8Q>] [hereinafter Sloan, *Legal Education in ‘Perilous Moment’*] (quoting Barry Currier, Am. Bar Ass’n managing director of Accreditation and Admission) (“We really haven’t had any major reforms. We should have done it yesterday. . . . We’ve tinkered around the edges of the fundamental changes of the business model.”). For a thoughtful analysis of the NALP Class of 2017 data, see Bill Henderson, *Four Charts to Better Understand the Class of 2017*, LEGAL EVOLUTION BLOG (Aug. 5, 2018), <https://www.legalevolution.org/2018/08/four-charts-better-understand-class-2017-060> [<http://perma.unl.edu/NB7G-D85N>].

324. Martin Pritkin, *Return on Investment: The Core Challenge for Legal Education and the Legal Profession*, NAT’L JURIST (Aug. 21, 2017), <http://nationaljurist.com/national-jurist-magazine/return-investment-core-challenge-legal-education-and-legal-profession> [<http://perma.unl.edu/U35Y-E8CQ>]. Pritkin also challenged the long-term viability of “elaborate physical facilities” in the digital age. *Id.* Concord Law School, while not ABA-accredited, is unique because it offers online legal education for \$12,000 per year. *Id.* In contrast, the 2018–2019 tuition for ABA-accredited hybrid-online J.D. program offered by Syracuse University Law is \$49,300 (same as the residential program); *Cost of Attendance*, SYRACUSE U. C. L., <http://law.syr.edu/financial-aid/cost-of-attendance> [<http://perma.unl.edu/BN67-M4PB>]; *JDinteractive FAQs*, SYRACUSE U.C.L., <http://jdinteractive.syr.edu/home/faqs/> [<http://perma.unl.edu/55KS-2TM6>]; see Karen Sloan, *Denver Law Joins the Hybrid J.D. Trend*, LEGALTECH NEWS (Aug. 22, 2018), <https://www.law.com/legaltechnews/2018/08/22/denver-law-joins-the-hybrid-j-d-trend> [<http://perma.unl.edu/4Z2D-8AJL>]. The 2018–2019 per credit tuition for the University of Denver’s part-time J.D. program (weekly online classes and weekend on campus classes) is \$1,687. For 2018–2019, full-time (30 credits) tuition is \$50,610 and part-time (22 credits) tuition is \$37,114. *2018–2019 Cost of Attendance*, U. DENV., <https://www.du.edu/financialaid/law/cost/> [<http://perma.unl.edu/SGZ3-YSL8>]; see also Paul Caron, *Dayton Is Seventh Law School to Offer Hybrid Online J.D.*, TAX-PROF BLOG (May 29, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/05/dayton-is-seventh-law-school-to-offer-hybrid-online-jd.html](http://taxprof.typepad.com/taxprof_blog/2018/05/dayton-is-seventh-law-school-to-offer-hybrid-online-jd.html) [<http://perma.unl.edu/>]

Law schools currently face significant market headwinds from competitors and the professional community. For example, in some geographic regions with multiple law schools, programs often compete for the same pool of new students, especially if both programs have comparable quality. Vying for highly qualified students, these neighboring schools offer generous student financial aid resources to diminish tuition cost as the deciding enrollment factor.<sup>325</sup> Members of the professional community further complain about the lack of practical legal skills being taught by academia.<sup>326</sup> Employer demand for practice-ready graduates amplifies the stress for students, faculty, and program leaders.<sup>327</sup> Compounding negative financial factors include high tuition and student debt.<sup>328</sup> Because market decay seldom moves

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8PWB-SDFY] (listing Dayton, Loyola-Chicago, Mitchell Hamline, Seton Hall, Southwestern, Syracuse, and Touro law schools); *The University of Dayton School of Law and 2U, Inc. Partner to Offer an Innovative New Hybrid J.D. Program*, U. DAYTON (May 24, 2018), <https://www.prnewswire.com/news-releases/the-university-of-dayton-school-of-law-and-2u-inc-partner-to-offer-an-innovative-new-hybrid-jd-program-300654765.html> [http://perma.unl.edu/3VP4-4ZX8]. *But see* Michael Simkovic & Frank McIntyre, *The Economic Value of a Law Degree*, 43 J. LEGAL STUD. 249–89 (June 2014) (“A law degree is associated with median increases of 73 percent in earnings and 60 percent in hourly wages. The mean annual earnings premium is approximately \$57,200 in 2013 dollars. Values in recent years are within historical norms. The mean pretax lifetime value of a law degree is approximately \$1 million.”). Professor Simkovic recently penned a criticism of online legal education. Michael Simkovic, *Should Online Education Come with an Asterisk on Transcripts?*, BRIAN LEITER’S L. SCH. REP. (Aug. 8, 2018), <http://leiterlawschool.typepad.com/leiter/2018/08/should-online-education-come-with-an-asterisk-on-transcripts-michael-simkovic.html> [http://perma.unl.edu/CL74-4UUP].

325. Staci Zaretsky, *The 10 Law Schools that Offer Students the Most Help with Tuition*, ABOVE THE LAW (June 1, 2018), <https://abovethelaw.com/2018/06/the-10-law-schools-that-offer-students-the-most-help-with-tuition> [http://perma.unl.edu/T3CU-EH65]. For a critique on this process, see Jordan Rothman, *Law Schools Care More About Rankings than the Financial Burdens of Students*, ABOVE THE LAW (May 23, 2018), <https://abovethelaw.com/2018/05/law-schools-care-more-about-rankings-than-the-financial-burdens-of-students> [http://perma.unl.edu/4BWB-H77F]. *But see* Li, *supra* note 138 (finding “a lack of price sensitivity in legal education”).
326. Areen, *supra* note 136, at 1094; TAMANAHA, *supra* note 318, at 59 (discussing the 2007 findings of the Clinical Legal Education Association that “[m]ost law school graduates are not sufficiently competent to provide legal services to clients or even to perform the work expected of them in large firms”). Tamanaha also references an ABA survey of legal practitioners issued in the late 1990s which reports that “practicing lawyers believe that their law school training left them deficient in skills that they were forced to acquire after graduation.” *Id.* at 55.
327. *See* Konefsky & Sullivan, *supra* note 122, at 683 (describing how firms cut costs by hiring few associates, paying them less, and routinely replacing them with even lower-paid substitutes).
328. ADAM LOONEY & CONSTANTINE YANENELIS, BORROWERS WITH LARGE BALANCES: RISING STUDENT DEBT AND FALLING REPAYMENT RATES (2018); Staci Zaretsky, *Will You Ever be Able to Pay Off Your Law School Debt?*, ABOVE THE LAW (Sept. 26, 2017), <https://abovethelaw.com/2017/09/will-you-ever-be-able-to-pay-off-your->

in straight lines,<sup>329</sup> it is necessary to examine multiple market indicators such as student enthusiasm for legal education; access to student loans and economic outlook for new graduates; some law schools' recent tactical decision to accept GRE in lieu of LSAT; the personal, professional, and financial well-being of graduates when they enter the profession; employer perspectives on graduate skills; and other relevant factors.

### 1. SIP Indicator: Student Enthusiasm for Legal Education

American Bar Association (ABA) reports show that law school enrollments peaked in 2010 followed by a downward trend,<sup>330</sup> which points to the presence of an SIP in legal education.<sup>331</sup> Recent LSAT test taking and law school application spikes should be viewed with

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law-school-debt/ [http://perma.unl.edu/9AK4-HGUZ] (“[T]he average law school graduate borrowed \$112,776 to finance their degree.”); Robert Farrington, *Law School and Student Loan Debt: Be Careful*, FORBES (Dec. 18, 2014), <https://www.forbes.com/sites/robertfarrington/2014/12/18/law-school-and-student-loan-debt-be-careful/#50e2a73211f9> [http://perma.unl.edu/KYQ4-NPJP]. *But see* Jordan Rothman, *Law Students Today Have Fewer Excuses for Being Blindsided by Student Loans*, ABOVE THE LAW (Mar. 14, 2018), <https://abovethelaw.com/2018/03/law-students-today-have-fewer-excuses-for-being-blindsided-by-student-loans/> [http://perma.unl.edu/T6YS-K5CW] (asserting that now, unlike prior to the Great Recession, “[m]ost people are extremely well-informed about the value proposition of attending law school and are well-educated about the risks of borrowing student debt”); Matt Krupnick/The Hechinger Report, *What Law Schools Can Teach Colleges about Lowering Tuition*, TIME (Apr. 21, 2014), <http://time.com/67168/law-school-college-tuition/> [http://perma.unl.edu/XEE5-F6SU] (noting how some law schools reduced tuition between five percent (5%) and eighteen percent (18%)).

329. LINKNER, *supra* note 92, at 13 (“Unfortunately, many leaders skate through the days without recognizing the eroding force of deterioration until it’s too late.”).
330. *Archive: ABA End-of-Year Summary—Applicants, Admitted Applicants, & Applications [2008–2015]*, L. SCH. ADMISSIONS COUNCIL (LSAC) (on file with author); *see* Tyler Roberts, *Why Flat Enrollment Is Great News for Law Schools*, NAT’L JURIST (Jan. 13, 2017), <http://www.nationaljurist.com/prelaw/why-flat-enrollment-great-news-law-schools> [http://perma.unl.edu/G65F-U8Q8] (stating that declining enrollments “represent close to \$1 billion in lost tuition revenue”); Areen, *supra* note 136 n.3 (explaining that law school “[e]nrollment has dropped from approximately 52,500 in 2010 to 37,100 in 2015 [rounded to nearest hundred],” per ABA statistics); Nathan Allen, *Law School Enrollment Drops . . . Again*, TIPPINGTHESCALES.COM (Dec. 17, 2014), <https://tippingthescales.com/2014/12/law-school-enrollment-drops-again/> [http://perma.unl.edu/32HK-4WVZ]; *see also* TAMANAHA, *supra* note 318, at 160–66 (providing an overview of LSAT test-takers and law school applications between 1990 and 2012).
331. GROVE, *supra* note 3, at 3–4; *see* Chiappinelli, *supra* note 288, at 22–33 (examining dental school crisis). In addition, McGrath identifies some signs of business model distress, which include small decreases in customer engagement, followed by a flattening, and then by very obvious declines. McGRATH, *supra* note 89, at 56 (“Unfortunately, by the time a decline shows up in your performance numbers, it is usually too late to muster a proactive response, and you find yourself clambering back in a weaker position than you had been in.”).

caution until clear enrollment trends show sustainable market interest for legal education by highly qualified applicants likely to pass the bar exam.<sup>332</sup>

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332. Kathryn Rubino, *All the Cool (and Smart) Kids Are Staying Away from Law School*, ABOVE THE LAW (Apr. 5, 2018), <https://abovethelaw.com/2018/04/all-the-cool-and-smart-kids-are-staying-away-from-law-school/> [http://perma.unl.edu/85KF-PXNY]; Paul Caron, *Law School Applicants from Top Colleges Decreased 7% in 2018, Down 45% Since 2008*, TAXPROF BLOG (Apr. 2, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/04/law-school-applicants-from-top-colleges-decreased-7-in-2017-down-45-since-2008.html](http://taxprof.typepad.com/taxprof_blog/2018/04/law-school-applicants-from-top-colleges-decreased-7-in-2017-down-45-since-2008.html) [http://perma.unl.edu/PK44-XCKP]; Doug Lederman, *Low Bar for Bar Passage*, INSIDE HIGHER ED (Mar. 23, 2018), <https://www.insidehighered.com/news/2018/03/23/new-data-bar-passage-show-wide-variation-law-schools-rates> [http://perma.unl.edu/2Z5V-ADVS] (“[The] [v]ast majority of law school grads who sit for the bar pass within two years, but at least a quarter fail at more than 10 percent of schools.”); Staci Zaretsky, *Performance on February 2018 Bar Exam Sinks to Record Low*, ABOVE THE LAW (Apr. 19, 2018), <https://abovethelaw.com/2018/04/performance-on-february-2018-bar-exam-sinks-to-record-low/> [http://perma.unl.edu/BXM2-FGK4]; Staci Zaretsky, *Majority of Undergraduate Students Will Never Apply to Law School*, ABOVE THE LAW (July 11, 2018), <https://abovethelaw.com/2018/07/majority-of-undegraduate-students-will-never-apply-to-law-school/> [http://perma.unl.edu/H3SV-W83W]; Paul Caron, *July 2018 Multistate Bar Exam Scores Collapse to a 34-Year Low*, TAXPROF BLOG (Sept. 17, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/09/july-2018-multistate-bar-exam-scores-collapse-to-34-year-low.html](http://taxprof.typepad.com/taxprof_blog/2018/09/july-2018-multistate-bar-exam-scores-collapse-to-34-year-low.html) [http://perma.unl.edu/VUK9-REMD]; Karen Sloan, *Multistate Bar Exam Scores Sink to 34-Year Low, Pass Rates Sag*, LAW.COM (Sept. 17, 2018), <https://www.law.com/2018/09/17/multistate-bar-exam-scores-sink-to-34-year-low-pass-rates-sag/> [http://perma.unl.edu/2FHH-F6QZ]; Cheryl Miller, *Nearly Six in 10 Failed California’s July 2018 Bar Exam*, LAW.COM: THE RECORDER (Nov. 16, 2018), <https://www.law.com/therecorder/2018/11/16/nearly-six-in-10-failed-californias-july-2018-bar-exam/> [https://perma.unl.edu/5V6C-6Z7T]. *But see* Kathryn Rubino, *This Is Really Good News for Law School Fans—More (and Smarter) Applicants Are Here*, ABOVE THE LAW (July 31, 2018), <https://abovethelaw.com/2018/07/this-is-really-good-news-for-law-school-fans-more-and-smarter-applicants-are-here/> [http://perma.unl.edu/TQS8-TBYT] (“Applicants scoring between 175 and 180 on the LSAT increased 60 percent, applicants with LSAT scores in the 170 to 174 range were up 13 percent, and those with test scores between 165 and 169 were up 27 percent.”); Paul Caron, *Testy: The Quantity and Quality of Law School Applicants: 2018 Edition*, TAXPROF BLOG (Sept. 7, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/09/testy-the-quantity-and-quality-of-law-school-applicants-2018-edition.html](http://taxprof.typepad.com/taxprof_blog/2018/09/testy-the-quantity-and-quality-of-law-school-applicants-2018-edition.html) [http://perma.unl.edu/S3YG-SS6C] (concluding that “the overall number of applicants and quality of applicants is improving”); *see generally* Amy N. Farley et al., *Law Student Success and Supports: Examining Bar Passage and Factors that Contribute to Student Performance*, U. CINCINNATI (May 2018), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3237546](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3237546) [http://perma.unl.edu/W5G2-33UX] (“Results suggest that bar passage can be predicted by a wide battery of variables. Despite some literature that suggests otherwise, however, LSAT and undergraduate GPA are weakly predictive, while information from the first year of law school – even the performance in just one first semester course – explains significantly more variation in bar passage.”).

ABA Data Law School 1L Enrollments	
2010	52,488 <sup>333</sup>
2011	48,697 <sup>334</sup>
2012	44,481 <sup>335</sup>
2013	39,675 <sup>336</sup>
2014	37,924 <sup>337</sup>
2015	37,071 <sup>338</sup>
2016	37,105 <sup>339</sup>
2017	37,320 <sup>340</sup>
2018	38,390 <sup>341</sup>

The current rise in law school applications and first-year enrollments—dubbed the “Trump bump”<sup>342</sup> in the media—may be compara-

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333. *ABA Section of Legal Education Reports 2014 Law School Enrollment Data*, A.B.A. (Dec. 16, 2014), [https://www.americanbar.org/news/abanews/aba-news-archives/2014/12/aba\\_section\\_of\\_legal.html](https://www.americanbar.org/news/abanews/aba-news-archives/2014/12/aba_section_of_legal.html) [http://perma.unl.edu/7TM9-9LNH].
334. *ABA Section of Legal Education Reports Preliminary Fall 2012 First-Year Enrollment Data*, A.B.A. (Nov. 28, 2012), [https://www.americanbar.org/news/abanews/aba-news-archives/2013/08/aba\\_section\\_of\\_legal.html](https://www.americanbar.org/news/abanews/aba-news-archives/2013/08/aba_section_of_legal.html) [http://perma.unl.edu/BG29-ULNR] (including 2011 and 2012 enrollments).
335. *Id.*
336. *ABA Section of Legal Education Reports 2013 Law School Enrollment Data*, A.B.A. (Dec. 17, 2013), [https://www.americanbar.org/news/abanews/aba-news-archives/2013/12/aba\\_section\\_of\\_legal.html](https://www.americanbar.org/news/abanews/aba-news-archives/2013/12/aba_section_of_legal.html) [http://perma.unl.edu/P8VM-FN3D].
337. *Id.*
338. *2016 Standard 509 Information Report Data Overview*, A.B.A., [https://www.americanbar.org/content/dam/aba/administrative/legal\\_education\\_and\\_admissions\\_to\\_the\\_bar/statistics/2016\\_standard\\_509\\_data\\_overview.authcheckdam.pdf](https://www.americanbar.org/content/dam/aba/administrative/legal_education_and_admissions_to_the_bar/statistics/2016_standard_509_data_overview.authcheckdam.pdf) [http://perma.unl.edu/7243-CSY7].
339. *Section of Legal Education and Admissions to the Bar: 2017 Standard 509 Information Report Data Overview*, A.B.A. (Apr. 2, 2018), [https://www.americanbar.org/content/dam/aba/administrative/legal\\_education\\_and\\_admissions\\_to\\_the\\_bar/statistics/2017\\_509\\_enrollment\\_summary\\_report.authcheckdam.pdf](https://www.americanbar.org/content/dam/aba/administrative/legal_education_and_admissions_to_the_bar/statistics/2017_509_enrollment_summary_report.authcheckdam.pdf) [http://perma.unl.edu/8W4F-T8SB].
340. *Section of Legal Education and Admission to the Bar: 2018 Standard 509 Information Report Data Overview*, A.B.A. (Dec. 14, 2018), [https://www.americanbar.org/content/dam/aba/administrative/legal\\_education\\_and\\_admissions\\_to\\_the\\_bar/statistics/2018-509-enrollment-summary-report.pdf](https://www.americanbar.org/content/dam/aba/administrative/legal_education_and_admissions_to_the_bar/statistics/2018-509-enrollment-summary-report.pdf) [https://perma.unl.edu/2UGE-RXEJ].
341. *Id.* (reporting a 1.2% increase in J.D. enrollments from 2017).
342. Stephanie Francis Ward, *The ‘Trump Bump’ for Law School Applicants Is Real and Significant, Survey Says*, A.B.A. J. (Feb. 22, 2018), [http://www.abajournal.com/news/article/the\\_trump\\_bump\\_for\\_law\\_school\\_applicants\\_is\\_real\\_and\\_significant\\_survey\\_say](http://www.abajournal.com/news/article/the_trump_bump_for_law_school_applicants_is_real_and_significant_survey_say) [http://perma.unl.edu/2CQX-GVVD]; Kathryn Rubino, *Over 30 Percent of Applicants Want to Go to Law School Because of Trump*, ABOVE THE LAW (Feb. 22, 2018), <https://abovethelaw.com/2018/02/over-30-percent-of-applicants-want-to-go-to-law-school-because-of-trump/> [http://perma.unl.edu/48GB-ZBK6]; see also Paul Caron, *LSAT Test-Takers Surge 29.7% in December; 19.2% Yearly Rise Would be Highest in 16 Years*, TAXPROF BLOG (Feb. 21, 2018), <http://>

ble to a stock market “dead cat bounce.” Investopedia defines a dead cat bounce as “a temporary recovery from a prolonged decline or a bear market that is followed by the continuation of the downtrend.”<sup>343</sup> The jarring name “dead cat bounce” represents the “notion that even a dead cat will bounce if it falls far enough and fast enough.”<sup>344</sup> The Investopedia chart below illustrates a dead cat bounce.<sup>345</sup>

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taxprof.typepad.com/taxprof\_blog/2018/02/lsat-test-takers-surge-297-in-december-192-yearly-rise-would-be-highest-in-16-years.html [http://perma.unl.edu/S6H9-BLYR] (displaying a chart of LSAT test-takers); Paul Caron, *Survey Confirms ‘Trump Bump’ in Law School Applications*, TAXPROF BLOG (Feb. 23, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/02/survey-confirms-trump-bump-in-law-school-applications-.html](http://taxprof.typepad.com/taxprof_blog/2018/02/survey-confirms-trump-bump-in-law-school-applications-.html) [http://perma.unl.edu/PK2J-PSUH] (discussing students’ motives in applying for law school); Paul Caron, *LSAT Test-Takers Surge 18.1%, the Biggest Increase in 16 Years*, TAXPROF BLOG (May 11, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/05/lsat-test-takers-surge-181-the-biggest-increase-in-16-years.html](http://taxprof.typepad.com/taxprof_blog/2018/05/lsat-test-takers-surge-181-the-biggest-increase-in-16-years.html) [http://perma.unl.edu/529P-FH7J] (same); Paul Caron, *Law School Applications are up 8.8%*, TAXPROF BLOG (May 12, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/05/law-school-applicants-are-up-88.html](http://taxprof.typepad.com/taxprof_blog/2018/05/law-school-applicants-are-up-88.html) [http://perma.unl.edu/K7BF-TX3Y] (same); Staci Zaretsky, *First-Year Enrollment Is Way, Way up at Some Law Schools*, ABOVE THE LAW (Aug. 22, 2018), <https://abovethelaw.com/2018/08/first-year-enrollment-is-way-way-up-at-some-law-schools/> [http://perma.unl.edu/Y8TX-BRKC] (noting increased enrollments and questioning whether the future legal job market can accommodate this student surge upon graduation); Karen Sloan, *First-Year Enrollment Soars by Double Digits at Some Law Schools*, LAW.COM (Aug. 21, 2018), <https://www.law.com/2018/08/21/first-year-enrollment-soars-by-double-digits-at-some-law-schools/> [http://perma.unl.edu/8YPL-CZNN] (same); Staci Zaretsky, *Law School Enrollment Is up for the First Time in Nearly a Decade*, ABOVE THE LAW (Dec. 14, 2018), <https://abovethelaw.com/2018/12/law-school-enrollment-is-up-for-the-first-time-in-nearly-a-decade> (noting the 1.2% enrollment increase from 2017 and stating “The Trump bump is real, and young students who want change in America are heading to law school.”). For a thoughtful analysis of the recent applicant spikes, see Jerry Organ, *Update on 2018 Applicant Pool: Growth in Matriculants Likely Will be Unbalanced Across Law Schools*, TAXPROF BLOG (Aug. 8, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/08/update-on-2018-applicant-pool-growth-in-matriculants-likely-will-be-unbalanced-across-law-schools.html](http://taxprof.typepad.com/taxprof_blog/2018/08/update-on-2018-applicant-pool-growth-in-matriculants-likely-will-be-unbalanced-across-law-schools.html) [http://perma.unl.edu/DR5S-WC7H].

343. *Dead Cat Bounce*, INVESTOPEDIA, <https://www.investopedia.com/terms/d/dead-catbounce.asp> [http://perma.unl.edu/C5J7-CB95]; see, e.g., Chiappinelli, *supra* note 288, at 46 (noting that Northwestern closed its dental school even though its admissions had rebounded by 300%).

344. *Id.*

345. *The Dead Cat Bounce: A Bear in Bull’s Clothing?*, INVESTOPEDIA <https://www.investopedia.com/articles/00/101700.asp> [http://perma.unl.edu/AD9W-QZM2].



While the ABA data cited above (if charted) does not depict such a dramatic downward trend, the data clearly shows seven years of declining student enrollments. The fall 2018 first-year law student enrollment spike should, therefore, be viewed cautiously. For example, if three years from now there is mismatch between new graduates entering the profession and market demand for entry-level lawyers, first-year J.D. enrollments may again gravitate downward.<sup>346</sup> Some additional future challenges for law schools seeking new applicants include the Trump administration's unpredictable travel and immigration rules and rhetoric that affect international students<sup>347</sup> and

346. Mike Stetz, *Enrollment up at Some Schools, but Is that Good or Bad?*, NAT'L JURIST (Sept. 4, 2018), <http://www.nationaljurist.com/national-jurist-magazine/enrollment-some-schools-good-or-bad> [<http://perma.unl.edu/8G58-5VX8>] (quoting James Leipold, National Association for Law Placement) ("I am not convinced that the job market will support a larger graduating class, and I am hopeful that law schools will use this jump in the quality and quantity of law school applicants to shore up the credentials of their incoming class, rather than grow their enrollment.").

347. Angela Morris, *Law School Enrollment Edges up, with Surprise Spike in Non-JD Programs*, LAW.COM (Dec. 15, 2017), <https://www.law.com/sites/almstaff/2017/12/15/law-school-enrollment-edges-up-overall-with-surprise-spike-in-non-jd-programs/> [<http://perma.unl.edu/AY6P-WPCE>]; Stephanie Saul, *As Flow of Foreign Students Wanes, U.S. Universities Feel the Sting*, N.Y. TIMES (Jan. 2, 2018), [https://www.nytimes.com/2018/01/02/us/international-enrollment-drop.html?\\_r=0](https://www.nytimes.com/2018/01/02/us/international-enrollment-drop.html?_r=0) [<http://perma.unl.edu/JJA7-WSC4>]; see also THE WORK AHEAD, *supra* note 110, at 18 (noting declines in foreign student enrollment in U.S. universities given comments and changes to immigration policies); Paul Caron, *New International Student Enrollment in American Higher Ed Fell 6.6% In 2017, On Heels of 3.3% Decline in 2016*, TAXPROF BLOG (Nov. 18, 2018), <https://taxprof.typepad>

demographic indicators of softening demand for undergraduate education.<sup>348</sup>

## 2. *SIP Indicator: Funding Changes and Uncertain Economic Outlook*

Economic factors present the strongest market headwinds to legal education. In April 2018, Chris Chapman (President of AccessLex Institute) warned of “a bill wending its way through Congress [that] would cap graduate federal student loans and drive many law students into the private loan market.”<sup>349</sup> If passed, these loan caps could topple financially vulnerable law schools that have for decades relied on steady flows of student loans to keep their lights on, doors open, and faculties paid.<sup>350</sup> Chapman predicted that these changes to the federal loan program could force “between 20 and 30 law schools to close within five years” given that average law school tuition costs far exceed the proposed limits, especially for out-of-state students and

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.com/taxprof\_blog/2018/11/new-international-student-enrollment-in-american-higher-ed-fell-66-in-2017-on-heels-of-33-decline-in.html; Vima Patel, *Is the ‘Trump Effect’ Scaring Away Prospective International Students?*, CHRON. HIGHER EDUC. (Nov. 13, 2018), <https://www.chronicle.com/article/Is-the-Trump-Effect-/245067/> [<https://perma.unl.edu/68AC-SX3C>].

348. Looking ahead, softness in the undergraduate education market presents additional early warning signs for the economic viability of legal education. For example, in February 2018, the *Chronicle of Higher Education* released a survey that found that “52 percent of private colleges and 44 percent of public colleges didn’t meet their enrollment goals this past fall.” Jeffery J. Selingo, *Higher Education Is Headed for a Supply and Demand Crisis*, WASH. POST (Jan. 28, 2018), <https://www.washingtonpost.com/news/grade-point/wp/2018/01/27/higher-education-is-headed-for-a-supply-and-demand-crisis/> [<http://perma.unl.edu/79EE-828B>]; Marek, *supra* note 153 (quoting Sally Blount, outgoing Dean of Northwestern University’s Kellogg School of Management) (“Based on what I know about the economics of what it takes to run colleges and universities, there is no way that (nearly half of four-year institutions) are operating at scale and have sustainable business models . . . . We’re beginning to see closures, mergers, and acquisitions.”); see generally NATHAN D. GRAW, DEMOGRAPHICS AND THE DEMAND FOR HIGHER EDUCATION (2017).
349. Karen Sloan, *Proposed Student Loan Cap Could Devastate Law Schools*, NAT’L L.J. (Apr. 18, 2018), <https://www.law.com/nationallawjournal/2018/04/18/proposed-student-loan-cap-could-devastate-law-schools/> [<http://perma.unl.edu/KD8V-UUWC>].
350. *Id.*; see also Daniels, *supra* note 135, at 15–16 (discussing former Tulane Law School Dean John Kramer’s assertion that federal student loans “had become the key source of funding for a highly problematic business model”).



those who attend private institutions.<sup>351</sup> The proposed House Bill, titled the “Prosper Act,” caps annual federal loans at \$28,500.<sup>352</sup>

For students drawn to public interest work, potential changes to the Public Service Loan Forgiveness (PSLF) program<sup>353</sup> and the in-

351. Sloan, *supra* note 349; *see also* Ilana Kowarski, *See the Price, Payoff of Law School Before Enrolling*, U.S. NEWS (Mar. 21, 2018), <https://www.usnews.com/education/best-graduate-schools/top-law-schools/articles/2018-03-21/understand-the-cost-payoff-of-law-school-before-getting-a-jd> (reporting the following full-time average tuition and fees for 2017–2018 for law schools: private \$47,112; public out-of-state \$40,308, and public in-state \$28,864). Additional examples of wide price range: University of North Dakota \$12,232 (public in-state tuition); Columbia University \$67,564 (private tuition). *Id.*

352. For the text of the House Bill, see H.R. 4508, 115th Cong. (2017). *See* Paul Caron, *A Looming Asteroid for Law Schools: Proposed \$28,500 Annual Federal Loan Cap*, TAXPROF BLOG (Dec. 14, 2017), <http://taxprof.typepad.com/taxprof/blog/2017/12/a-looming-asteroid-for-law-schools-proposed-28500-annual-loan-cap.html> [<http://perma.unl.edu/D59S-4ZWH>]; Joe Patrice, *Congress Plans to Take Away Your Student Loan Money—What Happens to Legal Education Then?*, ABOVE THE LAW (Apr. 19, 2018), <https://abovethelaw.com/2018/04/congress-plans-to-take-away-your-student-loan-money-what-happens-to-legal-education-then/> [<http://perma.unl.edu/NHW9-DLY2>]; Karen Sloan, *Proposed Changes to Student Loans Worry Law School Association’s New President*, LAW.COM (Jan. 4, 2018), <https://www.law.com/sites/almstaff/2018/01/04/proposed-changes-to-student-loans-worry-law-school-associations-new-president/> [<http://perma.unl.edu/6T79-M89L>]; *see also* Sloan, *Legal Education in ‘Perilous Moment,’ supra* note 323 (quoting Chris Chapman, President of nonprofit AccesLex Institute) (“Law schools must plan for a future in which lawmakers rein in federal student loans, tamping down the spigot of loan funds into the academy.”); Lee Rawles, *Would an Overhaul of Federal Student-Loan Programs Help Bring Down Law School Tuition?*, A.B.A. J. (Feb. 4, 2018), [http://www.abajournal.com/news/article/would\\_an\\_overhaul\\_of\\_federal\\_student\\_loan\\_programs\\_help\\_bring\\_down\\_law\\_scho](http://www.abajournal.com/news/article/would_an_overhaul_of_federal_student_loan_programs_help_bring_down_law_scho) [<http://perma.unl.edu/H555-YZMX>] (quoting Barry Currier, ABA’s managing director of accreditation and legal education). According to Currier:

And I venture to say that if a cap of \$28,500 per year were put on law school borrowing through the federal student-loan programs, one of two things would happen: A lot of students would then not go to law school because they couldn’t afford it. Or the interest rate they would have to borrow on the private loan that they would have to take out to supplement that would be at a rate of interest that would make it really difficult to justify the decision to go to law school.

*Id.*

353. Farran Powell, *The Fate of Public Service Loan Forgiveness*, U.S. NEWS (Oct. 3, 2017), <https://www.usnews.com/education/best-colleges/paying-for-college/articles/2017-10-03/the-fate-of-public-service-loan-forgiveness> (suggesting that new borrowers be cautious about incurring student debt and assume that PSLF will not be an option in the future). Stacy Cowley, *28,000 Public Servants Sought Student Loan Forgiveness. 96 Got It*, N.Y. TIMES (Sept. 27, 2018), <https://www.nytimes.com/2018/09/27/business/student-loan-forgiveness.html>; *see also* Staci Zaretsky, *Law School Grads to Pay ‘Significantly More’ on Their Loans Under Trump’s Budget Proposal: Many Law Students Will be Screwed by Trump’s Budget Plan*, ABOVE THE LAW (Feb. 13, 2018), <https://abovethelaw.com/2018/02/law-school-grads-to-pay-significantly-more-on-their-loans-under-trumps-budget-proposal/> [<http://perma.unl.edu/WCJ5-QB3Y>] (explaining how Trump’s budget plan will hurt law students); Patrice, *supra* note 352 (explaining that PSLF

come phase-out and tax filing status provisions of Internal Revenue Code § 221 (governing the deductibility of interest paid on education loans) may enter into their individual cost-benefit analysis when deciding whether or not to pursue legal education.<sup>354</sup> Changes to the PSLF may further exacerbate the “justice gap” for clients unable to afford representation, particularly in rural and urban areas.<sup>355</sup>

For students, the decision to enroll and pay tuition for a juris doctor (J.D.) or master of laws degree (LL.M.)<sup>356</sup> is often motivated by the belief that the academic credential will translate into career opportunities.<sup>357</sup> When students no longer see or believe in the fruitfulness of a law degree, they almost certainly will choose a more viable career path. In J.D. programs especially, student disinterest indicates disconnect between market demand (i.e., consumer wants and needs) and the actual form of education available. Seven years of lackluster law student applications further suggest that students recognize the “market weakness” and uncertain economic value of a J.D. degree and

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changes may dampen interest and financial ability to serve as government lawyers).

354. See generally *Topic Number 456 - Student Loan Interest Deduction*, IRS.GOV, <https://www.irs.gov/taxtopics/tc456> [http://perma.unl.edu/7N3M-5ZNV].
355. Sloan, *supra* note 349. But see Kathryn Rubino, *Elite Law School Announces Expansion of Support for Public Interest Work*, ABOVE THE LAW (Nov. 15, 2018), <https://abovethelaw.com/2018/11/elite-law-school-announces-exciting-expansion-of-support-for-public-interest-work/?rf=1> [https://perma.unl.edu/S5FK-9XP7] (“Today Columbia Law School announced that they are investing an additional \$4.5 million over the next three years to better enable students to embark on a career in public interest after graduation.”).
356. The 2017 tax reform bill has been dubbed “manna from heaven” for tax lawyers, so a wait-and-see approach on making a firm conclusion about the health of tax programs in particular seems prudent. Paul Caron, *The New Tax Law Is ‘Manna from Heaven’ for Tax Lawyers, Especially Young Tax Lawyers*, TAXPROF BLOG (Dec. 23, 2017), [http://taxprof.typepad.com/taxprof\\_blog/2017/12/the-new-tax-law-is-manna-from-heaven-for-tax-lawyers-especially-young-tax-lawyers-.html](http://taxprof.typepad.com/taxprof_blog/2017/12/the-new-tax-law-is-manna-from-heaven-for-tax-lawyers-especially-young-tax-lawyers-.html) [http://perma.unl.edu/C5DV-Q282].
357. Simkovic & McIntyre, *supra* note 324 (“[A]ttending law school is generally a better financial decision than terminating education with a bachelor’s degree.”); see generally TOUTKOUSHIAN & PAULSEN, *supra* note 147, at ch. 4 (“Private and Social Returns to Higher Education”). But cf. Harper, *supra* note 323, at 347 (opening his article with the following searing sentence: “Law schools have become poster children for market dysfunction.”); see also Phillips et al., *supra* note 310, at 17 (questioning whether “an expensive MBA [is] a fool’s gamble”); ANAND, *supra* note 17, at 306–07 (describing a decade of declining MBA enrollments). Kelsey Gee, *M.B.A. Applications Decline at Harvard, Wharton, Other Elite Schools as Degree Loses Luster*, WALL ST. J. (Oct. 1, 2018), <https://www.wsj.com/articles/m-b-a-applications-keep-falling-in-u-s-this-year-hitting-even-elite-schools-1538366461> [https://perma.unl.edu/B82L-CWGJ] (noting that the fourth year of declining applications to elite MBA programs is attributable to prospective student concerns about accumulating more loan debt for an expensive degree in a vibrant job market). Gee’s article also notes that international students submitted 11% fewer applications to U.S. schools because international students face “steeper hurdles to getting work visas after graduation.” *Id.*

therefore question whether the time, tuition costs, and high student debt incurred justify the education investment.<sup>358</sup> A damning Gallup-Purdue study published in February 2018 validates these student concerns about the economic wisdom of pursuing a J.D. degree.<sup>359</sup> The Gallup study revealed that, overall, law graduates between 2000 and 2015 “rate the value of their degree poorly.”<sup>360</sup> The survey found that only 23% of law school graduates felt that their education was a worthwhile investment and a mere 20% believed that their law degree prepared them for “life outside of graduate school.”<sup>361</sup> The study also reported that graduates viewed J.D. degree costs (and debt incurred) as an unsound financial investment given the anemic job market.<sup>362</sup>

Increases in non-J.D. enrollments (LL.M. and certificate-seeking candidates) represent a potential bright—but fragile—spot for legal education programs.<sup>363</sup> As non-J.D. programs continue to proliferate, high-quality, pedagogically sound, data-validated, competency-fo-

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358. TAMANAHA, *supra* note 318, at 154 (examining the “market weakness” of the J.D. degree based on poor entry-level job prospects, low salaries, and high debt incurred for the degree); see Nicole Black & Heather Morse, *An Open Letter to Potential Law Students: Know the Truth*, A.B.A. J. (Aug. 13, 2018), [http://www.abajournal.com/voice/article/an\\_open\\_letter\\_to\\_potential\\_law\\_students\\_know\\_the\\_truth](http://www.abajournal.com/voice/article/an_open_letter_to_potential_law_students_know_the_truth) [<http://perma.unl.edu/VJ9C-WQHY>] (encouraging prospective law students to do their due diligence before entering law school and incurring substantial debt for a legal career experiencing profound business model, globalization pressures, and technological disruptions). *But see* Li, *supra* note 138 (finding “a lack of price sensitivity in legal education”).

359. Zac Auter, *Few MBA, Law Grads Say Their Degree Prepared Them Well*, GALLUP (Feb. 16, 2018), <http://news.gallup.com/poll/227039/few-mba-law-grads-say-degree-prepared.aspx> [<http://perma.unl.edu/XAR2-66SW>].

360. *Id.*

361. *Id.*

362. *Id.*

363. Morris, *supra* note 347 (“While J.D. enrollment fell by 0.7 percent compared with last year, the numbers of non-J.D. students—studying for LL.M., masters or certificate degrees—grew by a whopping 20.5 percent, compared with last year.”); Paul Caron, *The Growth of Law School Online Master’s Programs*, TAXPROF BLOG (Jan. 4, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/01/the-growth-of-law-school-online-masters-programs.html](http://taxprof.typepad.com/taxprof_blog/2018/01/the-growth-of-law-school-online-masters-programs.html) [<http://perma.unl.edu/4E6E-4ASV>]; Sloan, *supra* note 138 (noting how Northwestern is “increasing the size of its LL.M. class to increase revenue” to address “a financial shortfall”); *Section of Legal Education and Admission to the Bar: 2018 Standard 509 Information Report Data Overview*, *supra* note 340 (reporting 8.2% increase in LL.M., masters, and certificate programs in 2018); Sara Randazzo, *Law Schools Find a Way To Fill Seats (No Lawyers Required)*, WALL ST. J. (Dec. 20, 2018), <https://www.wsj.com/articles/law-schools-find-a-way-to-fill-seats-no-lawyers-required-11545301800> [<https://perma.unl.edu/K8BR-FY4J>] (describing increase of non-J.D. programs at law schools); see also AOUN, *supra* note 19, at 129 (“As the population of lifelong learners grows and colleges and universities focus more intently on the needs of these learners, we will need additional ways to organize and segment knowledge.”). Aoun suggests that programs consider offering certificates, boot camps, modular blocks, and subscriptions to meet the needs of lifelong learners. *Id.* at 128–29, 134. *Legal Education: A New Growth Vision Part III*, section III.C of this

cused, innovative format (e.g., hybrid, HyFlex, “digital-first” and “digital-live”<sup>364</sup>) online programs will likely capture market share compared to those that place a camera in the back of the classroom and charge distance-learners full tuition.

### 3. *SIP Indicator: Law Schools Accepting GRE in Lieu of LSAT*

The end of the Law School Admission Test (LSAT)’s monopoly as the test required for most law school admissions further indicates that legal education faces an SIP. The status of the LSAT has long generated considerable discussions amongst law and tax faculty.<sup>365</sup> Now, in a tactical move to broaden the law student applicant pool and respond to plummeting enrollments, Harvard, Northwestern, Georgetown, Columbia, University of Southern California-Gould, New York University, Washington University, and an expanding list of other law schools will accept the Graduate Record Examination (GRE) test in

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Article series considers unbundling, cannibalization, and price innovations as potentially smart business moves that differentiate program services.

364. A hybrid (or blended) course involves moving “a significant percentage—often more than 20% but less than 100%—of traditional classroom meetings” to online activities. ROBERT TALBERT, *FLIPPED LEARNING: A GUIDE FOR HIGHER EDUCATION FACULTY* 153 (2017). For a description of the HyFlex instruction model, see Jackie B. Miller et al., *Student Choice, Instructor Flexibility: Moving Beyond the Blended Instructional Model*, *ISSUES & TRENDS IN EDUC. TECH.* (2013), <https://journals.uair.arizona.edu/index.php/itet/article/view/16464/16485> [<http://perma.unl.edu/989S-6EUT>]. In 2010, Dr. Brian Beatty defined HyFlex courses as those that “enable a flexible participation policy for students whereby students may choose to attend face-to-face synchronous class sessions or complete course learning activities online without physically attending class.” *Id.* Harvard Business School’s (HBS) HBX program currently pioneers some “digital-first” teaching approaches that involve “intentionally distancing from or even discarding analog habits.” ANAND, *supra* note 17, at 191. For example, when designing its 2014 pilot launch of student fundamental coursework in business, accounting, and economics (later called HBX CORE), the leaders first decided against offering any educational services that could cannibalize HBS’s flagship MBA program. *Id.* at 314–17. HBX leaders then made several contrarian and counterintuitive decisions in the design of its online programs. *Id.* Specifically, the HBX team rejected camera in back of the room, focused on small learning groups, and eliminated live faculty interactions with students (sometimes referred to as “value-added services”). *Id.* at 307. In 2015, HBX then launched HBX Live, a “virtual classroom” “where, in effect, sixty physical seats were replaced by sixty TV screens, so that learners could participate in live class discussion from anywhere in the world.” *Id.* at 339; see also Bharat Anand et al., *What Harvard Business School Has Learned About Online Collaboration from HBX*, *HARV. BUS. REV.* (Apr. 14, 2015), <https://hbr.org/2015/04/what-harvard-business-school-has-learned-about-online-collaboration-from-hbx> [<http://perma.unl.edu/BG6D-Q5F7>] (discussing Harvard Business School’s new collaborative and individualized learning experience).
365. See Paul Caron, *Kent Syverud and Dan Rodriguez on the GRE/LSAT Debate*, *TAXPROF BLOG* (Dec. 13, 2017), [http://taxprof.typepad.com/taxprof\\_blog/2017/12/kent-syverud-and-dan-rodriguez-on-the-grelsat-debate-.html](http://taxprof.typepad.com/taxprof_blog/2017/12/kent-syverud-and-dan-rodriguez-on-the-grelsat-debate-.html) [<http://perma.unl.edu/Y7UZ-UHDA>].

lieu of the LSAT for admission.<sup>366</sup> Washington University Law Dean, Nancy Staudt, explained that the decision to accept the GRE makes “the admissions process even more accessible to highly qualified and motivated students of all backgrounds interested in pursuing a legal education.”<sup>367</sup> In summer 2018, the University of Pennsylvania and Cornell Law schools further bulldozed the admissions landscape by

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366. Elizabeth Olson, *Law Schools Debate a Contentious Testing Alternative*, N.Y. TIMES (Apr. 5, 2018), <https://www.nytimes.com/2018/04/05/education/learning/lsat-law-school-testing-alternative.html> [http://perma.unl.edu/TEA7-2WWW]; Kathryn Rubino, *Another Law School Bows to the Inevitable and Accepts the GRE*, ABOVE THE LAW (Sept. 21, 2017), <http://abovethelaw.com/2017/09/another-law-school-bows-to-the-inevitable-and-accepts-the-gre/> [http://perma.unl.edu/5ZL9-XAPX]; see also Angela Norris, *Tougher Bar Pass Standard for Law Schools on Agenda at ABA Meeting*, LAW.COM (Nov. 1, 2017), <https://www.law.com/sites/almstaff/2017/11/01/tougher-bar-pass-standard-for-law-schools-on-agenda-at-aba-meeting/> [http://perma.unl.edu/YGS7-F68D] (discussing the controversy between ABA members to make bar passage more difficult); *Why Are Law Schools Accepting the GRE?*, ECONOMIST (Apr. 2018), <https://gre.economist.com/news-announcements/why-are-law-schools-accepting-gre> [http://perma.unl.edu/2DJV-VAB3] (describing the benefits of accepting GRE scores in law school); Staci Zaretsky, *Top 20 Law School Is the Latest to Accept GRE Scores*, ABOVE THE LAW (June 14, 2018), <https://abovethelaw.com/2018/06/top-20-law-school-is-the-latest-to-accept-gre-scores> [http://perma.unl.edu/W2F8-VLMU] (explaining that the University of Southern California-Gould now accepts the GRE); Kathryn Rubino, *Another T14 Law School Decides the GRE Is Good Enough for Them*, ABOVE THE LAW (July 19, 2018), <https://abovethelaw.com/2018/07/another-t14-law-school-decides-the-gre-is-good-enough-for-them/> [http://perma.unl.edu/45C2-B46G] (noting that twenty-two law schools now accept the GRE for admissions); Paul Caron, *BU, George Mason, Massachusetts, and Virginia Are Latest Law Schools to Accept GRE for Admissions*, TAXPROF BLOG (Oct. 2, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/10/bu-george-mason-massachusetts-and-virginia-accept-gre-for-law-school-admissions.html](http://taxprof.typepad.com/taxprof_blog/2018/10/bu-george-mason-massachusetts-and-virginia-accept-gre-for-law-school-admissions.html); Paul Caron, *Chicago, Notre Dame, Pepperdine, Texas, and Suffolk Are Latest Law Schools to Accept GRE*, TAXPROF BLOG (Nov. 2, 2018), [https://taxprof.typepad.com/taxprof\\_blog/2018/11/chicago-notre-dame-pepperdine-texas-and-suffolk-are-latest-law-schools-to-accept-gre-for-admissions.html](https://taxprof.typepad.com/taxprof_blog/2018/11/chicago-notre-dame-pepperdine-texas-and-suffolk-are-latest-law-schools-to-accept-gre-for-admissions.html); Paul Caron, *34 Law Schools Now Accept the GRE for Admissions (the Latest Are Buffalo, UC-Davis)*, TAXPROF BLOG (Dec. 20, 2018), [https://taxprof.typepad.com/taxprof\\_blog/2018/12/34-law-schools-now-accept-the-gre-for-admissions-latest-are-buffalo-uc-davis.html](https://taxprof.typepad.com/taxprof_blog/2018/12/34-law-schools-now-accept-the-gre-for-admissions-latest-are-buffalo-uc-davis.html); see generally Stephanie Francis Ward, *LSAT to Start Transitioning to Digital Format in 2019*, A.B.A. J. (Oct. 3, 2018), [http://www.abajournal.com/news/article/lsat\\_to\\_start\\_transitioning\\_to\\_digital\\_format\\_in\\_2019](http://www.abajournal.com/news/article/lsat_to_start_transitioning_to_digital_format_in_2019) [https://perma.unl.edu/V4Z4-CNPL].
367. Neil Schoenherr, *School of Law to Accept GRE*, WASH. U. IN ST. LOUIS: THE SOURCE (Oct. 3, 2017), <https://source.wustl.edu/2017/10/school-law-accept-gre/> [http://perma.unl.edu/6E4Y-GPXR]. Similarly, business schools that have also experienced steady declines in new student applications currently experiment with broadening their applicant pool with new initiatives. See Janaki Chadha, *M.B.A. Programs Try Catering to Liberal-Arts Types—with Math Camp*, WALL ST. J. (July 4, 2018), <https://www.wsj.com/articles/m-b-a-programs-try-catering-to-liberal-arts-types-with-math-camp-1530712800> [http://perma.unl.edu/X2ZZ-SV82]; Kelsey Gee, *M.B.A. Applications Decline for Third Year in a Row*, WALL ST. J. (Sept. 18, 2018), <https://www.wsj.com/articles/m-b-a-applications-decline-for-third-year-in-a-row-1505727000> [http://perma.unl.edu/R95X-X7NP].

announcing that they will accept the LSAT, GRE, as well as the Graduate Management Admission Test (GMAT) for new J.D. applicants.<sup>368</sup> The decision by leaders at Harvard and elsewhere to abandon the LSAT “rite of passage”<sup>369</sup> suggests structural damage to the tree roots of traditional legal educational programs. If the market viewed a law degree as a clearly valuable and sound career decision—such as a degree in computer or data science—numerous high-qualified, motivated students would still be willing to sit for the LSAT.<sup>370</sup> After some debate by the House of Delegates in August 2018, the ABA decided to continue its study and evaluation of potential changes to its admissions testing rules and standards.<sup>371</sup> The recent shifts in law school

368. Kathryn Rubino, *Elite Law School Enters the Post-LSAT World*, ABOVE THE LAW (June 4, 2018), <https://abovethelaw.com/2018/06/elite-law-school-enters-the-post-lsat-world/> [http://perma.unl.edu/539C-YMBG]. According to Dean Ted Ruger:

This new initiative allows applicants who plan to take the GMAT or GRE, particularly those interested in our joint degree programs such as our many partnerships with Wharton, including the Francis J. and Wm. Polk Carey JD/MBA program, or our Law and Technology joint degrees with Penn Engineering, to support their application to Penn Law with a single test.

*Id.*; see also Cornell Law School to Accept GRE and GMAT Under Pilot Program, CORNELL L. SCH. (July 17, 2018), <http://www.lawschool.cornell.edu/spotlights/Cornell-Law-School-to-Accept-GRE-and-GMAT-Under-Pilot-Program.cfm> [http://perma.unl.edu/2LBF-ZQ2S] (discussing Cornell Law School’s pilot program).

369. Rubino, *supra* note 366.

370. Some potential new growth appears with recent increases in LSAT test-takers. See Paul Caron, *LSAT Test-Takers Continue to Surge, with 10.7% Increase in Sept/October Following June’s 19.8% [2017–2018 Admissions Cycle]*, TAXPROF BLOG (Nov. 6, 2017), [http://taxprof.typepad.com/taxprof\\_blog/2017/11/lSAT-test-takers-continue-to-surge-with-107-increase-in-septoct-following-junes-198.html](http://taxprof.typepad.com/taxprof_blog/2017/11/lSAT-test-takers-continue-to-surge-with-107-increase-in-septoct-following-junes-198.html) [http://perma.unl.edu/QJ4K-3KYD]; see also Corilyn Shropshire, *After Trump’s Election, More Students Consider Law School, Hoping to Make a Difference*, CHI. TRIB. (Nov. 17, 2017), <http://www.chicagotribune.com/business/ct-biz-lsat-registration-up-trump-bump-20171116-story.html> [http://perma.unl.edu/E67X-HAPZ] (discussing causes of increases in people taking the LSAT).

371. Stephanie Francis Ward, *ABA Legal Ed Committee Suggests Changes to Rule on Law School Admissions Tests*, A.B.A. J. (Oct. 11, 2017), [http://www.abajournal.com/news/article/legal\\_ed\\_committee\\_suggests\\_changes\\_to\\_rule\\_on\\_law\\_school\\_admissions\\_tests](http://www.abajournal.com/news/article/legal_ed_committee_suggests_changes_to_rule_on_law_school_admissions_tests) [http://perma.unl.edu/Y6PJ-PLDJ]. The ABA requested comments on proposed changes to the accreditation rules regarding distance learning. *Id.* In late 2017, the ABA changed Rules 501 and 503 to allow for the GRE as an acceptable admission test. See AM. BAR ASS’N, ABA STANDARDS AND RULES OF PROCEDURE FOR APPROVAL OF LAW SCHOOLS 2017–2018, 32–33 (2017); Kathryn Rubino, *ABA Looks to Roll out the Red Carpet for the GRE*, ABOVE THE LAW (Apr. 17, 2018), <https://abovethelaw.com/2018/04/aba-looks-to-roll-out-the-red-carpet-for-the-gre/> [http://perma.unl.edu/EFH2-RZH9]; Stephanie Francis Ward, *ABA Legal Ed Council Approves Proposed Rule Change to End Admission Test Requirement*, A.B.A. J. (May 11, 2018), [http://www.abajournal.com/news/article/ABA\\_legal\\_education\\_council\\_rule\\_change\\_end\\_admission\\_test\\_requirement](http://www.abajournal.com/news/article/ABA_legal_education_council_rule_change_end_admission_test_requirement) [http://perma.unl.edu/E6MH-UA5J]; Stephanie Francis Ward, *Plan to Drop Law School Entry Exam Requirement Withdrawn Before ABA House Vote*, A.B.A. J. (Aug. 6, 2018), [http://www.abajournal.com/news/article/plan\\_to\\_drop\\_law\\_](http://www.abajournal.com/news/article/plan_to_drop_law_)

admissions requirements indicates another stress fracture in legal education.

#### 4. *SIP Indicator: Personal, Professional, and Financial Well-Being*

According to a January 2018 report by the AccessLex Institute, a law degree is viewed by law school graduates and graduates in other disciplines as a riskier investment than it has been perceived in the

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school\_entry\_exam\_requirement\_withdrawn\_before\_house\_vote [http://perma.unl.edu/6XRB-UE6B]; Stephanie Francis Ward, *After Withdrawal of Law School Admissions Test Rule Revision, Will Fewer Schools Accept the GRE?*, A.B.A. J. (Aug. 9, 2018), [http://www.abajournal.com/news/article/following\\_withdrawl\\_of\\_admissions\\_test\\_rule\\_revision\\_will\\_fewer\\_schools\\_acc](http://www.abajournal.com/news/article/following_withdrawl_of_admissions_test_rule_revision_will_fewer_schools_acc) [http://perma.unl.edu/G6KV-X3RT] (quoting Barry Currier, ABA's managing director of accreditation and legal education) ("If a law school permits an applicant to submit a test score other than the LSAT, then, under Interpretation 503-1, the school has the burden, if and when asked, to demonstrate that the score is on a test that is a 'valid and reliable' and that will assist the school in assessing whether an applicant appears capable of satisfactorily completing its program of legal education and being admitted to the bar."). Currier also explained that the House of Delegates can propose rule changes that will be ultimately decided by the council of the Section of Legal Education and Admissions to the Bar. *Id.*; see also Brian Leiter, *ABA Lives up to Its Reputation for Being Captured by Special Interests (in This Case Related to LSAC) and Withdraws Proposal to Authorize Tests Other than LSAT for Admission*, BRIAN LEITER'S L. SCH. REP. (Aug. 7, 2018), <http://leiterlaw-school.typepad.com/leiter/2018/08/aba-lives-up-to-its-reputation-for-being-captured-by-special-interests-in-this-case-related-to-lsac.html> [http://perma.unl.edu/7BDB-CEEX] ("Pathetic. Law schools should continue offering the GRE option regardless, sooner or later, the ABA will have to catch up with reality."); Paul Caron, *ABA's Decision Continues LSAT's Dominance, Only 20 Additional Law Schools Are Likely to Accept GRE in Fall 2019 Admissions Season*, TAXPROF BLOG (Aug. 12, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/08/abas-decision-continues-lsats-dominance-only-20-additional-law-schools-are-likely-to-accept-gre-in-f.html](http://taxprof.typepad.com/taxprof_blog/2018/08/abas-decision-continues-lsats-dominance-only-20-additional-law-schools-are-likely-to-accept-gre-in-f.html) [http://perma.unl.edu/AL5U-2F8G] ("The American Bar Association's decision Monday to table the elimination of its LSAT requirement might slow the tide of law schools using the GRE and other alternative tests in admissions, but it won't stop it."); Staci Zaretsky, *LSAT Will Still be Required for Law School Admissions – for Now*, ABOVE THE LAW (Aug. 7, 2018), <https://abovethelaw.com/2018/08/lSAT-will-still-be-required-for-law-school-admissions-for-now> [http://perma.unl.edu/8XWA-YQX8] ("After duking it out with the GRE for months on end and facing an ABA committee's recommendation that the standardized testing requirement be axed from accreditation standards, it appears that the LSAT has emerged victorious."). For schools experimenting with alternative applicant test scores, the ABA requires that these schools demonstrate that these "tests are valid and reliable." Paul Caron, *After ABA Decision, Law Schools Deciding Whether to Accept GRE for Fall 2019 Admissions Season Are in a Quandary: Is a School-Specific Validation Study Required?*, TAXPROF BLOG (Aug. 20, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/08/after-aba-decision-law-schools-deciding-whether-to-accept-the-gre-for-the-fall-2019-admissions-seaso.html](http://taxprof.typepad.com/taxprof_blog/2018/08/after-aba-decision-law-schools-deciding-whether-to-accept-the-gre-for-the-fall-2019-admissions-seaso.html) [http://perma.unl.edu/U9KW-D2XB].

past.<sup>372</sup> The report noted that sixty percent (60%) of those students who completed their J.D. after 2010 borrowed more than \$100,000 to obtain their degree.<sup>373</sup> While data released by the U.S. Bureau of Labor Statistics (BLS) on March 30, 2018 concluded that lawyer incomes increased by about 1.4% from 2016, for a 2017 mean wage of \$141,890 and a median wage of \$119,250,<sup>374</sup> consider whether that rate of growth keeps pace with rising costs of living and tuition throughout the country.

The AccessLex Institute report also found that only 53% of J.D. holders who graduated between 2009 and 2017 would recommend getting a law degree to prospective applicants, with concerns about the job market, high tuition costs, and work-life balance shaping their opinions.<sup>375</sup> It also examined how J.D. holders consider their well-being in terms of purpose, community, social, financial, and physical well-being.<sup>376</sup> The report concluded that post-2010 graduates exhibited notable struggles with well-being that may be attributable to weak professional prospects, student debt burdens, and loneliness.<sup>377</sup>

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372. AccessLex Inst., *Foreword to Examining Value, Measuring Engagement: A National Study of the Long-Term Outcomes of a Law Degree*, GALLUP (Jan. 2018), [http://www.abajournal.com/files/AccessLex\\_report\\_1.17-2018.pdf](http://www.abajournal.com/files/AccessLex_report_1.17-2018.pdf) [<http://perma.unl.edu/6BFZ-G3Y8>].

373. *Id.* at 3.

374. Paul Caron, *Diamond: BLS Data Show Lawyer Employment, Incomes Continue to Rise*, TAXPROF BLOG (Apr. 18, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/04/diamond-bls-data-show-lawyer-employment-incomes-continue-to-rise.html](http://taxprof.typepad.com/taxprof_blog/2018/04/diamond-bls-data-show-lawyer-employment-incomes-continue-to-rise.html) [<http://perma.unl.edu/Q525-R56M>].

375. See Stephanie Francis Ward, *Less Than Half of Recent Grads Had Good Jobs for Them After Graduation, Report Says*, A.B.A. J. (Jan. 16, 2018), [http://www.abajournal.com/news/article/less\\_than\\_half\\_of\\_recent\\_grads\\_had\\_good\\_jobs\\_waiting\\_for\\_them](http://www.abajournal.com/news/article/less_than_half_of_recent_grads_had_good_jobs_waiting_for_them) [<http://perma.unl.edu/X9QB-FK99>] (“For respondents who graduated from law school during and after the Great Recession—the time period between 2009 and 2017—only 44 percent indicated that they had a ‘good job’ waiting for them when they graduated.”); see also *ABA Legal Education Section Releases Employment Data for Graduating Law Class of 2017*, A.B.A. (Apr. 20, 2018), [https://www.americanbar.org/news/abanews/aba-news-archives/2018/04/aba\\_legal\\_education.html](https://www.americanbar.org/news/abanews/aba-news-archives/2018/04/aba_legal_education.html) [<http://perma.unl.edu/BGF7-F2UE>] (“The higher percentage of students so employed, however, results from an approximately 6 percent decrease in the size of the graduating class.”).

376. *Examining Value, Measuring Engagement*, *supra* note 372, at 16–17.

377. *Id.*; see also Shawn Anchor et al., *America’s Loneliest Workers, According to Research*, HARV. BUS. REV. (Mar. 19, 2018), <https://hbr.org/2018/03/americas-loneliest-workers-according-to-research> [<http://perma.unl.edu/C3XX-L4HZ>] (“In a breakdown of loneliness and social support rates by profession, legal practice was the loneliest kind of work, followed by engineering and science.”). To support young lawyers with achieving well-being and work-life balance, Penn Law will launch in 2019 a pilot program that integrates mental health awareness, stress and anxiety management, and resilience and mindfulness into its mandatory “Professional Responsibility” course. Ashley Ahn, *Penn Will Be the First Top Law School to Require Attorney Mental Health Training for Students*, THE DAILY PENNSYLVANIAN (Dec. 10, 2018), <https://www.thedp.com/article/2018/12/penn>



To this point, it found that “[l]aw graduates significantly trail other advanced degree holders [M.D., MBA, Ph.D.] in liking what they do every day.”<sup>378</sup> In comparison, non-practicing J.D. holders “have thriving purpose well-being” as compared to their colleagues who practice law.<sup>379</sup>

In a slim ray of sunshine, the Association of American Law Schools released a report in September 2018 titled *Before the J.D.* which reported Gallup survey findings of 22,189 undergraduate students and 2,727 first-year law students.<sup>380</sup> The survey results showed that “undergraduates considering law school report that their top reason is to pursue a career in politics, government, or public service.”<sup>381</sup> Of the fifteen factors considered, other “top factors include being passionate about the work, an opportunity to give back to society, and to advocate for social change.”<sup>382</sup> High pay and social prestige ranked as lower determining factors.<sup>383</sup> However, survey participants noted degree cost, three-year time commitment, and poor work-life balance as deterrents for pursuing a law degree.<sup>384</sup>

Because the issue of work-life balance poses gnawing concerns for prospective J.D. students and nettlesome problems for practitioners,

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law-first-mental-health-well-being-attorney-upenn [https://perma.unl.edu/9FS7-JNRH].

378. *Examining Value, Measuring Engagement*, *supra* note 372, at 19. Interestingly, some medical schools are taking steps to eliminate tuition. *See, e.g.*, Karen Sloan, *NYU Drops Med School Tuition. Will Law Schools Follow Suit?*, LAW.COM (Aug. 20, 2018), <https://www.law.com/2018/08/20/nyu-drops-med-school-tuition-will-law-schools-follow-suit/> [http://perma.unl.edu/D3TJ-FX3Y].
379. Ward, *supra* note 375. *But see generally* John Monahan & Jeffrey Swanson, *Lawyers at the Peak of Their Careers: A 30 Year Longitudinal Study of Job and Life Satisfaction*, J. EMPIRICAL STUD., [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3258632](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3258632) (finding that graduates of the University of Virginia School of Law had high career and life satisfaction).
380. Press Release, Ass’n of Am. L. Schs., AALS/Gallup Report: College Students’ Reasons for Attending Law School Focus on Public Service and Opportunity to Make a Difference (Sept. 20, 2018), <https://www.aals.org/aals-newsroom/aals-gallup-before-the-jd/> [http://perma.unl.edu/U7W2-V593]; *Highlights from Before the JD: Undergraduate Views on Law School*, ASS’N AM. L. SCHS., <https://www.aals.org/wp-content/uploads/2018/09/BJDReportsHighlights.pdf> [http://perma.unl.edu/3HWP-5UF4].
381. Press Release, *supra* note 380.
382. *Id.*
383. *Id.*
384. Karen Sloan, *What Pushes Undergrads to Law School? It Ain’t the Money*, LAW.COM (Sept. 19, 2018), <https://www.law.com/2018/09/19/what-pushes-undergrads-to-law-school-it-aint-the-money/> [http://perma.unl.edu/45NB-WMMG]; Cecelia Vieira, *New Study Shows Students Consider High Costs and Work-Life Balance of Law School*, DAILY PENNSYLVANIAN (Sept. 21, 2018), <https://www.thedp.com/article/2018/09/penn-law-admissions-tuition-mental-health-upenn-philadelphia> [http://perma.unl.edu/B5GA-SAXC].

some bar associations<sup>385</sup> provide resources to assist lawyers with developing healthy ways to navigate and mitigate the destructive effects of long hours<sup>386</sup> and stress.<sup>387</sup> Since workplace culture plays a key role into whether attorneys can enjoy both a demanding career and a satisfying personal life,<sup>388</sup> lawyers may periodically need to recalibrate their work goals and environments to find work-life balance. For instance, some lawyers may eschew the “stress and workload” of big law<sup>389</sup> in favor of alternative work relationships,<sup>390</sup> solo practice,

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385. See, e.g., Colorado Lawyer Assistance Program & Colorado Lawyers Helping Lawyers Program, COLO. BAR ASS'N, <http://www.cobar.org/For-Members/Confidential-Assistance-for-Attorneys> [<http://perma.unl.edu/J2B9-4P9R>]. The Denver Bar Association offers members with discounts for yoga and other wellness programs. *Member Benefits*, DENV. BAR ASS'N, <http://www.denbar.org/Members/Member-Benefits> [<http://perma.unl.edu/DV45-7QPU>].
386. AFTER THE JD III: THIRD RESULTS FROM A NATIONAL STUDY OF LEGAL CAREERS, AM. BAR FOUND. & NALP FOUND. L. CAREER RES. & EDUC. 32 (2017), [http://www.americanbarfoundation.org/uploads/cms/documents/ajd3report\\_final\\_for\\_distribution.pdf](http://www.americanbarfoundation.org/uploads/cms/documents/ajd3report_final_for_distribution.pdf) [<http://perma.unl.edu/3QVR-EEA2>] (“The median AJD3 attorney works 47 hours a week, seven hours longer than a traditional full-time job of 40 hours per week. Lawyers in private practice work longer hours, on average, than lawyers working in government, legal services, public defense, or public interest law.”).
387. The struggles of high-profile lawyers such as Brian Cuban (lawyer and brother of billionaire Marc Cuban) spotlight issues of substance abuse and addiction and mental health struggles. See generally BRIAN CUBAN, THE ADDICTED LAWYER: TALES OF THE BAR, BOOZE, BLOW, AND REDEMPTION (2017) (describing his difficulties with substance abuse and path to recovery). Further, a February 2016 study reported in the *Journal of Addiction Medicine* concluded that “[a]ttorneys experience problematic drinking that is hazardous, harmful, or otherwise generally consistent with alcohol use disorders at a rate much higher than other populations.” Patrick R. Krill et al, *The Prevalence of Substance Abuse and Other Mental Health Concerns Among American Attorneys*, 10 J. ADDICTION MED 46, 52 (Jan.–Feb. 2016), [https://journals.lww.com/journaladdictionmedicine/Fulltext/2016/02000/The\\_Prevalence\\_of\\_Substance\\_Use\\_and\\_Other\\_Mental.8.aspx](https://journals.lww.com/journaladdictionmedicine/Fulltext/2016/02000/The_Prevalence_of_Substance_Use_and_Other_Mental.8.aspx) [<http://perma.unl.edu/GDF3-U2D6>]. The report also found that attorneys struggle with anxiety and stress. *Id.*
388. Debra L. Bruce, *Leadership Impact on Work-Life Balance*, A.B.A. L. PRAC. TODAY (Aug. 14, 2017), <https://www.lawpracticetoday.org/article/leadership-impact-work-life-balance/> [<http://perma.unl.edu/G8H3-ZEAT>] (“While clients can be demanding, firm culture has significant influence on the stressful imbalance in lawyers’ lives. When leaders ignore the issue, they subject their firms to costly attrition as well undue risk of malpractice, and the cost to their lawyers can be even more grave.”).
389. See, e.g., Patrick Krill, *ALM Survey on Mental Health and Substance Abuse: Big Law’s Pervasive Problem*, LAW.COM (Sept. 14, 2018), <https://www.law.com/americanlawyer/2018/09/14/alm-survey-on-mental-health-and-substance-abuse-big-laws-pervasive-problem/> [<http://perma.unl.edu/7HR2-5V26>] (“Here’s a quick summary of what we found: The overwhelming majority of law firms report that alcohol abuse, depression and anxiety are occurring at their firms; half said the same about drug abuse. The stigma surrounding substance abuse, addiction and mental health problems is pervasive in Big Law.”).
390. Leigh McMullan Abramson, *Making One of the Most Brutal Jobs a Little Less Brutal: Can Lawyers Balance Work And Leisure?*, ATLANTIC (Sept. 10, 2015),

work for other entities (government, public interest or nonprofit organizations), or in business.<sup>391</sup> Perpetually dissatisfied lawyers may instead elect to pursue adjacent careers or exit the profession altogether.<sup>392</sup> In an effort to understand the latter, the ABA launched a Presidential Initiative to study the gender gap at senior levels of the legal profession.<sup>393</sup> Hopefully, as millennials and technologies continue to transform the profession, lawyers may finally achieve work-life balance.

Given the foregoing, legal education programs face headwinds. High cost, high debt, dim job prospects, and discontent with the practice of law thus represent powerful challenges for J.D. programs. From a simple cost-benefit point of view, some observers note that with perhaps only twenty law schools that “are worth paying full price for” and another twenty schools where significant tuition reductions make a J.D. degree a good investment, students may find it financially advisable to pursue other degrees and careers, especially in a strong economy.<sup>394</sup> Recent “green shoots”<sup>395</sup> suggesting renewed student

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<https://www.theatlantic.com/business/archive/2015/09/work-life-balance-law/404530/> [<http://perma.unl.edu/RLB9-279Q>] (describing the emergence of “New Models of Legal Practice” that “are built on a radical premise: Corporate lawyers can have work-life balance, too”).

391. Ilana Kowarski, *Consider Work-Life Balance Issues Before Law School*, U.S. NEWS (Jun. 22, 2017), <https://www.usnews.com/education/best-graduate-schools/top-law-schools/articles/2017-06-22/assess-work-life-balance-priorities-before-law-school> (describing how solo practitioners and government or in-house counsel may enjoy greater flexibility than big firm lawyers); *see also* AFTER THE JD III, *supra* note 386, at 54 (noting how part-time female lawyers work in small firms or as solo practitioners). The report also noted that “solos and those working in small firms were generally relatively satisfied compared to their peers in other settings across all dimensions of [career] satisfaction.” *Id.*
392. AFTER THE JD III, *supra* note 386, at 17, 53 (noting that nineteen percent (19%) of the sample were “no longer practicing law” and discussing various work settings and lawyer career satisfaction).
393. *See, e.g., Achieving Long-Term Careers for Women in Law*, A.B.A. PRESIDENTIAL INITIATIVE (2017–2018), [https://www.americanbar.org/content/dam/aba/administrative/office\\_president/Initiative\\_Overview.authcheckdam.pdf](https://www.americanbar.org/content/dam/aba/administrative/office_president/Initiative_Overview.authcheckdam.pdf) [<http://perma.unl.edu/A9VJ-XTTZ>] (recognizing the exodus of women lawyers from the profession, the ABA has launched “a groundbreaking Presidential Initiative focused on increasing the number of women lawyers who pursue successful long-term careers in the law.”). The summary report also notes that women will “not reach gender parity at senior levels of the profession until 2181” given the “current glacial rate of progress.” *Id.*
394. Elie Mystal, *Yes, Going to Law School During the Great Recession Turned Out to be a Terrible Idea*, ABOVE THE LAW (Jan. 16, 2018), <https://abovethelaw.com/2018/01/yes-going-to-law-school-during-the-great-recession-turned-out-to-be-a-terrible-idea/> [<http://perma.unl.edu/L3CS-ZRSY>]; *see also* TAMANAHA, *supra* note 318, at 155–57 (examining how a hypothetical student fares financially in the job market after graduation from an elite versus a non-elite law school); Kelsey Gee, *Hey, Bargain-Hunters: An M.B.A. Is Cheaper Than You Think*, WALL ST. J. (Jan 3, 2018), <https://www.wsj.com/articles/hey-bargain-hunters-an-m-b-a-is-cheaper->

enthusiasm for legal education—measured by the number of applications submitted to law schools nationally<sup>396</sup>—should be viewed cautiously until there is sufficient information to form solid conclusions.<sup>397</sup>

5. *SIP Indicator: Marketplace Dissatisfaction with Graduate Skills in New Landscape of Professional Services*

For employers seeking new talent, completion of a J.D. degree indicates dedicated academic study but often little or no proficiency in performing immediately billable client work.<sup>398</sup> Compounding employer

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than-you-think-1514988000?modP\_businessandfinance\_4&tesla=y [http://perma.unl.edu/W4AX-4R43]; Sandy Baum & Patricia Steele, *After Graduate and Professional School: How Students Fare in the Labor Market*, ACCESSLEX INST./URBAN INST. 6 (Feb. 2018), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3132536](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3132536) [http://perma.unl.edu/GB4B-MGLJ] (“The overall national median starting salary for the 2016 [law graduate] cohort was \$65,000, with medians of \$59,000 for government jobs, \$55,000 for judicial clerkships, and \$48,500 for public interest positions.”); Scott Flaherty, *Despite Salary Hikes, Inflation Leaves Associate Pay Below Pre-Recession Level*, AM. LAW. (Aug. 22, 2018), <https://www.law.com/americanlawyer/2018/08/22/despite-salary-hikes-inflation-leaves-associate-pay-below-pre-recession-level/> [http://perma.unl.edu/549X-2GH6]; Daniel Waldman, *How to Spot Red Flags in Lower-Ranked Law Schools*, U.S. NEWS & WORLD REP. (Nov. 26, 2018), <https://www.usnews.com/education/blogs/law-admissions-lowdown/articles/2018-11-26/how-to-spot-the-red-flags-in-lower-ranked-law-schools> (recommending that law school applicants carefully complete a cost benefit analysis of the ranking, reputation, cost, student debt burden, and employment/bar passage rates for each school under consideration). *But see* Li, *supra* note 138 (finding “a lack of price sensitivity in legal education”).

395. *Green Shoots*, INVESTOPEdia, <https://www.investopedia.com/terms/g/green-shoots.asp> [http://perma.unl.edu/48NK-652L] (“A term used to describe signs of economic recovery or positive data during an economic downturn. The term green shoots is a reference to plant growth and recovery, and has been used during down economies to describe signs of similar growth.”).
396. Paul Caron, *Fall 2018 Law School Admissions Season Opens with a Bang: Applicants Are up 14.2%*, TAXPROF BLOG (Dec. 6, 2017), [http://taxprof.typepad.com/taxprof\\_blog/2017/12/fall-2018-law-school-admissions-season-opens-with-a-bang-applicants-are-up-142.html](http://taxprof.typepad.com/taxprof_blog/2017/12/fall-2018-law-school-admissions-season-opens-with-a-bang-applicants-are-up-142.html) [http://perma.unl.edu/EAM3-QQER]; *see also* Sara Randazzo, *Law School Is Hot Again as Politics Piques Interest*, WALL ST. J. (Dec. 15, 2017), <https://www.wsj.com/articles/law-school-is-hot-again-as-politics-piques-interest-1513333801> [http://perma.unl.edu/2JN3-HUDX] (summarizing recent upward trends in law school applications).
397. *See* Morris, *supra* note 347 (noting University of Alabama Professor Alfred Brophy’s assessment of the small upticks in law school applications and student enrollments as not being “enough to declare a trend-not yet”).
398. Pistone & Horn, *supra* note 255, at 12 (noting that teaching doctrinal knowledge about the law no longer aligns with employer expectations for skills and practice-ready graduates); *see also* PRESIDENT’S COUNCIL SCI. & TECH., EXEC. OFFICE OF THE PRESIDENT 6 (Sept. 2014), [https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/PCAST\\_worforce\\_edIT\\_Oct-2014.pdf](https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/PCAST_worforce_edIT_Oct-2014.pdf) [http://perma.unl.edu/UAQ8-UKY9] (“Traditionally, employers have relied on the attainment of educational degrees or credentials as a proxy for skills. Demand is growing for specialized and higher-level cognitive skills that can be hard to measure.

pressure points include ongoing changes by large corporations like Microsoft, which are shifting from hourly billings to alternative compensation arrangements.<sup>399</sup> Corporate clients are also “increasingly reluctant to subsidize additional costs like training entry-level lawyers.”<sup>400</sup> In fact, more clients are now insisting that professional firms “teach new hires on [their] own dime.”<sup>401</sup> A 2010 American Lawyer survey found that forty-seven percent (47%) of law firms had clients say, “We don’t want to see the names of first- or second-year associates on our bills.”<sup>402</sup>

Since the Great Recession of 2007, law firms have been forced to update corporate strategies, upgrade technologies,<sup>403</sup> introduce pro-

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This trend suggests that competency-based assessments that can gauge specialization and the readiness of potential employees to be productive within a business may become more common in the hiring process. Technology can help in skills-assessment.”). Numerous conversations between the author and several partners of Denver-area professional legal and accounting firms confirm these concerns about new graduate skills.

399. Elizabeth Olson, *Microsoft Shifts from Paying Outside Lawyers by the Hour*, N.Y. TIMES (Aug. 3, 2017), [https://www.nytimes.com/2017/08/03/business/dealbook/paying-lawyers-by-hour-microsoft.html?\\_r=0](https://www.nytimes.com/2017/08/03/business/dealbook/paying-lawyers-by-hour-microsoft.html?_r=0) [http://perma.unl.edu/XXM3-KSRV].
400. *Id.*; see also Maria Lokshin, *The Future of Law Schools: How Best to Train the 21st Century Lawyer*, LEGAL EXEC. INST. (Nov. 21, 2017), <http://www.legalexecutiveinstitute.com/future-law-schools-train-21st-century-lawyer> [http://perma.unl.edu/57GR-JUVP] (quoting Tim Henderson of Finnegan, Henderson, Farabow, Garrett & Dunner) (explaining that firms are looking for “market-ready candidates” because clients do not want to subsidize first- and second-year associate training).
401. David Segal, *What They Don’t Teach Law Students: Lawyering*, N.Y. TIMES (Nov. 11, 2011), <http://www.nytimes.com/2011/11/20/business/after-law-school-associates-learn-to-be-lawyers.html> [http://perma.unl.edu/B8TB-B9Y9].
402. *Id.* But see Brad Blickstein, *Law Schools Are Finally Starting to Do Their Part*, ABOVE THE LAW (Aug. 29, 2018), <https://abovethelaw.com/2018/08/law-schools-are-finally-starting-to-do-their-part/> [http://perma.unl.edu/H3VN-4AZM] (describing the Institute for the Future of Law Practice [IFLP] Summer Boot Camp with curriculum focusing on the following: “Introduction to In-House Practice, Business Fundamentals, Practical Legal Skills, [and] Tech Industry.”). The IFLP is a “nonprofit collaboration between law schools, law firms, #NewLaw service providers, and legal technology companies.” *Id.*; see also Bill Henderson, *What Signal[s] Are Legal Education Employers Sending to Legal Education*, LEGAL EVOLUTION (Aug. 26, 2018), <https://www.legalevolution.org/2018/08/signal-legal-employers-sending-legal-education-064/> [http://perma.unl.edu/Q3E2-Y9WR] (“If you are legal employer, here is a simple, low-risk way to send a powerful signal to law schools: Hire an IFLP intern.”).
403. See Mark A. Cohen, *Wanted: STEM Graduates for the Legal Industry – and Some Reasons They’re Not Applying*, FORBES (July 24, 2017), <https://www.forbes.com/sites/markcohen/2017/07/24/wanted-stem-graduates-for-the-legal-industry-and-some-reasons-theyre-not-applying/#363968b22b72> [http://perma.unl.edu/VU4D-U4V3] (discussing how “[t]echnology has become an essential component of legal delivery” and legal entrepreneurs with STEM knowledge are transforming the practice of law for the digital age).

cess efficiencies, and revise business models.<sup>404</sup> Client demand for cost- and process-efficiencies continues. For example, in March 2018, Columbia Sportswear Company Vice President, Jennifer Warner, sounded a call to law firms to act “like a business” by offering clear strategies to “improve clients’ experience[s] and meet their needs.”<sup>405</sup> Additionally, the former Dean of Brooklyn Law School, Nick Allard, recently predicted the legal profession’s rapid reckoning with the “[i]rresistible forces” of technology, globalism, and consumer-centrism.<sup>406</sup> He argued that survival in this changing landscape requires lawyers and law firms to be nimble, adaptive, innovative, entrepreneurial, and customer-focused.<sup>407</sup>

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404. Rita Gunther McGrath, *Creative Destruction Visits the Legal Profession*, HARV. BUS. REV. (Jan. 15, 2013), <https://hbr.org/2013/01/creative-destruction-visits-the-legal-profession> [http://perma.unl.edu/A6NS-ACPL] (noting an exasperated colleague’s observation that lawyers were “working with a business model that hasn’t changed since the time of Charles Dickens!”); see Alarie et al., *infra* note 526, at 4–5 (identifying some factors that shape the ongoing transformation of the law firm economic model (e.g., client demands for lower cost legal services, firm restructuring, and technology advances)); see also Joe Patrice, *Twilight of the Law Firms: The Big 4 Are Poised to Conquer the Legal Landscape*, ABOVE THE LAW (Feb. 8, 2018), <https://abovethelaw.com/2018/02/twilight-of-the-law-firms-the-big-4-are-poised-to-conquer-the-legal-landscape/> [http://perma.unl.edu/TSW6-SPAK]; *Report on the State of the Legal Market*, THOMSON REUTERS 4–10 (2018), <http://legalexecutiveinstitute.com/wp-content/uploads/2018/01/2018-Report-on-the-State-of-the-Legal-Market.pdf> [http://perma.unl.edu/GY74-KZBR] (reporting that in 2017, the traditional legal service providers experienced flat demand and profitability). The report also identifies emerging trends such as (1) PwC’s “New Law” initiative, which provides “lawyers on a temporary basis to work on particular projects or to provide extra bench strength for peak requirements”; and (2) complete outsourcing of legal departments to outside vendors. *Id.* at 16. The report concludes by warning of the accelerating pace of law firm transformation, which requires firms to respond proactively to make the necessary changes to promote efficiencies, innovation, transparent pricing models, etc. *Id.* at 18.

405. Caroline Spiezo, *Columbia Sportswear VP of Legal Wants Law Firms to Fix the Way They Run*, AM. LAW. (Mar. 15, 2018), <https://www.law.com/americanlawyer/2018/03/15/columbia-sportswear-vp-of-legal-wants-law-firms-to-fix-the-way-they-run> [http://perma.unl.edu/MW6R-B9PJ]; see generally *Future Trends for Legal Services: Global Research Study*, DELOITTE. 2 (June 2016), <https://www2.deloitte.com/global/en/pages/legal/articles/deloitte-future-trends-for-legal-services.html#> [http://perma.unl.edu/DPP9-9J2T] (concluding that because the market for legal services is rapidly changing, legal service providers—not exclusively law firms—must adapt to compete and thrive in this changing knowledge services environment).

406. Caron, *supra* note 4 (providing Allard’s remarks).

407. *Id.* Allard asserts that successful, modern lawyers will (1) provide “analysis, advice, and advocacy” (“the three a’s”), (2) combine agile thinking, innovation, and multidisciplinary insights, and (3) “have a deep understanding of both the law and the substantive disciplines that are shaping the 21st century.” *Id.*; see also WILLIAM D. HENDERSON, LEGAL MARKET LANDSCAPE REPORT i (2018) (asserting that the “legal profession is at an inflection point”). Professor Henderson examines how technology, process improvements, data and analytics, business model innovation, and regulatory reforms can work together to reduce costs and better

The 2018 Altman Weil survey, “Law Firms in Transition,” amplifies Ms. Warner and Dean Allard’s astute advice. The survey showed that because clients now demand greater efficiency, lower costs, and process improvements, law firms must promptly address and respond to these evolving client expectations to halt an impending client exodus.<sup>408</sup> The report also warned that innovative legal service alternatives (both human and technological) have taken firm root, quickening the decline of law firms frozen in tradition.<sup>409</sup> Lawyers and law firms that will survive and thrive in this era of technological disruption and legal services industry restructuring are those that implement business models that seek both near-term financial returns and long-term firm sustainability.<sup>410</sup>

The Altman Weil report specifically recommends that mid- and large-size law firms do the following: (1) embrace strategic thinking and deliver “offerings that resonate with clients and enable law firm sustainability”;<sup>411</sup> (2) develop an innovative culture that actively experiments with ways to improve legal service delivery (e.g., technology adoption/upgrades, pilot projects, project management training and support, process re-engineering, knowledge management);<sup>412</sup> (3) differentiate their services from the competition (i.e., deliver a “distinct and compelling value”) and then embrace customer service as a core function;<sup>413</sup> (4) manage human capital effectively (e.g., capacity and performance);<sup>414</sup> (5) manage firm transitions as new lawyers join and others leave the practice;<sup>415</sup> and (6) realign firm management and ownership practices to achieve long-term business profitability and sustainability.<sup>416</sup> Similarly, solo and small law firms must embrace

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serve all clients (e.g., rich/poor and individuals/organizations). *Id.* at 27. As discussed through this three-part series, law schools should also embark on similar customer-focused transformations.

408. Clay & Seeger, *supra* note 31, at iii.

409. *Id.* at iv.

410. *Id.* at v.

411. *Id.*

412. *Id.* at v–viii, 53–55.

413. *Id.* at vii, 92.

414. *Id.* at vi, 43–48.

415. *Id.* at vi.

416. *Id.* at vii. Legal industry leaders have strong opinions about what constitutes law firm innovation. *See, e.g.*, Mark A. Cohen, *Too Many Legal Awards – Too Little Customer Satisfaction*, FORBES (July 2, 2018), <https://www.forbes.com/sites/markcohen1/2018/07/02/too-many-legal-awards-too-little-customer-satisfaction> [<http://perma.unl.edu/FXM9-E4MB>] (“Law is staging its own version of ‘every kid gets a trophy.’”). Readers may find an interesting comparison of innovation approaches with the law firm of Davis Wright & Tremaine and its legal services innovation unit. *See* DWT DE NOVO, <https://denovo.dwt.com/> (last visited June 19, 2018) (applying design thinking and employing cross-functional teams—lawyers, process engineers, technologists, and data analysts—to deliver tailored client solutions). The International Legal Technology Association named DWT “Innova-

technology and process efficiencies to grow and remain competitive in an increasingly digital and do-it-yourself economy.<sup>417</sup> As discussed throughout this three-part Article series, survival-oriented law schools will follow similar paths for reinvention.

The traditional law firm business model also faces competition from the global “Big Four” accounting firms and others that now provide clients human-AI integrated, managed, and multidisciplinary professional services.<sup>418</sup> For example, PwC’s strategy to reinvent the

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tive Law Firm of the Year” in both 2015 and 2016. *Id.*; see also Joe Borstein, *Alt.legal: The Cross-Disciplinary Lawyer*, ABOVE THE LAW (Sept. 13, 2017), <https://abovethelaw.com/2017/09/alt-legal-the-cross-disciplinary-lawyer/> [<http://perma.unl.edu/94C3-RJ2N>] (discussing DWT’s innovation strategy in a shifting legal market); Ian Lopez, *14 Ways Law Firms Are on-Point with Their Tech Game*, AM. LAW. (May 2, 2018), <https://www.law.com/legaltechnews/2018/05/02/14-ways-law-firms-are-on-point-with-their-tech-game/> [<http://perma.unl.edu/2GXU-EQNJ>] (providing a slide show summarizing law firm innovation initiatives); *Orrick Announces New Corporate Venture Fund to Advance Legal Tech Innovation*, ORRICK.COM/NEWS (Nov., 15, 2018), <https://www.orrick.com/News/2018/11/Orrick-Announces-New-Corporate-Venture-Fund-to-Advance-Legal-Tech-Innovation> [<https://perma.unl.edu/JUY3-LXVR>].

417. See generally *2017 State of U.S. Small Law Firms*, THOMSON REUTERS 6, 9–10 (2017), [https://static.legalsolutions.thomsonreuters.com/static/pdf/S054373\\_State\\_of\\_Small\\_Law\\_Study.pdf](https://static.legalsolutions.thomsonreuters.com/static/pdf/S054373_State_of_Small_Law_Study.pdf) [<http://perma.unl.edu/3GU3-CMML>].
418. Roy Strom, *The Law Firm Disrupted: PwC Will Take Your Client’s Call Now*, AM. LAW. (Jan. 12, 2018), <https://www.law.com/sites/almstaff/2018/01/12/the-law-firm-disrupted-pwc-will-take-your-clients-call-now/> [<http://perma.unl.edu/8T4W-NKGZ>]; see Chris Johnson, *How Law Firms Can Counter the Growing Big Four Threat*, AM. LAW. (Sept. 26, 2017), <https://www.law.com/americanlawyer/almID/1202798990924/> [<http://perma.unl.edu/UK8D-9RS6>] (describing the investments into legal services by Deloitte, EY, KPMG, and PwC). Johnson also states: “While the Big Four have historically focused on practices that complement their audit and tax advisory businesses, such as tax, labor and employment, and immigration they are increasingly branching out into other areas, including M&A.” *Id.*; see also Ranica Arrowsmith, *Deloitte to Collaborate with SAP on Digital Offerings*, ACCT. TODAY (May 17, 2018), <https://www.accountingtoday.com/news/deloitte-consulting-collaborates-with-sap-on-digital-offerings> [<http://perma.unl.edu/8PFE-R672>] (“The consulting arm of Big Four firm Deloitte has begun a partnership with SAP America to develop digital offerings powered by SAP Leonardo. SAP Leonardo is SAP’s cloud-based enterprise resource planning platform, and incorporates new technology such as artificial intelligence and blockchain.”); Ranica Arrowsmith, *KPMG Offers New IBM Watson-Enabled Accounting Tools*, ACCT. TODAY (Mar. 15, 2018), <https://www.accountingtoday.com/news/kpmg-offers-new-ibm-watson-enabled-accounting-tools> [<http://perma.unl.edu/DWR6-WUHF>]; Mark A. Cohen, *EY Acquires Riverview Law: A Different Perspective*, FORBES (Aug. 10, 2018), <https://www.forbes.com/sites/markcohen/2018/08/10/ey-acquires-riverview-law-a-different-perspective/#71f05ee41950> [<http://perma.unl.edu/BV3Q-THY2>] (“‘Legal’ is no longer restricted to lawyers and ‘practice.’ Law is now about lawyers, technology, the business of delivering products and services, other professionals and paraprofessionals, new players, new structural and economic models, and new skillsets.”); Roy Strom, *A Big Four-Branded New Law Competitor Could be a ‘Safe Disruptor,’* AM. LAW. (Aug. 8, 2018), <https://www.law.com/americanlawyer/2018/08/08/a-big-four-branded-new->



delivery of legal services includes developing proprietary technologies (e.g., automated contracts), offering a flexible “Axiom-like staffing model,” and providing “holistic solutions” through managed, outsourced legal and professional services.<sup>419</sup> Further, PwC’s newly forged alliance with Kofax software will “deliver intelligent automation solutions to clients” by integrating in a single platform the capabilities of “artificial intelligence and deep learning and robotic process automation, multichannel capture, and workflow and case management.”<sup>420</sup> As Axiom, the Big Four accounting firms, and non-law firm alternative service providers industrialize and offer on-demand integrated legal and professional services, ambitious, survival-oriented law firms must adapt. Specifically, they must embrace process and cost efficiencies, focus on delivering personalized customer service, continuously adapt to satisfy changing client demands, and incorporate rapidly advancing technologies into the practice (e.g., AI,

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law-competitor-could-be-a-safe-disruptor [http://perma.unl.edu/2QDW-7QRT] (quoting Cornelius Grossman, EY global head of legal) (“We are the first one to combine such a specialized [legal managed services] team with the force of the Big Four.”); Nicholas Bruch, *The Big Four’s Recent Acquisition in the Legal Market Is a Big Deal*, LAW.COM (Aug. 8, 2018), <https://www.law.com/2018/08/08/the-big-fours-recent-acquisition-in-the-legal-market-is-a-big-deal/> [http://perma.unl.edu/J8G9-LTQZ] (explaining the importance of the EY acquisition of Riverview Law as a moment of market acceleration that speeds industry change and damages traditional law firm business models); see generally *Future Trends for Legal Services: Global Research Study*, supra note 405. Deloitte’s Global Research Study finds that client-purchasers increasingly expect that legal service providers—not necessarily law firms—effectively use integrated platform technologies, offer modernized billing structures (e.g., fixed fees, value pricing, and cost transparency), and multidisciplinary expertise to serve client needs (e.g., industry, commercial, digital/technology, regulatory/compliance, and financial expertise). *Id.* at 2, 6–8; see Giles Turner, *Ernst & Young to Spend Extra \$1 Billion on Cloud, New Technology*, BLOOMBERG (Aug. 10, 2018), <https://www.bloomberg.com/news/articles/2018-08-10/ernst-young-to-spend-extra-1-billion-on-cloud-new-technology> [https://perma.unl.edu/GR83-4K3K].

419. Roy Strom, *As Law Firms Stall, Who Will Overtake Them in the Innovation Race?*, AM. LAW. (Jan. 30, 2018), <https://www.law.com/americanlawyer/sites/americanlawyer/2018/01/30/as-law-firms-stall-who-will-overtake-them-in-the-innovation-race/> [http://perma.unl.edu/H4UE-ARS2]; see also Alex Berry, *PwC Eyes Global Expansion of Its Flexible Lawyering Service*, AM. LAW. (Feb. 22, 2018), <https://www.law.com/americanlawyer/sites/international/2018/02/22/no-limit-on-growth-pwc-eyes-global-expansion-of-flexi-lawyering-service-as-1000-sign-up-since-launch> [http://perma.unl.edu/C32B-WJNB] (discussing PwC’s use of outsourcing to provide holistic client experiences).
420. Ranica Arrowsmith, *PwC Offers Intelligent Automation Through Alliance with Kofax*, ACCT. TODAY (Sept. 14, 2018), <https://www.accountingtoday.com/news/pwc-offers-intelligent-automation-through-alliance-with-kofax> [http://perma.unl.edu/KF6K-MXGY] (explaining that Kofax software will allow “users to improve customer engagement, reduce operating costs, mitigate compliance risk and increase competitiveness, growth and profitability”).

blockchain, and smart contracts).<sup>421</sup> Taken all together, these ongoing industry changes will shake up traditional legal education delivery and business models.

#### 6. *SIP Indicator: Technological Disintermediation*

Technology also threatens the long-term career viability of lawyers as increasingly advanced AI and IA technologies redefine work and eliminate human gatekeepers.<sup>422</sup> For example, a 2018 LawGeex study

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421. Strom, *supra* note 419; Berry, *supra* note 419; see Roy Strom, *The Law Firm Disrupted: What Would Rattle Law Firm Shareholders?*, LAW.COM (Feb. 1, 2018), <https://www.law.com/sites/almstaff/2018/02/01/the-law-firm-disrupted-what-would-rattle-law-firm-shareholders/> [http://perma.unl.edu/8UAG-B66F]; see generally Olga V. Mack, *Smart Contracts Taking Over: Pros, Cons, and How to Stay on Top of It All*, ABOVE THE LAW (June 4, 2018), <https://abovethelaw.com/2018/06/smart-contracts-taking-over-pros-cons-and-how-to-stay-on-top-of-it-all/> [http://perma.unl.edu/TF4T-T75R]; Olga V. Mack, *Smart Contracts in the Wild: Applying Blockchain-Fueled Contracts Across Industries*, ABOVE THE LAW (May 21, 2018), <https://abovethelaw.com/2018/05/smart-contracts-in-the-wild-applying-blockchain-fueled-contracts-across-industries> [http://perma.unl.edu/S57K-8QUT]; Hannah Murphy, *Business Schools Race to Offer Lessons in Blockchain and Bitcoin*, FIN. TIMES (June 17, 2018), <https://www.ft.com/content/011cf9b6-69a7-11e8-ae1-39f3459514fd> [http://perma.unl.edu/KZS3-5ZLK]; Arrowsmith, *supra* note 418; see also Mark A. Cohen, *What's a 'Law Company' and Why Are Legal Consumers Embracing It?*, FORBES (Nov. 20, 2017), <https://www.forbes.com/sites/markcohen/2017/11/20/whats-a-law-company-and-why-are-legal-consumers-embracing-it/#358c695f155c> [http://perma.unl.edu/D4PN-AK6X] (discussing how the new legal services delivery paradigm brings together “automation, predictive tools, data, and analytics designed to enable consumers to detect legal problems before they metastasize and to solve business challenges that raise legal issues more quickly and efficiently”).
422. See KAPLAN, *supra* note 24, at 145–49 (discussing how synthetic intellects/AI will transform the legal industry in terms of decreasing needs for human involvement and expertise necessary to perform legal work (e.g., machine learning used for research, document review, etc.), and increasing opportunities for customers to choose cost-effective digital legal services). Kaplan questions the economic wisdom of pursuing a law degree in terms of student loan debt and starting salaries. *Id.* at 145–46; see also SUSSKIND & SUSSKIND, *supra* note 90, at 271, 276, 277–80, 284, 286–87, 289, 290–95 (discussing the future relationship of humans and machines by identifying categories of tasks for which one or the other is better suited); see generally BRYNJOLFSSON & MCAFEE, *supra* note 24; David Curle, *What Makes Good Legal AI? Ethical Efficiency and Accuracy*, ABOVE THE LAW (June 29, 2018), <https://abovethelaw.com/small-firm-center/2018/06/what-makes-good-legal-ai-ethical-efficiency-and-accuracy> [http://perma.unl.edu/W72J-PTTV]. But see Krishnan Nair, *Will the Rise of Artificial Intelligence Lead to More Job Cuts at Law Firms?*, AM. LAW. (July 18, 2018), <https://www.law.com/americanlawyer/2018/07/18/will-the-rise-of-artificial-intelligence-lead-to-more-job-cuts-at-law-firms-396-4963> [http://perma.unl.edu/C7U9-EWTZ]; Richard Tromans, *'AI to Create More Legal Jobs Than Losses' – Landmark PwC Report*, ARTIFICIAL LAW. BLOG (July 17, 2018), <https://www.artificiallawyer.com/2018/07/17/ai-to-create-more-legal-jobs-than-losses-landmark-pwc-report/> [http://perma.unl.edu/79NB-JKHU]; JOHN HAWKSWORTH ET AL., UK ECONOMIC OUTLOOK, PwC UK 36, 49 (2018), <https://www.pwc.co.uk/economic-services/ukeo/ukeo-july18-full-report>

pitted 20 licensed U.S. attorneys against LawGeex’s AI algorithm to review five non-disclosure agreements (NDAs) containing thirty legal issues, 153 paragraphs, and 3,213 clauses.<sup>423</sup> The attorneys who participated in the experiment had decades of contract review experience.<sup>424</sup> To prepare for the competition, the LawGeex AI trained on “tens of thousands of NDAs using machine-learning and deep-learning techniques.”<sup>425</sup> The results of the LawGeex human-AI competition are as follows:<sup>426</sup>

Measurement	20 Attorneys	LawGeex AI
Accuracy: Legal issue spotting	Average 85% Lowest atty 67% Highest atty 94%	94%
Time: Review 5 NDAs	92 minutes average Fastest atty 51 min. Slowest atty 156 min.	26 seconds

If AIs continue to deliver time, process, and accuracy results such as these, AI legal assistants will become digital partners in the performance of legal work, especially in the review of basic contracts such as NDAs, wills, and operating agreements.<sup>427</sup> In addition to LawGeex, the recently venture-funded “startup law firm + tech company” Atrium merits watching given its potential to redefine the delivery of legal services.<sup>428</sup> Atrium’s digital platform uses machine learning to

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.pdf [<http://perma.unl.edu/UH2J-UP6W>] (concluding that AI will both eliminate and create new job opportunities and generally arguing for an optimistic future workforce outlook).

423. LAWGEEX, COMPARING THE PERFORMANCE OF ARTIFICIAL INTELLIGENCE TO HUMAN LAWYERS IN THE REVIEW OF STANDARD BUSINESS CONTRACTS (2018), <https://www.lawgeex.com/AIvsLawyer/> [<http://perma.unl.edu/BT57-ZWBV>].

424. *Id.*

425. *Id.*

426. *Id.* at 14–15.

427. *Id.* at 22–23 (noting that additional benefits of AI assistants include consistent application of pre-approved legal rules in the contract review process and that AIs do not need sleep or caffeine); see Monica Chin, *An AI Just Beat Top Lawyers at Their Own Game*, MASHABLE (Feb. 25, 2018), <https://mashable.com/2018/02/26/ai-beats-humans-at-contracts/#qF6yIw.MRkq2> [<http://perma.unl.edu/VVU3-LN2P>]; John Markoff, *Armies of Expensive Lawyers, Replaced by Cheaper Software*, N.Y. TIMES (Mar. 4, 2011), <https://www.nytimes.com/2011/03/05/science/05legal.html> [<http://perma.unl.edu/GJ34-PR4W>]; see also *Artificial Intelligence and Life in 2030*, *supra* note 40, at 38 (explaining that legal jobs may be reduced and eventually eliminated as AI continues to be used for legal information extraction and topic modeling).

428. Ed Sohn & Joe Borstein, *A BREAKING alt.Legal Report: Unprecedented \$65 Million Shows Atrium Is on to Something Big*, ABOVE THE LAW (Sept. 10, 2018), <https://abovethelaw.com/2018/09/a-breaking-alt-legal-report-unprecedented-65->

“transform legal documents into structured data,” which then is used to develop legal services applications and integrated client solutions.<sup>429</sup> Similarly, the September 2018 acquisition of UnitedLex by European private equity firm, CVC Partners, signals further transformation of the global legal services industry in the years ahead.<sup>430</sup> Given these rapid changes occurring at the intersection of law and technology, astute law school leaders will monitor these developments and adapt the curriculum so that graduates can excel in a dynamic legal service marketplace.

In the years ahead, technology optimists anticipate a future where collaborations between humans and AI assistants will enable experienced attorneys and other knowledge professionals to focus their time and energies on client engagement and other complex, high-level work.<sup>431</sup> Any such optimism, however, should be tempered with realism about what the introduction of AI will mean for future livelihoods of new and mid-career lawyers.

To that end, three issues raised at the Stanford Center for Legal Informatics’s CodeX FutureLaw 2018 conference deserve mention.<sup>432</sup> First, according to Hilarie Bass (ABA president and co-president of Greenberg Traurig), the market for high hourly rate legal services will continue to narrow over time as clients demand more “fixed cost arrangements,” which will require law firms to implement process and technology efficiencies.<sup>433</sup> Second, only a few law schools teach project management, how to use AI, and how to consider the complex inter-

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million-investment-shows-atrium-is-on-to-something-big [http://perma.unl.edu/8B98-9JLX] (predicting that the September 2018 Atrium announcement will “be remembered as an important moment in legal innovation for years to come”). Atrium announced that it raised an additional \$65 million in funding (one year after its \$10.5 million seed investment) and that “tech heavyweights” Marc Andreessen, Andrew Chen, and Michael Seibel will be joining its board. *Id.*

429. *Id.*

430. Roy Strom, *UnitedLex, Big Deals in Hand, Sells Majority Stake to European Buyout Firm*, AM. LAW. (Sept. 20, 2018), <https://www.law.com/americanlawyer/2018/09/20/unitedlex-big-deals-in-hand-sells-majority-stake-to-european-buyout-firm> [http://perma.unl.edu/7WXP-X3WM] (“UnitedLex has a multi-billion-dollar opportunity ahead of it, with legal services being one of the few remaining verticals that is early in the penetration curve of technology, consulting, and solution delivery.”).

431. *See Artificial Intelligence and Life in 2030*, *supra* note 40.

432. Ben Hancock, *We Can’t All Be ‘Big Law’ Partners and Other Takeaways from Stanford’s #FutureLaw Conference*, RECORDER (Apr. 5, 2018), <https://www.law.com/therecorder/2018/04/05/we-cant-all-be-big-law-partners-and-other-takeaways-from-stanfords-futurelaw-conference> [http://perma.unl.edu/2928-BP45].

433. *Id.* (providing statements delivered by Ms. Bass, who noted that high cost bars approximately 80% of Americans from access to legal services and then recommended changes to education and regulatory structures to improve access); *see also* Ryan Lovelace, *Hourly Rate Gap Widens as Top Billers at Biggest Firms Leave Others Behind*, RECORDER (May 17, 2018), <https://www.law.com/therecorder/2018/05/17/hourly-rate-gap-widens-as-top-billers-leave-others-behind>

connected legal issues presented as AI technologies continually evolve and improve (e.g., self-driving cars may involve torts, business, public policy, discrimination, profit maximization, and risk management concerns).<sup>434</sup> And third, sunny promises that legal technology and AI will enable highly paid lawyers to do more sophisticated work belie the dark reality that AI will eliminate legal jobs.<sup>435</sup> LegalAlignment founder, Larry Bridgesmith, commented, “I’d love to say AI’s not going to put any lawyers out of work. That’d be a lie. If 60 to 90 percent of your day can be automated, what are you going to do when it is?”<sup>436</sup> If AIs and other technologies become the norm in firms seeking to extract personnel and process efficiencies and improve their bottom line, the reality for new professionals with limited experience may be that AIs will take over much of the entry-level work, thus amplifying the economic peril of choosing legal and tax careers.

Significant structural shifts have upended many white collar professions and will continue to do so. In the decades ahead, scholars will ascertain the extent and nature of these shifts. Until then, the pressing question for legal education leaders is how to respond.

### 7. *SIP Response Options: Reinvent or Dig in?*

To respond to SIPs, educational programs have a choice: either reinvent their programs or defend the status quo. Each of these responses offer different action (or inaction) plans. The choice turns on whether law school leaders recognize the profound and rapid ongoing technology changes that continue to transform society.

The debate about which path to take recently appeared center stage in April 2018 at the Summit on the Future of Legal Education and Entry to the Profession.<sup>437</sup> Calling for action, James Leipold, executive director of the National Association for Law Placement, warned that legal education is in a “perilous moment.”<sup>438</sup> Barry Currier, ABA managing director of Accreditation and Admission, added that “despite years of crisis, law schools have yet to undergo deep structural changes” to the business model necessary to prepare graduates for a legal career.<sup>439</sup> On the other hand, Wendy Perdue, Dean of University of Richmond School of Law and President of the American

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403-15646 [<http://perma.unl.edu/829B-U4LP>] (discussing the ability of larger firms to raise hourly rates faster than the rise of inflation).

434. Hancock, *supra* note 432.

435. *Id.*

436. *Id.*

437. Sloan, *supra* note 323.

438. *Id.*

439. *Id.*; see, e.g., Robert Kuehn, *Mandatory Professional Skills Training in Law Schools*, TAXPROF BLOG (Apr. 30, 2018), [http://taxprof.typepad.com/taxprof\\_blog/2018/04/kuehn-mandatory-professional-skills-training-in-law-schools.html](http://taxprof.typepad.com/taxprof_blog/2018/04/kuehn-mandatory-professional-skills-training-in-law-schools.html) [<http://perma.unl.edu/XNC9-YDQ9>]. Kuehn critically concludes:

Association of Law Schools, proclaimed that “[l]aw schools are doing a lot that they weren’t doing in 1968” but admitted that these changes increased the cost of a law degree.<sup>440</sup>

In few other industries would standards from fifty years ago qualify as compelling indicators of progress. For reference, Bluebooks, ballpoint pens, slide rules, and pencils were the dominant learning tools and technologies in 1968; even pocket calculators did not become widely available until the 1970s.<sup>441</sup> A reasonable benchmark to measure law school innovation should contemplate, at a minimum, how legal education has adapted to basic and common digital technologies like personal computers, the internet, and mobile communications. Accordingly, the late 1990s would serve as a more relevant metric from which to gauge law schools’ current and future innovations. In an era of rapidly changing and transformative technologies, the teaching and learning methods of 1968 are decidedly—and dangerously—outdated.

Some forward progress appears on the horizon. In August 2018, the ABA revised its accreditation standards so that J.D. students can now complete one-third of their credits online.<sup>442</sup> This change to ABA

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It took the ABA over 70 years to recognize that the purpose of law schools, like all other professional schools, is to prepare its graduates for successful entry into their profession, not just success on a licensing exam. The recent adoption of a skills requirement was an important step toward that preparation. But, a mere six credits is hardly sufficient training in the “professional skills needed for competent and ethical participatin [sic] as a member of the legal profession” that the accreditation standards require. Let’s hope it’s not another 70 years before law students are finally provided the enhanced professional skills training that they truly need to successfully begin the practice of law and is common in other professional schools, including a mandatory clinical experience for all graduates.

*Id.* (emphasis added).

440. Sloan, *supra* note 323.

441. *Calculator*, WIKIPEDIA, <https://en.wikipedia.org/wiki/Calculator> [<http://perma.unl.edu/P5D7-34V5>]; *Slide Rule*, WIKIPEDIA, [https://en.wikipedia.org/wiki/Slide\\_rule](https://en.wikipedia.org/wiki/Slide_rule) [<http://perma.unl.edu/C2Q8-PWTG>] (noting that by 1974 the pocket scientific calculator made the slide rule obsolete); *see also* Dylan Tweney, *Dec. 9, 1968: The Mother of All Demos*, WIRED (Dec. 9, 2010), <https://www.wired.com/2010/12/1209computer-mouse-mother-of-all-demos/> [<http://perma.unl.edu/LN3D-PQRQ>] (describing how in 1968, the legendary computer scientist, Douglas Engelbart, launched the personal computer revolution by introducing the groundbreaking innovations of the computer mouse, “what you see is what you get” text and graphic editing, hyperlinks, and an early version of computer slides).

442. Karen Sloan, *ABA Set to Approve More Online Credits for Law Students*, LAW.COM (May 15, 2018), <https://www.law.com/2018/05/15/aba-set-to-approve-more-online-credits-for-law-students> [<http://perma.unl.edu/SAT8-6TMA>]; *see Transition to and Implementation of the New Standards and Rules of Procedure for Approval of Law Schools*, A.B.A. SEC. OF LEGAL EDUC. & ADMISSION TO THE B. (Aug. 13, 2018), [https://www.americanbar.org/content/dam/aba/administrative/legal\\_education\\_and\\_admissions\\_to\\_the\\_bar/governancedocuments/2014\\_august\\_transition\\_and\\_implementation\\_of\\_new\\_aba\\_standards\\_and\\_rules.authcheckdam.pdf](https://www.americanbar.org/content/dam/aba/administrative/legal_education_and_admissions_to_the_bar/governancedocuments/2014_august_transition_and_implementation_of_new_aba_standards_and_rules.authcheckdam.pdf)

Standard 306 “Distance Education” marks an important passage into the digital era.<sup>443</sup> If and when legal education programs decide to reinvent their education offerings, they will need to follow the lead of the professions they cater to by revising their strategies, becoming more efficient, embracing new technologies, and rethinking their business models.<sup>444</sup> By making these changes, they can develop and deliver knowledge and skill solutions to give both student- and employer-customers confidence that, upon graduation, students have employer-valued, immediately billable technical knowledge and practical skills.<sup>445</sup> Obviously, not all topics and complexities can be addressed during the formal course of academic study; but if the curriculum trains graduates to competently perform sufficient billable skills to justify an offer of employment, a firm may be amenable to mentorship and training.<sup>446</sup>

Balancing doctrinal knowledge with practical skills also requires leaders to engage in continuous dialogue with graduates, employers, and community professionals. Entrepreneurially-oriented education programs will analyze this valuable customer information to formulate strategies that satisfy market demands.<sup>447</sup> Digital innovation teams can then begin the process of “challenge-driven” or “needs-driven” innovation, which involves putting customer needs (e.g., what

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[<http://perma.unl.edu/FJ8D-4PP7>]; *Revised Standards for Approval of Law Schools*, A.B.A. SEC. OF LEGAL EDUC. & ADMISSION TO THE B. (Aug. 2014), [https://www.americanbar.org/content/dam/aba/administrative/legal\\_education\\_and\\_admissions\\_to\\_the\\_bar/council\\_reports\\_and\\_resolutions/201406\\_revised\\_standards\\_clean\\_copy.authcheckdam.pdf](https://www.americanbar.org/content/dam/aba/administrative/legal_education_and_admissions_to_the_bar/council_reports_and_resolutions/201406_revised_standards_clean_copy.authcheckdam.pdf) [<http://perma.unl.edu/5RFW-K6RH>] (stating (1) the revised “Standard 306. Distance Education” and (2) providing interpretative guidance).

443. *Revised Standards for Approval of Law Schools*, *supra* note 442.

444. *See generally* Daniels, *supra* note 135; *see* Ronald G. Ehrenberg, *American Law Schools in a Time of Transition* (Cornell U. ILR Sch. Working Paper, 2011), <http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1165&context=workingpapers> [<http://perma.unl.edu/3B2G-HXJY>]. Ehrenberg states, “The economic model upon which law school is based is breaking down because of the collapse of the job market for new lawyers, which makes it difficult to justify ever increasing law school tuition levels.” *Id.* at 1.

445. *But see* Konefsky & Sullivan, *supra* note 122, at 732 (“What is essential to a student’s long-term employment interests is not necessarily the same as the set of skills with which an employer would like to see an entry-level employee equipped prior to his or her start date.”).

446. To develop new talent, some firms are experimenting with new training models such as the legal residency program. *See* Sara Randazzo, *Calling All Unemployed Law Grads: Greenberg Is Hiring*, *AM. LAW.* (Oct. 21, 2013), <https://www.law.com/americanlawyer/almID/1202624550961/> [<http://perma.unl.edu/EB47-ZD56>] (describing Greenberg’s “residency program” where selected associates are paid less, but they receive training and are not subject to billable hours requirements).

447. McGRATH, *supra* note 89, at 111–15 (discussing how Cambridge-based Sagentia’s impressive track record of “consistent, ongoing innovation” stems from its “extraordinary closeness to customers” and meeting their needs).

they seek to accomplish) into a growth factory<sup>448</sup> and using those goals as a springboard for creating knowledge and skills development solutions.<sup>449</sup>

If instead the education program elects to defend the status quo, it is appropriate to consider whether the organization suffers from the “Simmelweis effect.”<sup>450</sup> Named after Dr. Ignaz Semmelweis, the “‘Simmelweis effect’ is a metaphor for [how individuals and organizations have a] reflex-like tendency to reject new evidence or new knowledge because it contradicts established norms, beliefs or paradigms.”<sup>451</sup> For nearly 150 years, Langdell’s model for legal training has prevailed, meaning that law school only trains students to think; the status quo dictates that graduates learn how to be a lawyer while in practice.<sup>452</sup> The question, as applied here, is whether this

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448. *Id.* at 124. The Innosight: Innovation Consulting Firm describes a “growth factory” as a “complete system” that fosters “ideation, discovery, and incubation”; integrates IT and ICTs; and quickly and efficiently allocates staff and financial resources.

449. *Id.* at 106 (describing this approach as the “‘jobs to be done’ perspective”). It should be noted that customers may not know or even be able to articulate their needs until they have an opportunity to see a prototype—after which they may share cascades of insights and inputs. *See* IBM 2018 GLOBAL C-SUITE STUDY, *supra* note 30, at 26 (“Leaders with strong and singular vision are ever alert to change, positioning their organizations for the future by organizing teams that learn as they execute, cultivating ‘reflection in action.’” This involves “a dynamic interplay across the vision, culture and operations of organizations.”); *Legal Education: A New Growth Vision Part II*, sections IV.D and E and *Legal Education: A New Growth Vision Part III*, subsection II.B.1 discuss digital innovation teams.

450. *Dr. Semmelweis’ Biography*, SEMMELWEIS SOC. INT’L, <http://semmelweis.org/about/dr-semmelweis-biography/> [http://perma.unl.edu/6TYW-QFQH].

451. *Id.* In 1847, Dr. Ignaz Semmelweis (1818–1865) observed a troubling pattern of maternal mortality while practicing in the maternity ward at Vienna General Hospital. *Id.* He hypothesized that a lack of cleanliness may cause puerperal fever. *Id.* After studying differing patient outcomes and physician procedures, Dr. Semmelweis concluded that disease spread through physicians’ unwashed hands after autopsies and other contamination sources. *Id.* Because the nineteenth century medical establishment adhered to the miasma theory (attributing illness to evil spirits or bad air), Dr. Semmelweis’s theory was ridiculed and rejected by his peers. *Id.* Later, Dr. Semmelweis’s innovative insights advocating for handwashing and antiseptic procedures were validated by Louis Pasteur in his germ theory of disease. *Id.*; *see also* Ralph R. Frerichs, *Competing Theories of Cholera*, UCLA DEPT. EPIDEMIOLOGY, <http://www.ph.ucla.edu/epi/snow/choleratheories.html> [http://perma.unl.edu/G3MF-E4ZQ] (discussing the evolution of modern germ theory).

452. Pistone & Horn, *supra* note 255, at 12 (stating that under the traditional model, “a law student could graduate from law school without any exposure to the practice of law or to real clients”); *see* Mary Juetten, *The ‘Think like a Lawyer’ Approach to Law School Is Outdated*, A.B.A. J. (June 14, 2018), [http://www.abajournal.com/news/article/the\\_think\\_like\\_a\\_lawyer\\_approach\\_to\\_law\\_school\\_is\\_outdated](http://www.abajournal.com/news/article/the_think_like_a_lawyer_approach_to_law_school_is_outdated) [http://perma.unl.edu/2RSQ-3UHA]; Ian Holloway & Steven I. Friedland, *The Double Life of Law Schools*, 68 CASE W. RES. L. REV. 397, 400 (2017) (noting the “demise of the complementary ‘finishing school’ partnership with the



long-accepted model survives because it is viable, smart, and useful; or if it survives merely because it is the model most readily available.

#### 8. *SIP Reality: Market Will Decide*

The market will ultimately determine the quality, quantity, character, form, and value of legal education services.<sup>453</sup> If a program insists on tightly clinging to an educational model despite evidence that it is failing, the market will sort winners from losers when new and innovative models emerge. Market disconnects and dissatisfaction cannot be papered over with small tactical admission exam changes and public relations campaigns<sup>454</sup> defending the status quo,<sup>455</sup> espe-

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legal profession”); *see also* KAPLAN, *supra* note 24, at 158 (discussing the need for partnerships between universities and employers to teach students the knowledge and skills necessary to survive and thrive in rapidly changing economic and technological environments).

453. TOUTKOUSHIAN & PAULSEN, *supra* note 147, at 151 (“As technology improved and humans became more mobile, markets became less place-bound. Today, there are numerous examples of markets where transactions occur without buyers and sellers ever meeting in person.”). Debates about the quality of online education continue in the academy. Harvard Business Professor Anand responds to the question about whether online education will ultimately displace the traditional classroom by stating that this “question falls into the trap of seeing traditional and digital forms of education as substitutes rather than complements. It falls into the trap of distressing about the future of the traditional classroom rather than seeing how technology might augment it. It misses opportunities and product connections.” ANAND, *supra* note 17, at 341–42.
454. *See* Areen, *supra* note 136, at 1098–1100; McGRATH, *supra* note 89, at 136–39. McGrath recounts how Kodak responded to a 1984 FORBES article titled *Has the World Passed Kodak By?* with a seven-page, single-spaced rebuttal on why the article was wrong. Had Kodak’s management been willing to recognize the substantial consumer and technology changes on the horizon in the 1980s, it could have adapted; instead, Kodak ignored the warning signs and filed bankruptcy. *Id.*; *see also* Karen Sloan, *Interested in Law School? Click Here*, LAW.COM (Jan. 17, 2018), <https://www.law.com/sites/almstaff/2018/01/17/interested-in-law-school-click-here/> [<http://perma.unl.edu/N7JZ-Y6ZD>] (discussing approaches to attracting more law school applicants); Gerardo Alvarez, *Project by LSAC, Law Schools Association Aims to Boost Understanding—and Appeal of Law Profession*, A.B.A. J. (Feb. 2, 2018), [http://www.abajournal.com/news/article/project-by\\_lsac\\_law\\_schools\\_association\\_aims\\_to\\_boost\\_understanding—and\\_ap](http://www.abajournal.com/news/article/project-by_lsac_law_schools_association_aims_to_boost_understanding—and_ap) [<http://perma.unl.edu/CCZ4-RU3G>] (discussing ways to make the legal profession seem more appealing); Erwin Chemerinsky, *Reflections on the Future of Legal Education*, 13 FIU L. REV. 215, 225 (2018) (recommending that law schools “do much more to get out the word that being a lawyer is an attractive, exciting and enjoyable profession”).
455. JUMA, *supra* note 14, at 301 (“Managers with restrictive mental models will adopt up to five disruption innovation rejection strategies: rewarding incrementalism; ignoring the positive aspects of disruptive innovation; focusing on historical perceptions of success; creating perceptions of success with high effort; and holding beliefs in the face of disconfirming information.”); *see generally* Chemerinsky, *supra* note 454, at 216, 227 (arguing that the traditional legal education model delivers excellent quality and is “very cost effective”). He also asserts that be-

cially when massive gaps exist between what legal education leaders believe about the quality delivered and the customers' opinions regarding quality and value.<sup>456</sup> Denial and resistance to these market and technology changes wastes critical time, effort, and resources.<sup>457</sup> Simply put, the risks of inaction and clutching tradition far outweigh the risks of action and fostering innovation.<sup>458</sup>

A prudent approach involves operating at the intersection of imagination, anticipation, experimentation, preparation, and action because "standing still is not an option."<sup>459</sup> Survival-focused law school leaders will therefore embrace Grove's curiosity and adventurousness by surveying the landscape and identifying market and entrepreneurial opportunities. Three related survival strategies include:

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- cause law school enrollment is cyclical, it will recover as indicated by the recent "Trump bump" spike in applications. *Id.* at 218.
456. See, e.g., Chris Bradley et al., *Strategy to Beat the Odds*, MCKINSEY Q. (Feb. 2018), <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/strategy-to-beat-the-odds> [<http://perma.unl.edu/J3CD-U8GQ>] (citing a study that found "80 percent of executives believe their product stands out against the competition—but only 8 percent of customers agree").
457. GROVE, *supra* note 3, at 52; see also Martha Lagace, *Ruthlessly Realistic: How CEOs Must Overcome Denial*, HARV. BUS. SCH., WORKING KNOWLEDGE (Mar. 29, 2010), <https://hbswk.hbs.edu/item/ruthlessly-realistic-how-ceos-must-overcome-denial> [<http://perma.unl.edu/PR3B-RGHL>]. In her interview with Richard S. Tedlow, Tedlow stated, "Fighting denial is not a matter of IQ. It is a matter of point of view." *Id.*; see TEDLOW, DENIAL, *supra* note 177, at 77 (describing how the once great A&P grocery store "was not destroyed by fire. It rusted. This is the same process, but less dramatic, slower, and therefore easier to deny."). Tedlow then quotes T.S. Eliot's poem *The Hollow Men*: "This is the way the world ends / Not with a bang but a whimper." *Id.* at 77; see also McGRATH, *supra* note 89, at 141 ("[G]etting beyond denial that there is a problem has to be part of a mind-set to cope with transient advantage."); Chiappinelli, *supra* note 288, at 57 ("At certain schools during the dental education crisis, faculty resistance to change and the faculty's isolation from other scholars impeded the school's relationship with the university and made those schools more likely to be closed.").
458. JUMA, *supra* note 14, at 315; see also ANAND, *supra* note 17, at 299 ("The same digital technologies and phenomena that impacted these other businesses are now creating cataclysms in education, too: broad-band delivery, multisided platforms, apps, search, new devices, and software innovations.").
459. Daniel Hood, *AICPA Chair: 'Standing Still Is Not an Option,'* ACCT. TODAY (Dec. 4, 2017), <https://www.accountingtoday.com/news/aicpa-chair-kimberly-ellison-taylor-calls-for-the-accounting-profession-to-lead> [<http://perma.unl.edu/5D23-T686>] (quoting American Institute of CPAs chair Kimberly Ellison-Taylor) (discussing current era of technological and professional transformation, noting that one of the first steps is to start preparing for the changes that lie ahead). Ms. Ellison-Taylor stated:
- One of the first steps is to start preparing for the changes that lie ahead. We have to ride change like a surfboard. We can't be threatened by it. Let's operate at the intersection of anticipation and preparation. When we see that 49 percent of accountants' work activities can be automated, what does that mean for your role? What does it say about your competencies? Your plan can't be to wait this out.

*Id.*

(1) dynamic and continuous reinvention of education services by creating a startup innovation culture that scouts and seizes opportunities,<sup>460</sup> (2) laser-focus on satisfying the ever-changing needs and preferences of the youth demographic—that is, student-customers under age 30,<sup>461</sup> and (3) serving the lifelong learning and skills development needs for a full spectrum of customers.

First, movers in higher education can potentially set the new rules for “how the game is played” in the future.<sup>462</sup> A 2015 survey from the Bill and Melinda Gates Foundation found that only twenty percent (20%) of the professors surveyed have used “innovative teaching techniques and technologies.”<sup>463</sup> The Gates Foundation study describes innovative teaching as including the use of flipped classroom models, free and/or paid courseware, hybrid and/or online course formats, team teaching, collaboration (via video and social media), clickers, and standardized assessments.<sup>464</sup> Interestingly, the Gates Foundation study found that “elite schools” are “less disposed toward students’ needs and goals, and less inclined to use online or hybrid tools.”<sup>465</sup> Education entrepreneurs at lower-ranked schools with a startup cul-

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460. REIS, *supra* note 77, at 323 (stating that startup cultures do the following: “Think big. Start small. Scale fast.”); *see* IBM 2018 GLOBAL C-SUITE STUDY, *supra* note 30, at 27 (“Asked to rank the capabilities most instrumental to their success, CEOs in our study cited two characteristics above all others: a new willingness to experiment and the support of empowered employees.”). Forward-focused organizations exhibit the following characteristics: flexibility of vision, a culture of experimentation, rapid response to market changes, and employees who scout the front lines for new opportunities. *Id.*; *see also* RITA GUNTHER McGRATH & IAN C. MACMILLAN, DISCOVERY DRIVEN GROWTH 60 (2009) (“Scouting options are useful when you have a capability or technology that you think might have value to a set of customers, but you don’t really know for sure.”).

461. GROVE, *supra* note 3, at 66.

462. *Id.* at 150.

463. Casey Fabris, *Professors Know About High-Tech Teaching Methods, but Few Use Them*, CHRON. HIGHER EDUC. (Feb. 10, 2015), <http://www.chronicle.com/blogs/wiredcampus/professors-know-about-high-tech-teaching-methods-but-few-use-them/55777> [<http://perma.unl.edu/Z4HW-YVG2>].

464. GATES FOUND., U.S. POSTSECONDARY FACULTY IN 2015, (2015), <http://postsecondary.gatesfoundation.org/wp-content/uploads/2015/02/US-Postsecondary-Faculty-in-2015.pdf> [<http://perma.unl.edu/6FPM-PBMG>]; *see also* TALBERT, *supra* note 364, at 20. Professor Robert Talbert defines “Flipped learning” as a pedagogical approach in which first contact with new concepts moves from the group learning space to the individual learning space in the form of structured activity, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter.

*Id.*

465. GATES FOUND., *supra* note 464, at 25; *see also* Chiappinelli, *supra* note 288, at 62 (discussing U.S. News rankings and noting that “schools that focus on rankings will be less able to compete in the future because they will be oblivious to the coming disruption in the provision of legal education”).

ture can leverage this valuable insight—that is, elite schools’ disinterest in online teaching and tools—when identifying program goals, establishing innovation mission trajectories, and cultivating new market opportunities.<sup>466</sup> While elite institutions sit and savor their traditions, lower-ranked schools that are adaptive, nimble, and innovative can be the movers that actually respond to the SIP in higher education, thereby harvesting market share and gaining competitive advantages.

Second, Grove sees this moment as one ripe with market opportunities for entrepreneurs.<sup>467</sup> He asserts that in order to successfully attract and stay connected with the youth demographic, education entrepreneurs must understand how “digital natives”<sup>468</sup>—students who grew up with technology—“generate information, transact their business, and live their lives.”<sup>469</sup> Here, the importance of the “outsider’s objectivity”<sup>470</sup> comes to the fore, as well as clear recognition of the implications of a highly tech-savvy but young consumer base.<sup>471</sup>

Third, to serve lifelong learners, law school entrepreneurs should consider developing a layered, modular—possibly unbundled—education platform that could conceivably serve degree and non-degree can-

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466. CHRISTENSEN, *supra* note 62, at 139 (“[C]reating new markets is significantly *less* risky and *more* rewarding than entering established markets against entrenched competition.”).

467. GROVE, *supra* note 3, at 65–66 (predicting vast digital entrepreneurial opportunities).

468. “A digital native is an individual who was born after the widespread adoption of digital technology” such as computers, internet, and mobile devices. *Digital Native*, TECHOPEDIA, <https://www.techopedia.com/definition/28094/digital-native> [<http://perma.unl.edu/P63G-6XUA>].

469. GROVE, *supra* note 3, at 66 (highlighting significant market opportunities for digitally connected youth); *see also* THOMSON, *supra* note 166, at 14 (noting that the Millennial Generation includes “educated consumers” who are also “media saturated and technology savvy”).

470. Brandenburger & Nalebuff, *supra* note 198.

471. For example, in a conversation about higher education trends, challenges, and opportunities with this author on October 4, 2017, Dr. Susan Zvacek (consultant and speaker for faculty development and instructional design) pointed out that tech-savviness does not necessarily mean digital natives also possess strong critical thinking skills and judgment. Interview with Dr. Susan Zvacek, SMZTeaching.com (Oct. 4, 2017). Accordingly, faculty should use a combination of face-to-face interactions and technology to facilitate skills development in the areas of (1) critical thinking (investigation, skepticism, comparison, creativity, reflection, etc.); (2) problem solving (narrow-formulaic, open-ended, interactive, efficient/solution-oriented, creative, etc.); (3) logic; (4) idea synthesis (creative, cross-disciplinary, etc.); (5) judgment (moral, ethical, practical, strategic, etc.); and (6) effective oral and written communications (e.g., guiding clients through the decision-making process, persuasive writing, and risk management documentation). *Id.*; *see generally* SUSAN M. BROOKHART, HOW TO ASSESS HIGHER-ORDER THINKING IN YOUR CLASSROOM (2010), <http://www.ascd.org/publications/books/109111/chapters/Introduction.aspx> [<http://perma.unl.edu/36UP-6WMP>]; COMM’N ON BEHAVIORAL & SOC. SCI. & EDUC., *infra* note 527.

didates, practitioners seeking continuing education credits, employers seeking new hires and skills verification, students from other universities that do not have depth in certain doctrinal areas, and other interested parties. A total customer solution (e.g., value innovation)<sup>472</sup>—in the form of a dynamic, interactive, omni-channel digital knowledge and skills development ecosystem—deserves serious consideration as education entrepreneurs formulate innovation mission trajectories and develop multiple, diversified revenue streams.<sup>473</sup> For future-focused education programs, the goal is not imitation, but rather innovation.<sup>474</sup>

### C. Planting Seeds for Truly Sustainable Growth

Successfully navigating through SIPs requires legal education programs to innovate and create opportunities for long-term sustainable growth. Savvy education leaders will recognize that focusing on current operations only solves today's problems, while focusing on strategy can shape an enterprise's future.<sup>475</sup> This last section identifies

472. W. CHAN KIM & RENEE MAUBORGNE, *BLUE OCEAN STRATEGY: HOW TO CREATE UNCONTESTED MARKET SPACE AND MAKE THE COMPETITION IRRELEVANT* 65 (2005) (“Untapped value is often hidden in complementary products and services. The key is to define the total solution buyers seek when they choose a product or service.”). For an introduction to value innovation, see *Legal Education: A New Growth Vision Part II*, subsections IV.B.3 and 4. Value innovation paired with open innovation and platforms may eventually yield a total customer solution. See *Legal Education: A New Growth Vision Part III*, subsection III.D.2 which discusses the future of legal education and the development of a total legal education customer solution.

473. Koch & Windsperger, *supra* note 6, at 3 (“[D]igitization is first and foremost a hyper-dynamic condition to which organizations need to find responsive solutions.”); see Kim et al., *supra* note 41, at 8, 11 (discussing omni-channel strategies); see also *Legal Education: A New Growth Vision Part III*, subsection III.D.2 (envisioning the future of legal education).

474. CLAYTON M. CHRISTENSEN & HENRY J. EYRING, *THE INNOVATIVE UNIVERSITY: CHANGING THE DNA OF HIGHER EDUCATION FROM THE INSIDE OUT* 10 (2011) (stating that because elite universities set the terms of competition, the status quo “strategy of most schools is imitation, not innovation”); see Green Carmichael, *How Focusing on Content Leads the Media Astray* HBR IDEACAST (Nov. 23, 2016) (interview with Bharat Anand), <https://hbr.org/ideacast/2016/11/how-focusing-on-content-leads-the-media-astray> [http://perma.unl.edu/6XV7-946E] (quoting Professor Anand) (“[S]trategy 101, which is ultimately, competitive advantage comes from being different, not from looking exactly the same as your peers.”); see also Porter, *supra* note 5 (“The key is not to imitate rivals but to tailor Internet applications to a company’s overall strategy in ways that extend its competitive advantages and make them more sustainable.”); see also Porter, *supra* note 265 (“[T]he essence of strategy is choosing a unique and valuable position rooted in systems of activities that are much more difficult to match.”).

475. IBM 2016 CEO C-SUITE STUDIES, *supra* note 16, at 6; see McAFEE & BRYNJOLFSSON, *supra* note 14, at 244–45 (describing attributes of “geeky” leaders as having grand visions and strong opinions as well as “seeing the big patterns and kind of instinctively knowing what’s the right way to do things”); see generally DOERR,

five essential steps for transforming a traditional, atom-based law school program into a dynamic, human-AI integrated, total knowledge and skills development solution.

### 1. *Build Startup Culture*

To machete the entangled, tough, and wooden vines of the status quo, future-oriented leaders must analyze and make decisions from an outsider's perspective—that is, untethered from the status quo and traditions. Some ideal contributors are those who understand the value and importance of legal education but are not “captured by the current process.”<sup>476</sup> Digital innovation teams consisting of these interested outsiders and multidisciplinary thinkers can combine their respective expertise when developing innovation pathways. Sharply stated, minor tinkers to “current orthodoxies” will not revitalize incumbent organizations.<sup>477</sup>

Transforming a traditional organization into a creative, nimble, swift, and adaptively innovative startup culture requires vision, action, and infusions of fresh blood.<sup>478</sup> As discussed in *Legal Education: A New Growth Vision Part II*, some hallmarks of a startup culture include regular experimentation, iterative design, rapid and responsive development, continuous testing, and direct customer feedback on

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*supra* note 192, at 133–71 (2018) (describing “Big Hairy Audacious Goals,” stretch goals, and “10x thinking”). According to Google’s Larry Page, “If you set a crazy, ambitious goal and miss it, you’ll still achieve something remarkable.” *Id.* at 143.

476. MITCHELL KOWALSKI, *THE GREAT LEGAL REFORMATION: NOTES FROM THE FIELD* 12 (2017); *see also* MCGRATH & MACMILLAN, *supra* note 460, at 201 (emphasizing that innovation requires “unwavering support from powerful people within the corporation who control resources”).

477. Hamel & Prahalad, *supra* note 258.

478. EVANS & SCHMALENSEE, *supra* note 10, at 190–92 (describing how video giant Blockbuster’s incumbent mindset triggered its extinction by failing to (1) capitalize on its treasure trove of customer data about viewing habits, (2) launch a mult-sided platform, and (3) embrace digital streaming); *see also* Marc Brodherson et al., *Creativity’s Bottom Line: How Winning Companies Turn Creativity into Business Value and Growth*, MCKINSEY & CO. (June 2017), <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/creativitys-bottom-line-how-winning-companies-turn-creativity-into-business-value-and-growth> [http://perma.unl.edu/V4DW-29JD] (identifying four creativity and innovation practices: (1) “[h]ardwire creativity and innovation in daily practices,” (2) “[b]ecome customer fanatics,” (3) “[f]eed the need for speed,” and (4) “[a]dapt or die”); *see generally* Julie Goran et al., *Culture for a Digital Age*, MCKINSEY Q. (July 2017), <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/culture-for-a-digital-age> [http://perma.unl.edu/N8WK-UCU6] (explaining that successful digital cultures break down thought and organizational silos, embrace smart risk taking, and obsessively focus on delivering customer satisfactions).

current and future products and services—all while seeking to minimize waste.<sup>479</sup>

The journey forward begins when education entrepreneurs<sup>480</sup> articulate and explain a program’s innovation mission trajectory,<sup>481</sup> give space for individual and team contributions, support unorthodox changes, maintain enthusiasm, champion and empower teams to experiment, and allocate resources appropriately.<sup>482</sup> Leaders will then perform the spadework necessary to create, support, and sustain innovation mission trajectories that lead to specific dynamic outcomes. This work involves (1) ongoing collaborations between customers, program leaders, and members of multidisciplinary digital innovation teams to identify “seed ideas,”<sup>483</sup> (2) nurturing these seed ideas in growth factories, and (3) engaging in fluid processes of iterating emergent innovations.

Like gardeners who recognize the importance of nutrient-rich soil for healthy blooms, education leaders committed to sustainable growth will create and support innovation cultures focused on achieving the short-, mid-, and long-term initiatives that advance the organization’s innovation mission trajectories. Most importantly, these forward-aimed education programs remain nimble enough to adapt swiftly to new circumstances and market opportunities.<sup>484</sup>

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479. See generally Steve Blank, *Why the Lean Start-Up Changes Everything*, HARV. BUS. REV. (May 2013), <https://hbr.org/2013/05/why-the-lean-start-up-changes-everything> [<http://perma.unl.edu/U8SL-ANLA>]; RIES, *supra* note 16, at 4; Cathy Reisenwitz, *What Is Lean Law? A Conversation with Expert Kenneth A. Grady*, CAPTERRA LEGAL SOFTWARE BLOG (June 9, 2015), <https://blog.captterra.com/what-is-lean-law-a-conversation-with-expert-kenneth-a-grady/> [<http://perma.unl.edu/YAY4-WAED>].

480. See GROVE, *supra* note 3, at 111 (noting Peter Drucker’s definition of an entrepreneur as “someone who moves resources from areas of lower productivity and yield to areas of higher productivity and yield”); see also, e.g., Vincent D. Rougeau, *Amid Rising Applications, a New Strategy for Law School Budgets*, B.C. L. SCH. MAG. (Feb. 23, 2018), <http://lawmagazine.bc.edu/2018/02/amid-rising-applications-a-new-strategy-for-law-school-budgets/> [<http://perma.unl.edu/K35E-8BFG>] (“A more effective course links the law school’s goals to the university’s strategic vision, followed by a compelling plan on how the law school will steward resources as a key partner in that vision.”).

481. See *supra* note 200 (explaining innovation mission trajectory). Chiappinelli, *supra* note 288, at 55 (“Schools will be more successful when the dean has the strategic vision to align resources with the school’s (and university’s) mission.”).

482. Hamel & Prahalad, *supra* note 258.

483. Martin L. Weitzman, *Recombinant Growth*, 113(2) Q.J. ECON. 333 (1998).

484. Hamel & Prahalad, *supra* note 258; see also Lokshin, *supra* note 400 (describing Dean Ted Ruger’s University of Pennsylvania Law School “interdisciplinary approach to legal education” and collaborations with the Wharton School of Business). The Penn teaching approach emphasizes open-mindedness, interpersonal skills, teamwork, and collaboration. *Id.*; see also THE WORK AHEAD, *supra* note 110, at 35 (“Continuing education, retraining, and improvements in skills

## 2. *Embrace New Technologies*

Technology has only begun its radical transformation of the education industry. The limits of time and space no longer govern education access and delivery,<sup>485</sup> and technology has already melded into the consciousness of every millennial student and of subsequent generations. Technology must, therefore, become a central feature in current and future education services—not an afterthought. Mission change of this magnitude requires that leaders, faculty, and staff embrace entrepreneur-innovator mindsets. Old education models must be scrutinized, and new models must be developed.<sup>486</sup> To use the language of business, education must embrace free market ideas to unleash both its creative and destructive forces.<sup>487</sup> Law school sustainability and growth requires excellent faculty, high-quality doctrinal and skills development services, good technologies, and efficient processes—all working together to produce satisfied customers.

## 3. *Scout for Opportunities in Adjacent Markets*

Entrepreneurially-oriented legal education programs may find open innovation<sup>488</sup> and platform business models<sup>489</sup> to be intriguing growth strategies that complement and expand upon the holistic con-

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throughout an individual's working life will be critical to success in the workforce as the rate of technological change increases.”)

485. Rooksby, *supra* note 129, at 935 (contemplating the future of higher education in cyber space (e.g., MOOCs, digital competency assessments, and other digital teaching and learning interactions)); *see also* GROVE, *supra* note 3, at 5 (stating technology change “is going to reach out and sooner or later change something fundamental in your business world”).
486. JUMA, *supra* note 14, at 19 (“[Some technologies] reorder the socioeconomic terrain by co-evolving with new institutional arrangements and organizational structures. It is this wider societal transformation that generates tensions between innovation and incumbency.”).
487. *See* Hansmann, *supra* note 127, at 181–82; *see also* GROVE, *supra* note 3, at Prologue (quoting JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY (1942)) (“But in capitalist reality, as distinguished from its textbook picture, it is not (price) competition which counts but the competition from the new commodity, the new technology, the source of supply, the new type of organization . . . competition which . . . strikes not at the margins . . . of the existing firms but at their foundations and their very lives.”).
488. Chesbrough and Bogers define open innovation as “a distributed innovation process based on purposively managed knowledge flows across organizational boundaries, using pecuniary and non-pecuniary mechanisms in line with each organization's business model.” Henry Chesbrough & Marcel Bogers, *Explicating Open Innovation: Clarifying an Emerging Paradigm for Understanding Innovation*, in *NEW FRONTIERS* 3, 27 (Henry Chesbrough et al. eds., 2014); *see also* HENRY CHESBROUGH, OPEN INNOVATION: THE NEW IMPERATIVE FOR CREATING AND PROFITING FROM TECHNOLOGY (2006) (discussing how disruptive innovation requires business model modifications); HENRY CHESBROUGH, OPEN BUSINESS MODELS: HOW TO THRIVE IN THE NEW INNOVATION LANDSCAPE (2006) (discussing open innovation and how it is defined).



nections of the referral business model (*Parts II* and *III* of this Article series discuss these models). In brief, open innovation and platform business strategies focus on the development of robust digital education content by bringing together internal and external resources to foster pedagogically sound customer learning experiences.<sup>490</sup> If successfully executed, a curated, integrated digital knowledge and skills development platform could enhance the status of a program's educational offerings by positioning the program as a trusted, reliable, and convenient resource for knowledge and skills development services for law students and lifelong learners.<sup>491</sup> For law schools looking to diversify revenue sources, the "worker-trainer-employer ecosystem" presents dynamic business opportunities for innovators in this marketplace, especially if the law school can become the lifelong educator of choice for professionals in law and accounting firms.<sup>492</sup>

489. CHESBROUGH, *supra* note 16, at 105 (stating that the platform business model is the most valuable because it "leverages other people's money and resources as it grows"). For example, platforms can also do the following: (1) deliver long-term value and differentiation of services offered, (2) attract external complementors and competitors who enhance platform value, and (3) leverage inside and outside collaborators' knowledge, expertise, and resources to foster platform growth. *Id.* at 90, 102–11. Platforms have also been described as a "two-sided market between suppliers and customers." *Id.* at 105; see IBM 2017 GLOBAL C-SUITE STUDY, *supra* note 38, at 8 ("Ecosystem partners are a pipeline to the widest possible set of data – contextualized and heterogeneous data that reveals rich new patterns of possibility."); PARKER ET AL., *supra* note 12, at 63 ("We've entered stage two of the disruption saga, in which *platforms eat pipelines*."); MCAFEE & BRYNJOLFSSON, *supra* note 14, at 221 (warning also that the disruptive power of platforms has only just begun); see generally Feng Zhu & Nathan Furr, *Products to Platforms: Making the Leap*, HARV. BUS. REV. (Apr. 2016), <https://hbr.org/2016/04/products-to-platforms-making-the-leap> [http://perma.unl.edu/64ND-4ASB].

490. Dubickis & Gaile-Sarkane, *supra* note 172, at 3.

491. See generally PRESIDENT'S COUNCIL OF SCI. & TECH., EXEC. OFFICE OF THE PRESIDENT, *supra* note 398. The report states:

Key challenges in today's jobs ecosystem include: (1) providing better information to workers on available jobs and effective (measured by learning and employment outcomes) training programs, (2) fostering better connections between training institutions and industry to ensure that curriculum, infrastructure, and staff development are up to date and provide job-relevant skills, and (3) helping employers identify talent to fill jobs, including people who may be qualified but present themselves in ways that lead them to be rejected by conventional screening systems. [Information technology] can assist the interactions within this [worker-trainer-employer] triangle in a variety of ways: analyzing and characterizing skill requirements, assessing existing skill levels (and other employment-relevant attributes) of current or potential workers, and providing support for training and learning.

*Id.*; see also Henke et al., *supra* note 44, at 78–79, 93, 115 (describing how data and analytics can assist students, employees, employers, and education programs to quickly adapt to changing workforce conditions and design responsive coursework and skills development services).

492. *Id.* at 11; see THE WORK AHEAD, *supra* note 110, at 35 ("Continuing education, retraining, and improvements in skills throughout an individual's working life

In response to critics and resisters who argue that development of new revenue streams is expensive and cost-prohibitive, entrepreneurs should immediately remind naysayers and sandbaggers that given the foregoing SIP analysis, maintenance of the status quo likely leads to a financial death spiral. Investment in building an education enterprise that can create new services and seize emerging market opportunities delivers a far better financial return than propping-up a failing business model designed for the last century. As will be discussed in *Parts II* and *III* of this Article series, the epic business battles between brick-and-mortar giants like Blockbuster Video and Borders Books versus scrappy, nimble, digital upstarts like Netflix and Amazon make clear: innovators thrive; dawdlers disappear.

#### 4. *Prepare for a Human-AI Future*

To capitalize on emerging market opportunities and prepare for a human-AI future, entrepreneurially-oriented legal education programs will develop AI strategies that intentionally combine faculty excellence, community experts, and technology in all dimensions of its legal education services.<sup>493</sup> An AI-“robot-proof”<sup>494</sup> education will nurture the skills that machines cannot perform. For example, it will provide students with opportunities for real-world, project-based experiential learning that incorporates multidisciplinary content

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will be critical to success in the workforce as the rate of technological change increases.”); *see generally The Rise of the Social Enterprise*, *supra* note 158, at 41–46 (“In the 21st century, careers are no longer narrowly defined by jobs and skills but through experiences and learning agility. The ongoing transformation of work, the need for people and organizations to constantly upgrade capabilities, and shifts in employee preferences demand new approaches to learning, job design, performance management, and career development . . .”).

493. Bernard Marr, *How Is AI Used in Education – Real World Examples of Today and a Peek into the Future*, FORBES (July 25, 2018), <https://www.forbes.com/sites/bernardmarr/2018/07/25/how-is-ai-used-in-education-real-world-examples-of-today-and-a-peek-into-the-future/#128b5280586e> [http://perma.unl.edu/8BDE-VMMMD] (“AI can drive efficiency, personalization and streamline admin tasks to allow teachers the time and freedom to provide understanding and adaptability—uniquely human capabilities where machines would struggle.”). Marr mentions the following AI applications under development: mentors, smart/interactive content, and global teaching, learning, and conferencing opportunities. *Id.*; *see generally* Joe McKendrick, *Digital Strategies Are So 2016: Time for an Artificial Intelligence Strategy*, FORBES (May 19, 2018), <https://www.forbes.com/sites/joemckendrick/2018/05/19/digital-strategies-are-so-2016-time-for-an-artificial-intelligence-strategy> [http://perma.unl.edu/K7FC-Q6WT].

494. AOUN, *supra* note 19, at xviii (“A robot-proof model of higher education is not concerned with topping up students’ minds with high-octane facts. Rather, it refits their mental engines, calibrating them with a creative mindset and the mental elasticity to invent, discover, or otherwise produce something society deems valuable.”).

while continuously adapting to new technologies and processes.<sup>495</sup> Specifically, AI-“robot-proof” curriculums will be updated and rebalanced to teach (1) the “hard skills” of doctrinal knowledge, substantive process and procedures, and technical skills; (2) the “soft skills” of empathy and compassion,<sup>496</sup> conflict resolution, moral considerations,<sup>497</sup> ethical decision-making and conduct,<sup>498</sup> and cross-cultural awareness;<sup>499</sup> (3) the business development skills of creativity, trendspotting,<sup>500</sup> entrepreneurship and business of lawyering,<sup>501</sup>

495. See, e.g., AOUN, *supra* note 19, at 75; see Mark A. Cohen, *Legal Delivery at the Speed of Business – and Why It Matters*, FORBES (June 25, 2018), <https://www.forbes.com/sites/markcohen/2018/06/25/legal-delivery-at-the-speed-of-business-and-why-it-matters/#5d6e8fcf5e53> [http://perma.unl.edu/W7NZ-WF8C]. Attorney and legal innovator Cohen recommends reengineering of the law school model:

Law schools must augment traditional doctrinal courses—training students to ‘think like a lawyer’ with ‘practical practice’ courses—client interaction, drafting contracts and pleadings, settlement negotiations, and other core skills. The curriculum must also expose students to the marketplace and the new skills it demands—project management, business basics, data analytics, and how technology is used to deliver legal services. These tools will enable legal professionals to work more efficiently and accelerate the delivery process.

*Id.*

496. See SUSSKIND & SUSSKIND, *supra* note 90, at 251; see *Operating Models for the Future of Consumption*, WORLD ECON. F./ACCENTURE 17 (Jan. 2018), [https://www.accenture.com/t20180228T040007Z\\_w\\_/us-en/\\_acnmedia/PDF-72/Accenture-Strategy-WEF-Operating-Models-Future-Consumption-Full-Report.pdf#zoom=50](https://www.accenture.com/t20180228T040007Z_w_/us-en/_acnmedia/PDF-72/Accenture-Strategy-WEF-Operating-Models-Future-Consumption-Full-Report.pdf#zoom=50) [http://perma.unl.edu/YZQ7-3EG9] (describing “soft skills” as including: (1) “interpersonal & human intelligence” such as empathy, communication, collaboration, critical thinking, and creativity, and (2) “growth” such as resilience, adaptability, global mindset/perspectives, and lifelong learning); see also THE WORK AHEAD, *supra* note 110, at 14 (emphasizing the need for the human skills of “empathy, teamwork, collaboration, problem solving, critical thinking, and the ability to draw connections across disciplines.”).

497. *Id.* at 281 (stating that when it comes to moral decisions, “we tend to want another human being to have reflected, and perhaps agonized, over decisions and advice that matter to us”).

498. *Id.*; see also BRYNJOLFSSON & MCAFEE, *supra* note 24, at 139 (noting that computers do not [yet] have the ability to read the “emotional cues of a frustrated customer”). But see Dom Galeon & Abby Norman, *AI Learns to Read Sentiment Without Being Trained to Do So*, FUTURISM (Apr. 6, 2017), <https://futurism.com/ai-learns-to-read-sentiment-without-being-trained-to-do-so/> [http://perma.unl.edu/9SJP-RAVC] (describing how an AI trained for thirty days with “4,096 units on a corpus of 82 million Amazon reviews to predict the next character in a chunk of text” which led researches to discover a “single ‘sentiment neuron’ with a highly predictive sentiment value”).

499. See Holloway & Friedland, *supra* note 452, at 26–27.

500. LINKNER, *supra* note 92, at 69–70 (stating that innovators recognize the value of “trendspotting,” which means they consider macro-trends in their vision, plans, and actions). Linkner identifies some macro-trends such as demographic changes (e.g., aging population), technology changes to human interactions (e.g., social media, AR, VR, etc.), environmental and health concerns, and shifts in consumer purchasing preferences (e.g., AirBnB, Uber, car sharing, etc.). *Id.* Some key ques-

strategy,<sup>502</sup> marketing, and communications (e.g., advocacy and persuasion);<sup>503</sup> and (4) “humanics” which involves developing the distinct literacies necessary for working effectively with technology, data, and humans.<sup>504</sup>

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tions about how to harness these macro-trends include: How have customer demands changed over the last decade? What emerging consumer preferences provide fresh pathways for marketplace differentiation? How have legislative or policy changes affected the market? What organizations are gaining market momentum? What are they doing to generate this momentum? What organizations are failing and why? Are there new market entrants challenging industry norms? If so, what are they doing? *See generally id.*; *see also* KAPLAN, *supra* note 24, at 48 (observing the trend that “our evolving technologies are proliferating and consolidating at the same time”). Kaplan adds that the rapid speed at which this technological transformation occurs makes it difficult for humans to track, anticipate, and predict future outcomes. *Id.*

501. *See, e.g.*, Allen Maurer, *Gift of \$1.5M Will Establish UNC-CH Law School Entrepreneurship Program*, WRAL TECHWIRE (June 19, 2018), <https://www.wraltechwire.com/2018/06/19/gift-of-1-5m-will-establish-unc-ch-law-school-entrepreneurship-program/> [<http://perma.unl.edu/F8B5-URM7>]; *see also* Mary Juetten, *Reforming Law School: Start with the End in Mind*, A.B.A. J. (July 13, 2018), [http://www.abajournal.com/news/article/mary\\_juetten](http://www.abajournal.com/news/article/mary_juetten) [<http://perma.unl.edu/5WP4-FHH8>] (discussing the need for law students and attorneys to understand business principles).
502. *But see* FORD, *supra* note 116, at 113 (“If computers can create musical compositions or design electronic components, then it seems likely that they will soon be able to formulate a new legal strategy or perhaps come up with a new way to approach a management problem.”).
503. *But see* Will Knight, *This AI Program Could Beat You in an Argument—but It Doesn’t Know What It’s Saying*, MIT TECH. REV. (Jun 19, 2018), <https://www.technologyreview.com/s/611487/this-ai-program-could-beat-you-in-an-argument-but-it-doesnt-know-what-its-saying/> [<http://perma.unl.edu/DGC2-MCNT>] (describing Project Debater’s [PD] advanced technologies but also recounting critics’ observations about PD’s quality and utility, with some calling it a distraction with “shitty reasoning”); Bernard Marr, *IBM Showcases Artificial Intelligence Superiority with Project Debater*, FORBES (July 11, 2018), <https://www.forbes.com/sites/bernardmarr/2018/07/11/ibm-showcases-artificial-intelligence-superiority-with-project-dabater> [<http://perma.unl.edu/4AAC-HZZJ>] (concluding that IBM Project Debater “was an impressive debut, and it will be intriguing to see what’s up next”).
504. AOUN, *supra* note 19, at 53–61. Aoun defines technological literacy as “knowledge of mathematics, coding, and basic engineering principles.” *Id.* at 55. Data literacy involves the skills and ability to “read the digital record and also to understand when we ought to look elsewhere.” *Id.* at 58. Human literacy is the most important because it “equips us for the social milieu, giving us the power to communicate, engage with others, and tap into our human capacity for grace and beauty.” *Id.* at 58–59; *see* Joseph Aoun, *Robot-Proof: Higher Education in the Age of Artificial Intelligence*, MIT TECH. REV. (June 4, 2018), <https://www.technologyreview.com/video/611313/robot-proof-higher-education-in-the-age-of-artificial-intelligence/> [<http://perma.unl.edu/W6VW-BT7A>] (“President Joseph Aoun of Northeastern University on identifying which skills are most uniquely human, and encouraging students to commit to lifelong learning to stay relevant alongside robot coworkers.”); *see also* *Operating Models for the Future of Consumption*, *supra* note 496, at 17 (describing “hard skills” as including: (1) digital fluency,

Students, graduates, lawyers, and other knowledge professionals who will thrive in “the second machine age” are those who work well with technology but also think differently than machines—that is, they can think creatively and flexibly.<sup>505</sup> Specifically, these professionals (1) ask good questions,<sup>506</sup> (2) generate novel ideas and innovations,<sup>507</sup> (3) draw analogies,<sup>508</sup> (4) identify analytical connections,<sup>509</sup> (5) hypothesize, theorize, intuit, and speculate,<sup>510</sup> (6) exercise judgment,<sup>511</sup> (7) give reasoned advice,<sup>512</sup> (8) have and can apply tacit knowledge,<sup>513</sup> (9) engage in complex, nuanced, and non-verbal communications,<sup>514</sup> (10) execute large-frame pattern recognition,<sup>515</sup>

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design, interaction, and connectedness, and (2) data literacy, science, and translating insights into action); THE NEXT ERA OF HUMAN—MACHINE PARTNERSHIPS, *supra* note 61, at 18 (identifying the importance of “contextualized intelligence, entrepreneurial mindset[s], personal brand cultivation, automation literacy, [and] computational sensemaking”).

505. AOUN, *supra* note 19, at 21; see *The Rise of the Social Enterprise*, *supra* note 158, at 75–76 (“As Boston University [law] professor James Bessen has reported in his research, occupations with greater levels of computerization and technology experience higher, not lower, employment growth rates. What’s more, in many cases, the newly created jobs are more service-oriented, interpretive, and social, playing to the essential human skills of creativity, empathy, communication, and complex problem-solving.”); see also James E. Bessen, *How Computer Automation Affects Occupations: Technology, Jobs, and Skills* (B.U. Sch. L. Working Paper No. 15-49, 2016), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2690435](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2690435) [<http://perma.unl.edu/3G8T-H8UA>] (discussing how partial and complete automation affects employment rates).
506. BRYNJOLFSSON & MCAFEE, *supra* note 24, at 192 (quoting Voltaire) (“Judge a man by his questions, not his answers.”).
507. See Brynjolfsson et al., *New World Order*, *supra* note 61.
508. AOUN, *supra* note 19, at 32.
509. *Id.*
510. IAN AYRES, SUPER CRUNCHERS: WHY THINKING IN NUMBERS IS THE NEW WAY 124 (2007) (“The most important thing that is left to humans is to use our minds and our intuition to guess at what variables should and should not be included in statistical analysis.”). Ayres further explains that Aristotelian approaches to knowledge remain important as inputs to “statistical testing.” *Id.*
511. AOUN, *supra* note 19, at 32.
512. *Id.*
513. IBM INSTITUTE FOR BUSINESS VALUE, WHAT’S YOUR SUPERPOWER? AI REDEFINES WHAT IS POSSIBLE 5 (2018), <https://www-935.ibm.com/services/us/gbs/thought-leadership/superpower/> [<http://perma.unl.edu/7MKU-X36U>].
514. BRYNJOLFSSON & MCAFEE, *supra* note 24, at 194; see also MARKOFF, *supra* note 45, at 82 (describing technology’s “last mile” challenge, which typically involves complex and diverse human contact and communication).
515. *Id.*; see also Patrick Harker, *Change Is Coming: What U.S. Colleges Must Do to Survive*, KNOWLEDGE@WHARTON (Dec. 2, 2014), <http://knowledge.wharton.upenn.edu/article/what-u-s-colleges-must-do-to-survive/> [<http://perma.unl.edu/A9HW-KHUK>]. President Harker explains that “large frame pattern recognition” involves seeing and examining “the whole picture—including technology, social, political, and cultural factors—to find a solution to a problem.” *Id.*

(11) recognize context and think critically,<sup>516</sup> (12) perform big picture, multidisciplinary, “holistic systems thinking,”<sup>517</sup> (13) grapple with and resolve special or idiosyncratic cases, social complexities, and moral dilemmas,<sup>518</sup> (14) work and “function in tandem with intelligent machines” (AI, IA, and robots),<sup>519</sup> and (15) identify and act on innovation and entrepreneurial opportunities.<sup>520</sup> Humans capable of thinking differently than machines will always be needed in business, government, education, and the nonprofit sectors. While it is true that computer and data scientists can engineer solutions to complex technical challenges, their expertise and training does not apply “legal imagination” to resolve often thorny entanglements between humans, culture, ethics, law, finance, and technology.<sup>521</sup> Law schools can lead in this emerging education space.

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516. AOUN, *supra* note 19, at 42, 73, and 79 (noting IBM Watson’s inability to recognize and respond to context in the *Jeopardy!* competition). Aoun explains:

The definition of *critical thinking* is somewhat fluid, but for the purposes of this book, we say that it involves analyzing ideas in a skillful way and then applying them in a useful one. To do this well, a person needs to be able to observe, reflect, synthesize, and imagine concepts and information and to communicate the results of the process.

*Id.* at 42.

517. AOUN, *supra* note 19, at 37, 42 (“[S]ystems thinking involves seeing across areas that machines might be able to comprehend individually but that they cannot analyze in an integrated way, as a whole.”). Aoun further explains:

Systems thinking is a critical cognitive capacity for anyone in a position of leadership but also for anyone attempting to discover new knowledge, launch a business, or create something original. It sees the details and the entire tableau, exercising our mental strength to weigh complexity while also testing our grasp on multiple strands of thought.

*Id.* at 66.

518. ARTIFICIAL INTELLIGENCE, AUTOMATION, AND THE ECONOMY, *supra* note 36, at 19 (discussing the importance of human skills in the future). The report stated:

[Human] real-time supervision will also be required in exceptional, marginal, or high-stakes cases, especially those involving morality, ethics, and social intelligence that AI may lack. This might take the form of quality control of recommendations made by AI or online moderation when sensitive subjects are discussed. . . . As machines get smarter and have improved ability to make practical predictions about the environment, the value of human judgement [sic] will increase because it will be the preferred way to resolve competing priorities.

519. BRYNJOLFSSON & MCAFEE, *supra* note 24, at 193 (quoting futurist Kevin Kelly) (“You’ll be paid in the future based on how well you work with robots”); *see also* AOUN, *supra* note 19, at 41 (“To succeed, tomorrow’s employees will have to demonstrate a higher order of thought.”).

520. BRYNJOLFSSON & MCAFEE, *supra* note 24, at 191 (“We’ve never seen a truly creative machine, or an entrepreneurial one, or an innovative one.”).

521. *See, e.g.*, Symposium, *A Case for Another Case Method*, 60 VAND. L. REV. 597, 602 (2007) (describing the importance of “legal imagination”); Todd D. Rakoff and Martha Minnow define “legal imagination” as “the ability to generate the multiple characterizations, multiple versions, multiple pathways, and multiple solutions” and apply “well honed analytic skills.” *Id.*

Entrepreneurial, future-focused law schools will seize opportunities to train AI-robot-proof professionals essential for the “Internet Century” where clients and employers “hire people to *think*.”<sup>522</sup> These continuously adapting law schools will design curriculum that provide opportunities for students to develop collaborative and leadership skills in experiential learning simulations that require students to collaborate, dissect, and solve ambiguous and complex hypothetical client situations involving interwoven substantive legal and ethical issues.<sup>523</sup> Importantly, students should be provided opportunities to consider and apply multidisciplinary approaches—including business processes, data analytics, innovation, and technology—to design solutions for legal problems.<sup>524</sup> These comprehensive skillsets are necessary to maximize the customers’ perceived value of human-performed work as technologies—especially big data and AI—transform the legal and tax professions.<sup>525</sup> Education programs should consequently take

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522. SCHMIDT & ROSENBERG, *supra* note 89, at 174–75.

523. See Susan Strum, *Law Schools, Leadership, and Change*, 127 HARV. L. REV. 49 (2013); David Lat, *The Ethical Implications of Artificial Intelligence*, ABOVE THE LAW (2018), <https://abovethelaw.com/law2020/the-ethical-implications-of-artificial-intelligence/> [<http://perma.unl.edu/Z4VP-DBVQ>] (discussing that when lawyers use AI, these basic ethical rules still apply: competence and diligence, independence, judgment, confidentiality and privilege, supervision, unauthorized practice of law, anti-bias, etc.); see Nickisch, *supra* note 91 (discussing with Michigan Dean DeRue the need for graduates to have “horizontal” or “cross-cutting skills” so that they can respond, adapt, and thrive in complex situations and changing economies); see generally *Competing in the AI Economy: An Interview with MIT’s Andrew McAfee*, MCKINSEY & CO. (Mar. 2018), <https://www.mckinsey.com/Videos/video?vid=5759955614001&plyrid=HkOJqCPWdb> [<http://perma.unl.edu/W6MX-RR3C>]; *Retraining and Reskilling to Ease the Strain of Automation*, MCKINSEY GLOBAL INST. (Apr. 2018), <https://www.mckinsey.com/global-themes/future-of-organizations-and-work/retraining-and-reskilling-to-ease-the-strain-of-automation> [<http://perma.unl.edu/8CJP-NJRN>]; *The Role of Education in AI (and Vice Versa)*, MCKINSEY & CO. (Apr. 2018), <https://www.mckinsey.com/global-themes/artificial-intelligence/the-role-of-education-in-ai-and-vice-versa> [<http://perma.unl.edu/RM89-B9B7>].

524. Strum, *supra* note 523; see also Rhys Dipshan, *The Problem with Law Schools? They Only Prepare Future Lawyers*, LAW.COM (June 12, 2018), <https://www.law.com/legaltechnews/2018/06/12/the-problem-with-law-schools-they-only-prepare-future-lawyers/> [<http://perma.unl.edu/S9Y6-HW9R>] (emphasizing the importance of “T-shaped lawyers” and highlighting innovative legal education programs offered by the Institute for the Future of Law Practice [IFLP] and Northwestern, Suffolk, and University of Missouri-Kansas City Law Schools).

525. See Meredith Hobbs, *GSU Law Starts Big Data Lab as Industry Girds for Disruption*, LAW.COM (Oct. 17, 2017), <https://www.law.com/sites/dailyreportonline/2017/10/17/gsu-law-starts-big-data-lab-as-industry-girds-for-disruption/> [<http://perma.unl.edu/FL3X-LF5R>]; see also *Retraining and Reskilling to Ease the Strain of Automation*, *supra* note 523 (“Not just middle-class jobs but also high paying jobs will be augmented or somehow affected.”); see generally Kimberly Houser & Debra Sanders, *The Use of Big Data Analytics by the IRS: What Tax Practitioners Need to Know*, 128 J. TAX 1, 1 (2018), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3120741](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3120741) [<http://perma.unl.edu/WKF3-UEQJ>] (noting that

extra care to nurture and train students on those uniquely human skills that technology cannot absorb or perform.<sup>526</sup> Further, future-oriented law schools and their faculty will recognize, emphasize, and model flexible attitudes and learning processes;<sup>527</sup> they will exhibit nimble behaviors consistent with adapting to ever-changing technologies. Compared to tradition-bound schools, these modern law programs will target their efforts on demonstrating that their unique, differentiated, market-valued education services provide their full

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the “IRS uses a wide range of analytic methods to mine public and commercial data including social media sites such as Twitter, Facebook, and Instagram.”)

526. Binder, *supra* note 120 (noting that humans are well suited for considering complex issues, taking into account different perspectives, mediating conflicts, identifying creative solutions, and evaluating ethical/moral considerations); see Cohen, *supra* note 122 (emphasizing the importance of “intellectual intelligence (IQ) and emotional intelligence (EQ)” when a lawyer’s work involves collaboration and persuasion); DOMINGOS, *supra* note 36, at 276–77 (stating that work that involves a “broad combination of skills and knowledge” as well as understanding context and applying common sense are currently outside of computing capabilities). Similarly, as discussed by Alarie et al., “A lawyer does not merely provide answers to legal questions. She identifies the appropriate question (or likely, multiple questions) to answer. Moreover, her task is to advise a course of action that goes beyond the specific and immediate legal question, to consider the client’s overall circumstances and interests.” Benjamin Alarie et al., *How Artificial Intelligence Will Affect the Practice of Law*, at 12 (Nov. 7, 2017), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3066816](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3066816) [<http://perma.unl.edu/3M27-6AK4>]; see also Ken Grady, *Who Decides AI’s Role in Human Governance? A Rejoinder to Professor John O. McGinnis*, MEDIUM.COM (Jan. 10, 2018), <https://medium.com/the-algorithmic-society/who-decides-ais-role-in-human-governance-cb2f6310abda> [<http://perma.unl.edu/568M-AU76>] (explaining that because laws are based on important embedded values, such values should be interpreted and decided by humans—not AI systems); Philip Segal, *Surviving AI in the Law Firm: Be the One Asking Questions, Not Collecting Answers*, ABOVE THE LAW (Jan. 17, 2018), <https://abovethelaw.com/legal-innovation-center/2018/01/17/surviving-ai-in-the-law-firm-be-the-one-asking-questions-not-collecting-answers/> [<http://perma.unl.edu/9FM9-UQCA>] (linking the ability to understand and manage AI to job security). *But see* KAPLAN, *supra* note 24, at 70–71 (discussing how synthetic intellects/AI are highly persuasive and can influence customer purchasing decisions); Cade Metz, *Paul Allen Wants to Teach Machines Common Sense*, N.Y. TIMES (Feb. 28, 2018), <https://www.nytimes.com/2018/02/28/technology/paul-allen-ai-common-sense.html> [<http://perma.unl.edu/M9MN-9ESU>].
527. See generally EXPANDED EDITION: HOW PEOPLE LEARN: BRAIN, MIND, EXPERIENCE, AND SCHOOL, COMM’N ON BEHAVIORAL & SOC. SCI. & EDUC. (Nat’l. Academies of Sciences, Engineering, Medicine Press 2000). This book observes how technology engagement can facilitate learning:
- [Because of technology, often] both teachers and students are novices, and the creation of knowledge is a genuinely cooperative endeavor. Epistemological authority—teachers possessing knowledge and students receiving knowledge—is redefined, which in turn redefines social authority and responsibility. . . . Cooperation creates a setting in which novices can contribute what they are able and learn from the contributions of those more expert than they. Collaboratively, the group, with its variety of expertise, engagement, and goals, gets the job done.
- Id.* at 227.



spectrum of customers with the doctrinal, practical, technological, and entrepreneurial knowledge and skills necessary to thrive in an AI-robot future. Customers who invest in degrees and/or lifelong educational services from these always evolving, innovative law schools will more likely conclude that the tuition paid yields sound returns.

To assist the reader, Appendix I, “T-Shaped skills for knowledge professionals,” includes a visual depiction of these skills.<sup>528</sup> The horizontal stroke of the “T” includes skills in which humans often excel and are less likely to be supplanted by AI, IA, and robotic technologies.<sup>529</sup> The vertical central-stroke of the “T” lists the skills and functions that may eventually be usurped by AI since they may be “routinized” via “checklists, protocols, standard-form documents, and algorithms.”<sup>530</sup>

### 5. *Move and Innovate*

Law school deans confronting disruptive technological change must lead—not follow—to exploit new technologies and enter new markets.<sup>531</sup> Because innovations spring forth from pliable processes, not rigid results, shrewd leaders will remain open to all pathways that might move their institution forward and tailor their innovation mis-

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528. KOWALSKI, *supra* note 476, at 135 (explaining that a “T-shaped lawyer” includes a “lawyer with a depth of legal skills as well as a broad range of service delivery skills, such as project management skills, Lean skills, technology skills, business skills, and the like”); *see also* STAATS, *supra* note 217, at 146–47 (describing the T-shaped person as someone who is “highly skilled at a broad set of things” and a “world class expert[ ] within a more narrow discipline.”).

529. *See generally Preparing for the Future of Artificial Intelligence*, *supra* note 286, at 6–7. The National Science and Technology Council, Committee on Technology 2016 report cites the textbook, STUART RUSSELL & PETER NORVIG, *ARTIFICIAL INTELLIGENCE: A MODERN APPROACH* (3d ed. 2009) for the following taxonomy of AI:

(1) systems that think like humans (e.g., cognitive architectures and neural networks); (2) systems that act like humans (e.g., pass the Turing test via natural language processing; knowledge representation, automated reasoning, and learning), (3) systems that think rationally (e.g., logic solvers, inference, and optimization); and (4) systems that act rationally (e.g., intelligent software agents and embodied robots that achieve goals via perception, planning, reasoning, learning, communicating, decision-making, and acting).

*Id.*

530. SUSSKIND & SUSSKIND, *supra* note 90, at 119; *see also* THE WORK AHEAD, *supra* note 110, at 13 (2018) (“Any work tasks that can be routinized even in part are subject to replacement by computers or robots, and advances in artificial intelligence will steadily increase the number of occupations affected.”).

531. CHRISTENSEN, *supra* note 62, at 139; *see also* SCHWAB, *supra* note 36, at 13 (“The question for all industries and companies, without exception, is no longer ‘Am I going to be disrupted?’ But ‘When is disruption coming, what form will it take, and how will it affect me and my organization?’”).

sion trajectories as necessary.<sup>532</sup> Sustainable growth requires education leaders and faculty to move quickly, take smart risks,<sup>533</sup> learn from mistakes, and constantly improve. It requires digging in, getting dirty, and sowing seeds of change. Wise education leaders who are good stewards<sup>534</sup> of the minds entrusted to them will invest in the future and work to strengthen the programs under their care for future generations.<sup>535</sup>

## V. CONCLUSIONS

The unstoppable winds of rapid technology change threaten traditional legal education programs by supplanting longstanding business and teaching methodologies. For university programs with excellent reputations and consistent flows of students, it is easy to cling to tradition and discount the power of disruptive technologies. In a constantly evolving higher education marketplace, however, sitting still and playing it safe is both perilous and irresponsible. Because marketplace advantages are transitory, the poetic words of Percy Bysshe Shelley remain true: “The flower that smiles today . . . Tomorrow dies.”<sup>536</sup>

But failure is not a foregone conclusion. Energetic, determined, and adaptable legal education entrepreneurs will surpass slow and late movers. These intrepid entrepreneurs recognize that change brings opportunity. As discussed in this three-part Article series, entrepreneurial, forward-focused legal education programs can and will continue to serve as knowledge centers, provided that they embrace innovation as the means by which to capitalize on the opportunities unearthed by the upsetting and disorganizing forces of creative destruction. Joseph Schumpeter and Peter Drucker identify the only

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532. REIS, *supra* note 77, at 108 (discussing how the implementation of a grand vision requires nimble strategies, pivots, and adjustments or realignments to make the vision come to fruition). Reiss encourages organizations to mix and match a variety of innovation management techniques and ideas that become a part of the “fabric” of an organization. *Id.* at 308.

533. DOERR, *supra* note 192, at 133 (quoting Ariel Investments President Mellody Hobson) (“The biggest risk of all is not taking one.”).

534. *See Matthew* 25:14–30 (Catholic Study Bible/New American Bible).

535. REIS, *supra* note 77, at 34–35 (discussing the concept of legacy). Reiss also asserts that modern, thriving organizations will synthesize past excellence with future opportunities. *Id.* at 35. TEDLOW, *supra* note 177 (describing the epic market battles between Coca-Cola and Pepsi soft drinks and stating that legacy is a suffocating “wet blanket”).

536. Percy Bysshe Shelley, *Mutability* [“The flower that smiles to-day”], POETICAL WORKS PERCY BYSSHE SHELLEY, VOLUME 4 (1839), <https://www.poetryfoundation.org/poems/45133/mutability-the-flower-that-smiles-to-day> [http://perma.unl.edu/8BXV-LK2Q].

sustainable path forward: the entrepreneur's "task is creative destruction."<sup>537</sup>

Professor Langdell's once fantastical dream of blending the rigors of science with the teaching of law has come to fruition thanks to the perfect and powerful combination of computers, ICTs, and data. The challenge ahead for legal education entrepreneurs is to thoughtfully cross-pollinate tradition with technology and deliver high-quality, pedagogically sound, market-valued, and omni-channel knowledge development services for current students and lifelong learners.

Market survival demands that law schools satisfy changing customer expectations and adapt to modern technologies. While there remains time for self-disruption, each day that passes without intentional, forward progress concedes incumbent market share to disruptors. Education programs that do not innovate and instead tightly cling to their traditions and reputations will face obsolescence because according to Andrew Grove: "Only the paranoid survive."<sup>538</sup>

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537. Drucker, *supra* note 1.

538. GROVE, *supra* note 3; *see also* Pistone & Horn, *supra* note 255, at 23 (suggesting a new model for law schools); *see generally* SPENCER JOHNSON, WHO MOVED MY CHEESE: AN AMAZING WAY TO DEAL WITH CHANGE IN YOUR WORK AND IN YOUR LIFE (1998).

APPENDIX I: T-SHAPED SKILLS FOR KNOWLEDGE  
PROFESSIONALS

<ul style="list-style-type: none"> <li>• Soft skills (empathy, written and oral communication, collaboration, teamwork, conflict resolution) • Ethical skills (integrity, moral, social values) • Critical thinking skills (creativity, ability to intuit, analogize, hypothesize, theorize, speculate, exercise judgment, connect analytical concepts, holistic/big picture outlook, global and cultural agility and awareness) • Growth mindset (adaptability, resilience, agility) • Strategic/tactical skills (spot trends, seize opportunities, balance tradeoffs, develop holistic solutions)</li> <li>• Business skills (entrepreneurship, management, marketing, customer service) • Multidisciplinary and systems thinking • Continuous learning skills (substantive knowledge, technology, process improvement)</li> </ul>			<b>Human strengths</b>
		Technical fundamentals Doctrinal knowledge Process knowledge Procedural knowledge Discipline-specific analytic thinking Anomalies detection Pattern recognition Simulations Options/solutions identification	<b>AI-robot potential</b>

Credits:

- David Guest originated the T-shaped model concept in *The Hunt Is on for the Renaissance Man of Computing*, THE INDEPENDENT (Sept. 17, 1991).
- See also Peter Rogers & Richard J. Freuler, *The “T-Shaped Engineer,”* AM. SOC. FOR ENGINEERING EDUC. CONFERENCE (Jun. 14–17, 2015), <https://www.asee.org/public/conferences/56/papers/11576/view> [<http://perma.unl.edu/FM6E-QDTS>].
- This model reflects an ongoing dialogue with my colleague, Dr. Susan M. Zvacek.

## APPENDIX II: MULTIMEDIA RESOURCES

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## APPENDIX III: GLOSSARY OF KEY TERMS

**Algorithm:**

“[A] step by step method of solving a problem. It is commonly used for data processing, calculation and other related computer and mathematical operations. An algorithm is also used to manipulate data in various ways, such as inserting a new data item, searching for a particular item or sorting an item.” *Algorithm*, TECHOPEDIA, <https://www.techopedia.com/definition/3739/algorithm> [http://perma.unl.edu/4AWY-6XDQ].

**Artificial intelligence (AI):**

“[An] area of computer science that emphasizes the creation of intelligent machines that work and react like humans. Some of the activities computers with artificial intelligence are designed for include: speech recognition, learning, planning, [and] problem solving.” *Artificial Intelligence*, TECHOPEDIA, <https://www.techopedia.com/definition/190/artificial-intelligence-ai> [http://perma.unl.edu/2475-MMDM].

**Asynchronous learning model:**

The asynchronous teaching and learning model uses online learning resources “to enable information sharing between people in a network.” Asynchronous educational activities are not limited by time or place which enables students to complete their studies any time they prefer. Asynchronous learning methods may use digital platforms and media (e.g., online discussions, assignments, quizzes, etc.). *Asynchronous Learning*, TECHOPEDIA, <https://www.techopedia.com/definition/23154/asynchronous-learning> [http://perma.unl.edu/EMB6-4PNS].

**Augmented reality (AR):**

“AR overlays digital objects (information, graphics, sounds) on the real world, allowing the user to experience the relationship between digital and physical worlds.” *Redefine Your Company Based on the Company You Keep. Intelligent Enterprise Unleashed*, ACCENTURE 30–38 (2018), [https://www.accenture.com/t20180227T215953Z\\_w\\_/us-en/\\_acnmedia/Accenture/next-gen-7/tech-vision-2018/pdf/Accenture-TechVision-2018-Tech-Trends-Report.pdf#zoom=50](https://www.accenture.com/t20180227T215953Z_w_/us-en/_acnmedia/Accenture/next-gen-7/tech-vision-2018/pdf/Accenture-TechVision-2018-Tech-Trends-Report.pdf#zoom=50) [http://perma.unl.edu/4VJX-ED5F].

**Business Process Re-engineering (BPR):**

“[T]he analysis, control and development of a company’s systems and workflow. The principal idea behind business process re-engineering is that a company is a collection of processes that evolves over time. Business processing re-engineering [ ] gained prominence in the 1990s, but has re-emerged as business software and enterprise applications have provided more in-depth analytics with which to evaluate business systems.” *Business Process Re-Engineering*, TECHOPEDIA, <https://www.techopedia.com/definition/13764/business-process-re-engineering-bpr> [http://perma.unl.edu/A92D-SV4W].

**Digital-first:**

Asynchronous learning model. Harvard Business School's HBX program currently pioneers some "digital-first" teaching approaches which involves "intentionally distancing from or even discarding analog habits." For example, in its pilot launch of student fundamental coursework in business, accounting, and economics later called HBX CORE, HBX made several contrarian online education decisions. Specifically, the HBX design team rejected camera in back of the room, focused on small learning groups, and eliminated live faculty interactions with students (sometimes referred to as "value-added services"). BHARAT ANAND, *THE CONTENT TRAP: A STRATEGIST'S GUIDE TO DIGITAL CHANGE* 191, 307, 314–17 (2016).

**Digital Innovation Team:**

A small, full-time, energetic, self-managed, customer-obsessed multidisciplinary team made up of diverse talent focused on imagining, designing, and iterating legal education solutions that unite the best of being human and digital, with an end goal of human-AI integration. *See generally Legal Education: A New Growth Vision Part III*, subsection II.B.1.

**Digital live:**

Synchronous learning model. Harvard Business School also launched in 2015, HBX Live, a "virtual classroom" "where, in effect, sixty physical seats were replaced by sixty TV screens, so that learners could participate in live class discussion from anywhere in the world." BHARAT ANAND, *THE CONTENT TRAP: A STRATEGIST'S GUIDE TO DIGITAL CHANGE* 339 (2016).

**Digitization:**

"[T]he process of converting analog signals or information of any form into a digital format that can be understood by computer systems or electronic devices. The term is used when converting information, like text, images or voices and sounds, into binary code. Digitized information is easier to store, access and transmit, and digitization is used by a number of consumer electronic devices." *Digitization*, TECHOPEDIA, <https://www.techopedia.com/definition/6846/digitization> [http://perma.unl.edu/M39U-Y2QS].

**Dystechnia:**

The flawed use of technology which creates barriers to organizational performance. McDonald R. Stewart & Elias G. Carayannis, *Dystechnia: A Model of Technology Deficiency and Implications for Entrepreneurial Opportunity*, *J. INNOVATION & ENTREPRENEURSHIP* 2:1 (2013), <https://innovation-entrepreneurship.springeropen.com/articles/10.1186/2192-5372-2-1> [http://perma.unl.edu/S325-ZR3G].

**Extended reality (XR):**

"XR refers to the spectrum of experiences that blurs the line between the real world and the simulated world. The technology immerses the user through visuals, audio, and potentially olfactory and haptic cues. The two major types of XR are virtual reality and augmented reality." *Redefine Your Company*

*Based on the Company You Keep. Intelligent Enterprise Unleashed*, ACCENTURE TECH. VISION 30–38 (2018), [https://www.accenture.com/t20180227T215953Z\\_w\\_/us-en/\\_acnmedia/Accenture/next-gen-7/tech-vision-2018/pdf/Accenture-TechVision-2018-Tech-Trends-Report.pdf#zoom=50](https://www.accenture.com/t20180227T215953Z_w_/us-en/_acnmedia/Accenture/next-gen-7/tech-vision-2018/pdf/Accenture-TechVision-2018-Tech-Trends-Report.pdf#zoom=50) [http://perma.unl.edu/B66F-6HHT].

### **Foundational platform:**

“A multisided platform that provides core services to other multisided platforms and is therefore a ‘platform for platforms.’ These include Internet Service Providers (ISPs), which connect edge providers and end users. For example, Comcast makes it possible for end users to connect over the Internet to Google’s search engine. Foundational platforms also include computer operating systems, or invisible engines, which provide a standard platform for app developers and end users; for example, Android provides an operating system that enables app developers to provide apps to end users and for end users to use those apps.” DAVID S. EVANS & RICHARD SCHMALENSEE, *MATCHMAKERS: THE NEW ECONOMICS OF MULTISIDED PLATFORMS* 208 (2016).

### **Hybrid:**

A hybrid (or blended) course involves moving “[a] significant percentage—often more than 20% but less than 100%—of traditional classroom meetings” to online activities. ROBERT TALBERT, *FLIPPED LEARNING: A GUIDE FOR HIGHER EDUCATION FACULTY* 153 (2017).

### **HyFlex:**

Synchronous and/or asynchronous learning model. In 2010, Dr. Brian Beatty defined HyFlex courses as those that “enable a flexible participation policy for students whereby students may choose to attend face-to-face synchronous class sessions or complete course learning activities online without physically attending class.” Jackie B. Miller et al., *Student Choice, Instructor Flexibility: Moving Beyond the Blended Instructional Model*, *ISSUES & TRENDS IN EDUC. TECH.* (2013), <https://journals.uair.arizona.edu/index.php/itet/article/view/16464/16485> [http://perma.unl.edu/E38Y-ZLET].

### **Information and Communications Technology (ICT):**

“[A]ll the technology used to handle telecommunications, broadcast media, intelligent building management systems, audiovisual processing and transmission systems, and network-based control and monitoring functions. Although ICT is often considered an extended synonym for information technology (IT), its scope is more broad. ICT has more recently been used to describe the convergence of several technologies and the use of common transmission lines carrying very diverse data and communication types and formats.” *Information and Communications Technology*, *TECHOPEDIA*, <https://www.techopedia.com/definition/24152/information-and-communications-technology-ict> [http://perma.unl.edu/Z6TD-AA3J].

### **Innovation mission trajectory (IMT):**

A fusion of modern innovation theories, an innovation mission trajectory encourages entrepreneurs to imagine the fantastic and improbable future and

then design ways to implement those dreams. This process of ideation, innovation, and implementation occurs through open collaborations between multidisciplinary knowledge experts, technology professionals, and diverse entities (e.g., education, business, nonprofits, non-governmental organizations, and government) that systematically and continuously experiment (e.g., prototypes and MVPs) to create, identify, and nurture seeds of inspiration. Innovation mission trajectories are designed to be flexible in conception and application but are always iterative and dynamic (i.e., forward-moving). They require curiosity, nimbleness, agility, and adaptability. In the context of higher education, innovation mission trajectories spring from customer collaborations, defined broadly to include students, graduates, employers, and community professionals.

### **Intelligence amplification or augmentation (IA):**

“[T]he idea that technologies can be assistive to human intelligence, rather than being composed of technologies that create an independent artificial intelligence. Intelligence amplification systems work to enhance a human’s own intelligence, to improve a human decision-maker’s function or capability in some way. Intelligence amplification is also known as assistive intelligence, augmented intelligence, cognitive augmentation or machine-augmented intelligence.” *Intelligence Amplification*, TECHOPEDIA, <https://www.techopedia.com/definition/32577/intelligence-amplification-ia> [<http://perma.unl.edu/47JF-HVGC>].

### **Machine learning:**

“[A]n artificial intelligence (AI) discipline geared toward the technological development of human knowledge. Machine learning allows computers to handle new situations via analysis, self-training, observation, and experience. Machine learning facilitates the continuous advancement of computing through exposure to new scenarios, testing and adaptation, while employing pattern and trend detection for improved decisions in subsequent (though not identical) situations.” *Machine Learning*, TECHOPEDIA, <https://www.techopedia.com/definition/8181/machinelearning> [<http://perma.unl.edu/XPM3-734C>].

### **Metcalfe’s Law:**

“[A] concept used in computer networks and telecommunications to represent the value of a network. Metcalfe’s Law states that a network’s impact is the square of the number of nodes in the network. For example, if a network has 10 nodes, its inherent value is 100 (10 \* 10). The end nodes can be computers, servers and/or connecting users.” *Metcalfe’s Law*, TECHOPEDIA, <https://www.techopedia.com/definition/29066/metcalfes-law> [<http://perma.unl.edu/SG9Z-87GS>].

### **Minimum Viable Product (MVP):**

A minimum viable product (MVP) is a “pared down version of the product” that helps test, tinker, and determine the viability of the envisioned solution. *Minimum Viable Product (MVP)*, TECHOPEDIA, <https://www.techopedia.com/definition/27809/minimum-viable-product-mvp> [<https://perma.unl.edu/3NVC-ENGV>]; Jason Thomas, *Proof of Concept vs. Minimum Viable Product (And When to Use Each)*, LEAN LABS (Jan. 23, 2015), <https://www.lean-labs.com/>

blog/proof-of-concept-vs.-minimum-viable-product-and-when-to-use-each [https://perma.unl.edu/W3PV-LWA9].

### **Mixed reality (MR):**

Mixed reality can be in both the real and digital world. For example, the user can (1) “remain in [a] real-world environment” with digital content added to the space or (2) enter a digital environment that “replaces the real world.” Quora, *The Difference Between Virtual Reality, Augmented Reality and Mixed Reality*, FORBES (Feb. 2, 2018), <https://www.forbes.com/sites/quora/2018/02/02/the-difference-between-virtual-reality-augmented-reality-and-mixed-reality/#213997282d07> [http://perma.unl.edu/8FJR-4CTZ] (providing answer by Julia Tokareva, Software Development Consultant at Ruby Garage); see Gleb B., *VR vs AR vs MR: Differences and Real-Life Applications*, RUBY GARAGE, <https://rubygarage.org/blog/difference-between-ar-vr-mr> [http://perma.unl.edu/4MHT-8BZK] (last visited Jun. 23, 2018).

### **Moore’s Law:**

Both a technology and economic theory which “states that the number of transistors that can be put on an integrated circuit to build a microprocessor doubles every eighteen months. A transistor is an on/off switch that can also amplify an electrical charge. More transistors equal more processing speed, and faster computers. Moore’s Law means computers will get smaller, more powerful, and cheaper at a reliable rate.” JAMES BARRAT, *OUR FINAL INVENTION: ARTIFICIAL INTELLIGENCE AND THE END OF THE HUMAN ERA* 139 (2013).

### **Multisided platform:**

An enterprise “that operates a physical or virtual place (a platform) to help two or more different groups find each other and interact. The different groups are called ‘sides’ of the platform. For example, Facebook operates a virtual place where friends can send and receive messages, where advertisers can reach users, and where people can use apps and app developers can provide those apps.” DAVID S. EVANS & RICHARD SCHMALENSEE, *MATCHMAKERS: THE NEW ECONOMICS OF MULTISIDED PLATFORMS* 210 (2016).

### **Multichannel:**

Integrated technologies and tools such as audio or video content, blogs, and discussion forums. Loic Ple & Jacques Angot, *Teaching and Learning a Multichannel Experience of HRM* (2008), [http://www.ufhrd.co.uk/wordpress/wp-content/uploads/2008/06/517-teaching-a-multichannel-hrm-experience\\_ple-et-al.pdf](http://www.ufhrd.co.uk/wordpress/wp-content/uploads/2008/06/517-teaching-a-multichannel-hrm-experience_ple-et-al.pdf) [http://perma.unl.edu/UP73-4C2X].

### **Network effects:**

A phenomenon whereby a good or service becomes more valuable when more people use it. The internet is a good example. “Initially, there were few users of the internet,” and “[i]t was of relatively little value to anyone outside of the military and a few research scientists. As more users gained access to the internet,” however, there were “[m]ore and more websites” to visit and more people to communicate with. “[T]he internet became extremely valuable to its

users.” *Network Effect*, INVESTOPEDIA, <http://www.investopedia.com/terms/n/network-effect.asp> [<http://perma.unl.edu/YNB8-52ZS>].

### **Objectives and Key Results (OKRs):**

The transformation management system Objectives and Key Results (OKRs) focuses on structured, effective goal setting and execution. Objectives are generally concrete, action oriented and significant (and often inspirational). Objectives focus on the “what” is to be accomplished. Key results are measurable, verifiable, time-focused, energetic, and urgent benchmarks that track “how” organizations achieve stated objectives. JOHN DOERR, *MEASURE WHAT MATTERS* 6–7, 23 (2018).

### **Omni-channel:**

“[S]eamless and effortless, high-quality customer experiences that occur within and between contact channels” (e.g., physical and digital environments). *Omnichannel*, WIKIPEDIA, <https://en.wikipedia.org/wiki/Omnichannel> [<http://perma.unl.edu/CDQ7-MHGS>].

### **Platform:**

“[A] group of technologies that are used as a base upon which other applications, processes or technologies are developed.” *Platform*, TECHOPEDIA, <https://www.techopedia.com/definition/3411/platform> [<http://perma.unl.edu/L99M-J5Y8>].

### **Prototype:**

A prototype is the “original model” of a product that provides a starting point for the development and iteration of “future models” (e.g., a pencil sketch). *Prototype*, TECHOPEDIA, <https://www.techopedia.com/definition/678/prototype> [<https://perma.unl.edu/8X3W-8Q6N>].

### **Strategic inflection point (SIP):**

“A point in time in the life of a business when its fundamentals are about to change.” ANDREW S. GROVE, *ONLY THE PARANOID SURVIVE: HOW TO EXPLOIT THE CRISIS POINTS THAT CHALLENGE EVERY COMPANY* 3 (1999).

### **Synchronous learning model:**

“Synchronous learning refers to” teaching and learning model in which students learn and interact with the instructor “in real time,” but the students and instructor are not necessarily at the same physical location. The course occurs live at a specific time. Distance learners may participate via telephone, web, or video conference. *Synchronous Learning*, TECHOPEDIA, <https://www.techopedia.com/definition/23794/synchronous-learning> [<http://perma.unl.edu/D6L8-ZCJF>].

**Virtual reality (VR):**

“VR visually takes the user out of their real-world environment and into a virtual environment, typically using a headset for viewing coupled with hand-held controllers to navigate the virtual space.” *Redefine Your Company Based on the Company You Keep. Intelligent Enterprise Unleashed*, ACCENTURE TECH. VISION 30–38 (2018), [https://www.accenture.com/t20180227T215953Z\\_\\_w\\_/us-en/\\_acnmedia/Accenture/next-gen-7/tech-vision-2018/pdf/Accenture-TechVision-2018-Tech-Trends-Report.pdf#zoom=50](https://www.accenture.com/t20180227T215953Z__w_/us-en/_acnmedia/Accenture/next-gen-7/tech-vision-2018/pdf/Accenture-TechVision-2018-Tech-Trends-Report.pdf#zoom=50) [http://perma.unl.edu/6TEB-X54N].

**XR: See Extended reality**