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Disruptive Innovation Within the Legal Services Ecosystem

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Abstract

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Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Most law firms have done little to address the opportunities and threats related to potentially disruptive technology (DT), such as artificial intelligence (AI) and machine learning (ML). The purpose of this multiple case study was to explore strategies that law firm leaders in the United States used to address the potentially detrimental influences of DT, such as AI and ML, on their organizations. The systems approach to management was employed as the conceptual framework. Data were collected from 6 participants at 2 international law firms with offices in California using semistructured interviews and organizational artifacts. Data were analyzed using Miles, Huberman, and Saldana's data analysis method, resulting in 4 themes: recognizing the legal ecosystem and legal firms are open systems, but organizational subsystems often function as semiclosed systems; acknowledging that while DT represents the most significant potential challenge in the near future, the immediate challenge is improving technology, which requires organizational adjustments; recognizing the need for firms to invest more heavily in innovation generation activities; and realizing the need for increased utilization of augmenting technologies, such as AI or ML, to streamline nonadvisory outputs. The findings of this study might support best practices for addressing DT and contribute to social change by outlining ways in which firms can lower costs to clients while increasing access to legal services for those in underserved communities.

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Dedication

I dedicate this doctoral study to my wife, Brenda Billings, whose steadfast support and encouragement remained unwavering at each stage of my doctoral journey. I also dedicate this work to my son, Ryan Billings, for his love and support, which helped pave my path and to my siblings, Chris Shelton, Camron Shelton, and Deena Billings-Webber, who understood and forgave my absences at family events and holiday gatherings, allowing me to remain focused on my research.

I also dedicate this work to my aunts, Michelle Turner, Patricia Robertson, and Debbie Holland, who, in my earliest years, instilled a passion for books and reading that continues to this day. Additionally, I dedicate this study to the memory of my mother, Alice de la Torre, who, as a mother and wife, continued her formal education well into adulthood. Finally, I dedicate this work to my father, Jim Shelton, who pushed me to challenge myself, no matter the subject. His natural curiosity, passion, humor, and positive outlook continue to serve as a model for my life.

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Section 1: Foundation of the Study

In 2011, academics, researchers, and notable members of the popular press first described the potential for systems-driven disruption within the legal services ecosystem. Some of changes were enabled by disruptive technologies (DTs), such as artificial intelligence (AI) and machine learning (ML; Simpson, 2016). Despite widespread consensus from legal industry leaders regarding the need to address the increased competitive threats, including the evolution of DTs, less than half of those participating in an industry study reported making any significant adjustments to their traditional business models (Clay & Seeger, 2014).

Background of the Problem

Although Christensen, Raynor, and McDonald (2015) formalized the concept of disruptive innovation (DI) as a business theory more than two decades ago, it was only as recently as 2015 that law firm leaders in the United States began to recognize the role DI may play within the broader legal services ecosystem (Brescia, 2015). As an open system, boundaries within the legal services ecosystem are both dynamic and porous, allowing for the exchange or sharing of information and feedback (Brescia, 2015). Most often, these external influences remain outside the control of the organization and may include the political climate, economic conditions, or even technological disruption (LoPucki, 1996). Of those working within the legal services ecosystem, only a small number have actively developed strategies aimed at addressing the potential effect that DTs, such as AI and ML, may have on existing business models (Dolin & Buley, 2015). This lack of action continues despite a growing consensus among scholars that disruption

within the legal industry is inevitable (Katz, 2014). According to Christensen et al., DI is a transformational process by which organizations are innovating at the lower end of the market, typically in niche areas neglected by established incumbents, and transforming existing industries dominated by high cost and complex products or services. Such innovations tend to focus on features such as ease of use, costs, and convenience (Christensen et al., 2015). Over time, the broader adoption of the product or service could redefine an industry completely (Christensen et al., 2015).

Between 2006 and 2016, corporations reduced spending on outside legal services (Barton, 2014b). This trend corresponded to increased client-driven demand for greater efficiency and improved metrics-driven accountability throughout the legal industry (Butler & Kobayashi, 2014; Moppett, 2013; Ribstein, 2012; Simpson, 2016). These shifts in demand for improved efficiency helped bolster the growth of new market entrants, including entrepreneurs and venture-backed legal technology companies offering early iterations of AI and ML technologies designed to automate functions previously performed by lawyers (Barry, 2012; McGinnis & Pearce, 2014).

Problem Statement

Following the economic downturn of 2008, law firm leaders in the United States experienced increased external pressure to improve operational efficiency through technology adoption (Giroud & Mueller, 2017). Between 2008 and 2015, the failure of law firm leaders to implement strategies to adopt new technology contributed to the dissolution of more than 25 U.S.-based international law firms, some of which had been in business since the mid-1800s (Sheppard, 2015). The general business problem was that

some law firm leaders in the United States fail to successfully address the potentially negative systems effects of DTs, such as AI and ML, to their firms, resulting in a loss of competitive advantage. The specific business problem was that some law firm leaders in the United States lack strategies to address the potentially negative systems effects of DTs, such as AI and ML, on their organizations.

Purpose Statement

The purpose of this qualitative, descriptive multiple case study was to explore strategies that law firm leaders in the United States use to address the potentially detrimental influences of DTs, such as AI and ML, on their organizations. The target population was comprised of six law firm leaders from two U.S.-based international law firms with offices located in California that are recognized by their peers for successfully implementing strategies to adapt to DTs by adopting AI and ML. The implications for positive social change include potential benefits to community members that Brescia, McCarthy, McDonald, Potts, and Rivais (2014) claimed in the form of a potential to increase access to and reduce the cost of legal services within currently underserved markets through improved efficiency and decreased costs to consumers.

Nature of the Study

I selected the qualitative method and multiple case study design for this research study. I chose to use the qualitative approach over other methods because the use of this method encourages the researcher to see phenomena from the perspective of the participants and to explore themes based on what participants have experienced (see Denzin & Lincoln, 2013). Additionally, the use of the qualitative method provided a

means to identify themes or trends from a breadth of participants and supporting documents in ways that are not possible through other methods (Dukes, 1984).

Other research methods, such as quantitative or mixed methods research, were not appropriate for this study. Quantitative research is best suited to studies in which the scope of the research can be narrowly defined and measured through correlation studies, surveys, and experiments or through linear research that builds upon analysis of one variable's effects on another (Denzin & Lincoln, 2013). Moreover, because the variables for the phenomenon under study are unknown and the data are not structured in the form of numbers, a quantitative design was not appropriate. Similarly, because this study was exploratory in nature, mixed methods research was also inappropriate because of a lack of substantive quantitative data related to the phenomena under study (see Yin, 2013). According to Stake (1995) and Yin (2013), research that is exploratory in nature, such as the exploration of organizational strategy, is better suited for qualitative methods.

I used a multiple case study design in this study because it allowed me to conduct an in-depth exploration and description of the phenomena under study using varied sources of information, including document reviews and interviews, to develop detailed descriptions of the problem (see Yin, 2013). Yin (2015) defined a case study as an investigation of *why* and *how* people implement decisions as well as any potential result. Bernard and Bernard (2013) echoed Yin's comments and acknowledged the need for investigators to understand the phenomena as bound by time and activity. Although other qualitative research designs, such as phenomenological and ethnographic, remain useful frameworks for exploratory studies (Goldberg & Allen, 2014), neither was appropriate

for analyzing the current phenomenon under study. Although the use of the phenomenological design can provide a model for exploring the human experience through an interpretation of personal perception (Groenewald, 2004), this design was not appropriate for exploring the phenomena under study. Researchers have used the phenomenological design to capture and frame the phenomena through the perceived experience of the participants; however, use of the phenomenological design requires the researcher to focus on interviews as the sole data collection method (Dukes, 1984), which rendered the use of phenomenological design less suitable for this study due to the subjectivity of the data. Such an approach leads to difficulties in establishing the reliability and validity of approaches and information (Bevan, 2014). Moreover, due to the complex and emerging nature of the phenomenon under study, achieving transferability would not be possible using the phenomenological design (Yin, 2014). Yin (2018) claimed that reliance on a relatively small homogeneous population coupled with a requirement to perform iterative, face-to-face, semistructured interviews limits the utility of the design.

Most importantly, because the parameters of this study required exploring the phenomenon of the research problem beyond a single entity, other research designs, such as the single case study method, were far too restrictive to provide results that were representative of the larger legal technology community. Expanding beyond a single organization improves the diversification of data, increasing the likelihood that the results of the study are potentially transferable (Yin, 2013). Yin (2018) further stated that the ethnographic design is also inappropriate for studies of this nature because the design

requires a level immersion within the community not possible with the population under study. Moreover, the deep immersion format of ethnographic design is used to capture and understand a group's culture (Yin, 2015), which was not the focus of this study.

Research Question

The overarching research question for this study was as follows: What strategies do law firm leaders in the United States use to address the potentially detrimental influences of DTs, such as AI and ML?

Interview Questions

1. What have been your experiences regarding the disruptive effects of technology, such as AI and ML, on the legal services ecosystem as a whole?
2. Explain why you would describe the legal services ecosystem as an open system, allowing for the exchange of information with the larger environment, or a closed system, where the system is isolated from outside influence.
3. What strategies have you employed to address the challenges of technology disruption within your organization?
4. How did the actions of your competitors affect your strategy to adapt to DTs?
5. How did government agencies affect your technology strategy to adapt to DTs?
6. How did your technology vendors affect your technology strategy to adapt to DTs?
7. How have internal operations been affected by your technology strategy to adapt to DTs?

8. How have outputs, specifically the services and products that you provide, changed due to DTs?
9. What additional information would you like to provide with regard to addressing technology disruption?

Conceptual Framework

The basis for this study was the systems approach to management, a framework designed to guide practitioners to optimize decision making within an organization (see Laszlo, 1975). According to Katz and Kahn (1966), when focused on open or closed systems, the critical analysis constructs underlying the systems approach to management are (a) external influences from stakeholders such as customers, competitors, government entities, and suppliers; (b) inputs from the stakeholders and outputs from the organization to the stakeholders; and (c) internal processes that apply the inputs and create outputs. LoPucki (1996) proposed applying system analysis to address challenges within the legal ecosystem through a framework the author described as the systems approach to law. LoPucki suggested that the complexity of the practice of law could be better understood by viewing the profession as a broader ecosystem through the lens of systems analysis.

Understanding how interconnectedness and external influences affect organizational systems allows firms to more effectively address any externally driven challenges that might otherwise disrupt existing business models (Nobles & Schiff, 2013). The systems approach to management was appropriate for this study because leaders at large U.S. law firms are in need of strategies designed to help address potential external threats related to DTs, such as AI and ML, on their organizations. As applied to

this study, the core concepts of systems approach to management allowed participants to adequately explore their perceptions and strategies related to creating goals to address potential disruption from technologies, such as AI and ML.

Operational Definitions

Am Law 100: The nation's 100 top-grossing firms, ranked annually by *The American Lawyer* (Barton, 2014a).

BigLaw: An industry term of art for the nation's largest law firms. These firms are full-service law firms that traditionally recruit from Tier 1 law schools, maintain a national or global presence, employ more than 100 attorneys, and rank of among the nation's top-grossing firms (Henderson, 2014).

Business processing management automation: A generic title used to describe the technology-enabled automation of activities or services that accomplish a particular function or workflow in an organization (Sanders Jones & Linderman, 2014).

eDiscovery: A broad term that practitioners use to define the retention, identification, collection, and production of electronically stored information in response to a request for production in a lawsuit or investigation initiated by a government agency (Baicker-McKee, 2015).

Legal moneyball: The application of the use of quantitative legal prediction to analyze and predict legal outcomes, law firm effectiveness, and individual lawyer performance through the analysis of big data sets (Katz, 2012).

Legal technology disruption: The application or adoption of technologies, such as analytics and ML, in ways that lead to the weakening of lawyers' marketing power over

legal services as a result of commoditization and increased competition in the market (McGinnis & Pearce, 2014).

Legal technologist: A generic title used to describe the spectrum of professionals tasked with driving technology innovation within the legal services industry. Individuals engaged in this work hold a variety of titles that may include lawyer, partner, eDiscovery consultant, data scientists, as well as others (Susskind, 2013).

Machine learning (ML): A particular type of AI that enables computers to learn without being explicitly programmed (McGinnis & Pearce, 2014).

Natural language processing: A broad term generally understood to be defined as the combined application of computational linguistics, statistical algorithms, and computer science to intricacies associated with spoken or written language (Mahler, 2015).

Open systems: According to Horst, Broday, Bondarik, and de Paula Xavier (2015), for a system to qualify as an open system, there must be mechanisms in place to allow for both interacting and interfacing with the larger, external environment

Assumptions, Limitations, and Delimitations

Assumptions

King (2014) indicated that assumptions are those things that are generally accepted as true in a study given the population, research design, and other delimitations. Two assumptions guided the data collection and analysis strategy for this study. First, I assumed that all of the documents I reviewed for the study were accurate and provided a

reliable representation of organizational strategies as they relate to potential DTs, unless there was a substantial difference from the interview data.

Second, I assumed that study participants provided honest answers during the interview process. Bevan (2014) explained that phenomenon and the ways in which individuals experience the phenomenon is subject to different interpretations based on the perspective of the participant, meaning there is objective reality; therefore, the researcher must trust that the answers the participants provided are truthful, even when the experiences of the perceivers vary across interviews. The use of the case study method allows the researcher to reduce and synthesize the participant's experience through triangulation of interview themes and corporate documents or artifacts (Bevan, 2014). Furthermore, by employing open-ended questions, asking follow-up questions as appropriate, and engaging in active listening, the researcher can ensure that the integrity of the process remains intact (Marshall & Rossman, 2015).

Limitations

Limitations indicate any potential weaknesses of a study that could affect the results (King, 2014). The selection of geographically dispersed participants resulted in an inability to visit all the participants in a live environment, which could have resulted in deeper observational and descriptive notes. Scholars, including Hamilton (2014); Hillman, Forghani, Pang, Neustaedter, and Judge (2014); and Janghorban, Roudsari, and Taghipour (2014), claimed that researchers might overcome challenges with geographically dispersed participants through the use of Skype or other video conferencing technology.

Delimitations

According to King (2014), identifying delimitations helps the researcher to narrow the scope of a research study. Delimitations in this study included the problem selection, the sample population, and the sample size. The study sample population comprised leaders at two U.S.-based international law firms located in California. I selected interviewees on a purposeful basis from the two firms. Scholars, such as Bernard (2013), have noted that small sample sizes are typical in criterion-selected qualitative studies, and Dukes (1984) observed that the sample size is sufficient once analysis yields no new themes.

Significance of the Study

Contribution to Business Practice

I sought to develop foundational research that explored strategies that law firm leaders in the United States employed to address the potentially detrimental influences of DTs, such as AI and ML, on their organizations. Although researchers have used qualitative studies to explore the general factors used to develop strategies aimed at addressing technology disruption, few authors have focused explicitly on the effects of DTs within professional services businesses. Fewer researchers have addressed these implementations within the legal services field, and none have addressed the effects this technology might have on the broader legal services ecosystem. Therefore, through this study, I explored the ways in which aligning the organization's strategy to address DT can improve a firm's competitive position. The findings from this study might contribute to the development of models or frameworks needed for the introduction of effective

mitigation strategies related to potentially DTs, such as AI and ML. The identification and introduction of useful systems models may enhance the capability and efficiency of leaders at large U.S.-based law firms and their organizations to deliver legal services competitively.

Implications for Social Change

The results of this study could have the potential to affect social change by promoting the systematization of specific tasks within the practice of law. By adopting strategies related to DTs, such as AI and ML, local governments and firms providing services to the poor could ultimately lower costs and create tangible improvements regarding the availability of legal services to underserved communities. There are currently enormous gaps in cost, quality, and delivery of services for low-income consumers (Cabral, Chavan, Clarke, & Greacen, 2012; Hadfield, 2014; Randazzo, 2013). By exploring the strategies employed by firms to address potential DTs, such as AI and ML, there may be an opportunity to improve the delivery of legal services to the point of lowering the overall costs of producing legal services with consistent quality. According to Murray (2016), society may ultimately benefit from social innovation that breaks down barriers to legal access. Such innovation might lead to an increase of new social enterprises in the legal sector, such as low-profit, limited liability companies; benefit corporations; and social purpose corporations, as alternatives to existing entities that currently leave a large segment of the population underserved (Murray, 2016).

A Review of the Professional and Academic Literature

In order to inform this study, I conducted a thorough literature review, presented in this subsection. To accurately understand and apply the systems approach to management, I first describe general systems theory (GST) and its evolution and influences. I then describe the systems theory of management and address detailed application to organizational constructs and the ways in which this framework directed my research. Next, I discuss other related areas, such as strategy making, potentially DTs, and competitive position within the legal services ecosystem. I conclude the literature review with examples of qualitative and quantitative studies that have explored similar constructs to those investigated in this study.

The source material for this literature review included relevant journals, seminal texts, books, and other resources related to the effects that technology disruption might have on individuals within a dynamic system. These systems may include professional services organizations such as a large law firms. In addition, I conducted complex keyword searches across 35 scholarly libraries as well as a comprehensive review of the available literature surrounding the strategic challenges facing legal services firms from industry-specific business reports and relevant law journal articles.

I first used a three-pronged approach to identify appropriate sources in the literature, including the use of advanced keyword searches across the relevant journals and databases, using variations of terms relevant to my study, such as *law firm*, *machine learning*, *systems theory of management*, *technology disruption*, and *legal ecosystem*. In addition, I conducted parallel searches for terms such as [qualitative OR Quantitative

AND Case Stud* AND “Machine Learning” OR “Disruptive Innovation” OR “Artificial Intelligence”]. From there, I expanded the search terms through concept clustering—a process that extracts the meanings and concepts of words or phrases from existing articles and identifies similar or complementary concepts based on those results. Next, through reference chaining, I identified and reviewed additional citations contained within numerous books and reference pieces, by following each link in the chain to its logical conclusion. Finally, I created automated keyword search reports in numerous legal and academic journals as well as in various databases, such as LexisNexis and IEEE. I supplemented this approach with the use of a newsfeed aggregator that provided me with daily updates on articles related to legal technology within the popular legal industry press.

Using the strategies noted above, I was able to distill the collection of relevant literature for this review down to 165 journal studies and articles and 16 seminal or foundational sources. Of those materials, a full 85%, or 141 articles, were published in peer-reviewed publications between 2015 and 2019. Another six were published in publications from 2011 or earlier, and two originated from non-peer-reviewed industry resources.

Systems Theory and the Systems Approach to Management

The systems approach to management is both based on and aligned with the broader, more general concept known as general systems theory (see Chikere & Nwoka, 2015). To correctly understand and apply the systems approach to management, I first studied the evolution and influences of general systems theory, followed by a detailed

study of the literature around the system theory of management. The concept of systems has been widely applicable across a broad spectrum of scientific literature, making analyzing and synthesizing the vast body of relevant research a daunting task for scholars. The ubiquitous use of the term *systems* further complicates this challenge to describe both the ontological (knowledge about systems) and epistemological (i.e., the conceptual application of thinking about systems) elements of systems theory (Cabrera, Colosi, & Lobdell, 2008; Horváth, 2015). Furthermore, seminal scholars, such as von Bertalanffy (1968), have used the terms *systems theory* and *systems thinking* synonymously—and in some instances inconsistently—within the literature, blurring the ontological and epistemological divisions between the concepts (Cabrera et al., 2008). Clemson and Stefanovska (2012) addressed this conflict by dividing these concepts into three distinct, but interrelated, parts, with systems theory and systems perspectives operating as subsets of systems thinking.

Ackoff (1960) described systems as interlocking sets of components or coordinating units; when one of these is removed or dissected, the collectiveness of the system is lost. This systems view characterizes social systems as both dynamic and open (Banathy, 1998). Through this understanding of the principles that govern all natural, open systems, the characteristics that indicate whether a specific open system, such as the legal services industry, can remain viable and financially sustainable over time is better able to be understood. This knowledge may then provide a catalyst for creating sustainable, positive social systems. One of the critical characteristics governing the ability of any open system to sustain itself is its integration within a larger ecosystem or

environment, which results in overlapping or nested intersystem dynamics and corresponding feedback loops that can, in some instances, stabilize the system and initiate deliberate growth (Anzoise & Sardo, 2016; Banathy, 1998; Checkland, 1999; Drack & Pouvreau, 2015; Hieronymi, 2013; Laszlo, 1996; Meadows, 2008; Pouvreau, 2013, 2014; von Bertalanffy, 1968).

Variants of Systems Theory

Systems historians have traced current systems frameworks related to the application of systems constructs within business and educational organizations to a number of different scholars who developed their theories independent of, but often parallel to, one another. For example, a substantial segment of the literature pointed to von Bertalanffy's GST (1956) as a seminal, foundational work related to systems thinking, while a similar number of publications cited Dewey (1938), followed by Lewin (1946). The concepts around these early, parallel frameworks begin to converge with Laszlo (1975), Banathy (1998), and Checkland (1999). Although Dewey's work appears to predate the research of the other authors in the field, early research from von Bertalanffy (1967) and Weiss (1959) provided the foundations for von Bertalanffy's more popular seminal work (Drack & Apfalter, 2007).

Cabrera et al. (2008) suggested further subdividing the concepts surrounding systems into two categories: (a) scholarly research found in academic journals and (b) popular press publications written for general business audiences. In some instances, systems authors, such as Meadows (2008) and Checkland (1999), were able to bridge academic research with popular business books by publishing prolifically in both genres.

In their works related to the application of systems theory to organizational constructs, von Bertalanffy (1968) and Laszlo (1975) described a framework in which the social and physical sciences are unified and applied to address phenomena created by the interactions and mutual influences of complex open systems. These constructs proved helpful in allowing researchers, such as Senge and Sterman (1992) and Powell, Olivier, and Yuan (2015), to apply the methodology to both accommodate and understand the complexity of organizational systems in ways that allow their members to better leverage or mitigate the effects of complexity within this construct. In applying these principles to the legal services ecosystem, factors such as personal mastery, mental models, shared vision, team learning, and overall systems thinking are applicable to cultural changes and the other organizational challenges facing leaders in this industry (Powell et al., 2015; Senge & Sterman, 1992).

Systems and Organizations

Seminal scholars and philosophers, such as Dewey (1938), first approached organizational learning and systems thinking through the concept of pragmatism (i.e., the view that science should be practical and aimed at producing useful knowledge). Lewin (1946) built upon this concept through research on intergroup relations, arguing for action-based research or the exploration of social management through the integration of traditional and social sciences. Lewin recognized and described the influence of social challenges, such as poverty and discrimination, within the larger systems of community and society and taught that improving intergroup relationships requires a two-way approach to viewing the problem or understanding that the problems affecting the few

also influence the social systems of the majority. Lewin later described this interaction as group dynamics or the study of group ecosystems.

Argyris and Schön (1997) further expanded this early attempt to develop a framework for systems thinking by exploring the benefits of systems thinking within the constructs of educational institutions and organizations. They concluded that some organizations were better positioned to address challenges that arise from complexity by applying single- and double-loop learning to first identify and then respond to changes in their internal and external environments. Argyris and Schön placed significant emphasis on the risks of remaining trapped in old mental models, the ways in which structures can influence behavior, and the way in which individual actions extend beyond their current location in any given system.

Building on the work of these seminal scholars, contemporary researchers, such as Senge and Sterman (1992), have referred to these organizational systems as webs of interdependence. Senge and Sterman wrote that due to the complexity of the interactions among individual actors within those webs, negative or unintended consequences could result from one area of the system acting on another. Furthermore, they argued that many organizational leaders believe they are acting rationally when addressing systems challenges, despite defaulting to the cultural guidelines or constraints of their immediate organizational construct. In many instances, these organizational dynamics contribute to leaders becoming apathetic due to viewing disruptive threats as amorphous and difficult to understand. Additional work by researchers, such as Senge and Sterman, related to the applications of systems theory expanded on this research in business studies and outlined

the mechanisms for merging human behavior and organizational systems perspectives into conceptual business tools.

Horst et al. (2015) conducted meta-research relating to the systems theory of management and surmised that organizations exist in an environment, surrounded by significant forces that determine the progression of activities within the company. As such, Horst et al. claimed organizations might choose to operate in either an open or closed system structure (Chikere & Nwoka, 2015). In the open structure, Horst et al. argued that the external environment affects organizations, with interactions occurring through the exchange of information, both input and output, to the ecosystem. Horst et al. went on to claim that such systems are divided by a permeable boundary between the firm and the environment through social, political, and economic systems. The influences described included company personnel, marketing channels, and the inputs and other materials involved (Horst et al., 2015). Horst et al. described the closed structure as one in which the organization strives to remain aloof and unaffected by the external environment. This occurs, Horst et al. claimed, by the rationalization of work through increased productivity. This closed form system of organization was informed by Taylorism, Fordism, Toyotism, and Fayolism (Horst et al., 2015). Moreover. Horst et al. espoused both macro- and microeconomic environment influences on shaping the organizational environment and decision making.

The application of GST—and by extension, systems thinking—to business problems is not without its detractors. Seminal scholars, such as Thayer (1972), criticized such applications as overly deterministic and claimed that although GST held promise,

the concept itself was flawed. Although praising the promise of GST, Thayer nonetheless postulated that in its current application, the theory fails to offer an alternative to mechanistic theories such as Taylorism. Moreover, Thayer asserted that in postfeudal societies, viewing the organization as a system assumes a wholeness at the organizational level that fails to account for broader system influences. This deficiency, Thayer surmised, is due in part to the way in which systems theory practitioners rely on creating and defining organizational wholeness in order to allow for comparisons across systems without regard to the potential effects or influences of larger systems on one another. This application of the systems approach to business organizations, according to Thayer, was akin to exploring a subsystem, such as bacteria in the human body, without accounting for the interplay and interactions of cells within the larger ecosystem.

Law as a System

LoPucki (1996) proposed applying systems analysis to address challenges within the legal ecosystem through a framework, the author described, as the systems approach to law. LoPucki suggested that the complexity of the practice of law could be better understood by viewing the profession as a more extensive ecosystem through the lens of systems analysis. LoPucki and Susskind (2013) proposed viewing a large law firm as an interdependent actor within a larger, unified whole requires the identification of its space and purpose as an open system as well as the subsystems contained within the organization. Recognizing this, scholars, such as Epstein (2014), have recommended breaking the law firm into its constituent parts and identifying the subsystems within those systems. Such subsystems might include coordinated or cooperative departments

segmented into what Ackoff (1960); Sturmberg, Martin, and Katerndahl (2014); and Stoica, Pelckmans, and Rowe (2015) have described as system types or variations, including mechanical, organismic, and societal systems.

By design, mechanical subsystems provide or support a function within a system (Au & Zhang,2015). Susskind and Susskind (2016) suggested that the legal ecosystem exists as a subsystem within a larger system of the professions, with each subsystem influencing one another. Susskind (2013) went on to claim that, if removed from the broader system, these mechanical functions could not operate as independent systems because they are dependent upon the organization as a whole. This process is similar to the functions of the heart within the human body and pistons within an engine. In both examples, each function's utility ceases to exist without each of the larger systems. In the law firm, mechanical systems might include departmental silos, such as accounting, information technology, and marketing, that are designed to support and serve the larger enterprise.

By contrast, partners, associates, consultants, and other staff members comprise the organismic system within the law firm (Epstein, 2014). Ackoff (1960) suggested that individual organisms, such as human capital and functional organizational verticals, combine to form the elements of the organismic system unit. In turn, organismic systems combine with external systems to create societal systems. When viewed holistically, societal systems may combine with external macrosocial elements—including client systems, geography, the business climate, and regulatory environments—that influence

and act upon one another in ways that shape the subsystems within the firm (See Ackoff, 1960; Epstein, 2014; Laszlo, 1975; Laszlo & Laszlo, 2004).

Other researchers, such as Collecchia (2013), have also begun to look at the law itself as a specific process or subenvironment within the legal ecosystem. By example, through a master's thesis, Collecchia sought to develop a theoretical framework for categorizing law as an informational process. Collecchia described ways in which elements within legal ecosystems are similar to information-first methods of analysis by comparing and contrasting the practice of law with concepts such as agent-based modeling, cognitive studies, and complex adaptive systems. Collecchia concluded that a lightweight framework could be applied to legal practice in a way that provides insight into legal theory through repeatable processes.

Nobles and Schiff (2013) opined that the legal ecosystem, like natural systems, has evolved through a process of increased differentiation and organization. Nobles and Schiff suggested that as in natural ecosystems, individual elements or actors eventually specialized in ways that allowed members of the system to perform purposeful tasks. They further claimed that this form of specialization is especially evident within the legal services industry, in which attorneys, consultants, and even support staff have become increasingly specialized over time while engaging in meaningful and useful relationships with other components of the system. Nobles and Schiff argued that the system becomes better organized and more complete as it evolves. Within any business organization, the various people and departments working together across particular functions enable the system—in this instance, the law firm—to successfully produce goods and services,

which allows the organization to remain economically and systemically viable over a sustained period of time. Processes within the system, as well as its inputs and outputs, create internal regulation and growth.

LoPucki (1996) claimed that similar to many natural and complex organic systems, large legal corporations evolve over time and become more internally diversified and complex. Instead of one or two lawyers and their support staff carrying out multiple functions, we now see specialized and subspecialized practice groups engaging in focused disciplines and functions while working in cooperation with other specialized groups and departments within larger firms (Nobles & Schiff, 2013). In addition, Nobles and Schiff opined that as in natural systems, each of the individual professions might be simultaneously acted upon by one or more external factors, such as technology disruption, in ways that drive evolutionary changes within professional industries (Susskind & Susskind, 2016). Howarth (2015) advocated viewing the legal ecosystem in its entirety through the lens of engineering in an effort to help mitigate any adverse systemic effects within the legal ecosystem, such as those that contributed to the economic collapse of 2008. In the examples cited above, Susskind and Susskind (2016) and Howarth (2015) advocated viewing the legal ecosystem holistically—in other words, as a system comprising numerous aggregate parts.

In exploring the impact of technology, Menicocci (2015) argued in favor of viewing technology within a systems framework. Menicocci cited the need to combine a symbiotic review of both the positive and negative emotional implications of technology with the complex business challenges presented by technologies that continuously

change, evolve, and advance over time. In the remainder of this literature review, I describe the literature related to the potential influences of DI in the completive legal ecosystem.

Disruptive Innovation Theory: Ecosystem Influences

The modern concept of disruptive innovation theory (DIT) was first introduced in the popular nonacademic business publication *Harvard Business Review*, where the authors discussed many of the concepts underlying disruption (Bower & Christensen, 1996). Although the specific term DI did not appear within the body of the article, Christensen (1997) built on many of the concepts raised in the piece within the seminal work on the topic, which helped to introduce and popularize the model just 2 years later. However, according to scholars such as Akiike and Iwao (2015), the definition of DIT as originally proffered by Christensen has been both overused and misapplied in recent years, both within the popular press and scholarly journals. In many instances, the term has been used to describe DIs that, upon closer inspection, were merely incremental improvements on existing products or processes, which served to obscure the current state of the literature regarding innovative disruption within the legal ecosystem (Sheppard, 2015). Akiike and Iwao. conducted a study to explore the supporting and detracting literature related to DIT, including studies from critics such as Takahashi, Shintaku, and Ohkawa (2013). According to Akiike and Iwao, Christensen's innovator's dilemma can be overcome by applying concepts such as dynamic capability, ambidexterity, and market orientation.

Christensen's Definition of DIT

Christensen (1997) claimed that DT allows small, entrepreneurial companies to beat large established businesses, which primarily focus on sustaining innovation. By upgrading existing products and services, these large organizations attempt to sustain their growth by attracting higher paying customers. Over time, Christensen argued, these established players begin to ignore existing customers, many of whom want lower-cost alternatives to existing solutions. Under Christensen's theory, smaller companies are better positioned to fill that void by offering streamlined, or sometimes simpler, solutions at a lower cost. In many instances, this leads to the innovator dominating the market. The author argued that to remain competitive, established businesses must develop departmental divisions responsible for creating lower-cost, DTs, essentially operating separate units within the larger organizational structure.

Christensen (1997) pointed out that DIT provides a framework for describing how smaller companies with fewer resources are able to challenge existing, established businesses by targeting underserved areas of the market. Christensen proffered, that as large companies grow, organizational leaders often focus on adding features or enhancing services, in an attempt to squeeze additional revenue from their more profitable clients or customers, often resulting in higher prices and bloated services or products that may exceed the needs of their existing clients. By contrast, disruptive organizations tend to focus on segments that are overlooked by their larger competitors by delivering more appropriate feature sets, often at lower price points. As these disruptive entrants move up in the market, they are able to seize market share from existing organizations. Once the

entrant product or service begins to be adopted *en masse*, the market or business line has been disrupted (Christensen, 1997).

Interestingly, researchers such as Christensen (1997) have also argued that firms could be too focused on innovation. Although looking to the future and planning for growth remain important, Christensen and Raynor (2013) discussed the dangers of performance oversupply or the improvement of a product or service to a point beyond what the customer is willing to purchase. Although customers may actively desire and even solicit improvements, Christensen and Raynor claimed that consumers have a psychological limit for technological improvement. Once an organization has reached this barrier, technological improvements no longer serve as a driver of competitive advantage; instead, factors such as functionality, price, and convenience take precedence (Christensen, 1997).

Organizations such as the Institute of Electrical and Electronics Engineers have moved beyond treating disruption as a smaller aspect of innovation and have instead chosen to devote an entire journal to the topic, still forming a subset of innovation management. Similarly, scholars in the field have also sought to expand the concepts of disruptive strategy as a theory, including Christensen's works on education and healthcare (Bucknell, 2016). Christensen and Raynor (2013) described the intrinsic differences between both approaches. In examining low-end innovation, researchers have pointed to the ways in which low-end disruption evolved in the lower segments of the market and relied on a business model that enabled organizations to offer cheaper products with a performance that, though initially inferior, ultimately meets client

demand at a far lower price point. Conversely, new market DTs are typically aimed at customers who have not been targeted previously. Examples of these markets include cell phones and personal computers (Chen, 2013; Matzler, Mooradian, Füller, & Anschober, 2014; Piliouras et al., 2014).

Additionally, scholars such as Moore (2014) have recently attempted to build on works related to DT. For example, Moore explored the innovation lifecycle as an S-curve, in which most technologies fail to move from early adopters to a mass audience. The author cited five core markets for innovative products that ranged from innovators as early adopters to laggards. Although Moore recognized the place of DT, the author argued that a customer's natural inclination to avoid discontinuity placed the technology industry's focus on DT and continual innovation at odds with traditional consumer behavior.

Defining Disruption – Limitations and Detractors

The confusion surrounding the pure interpretation of DT theory was significant enough to compel Christensen et al. (2015) to both clarify and reaffirm the parameters of DI in a recent article published in the nonacademic business publication, *Harvard Business Review*. Within that article, Christensen et al. claimed that the term *DI* has been carelessly applied and is often used to describe any new technology or business model that shakes up established incumbents, thereby diluting the DIt's value. Weeks (2015), while acknowledging the influence of DIs on existing enterprises, analyzed the propositions of Christensen (1997), as well those of his critics. Christensen's DI theory has received numerous criticism in the past. Weeks (2015) cited an article in the

nonacademic publication, the "*New Yorker*" magazine as among the most notable. In this piece, Lepore (2015) criticized the low-end disruption theory for lacking concise definitions, inconsistency, and inaccuracy (Weeks, 2015). Current literature also includes works from detractors of Christensen's DI theories (Grandinetti, 2014; Weeks, 2015). The researchers have argued that Christensen's theories can be applied to business-to-business transactions, but do not hold up in consumer-driven markets. Much of this criticism has focused on the unanticipated growth of tablets and smartphones, such as the iPad and iPhone: two markets that Christensen initially failed to foresee and inaccurately predicted would fail (Grandinetti, 2014; Weeks, 2015). Moreover, Lepore, as cited by Weeks also claimed that, although new entrants into the market mainly captured DIs in sectors such as the disk drive industry, large incumbent organization that missed those opportunities were not necessarily affected negatively over the long haul as anticipated under DIT. Lepore went on to argue that, although companies such as Semantic initially experienced declines due to their competition, Semantic was able to increase profits three-fold by following an incremental innovation strategy (Weeks, 2015). Christensen et al., addressed these critiques of his theory, stating that the choice of the term disruption 20 years ago may have been a poor one, as important literature and current marketplace articles currently misrepresent the theory due to misunderstanding the term. As described by Christensen et al., theory by design evolves over time.

Other detractors have included Takahashi et al. (2013), who have argued that the disruptive trajectories described by Christensen were not, in fact, disruptive, but rather, more incremental in nature. The authors claimed that Christensen incorrectly applied

Dosi's concept of disruptive technological trajectories and argued that Christensen might have been better served by performing analyses in areas such as the disk drive industry through the lens of existing theories, as opposed to developing a new theory of DI. Cusumano, Kahl, and Suarez (2015) have also shown such changes within service industries as being more evolutionary in nature, pointing to methods for promoting innovation more directly though well-developed frameworks.

The literature from Takahashi et al. (2013) and Cusumano et al. (2015) implied that DI often thrives in younger, smaller, and nimbler organizations, or those willing to chase early adaptors and lower profits. Takahashi et al. claimed these conditions present challenges for larger incumbent firms, which might otherwise lose their positions due to displacement by smaller firms. Cusumano et al. described a market in which disruption primarily attracted early adopters within the early stages of the lifecycle. Although this may be true in some circumstances, this hypothesis tends to ignore examples in which significant, enterprise-level entrants were able to quickly dominate a new market in which mature adopters were the primary purchasers of the entrant product, as was the case in the emerging tablet market. Embedded players apply little focus to how larger, established organizations might reorganize to build on these small firm characteristics (Takahashi et al., 2013). Responding to the criticism, Christensen et al. (2015) contended that under the pure disruption model, even Uber, while arguably upsetting the taxi and ride-sharing industries, did not exploit the lower end of the market, nor did mainstream customers adopt the service only after quality improved, and is, therefore, more of a

sustaining innovation than a disruptive business (Shintaku, Nakagawa, Ogawa, & Yoshimoto, 2014).

Disruptive Innovation and Strategy

Scholars such as Markides (2013) have also looked at ways to combine DIT with strategic planning by melding of Porter's five forces with what he described as a DI strategy. According to the Markides, although a limited number of products and services remain correctly classified as DIs, the specific strategic path in growing markets for DIs can vary dramatically based on the innovation type and its placement. Moreover, the author argued that while low-cost DIs may come to dominate the market, not all products at the bottom of the product pyramid will necessarily succeed.

Corsi and Di Minin (2014) performed a meta-analysis of the literature associated with DIs in emerging economies and categorized reverse innovation as a subset of DI theory. According to the authors, advancing DI theory requires a geographic component that allows for a theoretical framework for differentiating between DIs in developed nations from those in emerging markets (Corsi & Di Minin, 2014). Sandström, Berglund, and Magnusson (2014) expanded on the resource dependency aspects of DI and attempted to align its focus by examining a systemic theory of DI. The researchers' model focused on examining similar businesses affected by DT in similar ways, instead of on heterogeneous collections of businesses. Lippe (2015) discussed the evolutionary nature of legal technology disruption, citing the ways in which advancements such as e-mail, word processing, and the Internet served to enhance legal services, as opposed to supplanting lawyers. The author recognized that emerging technologies, such as ML and

AI, are the first technologies to offer direct competition to lawyers' core functions, but predicted that change would most likely emerge in areas such as delivering services to the client and in the types of materials clients provide to their corporate counsel.

Future Research: A Theory in Need of Refinement

According to Markides (2006), several additional core areas of study are needed to help us better understand DI. For example, although business process innovation can be frequently classified as disruptive, the lifecycle for business process innovation differs dramatically in form and competitive effects (Markides, 2006). When examining disruptive business process innovation, the innovator is seeking to develop a fundamentally different business model for an existing business. Markides proposed that this approach requires the organization to enlarge an existing market by attracting new customers or increasing consumption from a preexisting customer base. Scholars often cite this type of evolution within organizations such as Amazon, a company that moved from selling books to large online retailing, distribution, software and hardware development, grocery delivery, and most recently, self-branded products and entertainment. Markides went on to assert that in this type of situation, business process innovators are not necessarily developing a new product or service, but are instead redefining an existing product or service in ways that have not been previously manifested (Jim & Abhijit, 2014; Markides, 2006).

Markides (2006) suggested this method of process improvement differs significantly from technological innovation, which focuses on new products as differentiators. As an example, Christensen (2003) argued that technological innovations

eventually grow to dominate markets. In other words, practitioners frequently associate disruptive technologies with the displacement of incumbents by new entrants to the market. This level of disruption is not necessarily true of business process innovations. Although new, disruptive business processes may lead to a significant competitive advantage, these enhancements may not necessarily displace existing players. Further investigation relating to where these DIs are aligned and where they can be differentiated could provide an additional rung in the evolution of this theory.

Other areas for additional exploration might include radical product innovation. Although this type of DI may sound similar to the principles put forth by Christensen, it differs in that Christensen's (1997) model often looks at scaling niche markets to the mainstream, while the former looks to develop innovation by developing feeder firms or through external partner innovation. While both theories require investment into long-term scaling and growth, radical product innovation places less emphasis on internal personnel and management models, since much of the innovation originates from outside the core enterprise. Finally, a more thorough study comparing Christensen's theories with those of his detractors might help to modernize existing disruption theory. As stated in previous sections, although Christensen's theories provided a useful framework for business-to-business innovations, they fell short of anticipating the effects of consumerization on DI, since concepts such as lower price and upgrade fatigue appear to be running counter to DI theory.

Potentially Disruptive Technology Within the Legal Ecosystem

DI within the legal ecosystem has evolved as a venerated subject within the popular legal press (Susskind, 2015). Since 2008, hundreds of nonscholarly articles portending to correlate the rise of on-demand startup companies, such as Airbnb, Munchery, and Uber, to disruption in the legal industry have been published in law reviews, trade articles, and legal blogs (Brescia, 2015). Moreover, a focus on disruption within the legal ecosystem continues to be a widely contested topic in scholarly legal publications and studies (Brescia, 2015; Cortez, 2014; Leighton, 2016).

Epstein (2014) asserted that of the systems-related drivers currently affecting the legal ecosystem, technology-driven disruption likely poses the greatest threat to traditional law-related business models. Cortez (2014) conducted a case study to explore the effects of potentially DT within the regulatory law environment. Cortez suggested that a challenge exists for regulators when confronting new technologies that do not conform to existing regulatory frameworks. As an example, Cortez opined that at its inception, the Internet presented challenges to not just one regulatory agency, but several, including the Federal Communications Commission, the Federal Trade Commission, and the Food and Drug Administration. As described by Cortez, such innovation does not necessarily disrupt industry incumbents envisioned by Christensen (1997), but instead disrupts the legal, regulatory scheme (Cortez, 2014).

McGinnis and Pearce (2014) described the potential threats posed by legal technology disruption, pointing to the increased adoption of machine learning and analytics tools as leading to the growing commoditization of once bespoke services,

driving increased competition in market models and ultimately weakening lawyers' marketing power over legal services. These researchers compared threats to the legal industry with the loss of journalism jobs caused by the broader adoption of technology-based solutions for providing news and information. McGinnis and Pearce proffered their argument, that, as with journalism, automation within the legal services industry threatens to displace tens of thousands of traditional workers. They further proposed that potential DT is already evident within areas such as legal discovery, for which conceptually based services have already replaced lawyers in document review. Moreover, McGinnis and Pearce suggested that conceptual services are on the cusp of substituting for lawyers in other tasks currently performed by legal professionals, ranging from the generation of legal documents to the prediction of litigation outcomes (Goforth, 2013). Based on their research, McGinnis and Pearce surmised that these dynamics and processes might result in stratification within the legal services industry, in which a handful of very talented attorneys may continue to provide sophisticated legal services directly for clients, while relegating all other work to artificial intelligence systems (Leeuw, 2015; Remus, 2014;).

These authors based their hypotheses on several factors. First, this level of automation exceeds the capabilities of existing technologies in their current forms. Second, only a portion of the work that a lawyer does on behalf of clients can ever be fully automated. And finally, the authors ask a more philosophical question: whether a technological solution could ever capture the ideals or values of the legal profession (Remus & Levy, 2015).

Susskind (2013) echoed many of the sentiments regarding legal complexity proffered by Remus and Levy (2015), but further argued that technological innovation based on a pure DIT model could create disruption by preempting many of the most complex processes further down the service chain. For example, the application of legal moneyball, which is the implementation of advanced analytics to the case evaluation process, could result in what Susskind (2013) described as "no-sourcing" scenarios. Under this model, those tasked with procuring legal services might decide that, based on specific statistical models, that a more extensive range of legal tasks or matters is not commercially justified, thereby eliminating any need for legal sourcing in those instances. Researchers such as Friedmann (2016) disagree. As one of several industry experts downplaying the disruptive effects of ML and AI on the legal ecosystem, Friedmann speculated that artificial intelligence of Watson's caliber would not create significant disruption within the industry, at least in the near term (Friedmann, 2016). Friedmann further asserted that the combined complexity of subject matter, coupled with the very high economic investment required to develop and deploy these systems, makes Watson-based analytics systems less attractive than less costly improvements. Additionally, Friedman opined that firms might, instead embrace existing AI technologies that are considered more complementary than disruptive, including tools such as Neota Logic's advanced decision tree AI systems. Others, such as Mills (2015) have described the potential disruption as being more nuanced and have argued that the legal ecosystem is currently in a state of incomplete or partial disruption; a point at which

disruption may affect market leaders, but leave other areas of the ecosystem unchanged (Sheppard, 2015).

Mills (2015), cofounder and chief strategy officer for Neota Logic, has taken a similar stance. In summarizing the state of AI within legal services, Mills described the growth of intelligent systems, at least in their present form, as being more evolutionary than disruptive in nature. In other words, cognitive technologies within the legal ecosystem continue to evolve as developers continue to design scalable hardware and ever-smarter algorithms designed to both mine and exploit big data sets (Surden, 2014).

Susskind and Susskind (2016) contended that virtually all professions, especially those that employ knowledge workers, face disruption from technologies and systems that allow consumers and organizations to access aggregated expertise in areas such as the law, in ways that minimize or bypass the traditional gatekeepers in these fields. A parallel work from Lanier (2013) echoed these sentiments, citing the mass commoditization of knowledge work across a large number of professions as an economic paradox in which information aggregators can derive economic value from the broad dissemination of knowledge while causing the economic displacement of incumbents in a large number of knowledge professions.

Combining Incremental and Disruptive Technology in the Legal Ecosystem

Petrick and Martinelli (2012) explored methods for driving DI and noted that doing so requires companies to possess strategies to better forecast “nonobvious problems” that might require solutions at a future point in time. The researchers acknowledged that such an approach might be challenging for companies and laid out a

strategy that included monitoring external environments through a process known as road mapping. Road mapping allows organizations to anticipate and plan for innovation. The authors proposed that this formal process would allow incumbent companies to develop an outside-in view that challenged their competitive perspective s.

Several scholars, including Baron (2010), Markoff (2011), Randazzo (2013), Ribstein (2012), Wang, (2000); and Hadfield (2012), theorized that technological challenges associated with potentially DT might be driving alternative billing arrangements, disrupting traditional billing models within the legal ecosystem. Hadfield described systems-driven economic evolution within the legal ecosystem as transformative. Specifically, Hadfield explored what he described as structural changes within the practice of law, pointing to two key drivers: increased global demand for legal services coupled with the growth of Web-based tools that allow firms and individuals to work without the constraints of time, borders, or location. Hadfield investigated the need for a reworking of current legal infrastructures, which is mostly being driven by the new global economy. Noll (2012) refuted Hadfield's position, claiming that the need for designing structures that foster innovation is difficult to predict, making the success of the multidisciplinary services envisioned by Hadfield unlikely to succeed.

Not all scholars agree with the approach advocated by Noll. For instance, Pasquale and Cashwell (2015) pointed to four possible scenarios that would call for, and benefit from, legal automation. These researchers described the first of these four scenarios as high automation, low regulation, in which machine intelligence surpasses a practitioner's capabilities in ways that most closely represent the pure Christensen

definition of DI. Pasquale and Cashwell described the second proposed scenario as a society of control, whereby human activity is managed by machine intelligence or other software-based tools in an environment where both the regulatory climate and machine learning advance at roughly the same pace. This form of disruption is highly visible in the emerging on-demand economy, in which freelancers, such as those working for Uber, mainly interact with, and receive direction from, software-based tools (Pasquale & Cashwell, 2015).

Susskind & Susskind (2016) claimed that we already see this type of systems-driven management within the legal ecosystem. Susskind and Susskind (2016) provided a compilation of businesses developing DIs within this space, which included products such as ContractExpress*,* which provides a tool that generates complex legal forms based on user input derived from interactive consultations; Neota Logic, an emerging company offering software systems that model complex rules and reasoning processes through advanced decision tree software; Relativity and Recommind*,* developers of intelligent search and analytics tools that perform tasks such as document review far better than their human paralegal or lawyer counterparts; and Lex Machina and Premonition, big data analytics tools that combine artificial intelligence, predictive analytics, and data mining to predict the outcomes of legal cases (Susskind & Susskind, 2016).

Flood (2019) also looked at the rise of automation, ML, and general technological advancement, and forecasted that many professions and their practitioners might face a gradual phasing out of their traditional roles. Flood defined the nature of professional ethos and knowledge other and applied his analysis to the future of the legal profession.

Remarking on the existing and widening division of labor within the legal field such as paralegals, eDicovery consultants, and clerks, and the broad implementation of legal technology companies such as LegalZoom or RocketLawyer. Flood further argued that lawyers would increasingly need to rely upon their professional ethos and prioritize professional roles that are distributive rather than productive. Flood specifically noted that productive law, such as nondisclosure agreement drafting, will become further imperiled as technology advances. In this argument, Flood further suggested that the legal field, and those within it, will need to be adaptive to societal needs and that the future of legal professionals lies within the role of trusted advisor.

Osbeck (2015) compared the decades-old, traditional forecasting processes historically employed by lawyers to predict case outcomes with the automated methods now available through the use of emerging technologies such as Lex Machina's patent and trademark practice tools. Osbeck acknowledged that these predictive analytics tools provide forecasting capabilities superior to those of their human counterparts, primarily due to their ability to analyze aggregated datasets that span a breadth of matters in ways that are impossible for a single lawyer or even a large firm. However, while Osbeck acknowledged the potential competitive advantage of these technologies, he described them as being more assistive than disruptive. Dolin and Buley (2015) concurred with this assessment, claiming that the changes facing large law firms are neither sustaining nor disruptive, but rather adaptive in nature.

A third, less disruptive scenario put forth by Pasquale and Cashwell (2015) is the status quo with low automation and low regulation. Under this model, automation is

slowed or stalled to a point at which disruption becomes almost nonexistent. Here, systems-based influences would have minimal effect on the ecosystem. Instead, internal factors such as risk aversion will override a hypothetical growth in technology diffusion (Katz, 2013).

Finally, Pasquale and Cashwell (2015) described a fourth option: the great compression, in which low automation and high regulation persist and the practice of law is returned to its more egalitarian roots. Here, machines serve to assist their human counterparts in developing an extended regulatory environment, in which laws are designed to contribute to the betterment of society as a whole (Cusumano et al., 2015; Sheehy, 2013). As such, this scenario represents a solution to a regulatory market that is stifling innovation within the legal sector (Burke & Robertson, 2014). More specifically, Burke and Robertson (2014) have cited the corporate practices doctrine, which comprises rules that restrict professionals such as doctors or lawyers from practicing within corporate entities. These rules also restrict investment in such businesses by nonprofessionals, reducing the capital available for developing formal innovation strategies or research and development within professional practices.

Susskind (2013) claimed that in some instances, firms within the legal ecosystem have begun to respond proactively to increased pressure from clients to lower costs, improve quality, and increase transparency. A handful of law firms have been experimenting with base levels of automation, process improvement, and machine learning. Susskind and Susskind (2016) cited two critical areas of focus for these early initiatives: eDiscovery and legal project management. Susskind claimed that both upend

traditional revenue models by minimizing the focus on the billable hour and calculating charges with units or project-based costs.

Rnadazzo (2013), Ribstein (2012), and Wang (2000) have all proffered opinions expressing concern for the perceived challenges that large law firms face regarding technological advances and alternative billing arrangements. Reliance on the billable hour model as the core revenue generating activity—a practice that dates back to the 1950s—appears to be more challenging to maintain in with the growth of potentially DT (Kuckes, 2002). Moppet (2013) claimed that though practitioners once viewed the billable hour as a powerful and innovative management tool, DT may be considered a threat to the traditional law firm economic model. Moppett maintained that although some industry leaders cite the change as a mere cyclical adjustment, others have argued that it has become a new normal for the profession.

Moreover, researchers such as Maheshri and Winston (2014), who study the business of legal practice, have noted that the billable hour model may have contributed to the rise of DT, with consumers of legal services, including corporate clients, viewing the practice of law as a commodity. As Kukes (2002) opined, a number of industry reports on the subject point out that few other industries could thrive by relying on productivity metrics that measure time without accounting for employees'effort or the overall quality of their products (Kuckes, 2002). Maheshri and Winston explored the traditional law firm billing models as well as the factors affecting rates and pricing. They explored ways in which a monopoly on legal services may have contributed to artificially high prices. Moreover, the authors explored whether barriers to entry in legal practice

that restrict competition truly protect consumer interests. Watson (2014) also explored the strategic implications of various billing models within the legal services industry and discussed the challenges with current billing models as a measure of productivity. Watson argued that reliance on the billable hour is a relatively recent phenomenon and advocates a move toward pricing models that are both reproducible and auditable. Brescia et al. (2014) claimed that although increased integration of technology including, some forms of potential DTI into the legal ecosystem, has in some instances, reduced the drudgery associated with legal practice; it has also, they claim, to some extent disrupted the practice. Notably, the authors asserted, members of the populace can now easily access legal help from lawyers and nonlawyers through web based technology platforms. While weighing the potential positive and negative changes these technologies might have on the future of legal practice, Brecia et al. (2015) proffered that practitioners in the legal ecosystem should embrace and leverage potential DTI and embrace those technologies that have the potential to enhance access to justice. For instance, the authors applauded what they described as an increase in law firms providing legal information on websites for public consumption. Brecia et al., also cited automated documentation creation, precisely the fact that web-based applications can currently collect information on a number of consumer legal situations and autonomously prepare the requisite paperwork, without the need of human intervention. Brescia et al. also pointed to what they perceive to be an increase in lawyers to provide legal advice and form creation to lay people through online platforms. Although not full automation, smartphones support apps that immediately avail legal information to people in need. The authors surmised that.

overall, technology has enhanced the availability of legal information, especially to lower-income people (Brescia et al., 2014).

Akiike and Iwao (2015) stated that organizations need to establish and maintain sustainable developments specifically designed to identify effective strategies to resolve the "innovator's dilemma." The authors explored previous research related to DTI and proffered recommendations for avoiding such incidents. According to their research, Akiike and Iwao recommended possible ways of avoiding failure in the midst of innovative developments, including an increased focus on market orientation, ambidexterity, and dynamic capabilities as means of avoiding the disruption. Acknowledging the challenges with developing strategies designed to help organizations discover trajectory disruptions, Cowden and Alhorr (2013) recommended that multinational enterprises should first analyze subsidiaries since most disruptive ideas originate from these auxiliaries. The authors asserted that, unlike sustainable innovations where companies focus on moving up the market so as to appeal to high-end consumers, DIs entail a firm's attempt to increase the number of clients by providing less costly solutions (Cowden & Alhorr, 2013). Additionally, analyzing the characteristics of these subsidiaries dramatically increases the chances of detecting disruptions. Based on transaction-cost and resource-based approaches, it is evident branches located in areas with a high number of low-income people trigger most disruption innovations (Cowden & Alhorr, 2013).

Euchner and Ganguly (2014) provided recommendations related to how organizations can develop effective business strategies aimed at leveraging potential DTI

while reducing risks. The authors agreed that, although there is not a single method for addressing disruption risk, firms should focus on their strengths and execute tasks in a manner that are difficult for others to imitate (Euchner & Ganguly, 2014). Moreover, the authors acknowledged that firms should always explore the potential downside risks pertinent to any new business strategy, especially risks involving business execution, interdependence, and integration. Later, the organization should reduce the risks through experiments and finally enroll the model in small-scale dimensions. Euncher and Ganguly ascertained that firms that follow this approach of establishing a business strategy for addressing potential DTI have a higher likelihood of success.

Given its impacts, Cortez (2014) noted that it is imperative to develop effective strategies for dressing DIs. Cortez surmised that the low-end market approach has the potential to displace big firms, products, and industries. For instance, Cortez cited Ford, Kodak, and the Bell telephone as examples of companies disrupted by DTI.

Within the legal ecosystem, larger, more established organizations face the most significant threat. According to Christiansen (2003), holding a commanding position in the market does not guarantee long-term market dominance. To the contrary, existing firms risk disruption from entrant firms that can grow and eventually dominate their market segments. Often, established firms expend extraordinary effort on sustaining technologies, while neglecting efforts related to disruptive technologies. Although sustaining technologies remain an essential aspect of any business strategy, disruptive technologies often lead to higher rates of growth by creating new markets and expanding

differentiation strategies. In some instances, these shifts are based on substantial costs and research and development efforts (Gaughan, 2015; Petrick & Martinelli, 2012.

Existing Disruption Threats

McGinnis and Pearce (2014) argued that in the legal services industry, markets are currently being disrupted by the advent of predictive analytics and machine learning, with much of the funding for these innovations being directed toward non-law-firm technology businesses by venture capital investors looking to disrupt the industry from the outside (McGinnis & Pearce, 2014). McGinnis and Pearce proposed that although many of these innovations remain in the early adopter stages, these tools are beginning to disrupt pricing and employment models, especially within larger law firms, for which associate and staff hiring continues to remain flat or, in some instances, decline according to the Bureau of Labor Statistics (BLS; 2015). McGinnis and Pearce also proposed that these product disruptions are extensions of existing markets, as in the eDiscovery industry, in which vendors-and more recently, law firm spin-offs—provide services that either augment or function in parallel with the traditional practice of law (Christensen, 2008; McGinnis & Pearce, 2014). In the latter example, the disruption is not necessarily complicated but constitutes an improved method for building, revising, or expanding on existing technologies and growing new markets. In many instances, competing organizations have an equal opportunity to adopt the DT, but fail to look beyond sustaining technology strategies, which eventually lead to a loss of market dominance (Au & Zhang, 2016; McGinnis & Pearce, 2014).

Christensen (2003) provided a case study for this type of disruption by examining the disk drive industry, a sector in which many established players lost market dominance to smaller competitors that were willing to assume higher levels of risk and chase smaller profit margins. This willingness to assume additional risk allowed entrant firms to grow and dominate their positions, as these smaller firms were well placed to focus their innovation efforts on this disruptive, emerging technology. Although established manufacturers were capable of developing these same technologies, many entered that market long after emerging firms had established dominance (Costello, Donnellan, & Curley, 2013).

Survey data related to potentially DT in the legal environment, such as machine learning, appear to follow the disk drive model. According to an Altman Weil survey of 320 law firms employing 50 or more attorneys, a large number of respondents acknowledged the threat of Watson-type machine learning on traditional law firm employment models, with nearly 47% of the respondents stating that machine learning could eventually replace paralegals. Only nearly 20% claimed that these systems might completely replace first- through third-year associates within 5–10 years (Clay & Seeger, 2014)

According to O'Grady (2015), in mid-2015, the world's largest law firm, Dentons, announced a partnership with students at the University of Toronto for a start-up project titled Ross. The application was built on Watson's machine-learning platform and can search across millions of pages of case law, court records, and other documents in seconds. Proponents of the project argued that the tool might one day supplant the

routine research projects currently assigned to junior associates and paralegals. The firm also announced a partnership with International Business Machines to allow start-ups working with Next Law Labs to leverage IBM's cloud computing resources, including Watson (O'Grady, 2015). Epstein (2014), who argued that commoditization and technological advances result in downward pressures on the high fee structures that many large law firms depend on to support their overhead-reinforced what the author saw as challenges surrounding the integration of new technologies within the legal ecosystem. Moreover, Epstein has claimed that information related to law firm performance can now be aggregated and compared, allowing clients to measure the performance of individual lawyers and not only firms'reputations. Ultimately, Epstein has argued, this can hurt a firm's branding efforts, leading to fewer bulk legal service purchases. Over time, this leads to broader commoditization of services and a general de-professionalization of the industry as a whole (Ruhl, 2014).

Potentially Disruptive Technology in Law: Strategic Positioning

Jones, Regan, and Roberts (2016) proclaimed that, in addition to the challenges derived from DI, the legal ecosystem is also being shaped by systems-based shifts in the competitive legal environment, so much so that the researcher asked if BigLaw might be experiencing its Kodak moment (Jones et al., 2016). According to Jones et al., this is the point at which an incumbent business that relies on traditional or legacy strategies finds itself being substituted by nimbler competitors. Examining billable hours as the metric for calculating the demand for external law firm services, Jones et al. explored a diverse cross-section of 143 law firms composed of 48 Am Law 100 firms, 42 Am Law 200

firms, and 53 midsize firms. The authors found that, although a small number of firms appeared to have performed better in 2015 than in other years since the recession, demand for external legal services remained flat. Moreover, while the number of lawyers in U.S. law firms grew by 1.3%, this growth appeared to contribute to overcapacity challenges, which resulted in a decline in law firm productivity. The report's authors also pointed to increasing shifts within the legal ecosystem as segmentation in the market continued to grow, driven in large part by demand for improved efficiency, predictability, and cost controls by corporate legal departments.

Jones et al. (2016) described the results of a 2014 survey of corporate legal departments, 40% of those polled anticipated reducing their spending on work they sourced to external law firms, while spending on alternative providers such as legal process outsourcers and vendors grew from 3.9% in 2012 to 6.1% in 2015. In many instances, the work sourced to these alternative providers has not yet affected the high-end work at firms, such as bet-the-company litigation or complex advising. Instead, outsourcing has resulted in an erosion of service sourcing at the periphery of these markets, although that erosion continues to grow at a steady pace (Jones et al., 2016). According to Jones et al., much of this erosion is directly attributable to the willingness of corporate legal departments to manage projects directly while, at the same time, disaggregating services across a breadth of firms and suppliers.

Members of the legal community continue to warn of competitive challenges facing the legal ecosystem. Writing on behalf of the American Bar Association, Esposito (2014) discussed strategic challenges facing both legal departments and the legal

profession as a whole. The author began by discussing the challenges that law firms suffered in the aftermath of the Great Recession when clients became more sensitized to the need for improved efficiency and value, as well as reduced cost. Esposito went on to note that the law firm leaders involved in his research reported experiencing notable strategic challenges, including increased price competition, pressure to improve practice efficiency, the commoditization of legal work, increased competition from nontraditional legal services providers, and non-hourly billing arrangements.

Garoupa (2014) also discussed the challenges to firm structures brought about by the combination of enabling technologies and globalization. The author explored how changes in market structure and the modified regulatory environment might ultimately change the profession. Moreover, Garoupa (2014) explored the potential benefits of nonlawyer ownership and partnership based on a growing number of these relationships with legal services firms currently emerging in European markets. Campbell (2012) made similar claims, citing a tension between regulatory bodies, which are seen as stifling to innovation within the legal sector, and the fact that we live in an age of unparalleled innovation in how legal services are provided, despite high barriers to entry (Ali & Santos (2015).

Moses and Chan (2014) also explored the crossroads of DT and strategy through the context of big data analytics. According to the authors, big data technologies offer the opportunity to quickly answer even the most difficult legal questions. The authors cited the ways in which data might be aggregated and analyzed to provide ready answers to questions around both the administration of justice as well as the broader practice. They

recognized that deploying Watson-type tools into legal practice might provide immediate answers to questions regarding who might prevail in pending litigation, the statistical risks of parolees to communities, and even where law enforcement resources might be better deployed to maximize their effectiveness.

External Threats to Competitive Advantage

Barton (2014a) described the events that led to the point at which the U.S. legal market found itself in the midst of extreme disruptive change. Although experts initially believed the shift in demand to be cyclical, Barton argued that these changes were signs of a more significant trend. Moreover, the author theorized that a significant portion of the literature downplaying the effects of cumulative systems on the legal ecosystem originated from commentary associated with the downturn by law professors and corporate lawyers—the individuals who are most likely to be most affected by any potential changes or shifts in the status quo. In the long term, Barton argued, this necessary cleansing may streamline the market and eventually lead to the consumerization of innovative legal solutions, similar to LegalZoom (Barton, 2014b).

Butler and Kobayashi (2014) forecasted a similar trend within the legal services ecosystem. The authors, building on the works of previous scholars, focused on the future of the legal services industry. The researchers described ways in which external competitive pressures combined with threats from emerging technologies, such as predictive analytics, might ultimately reshape the world's largest legal firms. The authors further argued that these changes might lead to two important but distinct outcomes:

either decreases in the number of firms or far greater stratification between organizations at the bottom and top of the economic ladder.

Currell and Henderson (2014) expressed a more optimistic view of the profession's future. They argued that despite recent changes to the field, the industry is currently thriving and will continue to thrive. The authors also explored threats to the industry and concluded that experts should focus on the availability of legal services, especially in currently underserved markets, and pay less attention to the employment numbers for highly compensated lawyers. They went on to describe necessary changes to the profession, including the adoption of systems improvements, automation, and legal project management.

Merritt (2015) noted that because external pressures on the legal ecosystem have risen so quickly, due in large part to pressures brought about by the recession, nearly an entire graduating class was left unable to find employment due to pressure on the industry. Merritt argued that job prospects for those who have lost their positions within the legal field had declined severely over the last several years. The author acknowledged that there had been a debate on whether these outcomes stemmed from macroeconomic cycles or fundamental changes in the market for legal services. Merritt (2015) focused on a group of 1,200 lawyers, all of whom received their Juris Doctor degrees in 2010. Based on the evidence, it appears that there has been a robust structural shift in the legal services market. Even as the economy has improved, job outcomes have improved only marginally.

Killian (2015) described a phenomenon within the legal ecosystem in which law firms have begun to unbundle the work within their firms. The researcher further cited an increase in the work sourced to and performed by, nonlawyers that would previously have been performed by lawyers within a bundled services regime. Killian specifically cited time-intensive practices, such as due diligence, in which legal technology increasingly replaced the work traditionally done by lawyers and nonlawyers alike. According to the author, significant savings can be obtained by using these technologies, ultimately decreasing employment within the legal services field.

Katz (2012) concurred with this assumption. The author described the current era as being the law's information revolution. Katz pointed to the 2008 financial crisis as the root driver precipitating technological advances and developments in legal information technology. Moreover, the author cited how advances in these technologies were initiating long-term changes within the legal services market. While the author acknowledged that a percentage of the legal market downturn was cyclical in nature, the researcher described how the legal field is being changed structurally as a result of broader economic conditions. Specifically, the author pointed out that the downturn in demand has been one of those potentially cyclical areas, but that the structural changes related to the decline are likely permanent, and that the legal jobs displaced during the great recession will likely not return.

When discussing competitive advantage in the legal market, scholars such as Shell (2011), Masson and Shariff (2014), Orozco (2016), and Bhawsar and Chattopadhyay (2015) frequently cite the work of Michael Porter from Harvard Business

School. Porter (1998) told us that successful strategic planning is not a zero-sum game with only a single winner, but is instead about positioning an organization in a way that uniquely aligns and combines a company's activities to create differentiation and improve its bottom line. Under this tightly defined framework, law firms and other legal services businesses need not dominate the private legal markets or even a single area of law to hold a competitive advantage; instead, these organizations should focus on a differentiation strategy. Unfortunately, many organizations, including legal services businesses, mistakenly believe that achieving differentiation is purely about being different or unique. According to Porter, this definition misses the mark, since differentiation is not about merely being different, but also about distinguishing one's company from its rivals by offering superior value for a particular product or service. This type of differentiation has been a particular challenge within the legal services industry, in which firms frequently engage in what Porter described as competitive convergence and reliance on consultants as common seed sowers. As in other sectors, homogeneity in the legal market results in stagnant differentiation strategies, leaving many firms without the internal expertise required to address client demands for greater efficiency and accountability in delivering legal services. As Porter explained, strategic positions that favor imitation over innovation are often mutually destructive, leading to wars of attrition and reliance on mergers and acquisitions as the sole source of competitive advantage (Shahzad, Bajwa, & Zia, 2013).

According to Dzienkowski (2013), the need for comprehensive strategic planning and execution within the legal services industry has become a critical aspect of legal

business planning for law firms, consultancies, and other professional services organizations. The author argued that as internal corporate legal departments continue to grow, firms especially midsize to large companies will continue to experience significant challenges related to decreased corporate reliance on external private law firms for high-dollar legal work. Dzienkowski attributed much of this decline to an inability of some firms to innovate and adapt adequately to the changes and external pressures brought on by a globally competitive marketplace.

Competitive Impacts

Researchers at the U.S. Department of Labor (2015) also remarked on the challenging competitive environment for lawyers. In its 2014–2024 job outlook report, the U.S. Department of Labor forecasted that systemic pressures on the legal ecosystem would likely continue to drive down demand for externally sourced lawyers and their support staff as corporations and organizations move to insource many legal-related services and processes, in an effort to contain costs. The report went on to claim, that when sourcing routine legal services, many organizations are now evaluating and, in some instances, retaining lower-cost alternative legal services providers. In addition, the report's authors acknowledged that while law school applications are continuing to decline, the current oversupply of lawyers coupled with an influx of new law school graduates will continue to increase competition for law jobs, especially at the higher end of the market (U.S. Department of Labor, 2015). In many instances, this constraint in employment opportunities is driving applicants to the nontraditional providers cited previously, exasperating the rate of systems-driven change in the industry (BLS, 2015).

As competition among legal services providers has increased, some scholars such as Evans and Gabel (2013) have begun to explore the competitive state of the legal ecosystem through tools such as Porter's five forces analysis. Evans and Gabel proposed the use of a strategy-driven conceptual framework, citing the need to develop a completive synthesis of law and the management of legal services. The authors argued that the same regulatory environment that currently provides a high barrier to entry for competitors has led to stagnation in both legal services strategy and innovation. Although Evans and Gabel focused more on the use of the law or legal processes as a form of competitive advantage, their research captures many of the strategic challenges faced by firms (Evans & Gabel, 2013).

Bagley and Roellig (2013) explored competitive advantage from the perspective of in-house general counsels, hose tasked with procuring or sourcing external legal services. According to the authors, the role of chief legal officers is to more readily mitigate risk on the front end, while simultaneously controlling the costs of sourced services and ultimately the types and volumes of work that are eventually passed on to external counsel.

When addressing the strategic challenges facing law firms, Bagley and Roellig (2013) claimed leaders frequently begin by exploring improvements in operational effectiveness. Porter (1998) taught that operational effectiveness, while necessary, is often confused with strategy. For example, while managerial improvements such as benchmarking, outsourcing, partnering, and reengineering can provide substantial improvements, the author claims that these enhancements rarely result in long-term

increases in profitability. Magretta (2011) described operational effectiveness as a firm's ability to perform the same set of activities better than its rivals. These best practices comprise the combining of numerous activities in a way that allows the organization to better utilize its resources. Porter argued that, from a strategic perspective, operational improvements provide only a temporary advantage during the period in which a company can outperform its rivals in quality or price.

Orozco (2016) argued that while operational effectiveness alone might not provide a long-term strategic advantage, operational innovation might. According to the authors, operational innovation provides an opportunity for what the authors described as a profound change, affecting the very core of an organization's strategic positioning. For example, Hammer (2004) cited the operational innovations executed by Progressive Insurance. When faced with potential competition from new entrants, Progressive introduced the concept of immediate response claim handling. By making changes to its operational structure, such as by moving agents out of offices and into mobile claims vans, the organization was able to speed claim responses from 7 days to 9 hours.

Within the legal industry, fairly recent entrants into the competitive legal market have made similar strides (Henderson, 2014). Building on the work of Ribstein (2009), Henderson (2014) described a transformation into what the author described as *lean law*, or the application of lean business principles to the practice of law. According to Henderson, the potential for substitution due to technical advances and disaggregation of the legal supply chain threatens large firms'advantages derived from reputational capital. Henderson further argued that the portability of clients, or the relative ease with which

partners can move their book of business from one firm to another, can result in sudden revenue declines at firms where lawyers or teams of lawyers move with little warning from one firm to another.

Porter (1998) explained that over time, competitors within the legal profession might easily emulate attempts to implement practices such as short-term improvements to operational efficiency, resulting in competition for lower costs, improved productivity, or enhanced technology tools. Ultimately, these activities lead to the type of competitive convergence cited above, whereby organizations within the industry all began to look homogeneous. In the long term, this frequently results in cost being the only differentiator among like organizations. Swenseth and Olson (2014) explored the concept of supply chains within service organizations such as law firms, with a particular focus on personnel retention and technological developments as a supply chain component. The researchers argued that legal firms must develop a chain of trained professionals who hone their skills through training and experience throughout their careers. Moreover, although such firms have to consider these long-range goals, they must also continue to manage operations in the short-term to generate profit by increasing demand for their services, while simultaneously controlling costs. Swenseth and Olson applied a simple Monte Carlo simulation model to a legal firm's decision of managing short-term capacity. They explored factors such as fluctuating demand, cost control, and quality assurance. Based on their study, the researchers concluded that a steady manning policy could allow entrants to the legal industry to continue to learn in a less turbulent labor market. Swenseth and Olson went on to state that while automation reduced the number

of law clerks needed in any given firm, those who remained could more easily focus on changes within their particular legal ecosystem. Further, automation allowed those working within the organization to react more quickly to any changes in regulation or market competition.

A review of the current literature reveals a plethora of information surrounding competitive advantage, strategic planning, and strategic execution relating to potentially DT within a general business context. However, as we learned from Bagley and Roellig (2013), surprisingly little literature exists that explores explicitly the application of strategic planning within the legal environment. Bagley and Roellig identified only four studies that they felt substantively addressed the use of strategy within the context of law, including Shell (2011), Masson and Shariff (2014), Orozco (2016), and Bhawsar and Chattopadhyay (2015).

Operational Efficiency as a DT Strategy

Porter (1998) did not argue that operational efficiency is unnecessary; to the contrary, he pointed to a need to maintain both quality and efficiency at levels that remain competitive. Instead, Porter explained that strategy was about differentiation, or choosing a unique set of activities that deliver value in a different way than an organizations'competitors. This is a process of developing or designing positions that either attracts customers away from competitors or bring new customers to the market. The process innovation described by Hammer (2004) falls into this category, whereby organizations such as Progressive Insurance were able to gain market share while reducing costs in a way that resulted in competitive advantage.

As reported by McGinnis and Pearce (2013). within the legal industry, organizations such as RocketLawyer and LegalZoom have been able to leverage technology to improve operational efficiency, with tools such as automated document creation and near—round-the-clock availability via the Internet. This strategy has allowed organizations to offer both consumers and businesses lower-cost, high-value legal services in particular practice areas, including estates, real estate, business formation, and intellectual property (McGinnis & Pearce, 2013). Sanchez and Omar (2012) also discussed the strategic advantages of developing innovations in what the authors described as an information technology cluster, in which synergistic relationships emerge from people working at different companies that allow for the sharing of talent and resources (Crews, 2014; Esposito, 2014).

Callier and Reeb (2015) explored the operationalization of legal practice through process improvements. The researchers noted an overuse of the buzzword “innovation” and argued that firms should instead focus on operational excellence as a core innovation strategy. Under this model, Callier and Reeb contended that operational excellence could be broken into three categories-legal process outsourcing, legal services integration, and process improvement-with process improvements serving as the most significant catalyst to strategic advantage. Applying a structured problem-solving framework-described as define, measure, analyze, improve, and control, would serve to introduce greater efficiency into the delivery of legal services (Callier & Reeb, 2015). Although the authors did not predict catastrophic disruption within the competitive legal environment, they nonetheless acknowledged that greater stratification within the industry would lead to the

cannibalization of profits as work at the periphery evaporated (Callier & Reeb, 2015). Under the proposed framework, corporate procurement departments could better define and gauge not only costs but also the value of legal services providers (Callier & Reeb, 2015). This focus on value is not merely a desire for lower costs, according to the authors, but instead an effort to generate outputs that are more valuable to the client than the inputs consumed in delivering the outcome (Callier & Reeb, 2015; Silverstein, 2015). When looking at process improvement, Callier and Reeb noted that anything nonvalue-adding should be minimized or eliminated from the process.

Hodge et al. (2015) explored opportunities for disrupting the legal public health environment through innovation by examining the ways in which process improvements combined with innovation within the public health laws themselves could serve to improve access to health care over the long haul. Henderson (2014) also pointed to a need for productivity improvements as a foundation for achieving strategic advantages, while Reid, Matthias, and Doran (2015) proposed the use of evidence-based management methods to reduce waste, inefficiencies, and ineffective processes in the legal ecosystem. These methods include process improvement techniques such as multiple criteria decision analysis; Six Sigma and Lean/Agile practices within the legal network while leveraging aspects of stakeholder analysis to gain effectiveness and efficiency through the lean thinking ideology.

Porter (1998) stated that competition within an industry depends on what the researcher described as the five forces. In a competitive environment, companies compete against each other in ways that require each company to develop and cultivate its unique

competitive strategy. The five forces include the threat of entry, the intensity of rivalry among competitors, the risk of substitution, the bargaining power of buyers, and the bargaining power of suppliers. Examples might include the threat of substitution to law firms by non-traditional entrants, such as accountants and nonlawyer providers (The Economist, 2015), or threats from the lower end of the market, such as LegalZoom or RocketLawyer (Lauritsen, 2012; Locallo, 2012; McGinnis & Pearce, 2013; Rosen, 2012; Vandenack, 2013). Liu (2013), Chambliss (2014), and Perlman (2015) explored a recalibrating of social norms within the competitive legal ecosystem through an increased use of paraprofessionals who are authorized by states to provide a limited number of services currently handled by lawyers such as divorce, immigration, simple estates, and tenants'rights. Chambliss specifically cited recent legislation in Washington State designed to educate and licenses these professionals. Ultimately, such initiatives were cited as both increasing innovation and improving access within the legal ecosystem.

Porter (1998) explained that strategy depends on three core principles. The first is the creation of a unique value position, with which an organization can serve a few needs of many customers, the broad needs of a few customers, or the general needs of many customers within a narrow market. Porter also suggested that strategy requires trade-offs, forcing companies to choose between what they should and should not do. Finally, good strategy requires organizations to create a fit among their activities in a way that reinforces other activities in the firm (Porter, 1998). Magretta (2011) echoed this point, citing a need to focus on a particular geographic region, buyer group, or production.

According to Porter (1998), the construct of the value chain also plays an important role. Porter went on to claim that the value chain is composed of an organization's activities, which are broken into linked categories, including direct and indirect quality assurance activities. Porter tells us that these linkages occur when one action affects or influences another. By capitalizing on these linkages, an organization may create what the author defined as a competitive advantage. Porter further reported that, n the early days of IT, we saw this take place when Dell completely restructured the assembly and supply chain aspects of computer sales, for both business-to-business and business-to-consumer sales

Differentiation as a DT Strategy

Porter (1998) also taught that differentiation strategies also allow companies to compete more effectively; however, differentiation should not be confused with merely being different. Instead, differentiation occurs when a firm or organization creates unique value aside from a lower price. These organizations tend to drive differentiation through tools such as business relationships, scale, site or location, timing, policy, and value chain linkages. For example, in addressing value chain linkages, Porter described the ways in which activities at one point in the value chain can affect others. One significant advantage of differentiation is that it allows companies to mitigate the risk of buying power, creating a climate in which the organization is less susceptible to price risks.

Within legal IT, legal technology leaders see a similar result, this with enterprise storage products offered by organizations such as EMC (Motamarri, Akter, & Yanamandram, 2017). EMC is not a low-cost storage provider but instead focuses on

unique product lines as a means of providing added value to storage, which was once considered a commoditized product EMC (Motamarri et al., 2017). As of this writing, EMC faces similar competition from emerging cloud-based storage solutions such as those offered by the firms Amazon and Microsoft (Guo & Shen, 2017). Apple Incorporated is doing something similar by combining two complementary products-software and hardware-which allows its computers to operate as an appliance. This provides an advantage over Windows-based systems that must develop for a broad range of hardware configurations, which adds complexity to the development process and may also lead to lower customer satisfaction due to inadequate support for one configuration or another. As a result, Apple can charge a premium in the computer market, while other computer makers continue the race to the bottom (den Hartigh, Ortt, van de Kaa, & Stolwijk, 2016).

Porter (1998) also explained that mon-technology-driven examples of differentiation include those employed by Mercedes. Instead of competing on price, Mercedes relies on its brand image and can charge premium prices for its products. We see this same strategy employed in the legal sector, in which white-shoe firms focus only on high-value clients (Jones et al., 2016). Additionally, Porter claimed that differentiation is also an important differentiator. In the early days of automobile competition, Ford was able to achieve a competitive advantage through price leadership. Later, General Motors was able to lure customers away with early versions of auto financing—an angle that Ford had failed to predict.

Porter (1998) taught that a defensive strategy is designed to lower the risk of attack from competitors. This approach is embraced, in part, to fortify competitive advantages and ensure their sustainability over the long term. In most instances, when engaged in a defensive strategy, companies invest heavily in defensive activities, often at the expense of short-term profitability (Porter, 1998). In broader terms, the goal of a defensive strategy is to reduce the probability of an attack or to direct attacks toward firm activities that will be less affected by the threat. Examples of defensive strategies include preentry, sequencing, and post-entry. In all of these situations, the goal of the defense strategy is to influence or guide both competitors'and new entrants'perceptions in ways that lead the competing organization to conclude that the attack would not result in any sort of reasonable strategic gain.

Within the legal field, litigation is often used as a type of defensive strategy. Organizations may see this tactic employed, for example, when a competitor enters the existing market of a patent holder. This tactic can also be a large part of an offensive strategy, wherein patent litigation or another type of trade secret protection is asserted to prevent new products from coming to the market (Levi, 2016).

Offensive strategies rely on three conditions related to effectively attacking an industry leader (Porter, 1998), and failing to meet these conditions often results in failed attempts to obtain a strategic advantage over competitors. When engaging in offensive strategies, organizations must be aware of the risk of retaliation by competitors. Porter (1998) described this type of approach as allowing the organization to neutralize the completive strength of its rivals.

In looking at strategy, Dolin and Buley (2015) described BigLaw as being systemically transformed by factors such as globalization and technology, resulting in a transition to a demand-driven market from one that had traditionally been perceived as supply driven. According to the authors, this transformation does not fit neatly into Christensen's theory of DI. Instead, the authors predict a shift in competitive markets, in which measurable metrics such as quality, return on investment, and efficiency supplant reputation and breadth. Dowling and Moran (2012) also looked at the ways in which technology could improve firm reputations, avoiding what the authors described as "bolted-on strategies" and ultimately leading to a more sustainable competitive advantage. Euchner (2015) expanded on these concepts and noted that barriers to innovation in an organization are declining, in addition to claiming that innovators face far fewer obstacles in entering and potentially disrupting existing markets.

Porter (1998) and Takahashi et al. (2013) argued that firms could also look to technological achievement to serve as a catalyst for competitive advantage. For example, Porter and Takahashi et al., stated that globalization has resulted in significant shifts in global economic competitiveness that have benefitted some countries and disadvantaged others. Porter further noted that, in order to compete, countries must possess clusters of associated businesses as well as high production factors, such as labor and natural resources. There are several areas in which countries can utilize technology to achieve competitive advantage. For example, Japan was among the first to widely employ factory automation and floor robots, in an effort to offset a labor shortage. This, in turn, fostered

the domestic development of its robotics industry. In the long term, this led to quality improvements and enhanced manufacturing overall in Japan.

Citing Freidman's theory of a flat world economy, Terry (2013) acknowledged that globalization allows countries to compete for global knowledge and business on a more level playing field, and stated that the significant advances in Internet connectivity, software, and hardware that began in the early 1990s now allow for unprecedented interaction that can span nations, languages, and time zones in ways that allow organizations to leverage a global workforce. Within that context, Terry investigated whether globalization affected non-international law firms or firms that are not located in key metro areas. Terry concluded that globalization and a flat economy applied to lawyers and clients, regardless of size or location. Furthermore, Terry claimed that the trend was not limited to multinational corporations and global law firms, but also applied to individual (noncorporate) clients as well as the solo practitioners and small firm lawyers who represent them.

Flat vs. Spikey – The global landscape.

Not all scholars have agreed with the assessment that a flat world economy increases opportunity, however. For example, while acknowledging the power of technology, Feiock, Jae Moon, and Park (2008) pointed to an environment in which economic development occurs in clusters around metropolitan regions due to the synergistic relationships among talent, education, consumers, finance, and even less tangible attributes such as the arts. In addition, Porter (1998) stated that while technological innovations can influence strategic planning within businesses and

industries as a whole, not all technological innovations are strategically beneficial. In some instances, the use of technology merely enhances operational efficiency, versus an entire strategy. To engage in an actual technology strategy, the company must look beyond processes, products, and research and development. To achieve a real strategic advantage through technology differentiation, the organization should explore the relationships among all of its technologies (Porter, 1998).

Porter (1998) taught that risks that are associated with a technology-based strategy include technological discontinuities, which become a disadvantage to first movers in the market by leading to early obsolescence in the technology owned and invested in by the lead organization. First movers in the technology space are also subject to high rates of low-cost imitation, whereby competitors create technological tools or software with similar functionality and output at a far lower cost. Technological investments may also present a risk in situations where extensive early investment in technology cannot later be modified or updated to meet the changes or updates to the existing technology (Porter, 1998).

Although innovation and technology can provide overall business improvements, the use of technology alone generally will not lead to a competitive advantage based on differentiation. Instead, product innovation should be aligned with one or more other complementary services or processes. For example, the use of business process automation alone in an organization may improve productivity; however, competitors can easily duplicate productivity improvements themselves relatively quickly, resulting in what Porter referred to as a race to the bottom. As Magretta (2011) pointed out, only by

competing to be unique can an organization achieve and maintain a sustained advantage. In sum, maintaining a competitive advantage in a sustainable way requires a concerted effort to both understand and analyze one's competitors. By watching the strategies of others, an organization can anticipate moves in a way that provides an advantage.

Client spending for external legal services between 2007 and 2013 either remained flat or declined in some years, forcing firms to cannibalize a shrinking pool of business from within by poaching clients and human capital from their competitors, or through cost-cutting measures such as staff reductions and decreased spending on capital expenditures (Moppett, 2013). Based on pure dollar amounts, revenues for some firms appeared to increase between late 2014 and early 2015; however, when adjusted for inflation, many of those returns remained stagnant. For a smaller number of firms, growth in this period slightly exceeded inflationary increases; however, in many instances, the growth was nonorganic and resulted from the acquisition of lateral candidates with existing books of business or through annual rate hikes that are often discounted for enterprise clients. On the surface, these rate increases may improve a firm's gross revenue without corollary increases in realization or net revenues. Although expanding market share within existing markets may provide a short-term competitive advantage (Porter, 1998), a lack of organic growth demonstrates further stagnation in demand for legal services. Additionally, for the class of 2016, overall employment in the field remained below prerecession levels; according to the U.S. Bureau of Labor Statistics (2017), available full-time, long-term, legal service jobs requiring Bar passage declined by 4% from 28,029 for 2015 to 26,923 in 2016, and the overall employment average for

all 2016 law school graduates is currently only 73%, despite a year over year decline in the number of law school graduates

Regan and Heenan (2011) suggested that the focus on job displacement within the legal ecosystem, there is a growing body of research related to the positive role that technology may play in alternative legal career growth. This suggests that technological changes can drive innovation and ultimately help the nimblest of companies to survive and grow. For example, Regan and Heenan described how, through the use of technology, the legal supply chain could be adjusted to measure more commoditized work and processes in ways that improve productivity per employee, while simultaneously reducing the costs of services to the client. According to the authors, these types of process improvements can improve a firm's strategic positioning while simultaneously lowering costs for clients.

Legal Education and Approaches to DT Strategy

McGinnis and Mangas (2014) assessed the correlation between the cost of law school and the pricing of legal services to consumers. They argued that creating an undergraduate option for law school, coupled with a one-year apprenticeship requirement, might reduce the barrier to entry and increase competition at the consumer level for legal services (McGinnis & Mangas, 2014). Based on their research, McGinnis and Mangas argued that such an offering would not unduly diminish the quality of lawyers, and claimed that moving to this model would provide a variety of benefits, including increased opportunities for a variety of career choices by lawyers.

Cabral et al. (2012) have explored challenges related to access to justice and focused on strategies for ending the economic impact that these challenges have on lower and middle-class populations. The researchers recommended public ownership of law firms as a means of providing additional access to underserved markets. Moreover, the authors argued that current models do little to control cost, improve quality, and reduce errors. Cabral et al. further argued that current economic models related to the practice of law hold prices artificially high and cut firms off from the standard economic benefits of scale.

In looking at evolving law school curricula, it appears that some professors are beginning to proactively address the perceived threats and opportunities presented by legal technology. Rostain, Skalbeck, and Mulcahy (2012) described using assistive AI as part of a practicum project for law students attending the Chicago-Kent College of Law, where students collaborate with Illinois Legal Services Online and other organizations to develop and build automated interview systems. Among the organization's early projects was a Web-based interview application designed to help same-sex couples navigate their rights at the state level, following the repeal of the Defense of Marriage Act. Proposals to address disruption within the legal ecosystem frequently point to a need for to augment law school training with formal coursework in business and technology. Jamison (2014) described improving competitive challenges through continuing legal education. In discussing continuing education for lawyers'programs in Minnesota, Jamison explored continuing legal education offerings within the context of the American Bar Association Task Force Report on the future of legal education. The author argued that law schools

and continuing legal education courses need to focus far more heavily on business— and technology-related issues and less on more esoteric areas of legal theory. Moreover, although the author agrees that broad overview education is essential, focusing on practical, business-driven topics will help lawyers better succeed in the marketplace. Leeuw (2015) also noted a lack of substantive coursework related to legal operations and technology management.

Other scholars such as Katz (2013) concur with the need to modernize legal education as a means of ensuring sustainability within the legal ecosystem. Katz described a bifurcation within legal services providers, with a small number of high-end lawyers providing counseling at the high end of the market in complex areas such as M&A, and those at the lower end of the market currently facing increased commoditization. Katz also asserted that transformation within legal education could be leveraged to improve the technical prowess of graduates, improving their capacity to compete in an increasingly digital domain, a position also echoed by Freeland (2015).

Some in academia see opportunities to address the strategic challenges of DI. Powell et al. (2015) acknowledged that DI within higher education might improve pedagogy, while simultaneously reducing barriers to entry in higher education. Within the legal sector, such changes to the educational construct could serve to reduce the economic barriers to entry for those seeking a legal education, ultimately resulting in greater access and lower overall costs of the services.

Transition

The review of the literature related to the systems effects and competitive factors and technology disruption within the legal industry revealed a mix of potential challenges and benefits surrounding the various strategies leaders in U.S. law firms employ to address the effects of potentially DT such as AI and ML on their organizations. The scholars and practitioners of systems theory and legal practice cited in the literature review articulated a variety of possible solutions and risks to technology-driven market disruption. According to the literature, technology firms appear to be leading innovation in this area, and a small number of process automation and analytics tools have been developed to help the legal community as a whole address the competitive challenges of a data-driven economy. Based on the review, it appears that although some firms appear to be embracing strategies for addressing these technologies, few in the industry are taking a holistic, systems-based approach to the use of technology as a means of building competitive advantage.

The research problem and purpose statement support the need for exploration of the strategies employed by law firm leaders in the United States to address potential adverse systems effects of, such as AI and ML, on their organizations. Additionally, the use of a systems approach to management conceptual framework will allow for an integrated exploration of the phenomenon under study. Section 2 includes a restatement of the purpose of the study, the role and ethical obligations of the researcher, as well as the selected research method and design. In addition, I have included a thorough discussion of both validity and reliability. I have also included a comprehensive

description of the collection, organization and analysis decisions, supported with peer-reviewed citations for each of these sections. Section 3 contains a presentation of my research findings and the application to professional practice. I also elaborate on the (a) recommendations for action, (b) recommendation for future research, (c) a reflection of my experiences conducting this study, (d) potential social change implications, and (e) my research conclusion.

Section 2: The Project

The purpose of this study was to explore the strategies that law firm leaders in the United States use to address the potentially detrimental influences of DTs, such as AI and ML, on their organizations. Using a qualitative research methodology with a multiple case study design was appropriate to gain a deeper understanding of the meaning and essence drawn from data collected through interviews with leaders at large U.S.-based law firms and reviews of relevant documents. The outcomes of the study may help fill a gap in research related to addressing potentially harmful systems influences on large law firms. The role of the researcher was to facilitate learning about the process currently utilized by law firm leaders to develop strategies aimed at addressing external threats to their business models. I endeavored to mitigate threats to the reliability and validity of the study by employing well-documented data collection, organization, and interview analysis.

Purpose Statement

The purpose of this qualitative, descriptive multiple case study was to explore strategies that law firm leaders in the United States use to address the potentially negative influences of DTs, such as AI and ML, on their organizations. The target population comprised six law firm leaders from two U.S.-based, international law firms with offices located in California that are recognized by their peers for successfully implementing strategies to adapt to DTs by adopting AI and ML. The implications for positive social change included a potential benefit to community members that Brescia et al. (2014) claimed in the form of a potential to increase access and reduce the cost of legal services

within currently underserved markets through improved efficiency and decreased costs to consumers.

Role of the Researcher

As the researcher, I served as the primary data collection instrument. Within this capacity, I developed and implemented a study to explore strategies that law firm leaders in the United States use to address the potentially detrimental influences of DTs, such as AI and ML, on their organizations (see Stake, 1995). Yin (2013) provided guidance with regard to the use of interview protocols in qualitative studies that allow the researcher to identify and describe the phenomena when little or no qualitative data are available. To mitigate bias and improve the study reliability, I documented ethical standards and procedures employed in the study.

As part of the data collection process, I interviewed six leaders at two large law firms with offices located in California in a concerted effort to gain rich, descriptive data from their perspectives. Yin (2014) and Robinson (2014) proffered that the use of open-ended interviews and follow-up questions often results in richer data collection. In this regard, I relied on the interviews and follow-up questions that aligned with both the conceptual framework and the overarching research question. In addition to the literature analysis provided in Section 1, I also analyzed organizational documents provided by participants concerning the potential systems threats facing large law firms, including potential threats from DTs such as AI and ML.

As a regional manager and consultant in the legal technology field, I am familiar with the phenomenon under study. My background and expertise in the field provided a

level of comfort to participants while adding richness to the study based on the first-hand experience. I also acknowledged that my industry expertise might introduce experience-induced bias. In acting as a human collection instrument over the course of the study, I reduced the risk of bias by recognizing, detecting, and setting aside personal values, assumptions, and expectations (see Annan, 2014).

Goldberg and Allen (2015) maintained that all research contain embedded philosophical worldviews, even when those worldviews are not explicitly stated. These worldviews are the fundamental beliefs and principles that guide the researcher's actions because they can influence the research strategy, methods, and research design (Goldberg Allen (2015). As a social constructivist, I believe that individuals construct and make sense of their own reality and, as such, accept that my personal experience of growing up in a multicultural family impacted my worldview as well as the lens through which I view the world and events. Consequently, I brought to this research a deep commitment to respecting the ability of individuals to construct and give meaning to their own reality.

As prescribed in *The Belmont Report* (2008), ethical principles and guidelines for research involving human subjects frame the researcher's role. These include (a) respect for persons, by obtaining informed consent and ensuring respect treatment and protection of confidentiality of all participants; (b) beneficence, maximizing benefits for the research project and minimizing risks to the research subjects through a philosophy of do no harm, and: (c) justice, ensuring procedures are reasonable, nonexploitative, and impartially administered (CITE). *The Belmont Report* provided specific guidance for complying with this framework, including the steps of obtaining Internal Review Board

approval, securing informed consent, ensuring participants understand the study, avoiding cohesion, and protecting participant privacy.

My role in this study was to allow themes and meanings to emerge from both the review of organizational documents and dialogue with the study participants. My goal was to allow participants to validate that the interpretations and meanings were formulated to reflect their viewpoints. Haywood (2014) maintained that participatory research should be constructed as a joint enterprise of exploration and understanding of reality and experiences as viewed through the eyes of the participants.

Participants

I conducted semistructured interviews with six participants comprised of law firm leaders from two U.S.-based international law firms with offices located in California who were recognized by their peers for successfully implementing strategies to address DTs such as AI and ML. According to Leavy (2014), smaller participant pools are appropriate when the insights and experiences of the individuals might provide new knowledge about the phenomenon under study. Bethea, Murtagh, and Wallace (2015), relied on purposeful sampling to select 10–15 participants, nearly half of whom were professionals practicing in the field experiencing the phenomenon.

To gain access to prospective participants, I sent each an invitation to participate via e-mail. Upon acceptance, I provided each participant with a consent form indicating their agreement to participate with instruction to sign and return forms prior to each interview. A sample informed consent form is located in Appendix G. The use of the informed consent form, in conjunction with the introduction letter, provided individuals

with sufficient information to assist in their determination to participate or withdraw from the study. In addition, the form included information related to the participants' rights to privacy, refusal, and to withdraw from the study at any time prior to or after beginning the process.

Before researchers commence with data collection, they need to identify suitable participants (Harvey, 2015). According to Yin (2013), qualitative researchers define the eligibility criteria for study participants to ensure alignment with the research question. Some of the challenges facing researchers include both finding a suitable organization and securing access to the organization and its documents or other artifacts. Obtaining agreement from participants to take part in the research study can also be difficult when conducting research. To mitigate this challenge, researchers establish eligibility criteria for participants, such as age and employment status, to ensure that participants qualify for participation in a study (Bernard, 2013). Researchers deem participants eligible to participate in a study if they have experience and knowledge relating to the phenomenon under investigation (Bevan, 2014). participants of this study included leaders at U.S. law firms located in California. The selection of law firm leaders was appropriate due to their familiarity with the systems effects of potentially DTs, such as ML and AI, on their businesses.

Although I could not guarantee anonymity, I ensured confidentially by replacing the participants' personally identifiable information with a control number to help establish trust with the participant pool. Additionally, as a leader in the legal technology field, I am well known in the industry and leveraged that familiarity to ensure participants

remained comfortable throughout the process. I also employed stringent data protection techniques, including the application of 256 AES encryption on all at rest data for 5 years, after which I will shred the files using a Department of Defense level data deletion tool.

Research Method and Design

Method

I selected the qualitative research method to better understand how large law firms address potential systems threats from DTs. Qualitative research aligned well with an exploration of the potential influences of DTs on large law firms because it allowed participants to express their perceptions and experiences related to the phenomenon under study in their own words (see Bevan, 2014). Moreover, qualitative researchers explore a phenomenon using a descriptive method that provides insight into the experiences of the participants (Bernard, 2013). This qualitative form of exploration focuses on understanding participants' perspectives with data collection through interviewing and dialogue (Carlson, 2010).

Qualitative research is best suited for question related to *why* and *how* as opposed to gathering qualitative data related to statistical information. Additionally, unlike quantitative research methods that emphasize known or precise, identifiable variables, researchers recommend the use of qualitative research when variables for the study are unknown (Starr, 2014). Quantitative research is best suited to studies in which the scope of the research can be narrowly defined and measured through correlation studies,

surveys, and experiments or through linear research that builds upon analysis of one variable's effects on another (Denzin & Lincoln, 2013).

Because variables for the strategies under study were unknown and the data were not structured in the form of numbers, a quantitative design was not appropriate for this study. According to Yilmaz (2013), qualitative research methods are also appropriate when limited existing research is available on the study topic and when the information that is available cannot be formed or studied through isolated variables, numerical data, or patterns. Due to a lack of hard data related to the strategies under study, the problem is better served through the gathering of soft data, such as impressions, words, and sentences (Bernard, 2013). Furthermore, because qualitative research attempts to understand and make sense of a problem from the perspective of participants, researchers can approach the potential success and challenges relating to these strategies from an interpretive stance (Gilbert, Jackson, & di Gregorio, 2014). The qualitative method was appropriate because this study entailed exploring the strategies of law firm leaders through an analysis of interviews and unstructured data such as organizational documents.

Conversely, quantitative research relies on the use of numerical and statistical data to either prove or disapprove a hypothesis (Davies & Dodd, 2002), making quantitative research more suitable for measuring specific variables to with the goal of testing hypotheses (Corbin & Strauss, 2014). Similarly, mixed methods research was also inappropriate for this study due to its reliance on a combination of qualitative and quantitative methods (Gilbert et al., 2014). Such an approach is only appropriate when

neither a quantitative nor a qualitative approach is on its own, sufficient to understand the research topic. Because the mixed method requires a combination of both qualitative and quantitative research, the format was also unsuitable for this study. As described by Starr (2014), the quantitative emphasis on statistical calculation and numerical analysis found in mixed methods research is not appropriate for exploratory research such as this.

Study Design

For this study, I used a descriptive multiple case study design to explore the strategies that law firm leaders in the United States can employ to address the effects of potentially DTs, such as AI and ML, on their organizations. The case study design was appropriate because I sought to capture the commonalities of strategies employed by the participants through an interpretation of data collected by means of interviews, document analyses, and observations (see Yin, 2013). The use of the case study design allows the researcher to describe the strategies under study better (Dukes, 1984; Stake, 1995). Goldberg and Allen (2015) stated that qualitative research seeks to answer a central question and associated subquestions.

According to Yin (2013), in qualitative research, the design is driven by the *what* and *how* of the research question. The multiple case study method is an appropriate design for exploring the phenomenon in a natural setting (Yin, 2013). Moreover, the case study design allows the researcher to explore the phenomenon within the context of the organization, rendering them suitable for research design within the business context (Yin, 2013).

Other qualitative designs such as phenomenological, grounded theory, and ethnographic was not appropriate for investigating the phenomenon cited in this study. For example, although phenomenological research is a respectable choice for exploratory research, the design's reliance on interviews as the sole collection method coupled with a focus on lived experiences renders the design less suitable for exploring business problem related to strategy (Denzin & Lincoln, 2013). Grounded theory was also a poor fit for this study as it was not my intent to develop a new theory as a result of this study. Additionally, although this study did involve human responses to business problems, I was not reconnoitering the long-term social interactions of the study participants, a significant facet of grounded theory (Roy, 2015). Finally, scholars engaged in ethnographic research tend to embed themselves within cultural groups in their natural environment over a prolonged period (Gill, 2014). This requires the researcher to assimilate into the culture under study and involves a process that can be both time consuming and cost prohibitive (Goldberg & Allen, 2014). More importantly, the focus of ethnographic research is not to understand the phenomenon from the participants' perspective but instead focuses on broader cultural behaviors.

Population and Sampling

The sample population for the study consisted of six leaders at U.S. law firms with responsibility for the development, enforcement, and strategic management of technology related strategies. The objective of the study was to explore strategies that law firm leaders in the U.S. might employ to address the potential influences of DT such as AI and ML on their organizations. For this study, I employed purposeful, snowballing-

based sampling as a mechanism for both identifying and recruiting study participants. According to Robinson (2014), identifying a population for a qualitative research study requires striking a balance between theoretical and practical ideas. Moreover, Robinson claimed that an a priori sampling size need not be restrictive but should instead be open to adjustment as warranted over the course of the study. Bernard (2013) and Misigo and Kodero (2014) argued that snowballing is a form of network sampling and facilitates the identification of respondents within elite populations where recruiting might prove more difficult, as is the case in identifying thought leaders within the broader population of legal technologists. Application of the snowball sampling method, sometimes called chain sampling, involves asking current study participants to identify and refer additional participants, leading to referral chains (Robinson, 2014).

Although I selected an a priori sampling of six participants, I would have added additional interviewees to the study as needed to ensure reaching data saturation. Dukes (1984) asserted that the inclusion of a large number of respondents is not necessary in order to achieve saturation in a qualitative study, citing between one and 324 as appropriate for qualitative studies. Roy, Zvonkovic, Goldberg, Sharp, and LaRossa (2015) echoed this sentiment, citing participant pools that varied significantly and from low to high depending on the nature of the qualitative study, but acknowledged that between 10 and 45 interviews was sufficient to ensure suitable depth and diversity of perspectives. I determined an appropriate sample size for this study by first identifying the known number of potential participants perceived as thought leaders by their peers

within the legal technology field and who meet the experience criteria related to developing, implementing, and managing automation solutions in the legal industry

Ethical Research

According to Yin (2013), prior to interviewing participants, researchers should indicate they as a researcher are honest, credible, and conduct ethical research. The purpose of this study was to explore the strategies leaders at large U.S.-based law firms employ to address the effects of potentially DT, such as AI and ML, on their organizations. This study presented no risk of harm to the interview participants. Moreover, study participants did not encounter risks to their safety or well-being and, therefore, did not require protection. Interview questions did not contain identifying information about participants, and I did not offer incentives to complete the interview. I did not use imply measurement methods and instruments with obvious biases in the study. Further, this study did not focus on ethnic or cultural issues but instead relied on feedback from a diverse sampling of leaders perceived as thought leaders by their peers within the legal technology field and who met the experience criteria related to developing, implementing, and managing automation solutions in the legal industry potentially affected by the research problem. participants experienced only some risk of minor discomforts such as fatigue, stress, or becoming upset should sensitive topics arise for discussion. Ells and Thombs (2014) expressed the need to protect participants, including the protection of participants' privacy.

The Walden University IRB process for the structuring and conduct of data collection guides this study. No data collection occurred prior to receipt of IRB approval

of the submitted research plan that included the appropriate IRB approval number in the final study. In addition, I have successfully completed a National Institutes of Health web-based training course pertaining to the protection of human subjects during research.

Prior to conducting interviews, I furnished participants with the necessary information regarding study objectives and provided an informed consent form to each participant for review and signature. Additionally, I gave all interviewees the opportunity to decide whether they wish to participate in the study based on the information provided in the consent form. Tideman and Svensson (2015) recommended that researchers utilize informed consent to ensure participants understand their options with regard to their rights to withdraw from the interviews at any time.

I ensured the privacy of all study participants and their organizations through the redaction and coding of personally identifiable information during the data analysis process. In addition, I did not require study participants to respond to questions that they feel uncomfortable answering, nor did I oblige participants to provide information that they felt might compromise or threaten their professional status. Ells and Thombs (2014) expressed the need to protect participants, including the protection of participants'privacy. When relying on outside vendors for services such as transcription, all data exchanges were encrypted, and vendor employees signed a nondisclosure agreement. I will store interview recordings and transcripts in an encrypted padlock external hard drive that I will maintain in my safe for a maximum of 5 years, after which I will destroy the files using a professional data destruction tool. In addition, I informed participants of their rights to withdraw from the interviews at any time; I also provided

participants with the option to modify their responses at any stage in the process. I did not offer incentives or other forms of payments to those participants who agree to participate in the study, as several researchers recommended (Ayuso, Millán, Mancheño, & Dal-Ré, 2013).

Data Collection Instruments

Qualitative researchers strive to facilitate understanding of the meaning individuals construct about their worlds and experiences, allowing the researcher to explore a particular phenomenon from the participant's perspective (Yin, 2014). Merriam (2002) explained that during this process, the researcher becomes the primary instrument for data analysis and collection through an inductive process that builds toward the development of concepts or theories. King (2014) described the interview itself as a research instrument that enables the collection and use of multisensory data such as body language, gestures, and other nonverbal responses. Data analysis co-occurs with data collection, meaning the researcher begins analysis based on observations made during the interview processes. According to Merriam, this permits the researcher to test emerging themes or concepts in real time, allowing for adjustments as needed along the way. A copy of the review protocol can be found in Appendix A., followed by a copy of the interview questions at Appendix B.

Data collection in this qualitative case study entailed the exploration of documents combined with the recording, transcribing, and analysis of in-depth interview data obtained from leaders in the legal services industry. These leaders are responsible for the development, administration, and provisioning of business-process automation

solutions. According to Yin (2013), the collection of data from multiple sources adds to both the quality and reliability of qualitative research by allowing the researcher to engage in the triangulation of data as a means of verifying or corroborating the phenomenon under study. When undertaking a descriptive case study, Yin recommended that researchers prepare and follow a case study protocol as a means of ensuring ongoing focus and reliability. Elements of this recommended protocol included a written overview of the project, the protocol purpose, detailed descriptions of the data collection methods, a list of proposed research questions, and a description of the study's transferability.

When reviewing participant interviews, I engaged in a practice known as member checking, a process that involved summarizing the transcribed interviews for review by the interviewee. The review process allowed the participants to confirm that the researcher's interpretation of the interview accurately reflected the participants' experiences. In addition, during the member checking process, I compared and summarized the patterns and themes in a way that captures the varied experience and meaning each participant used to describe the phenomenon under investigation. Finally, I provided participants with copies of their transcripts and an opportunity to comment on the accuracy of the findings in follow-up interviews. Merriam (2002) recommended soliciting from participants throughout the process.

The collection of data for this study resulted in an amount of data that is beyond what might be deemed reasonable to include in the study's appendices. Therefore, I will provide the raw data in an anonymized format upon request. Appendix H includes a list of the documents considered in this study. Appendix I includes a list of codes used during

the document analysis and the total count information for each transcript. To enhance further the quality of the study, I engaged several of subject matter experts to provide formative evaluations of study elements, such as the interview questions, as a means of ensuring that I am accurately capturing the themes surrounding the phenomenon under study

Data Collection Technique

Data collection of this study consisted of information obtained from semistructured interviews with six participants and the review of relevant organizational documents. Additionally, I would have added participants if needed to achieve data saturation. Yin (2013) taught that researchers conducting case studies could rely on numerous document formats, including memoranda, letters, e-mail communications, written reports, administrative documents, and newspaper articles for triangulation purposes. Yin further claimed that researchers are better able to ensure quality by combining two or more data sources, which provides an advantage over other data collection techniques. According to Denzin (2012), methodological triangulation involves analyzing multiple data sources. I employed methodological triangulation by integrating organizational documents related to the deployment of various AI and ML based technologies as well as external survey data focused on law firm innovation that were used by the organization to review and develop internal strategy for addressing potential DT to validate the interview responses by participants Marshall and Rossman (2015) noted that employing methodological triangulation using organizational archival documents can enable researchers to control for potential bias that might be introduced

when participants are self-reporting. By combining the archival documents with participant responses, I was able to gather the required information to answer the resource question.

The purpose of these interviews was to explore strategies that law firm leaders in the United States use to address the potentially detrimental influences of DT, such as AI and ML, on their organizations. King (2014) described the use of interviews as an appropriate research instrument for capturing the experiences of participants involved in qualitative studies. Gill (2014) explained that qualitative methodologies, including a reliance on semistructured interviews, are both suitable and appropriate for supporting scholars investigating organizational challenges such as the phenomenon under study here.

To minimize potential inconvenience to study participants, most interviews occurred in face-to-face meetings at locations of the participants choosing. Face-to-face participation allowed me to more accurately assess the comfort level of study participants. Due to the nature of the study, some participants, there is a high probability of participants who are geographically dispersed. In those situations, I facilitated interviews with the assistance of video conferencing technology such as Skype. Scholars, including Hamilton, (2014); Hillman, Forghani, Pang, Neustaedter, and Judge (2014); as well as Janghorban et al. (2014) claimed the challenges with geographically dispersed participants could be overcome through the use of Skype or other video conferencing technology. According to Sullivan (2013), the use of video conferencing technology allows the researcher to expand the potential participant pool while maintaining the

ability to observe participants in their home environments. More importantly, if participants become uncomfortable during an interview, they could have easily disengaged with the click of a button. In addition, participants had the option of providing documents for onsite inspection. If participants requested remote interviews, I provided participants with access to an encrypted File Transfer Protocol site, where they had the option to upload documents or other organizational artifacts. Prior to uploading documents to the FTP, I instructed participants to remove or redact any personally identifiable information.

All interviews were digitally recorded with hardware based recording tools subject to prior approval from all study participants. Following the interviews, the audio files were placed in encrypted folders and transferred via secure FTP to a professional transcription service to ensure accuracy. To protect the privacy of the study participants, employees of the agency were required to sign a nondisclosure agreement, acknowledging that the contents of the recordings are confidential. According to Annan (2014) and VanScoy and Evenstad (2015), the use of professional transcription services is appropriate when the contents of the recordings are transferred securely and when the privacy of the participants is ensured. Once transcribed, the transcription agency returned the transcripts and certified destruction of any study documents or and audio files in their position. As advised by Anyan (2013), researchers should engage in what the author described as member checking. I stored the original audio files on an encrypted external padlock hard drive in preparation for analysis.

The data collection process involved face-to-face, semistructured interviews through the use of open-ended questions and reviews of organizational documents. Although a significant number of these interviews took place in person, some of the participants were geographically dispersed, making face-to-face interviews less practical. To overcome that obstacle, I conducted some face-to-face interviews through video conferencing technology such as Skype. Hamilton (2014); Hillman, et al., (2014); and Janghorban et al. (2014) supported the use of Skype video conferencing for both efficiency and the potential broadening of the participant pool. Hamilton described the use of these technologies as beneficial for enhancing recruiting success and obtaining consent from participants. Likewise, Janghorban et al. espoused the cost savings associated with minimized travel, as well as the benefit to participants. The use of Skype or similar video conferencing technologies allows participants to withdraw from interviews with the click of a button in uncomfortable situations, and, unlike telephone interviews, the researcher maintains access to both verbal and non-verbal cues throughout the interview process. Hamilton; Hillman, et al., claimed that the researchers might overcome challenges with geographically dispersed participants through the use of Skype or other video conferencing technology.

Data Organization Technique

As part of the data organization process, I created and maintain an encrypted log to track interview dates, interview research notes, as well as the status of interview processes. In addition, I recorded the location of original research material as well as any other materials I used or reference during the analysis process (Yin, 2015). According to

Bevan (2014), Yin, and Robinson (2014) notes related to observations and study elements help ensure the researcher captures observations as well as contextual factors that might provide insight into the participants' experiences.

I will store and access original copies of all study materials on a password-protected hard drive. I will maintain and secure working copies of transcripts with AES 256 encryption in the cloud-based, qualitative analysis tool, Dedoose. In addition, backup, archival copies of study materials will be stored on an encrypted server located within my home office. All research data and analysis files cite only to interviewee identification numbers. I redacted or otherwise anonymized all other personally identifiable information about participants and their organizations to ensure participants' confidentiality

Data Analysis

As recommended by Bernard (2013), I used coding as the primary data analysis technique to derive the interpretative aspect of the qualitative case study. Qualitative researchers use both inductive and deductive coding as a mechanism for categorizing and describing (Bevan, 2014). Relying on this guidance, I applied this perspective during the analysis of the data in an effort to capture and convey both the textural and structural meanings within a systems science construct. This application of the descriptive multiple case study method provided a disciplined approach to reduction and imaginative variation that enabled me to evaluate my biases and assumptions continually in a way that better ensured my openness to new insights or ideas. Yin (2014) adopted a method for analyzing data in qualitative, multiple case study designs. The author recommended

analyzing the data in stages by first transcribing and structuring interview data. Once structured Denzin and Lincoln (2013) recommended beginning the coding phase various levels from general to specific. The analysis of the interview where the researcher searches for and identifies any contradictions to the existing literature. During this analysis, I expected themes to emerge that may have helped clarify the systemic nuances of the participants' experiences with strategies that involve feedback loops, ecosystem interactions, and drivers within system environments, among others.

I employed Dedoose qualitative data management software for coding and analysis, as prescribed by Moylan, Derr, and Lindhorst (2015), who described computer-assisted data analysis packages as beneficial to qualitative research. The researchers specifically cited the ability to enhance and improve the qualitative research process and described the use of qualitative analysis tools as being invaluable to researchers who wished to analyze and better understand qualitative findings. Also, the authors affirmed that the use of software improved quality and consistency throughout the analysis process.

Before embarking on the interview phase, I requested formal written permission to digitally record the experiences of each study participant's interview through the use of the informed consent form. As the primary research instrument, my role included interviewing each member and capturing their experiences and meanings via a combination of digital voice recordings and research notes. When necessary, I supplemented the primary interview questions with additional probing questions designed to extract richer descriptions to expand erudition of the phenomenon under study (Denzin

& Lincoln, 2013). If further questions arose during the review of the initial participant recordings and notes, I contacted those participants for additional clarification (King, 2014). After formally coding and analyzing the findings, Bevan (2014) recommended providing interviewees the opportunity to review transcriptions of their interview in its entirety; however, when interviews are more extended, as is the case in this study, transcripts may be several pages in length and may not receive a thorough enough review from participants to ensure accuracy through traditional transcript review.

To mitigate these risks and to better capture the richness of the participants' lived experience, scholars (Carlson, 2010; Harvey, 2015) recommended engaging in a process known as member checking. Unlike transcript review, in which participants validate the entirety of the transcribed interview, member checking is an iterative process that involves conducting the interview, interpreting the results, and sharing the interpretation of those results with participants in an effort to validate the interpretations. This approach can provide several benefits over transcript verification, including the prevention or elimination of bias, opportunities to collect information not previously disclosed during the initial interview, and a broader opportunity to better assess the participant's intent (Goldblatt, Karnieli-Miller, & Neumann, 2011).

Harvey (2015) echoed many of these sentiments but warned of the potential for self-laid traps that can arise due to the variations in protocol and research design in qualitative studies. Among the challenges described by Carlson (2010) was a tendency of participants to focus on the literal translation of their experiences as opposed to the broader themes being collected. In some instances, Carlson claimed, this led participants

to retract or amend large portions of their initial interview responses. In other cases, participants mentioned being uncomfortable or embarrassed over grammatical or contextual errors (Brashear, Granot, Brashear, & Cesar Motta, 2012) when reviewing verbatim transcripts, reducing the interviewee's wiliness to participate in follow-up interviews or the member checking of notes. Carlson and Marshall and Rossman (2015) recommended that researchers place more emphasis on the researcher–participant relationship. In addition, I loaded the archival documents into Deddose to perform methodological triangulation. This type of methodological triangulation provides a researcher with an opportunity to collect richer data sets from through multiple forms and sources of data sources. Moreover, methodological triangulation allows the research to compare and contrast multiple data sources to construct a basis for the validity of the research (Denzin, 2012).

Although providing full, thorough transcriptions to participants may be meaningful in some situations, in some instances, partial transcripts or excerpts may be more appropriate. The authors also recommended determining the precision of transcript language prior to embarking on the member-checking exercise. With the assistance of Dedoose, I identified and clustered the individual descriptions into composite textural descriptions, allowing for the identification of common themes related to disruptive technologies within the legal ecosystem.

The nature of the interview questions substantially influenced the outcome of this research study. The interview questions in this study were open-ended and formed with the intent of answering the central research question and addressing the specific business

problem. Specifically, I used the interview questions to explore the strategies that law firm leaders in the United States employ to address the effects of potentially DT such as AI and ML on their organizations. As part of the analysis process, I correlated the key themes that emerged from the interview process with both the academic literature and the conceptual framework (Fusch & Ness, 2015; Yin, 2014;). The final step involved a level of data interpretation that helped me identify any patterns or differences among the data

Reliability and Validity

Reliability

Researchers describe reliability as whether a study can be repeated; however, in qualitative studies, researchers recognize the difficulty in reproducing the phenomena in a way that replicates the precise circumstances and conditions as they existed at the moment when the evidence was initially collected (Yin, 2003). Scholars such as Corbin and Strauss (2014) acknowledge that replicating these circumstances, even with the same or similar participant populations, is unlikely to result in identical responses from interviewees. Although there is no expectation of replication in qualitative studies, Goodwin and Goodwin (1984) described rigorous alternatives to validity and reliability as both necessary and relevant to ensure the accuracy, credibility, and dependability of qualitative research studies.

Davies and Dodd (2002), Denzin (2011), Lincoln and Guba (1985), and Marshall and Rossman (2015) pointed to research dependability rather than reliability as a means of demonstrating the trustworthiness of qualitative research and described a study's dependability as ensuring that its findings are consistent and repeatable. In order to

ensure the dependability of study findings, I developed and adhered to a research protocol that included developing an overview of the proposed project, a description of the data collection processes, a list of the interview questions, and an outline of the bracketing techniques applied in the study. Carlson (2010) cited member checking as another essential element of ensuring dependability, allowing participants to verify, adjust, and provide supplemental information around themes extracted through their interviews. This verification process provides a check, or audit, which allows the researcher to ensure that information was gathered and interpreted appropriately

Validity

In qualitative research, external validity and generalizability are not considered the ultimate goal (Marshall & Rossman, 2015). Instead, researchers point to the need for credibility, establishing that the results of the research are believable; confirmability, to establish a criterion of neutrality, and transferability, the degree to which the results of qualitative research can be generalized to other studies (Yin, 2015). Marshall and Rossman (2015) stated that the responsibility for applying or transferring existing qualitative results to future studies lies with those conducting future research and not with the original researcher, concluding that the transferability of the findings is dependent on the application by the reader and future researchers. In this study, I ensured credibility, confirmability, and transferability through a multipart approach that began with identifying bias. Yin (2013) described the need to both identify and suspend personal bias as a means of ensuring research dependability, arguing that the suspension of bias diminishes the risk of inadvertent contamination of participant responses due to the

influence of the researcher's preconceptions, personal values, or experiences with the phenomenon under study. In initiating data collection for strategies that law firm leaders in the United States employ to address the effects of potentially DT, such as AI and ML, on their organizations, I conducted an assessment of biases using a biases matrix, which allowed me to both identify and manage my bias effectively throughout the process.

Next, I used member checking, a step that involved returning interview transcriptions to the participants to ensure that the essence of each interview has been correctly captured (Stake, 1995). During this stage, I gave participants the opportunity to correct, clarify, or expand on statements made during the initial interview stage. Allowing participants to engage in member checks enhances the validity of the researcher's interpretation of the observations. Carlson (2010) cited member checking as an imperative element for ensuring the trustworthiness of a study,

Upon completing the member-checking procedure, I began the bracketing process to help in identifying common themes. Following the collection and transcription of interview data, I bracketed and evaluated each meaning segment or theme independently in an effort to identify both commonalities and differences in strategic approaches. The objective of this step was to extract and explore the full range of strategies implemented by the participants. Once bracketing was complete, I again provided participants with a copy of the bracketed texts to ensure that the results reflected the nuances of their strategies as applied to the phenomenon under study (Groenewald, 2004).

Finally, I performed methodological triangulation, which in this study entailed interviews, field notes, and organizational documents. This triangulation of information

among different sources of data was helpful in validating the accuracy of the data I am analyzing. By combining multiple data collection tools as a method of conducting triangulation, researchers can help increase the credibility of the study. Yin (2018) taught that researchers conducting case studies could rely on numerous document formats, including memoranda, letters, e-mail communications, written reports, administrative documents, and newspaper articles for triangulation purposes. Yin further claimed that researchers are better able to ensure quality by combining two or more data sources, which provides an advantage over other data collection techniques.

In qualitative studies, researchers achieve saturation at the point when data is redundant (Fusch & Ness, 2015; O'Reilly & Parker, 2012; Roy et al., 2015). Dukes (1984) asserted that the inclusion of a large number of respondents is not necessary in order to achieve saturation in a qualitative study, citing between one and 324 as appropriate for qualitative studies. Fusch and Ness (2015) and Dukes further postulated that researchers reach saturation when the data become duplicative. Roy et al. (2015) echoed this sentiment, citing participant pools that varied significantly and from low to high depending on the nature of the qualitative study, but acknowledged that between 10 and 45 interviews were sufficient to ensure suitable depth and diversity of perspectives. For this study, I ceased interviews with law firm leaders once I reached a noticeable level of repetitiveness.

Transition and Summary

Section 2 of my study included an outline of the intent, research design, population sample, and methods leaders at U.S. law firms use to address the potentially

detrimental influences of DT, such as AI and ML, on their organizations. The reliance on a qualitative, descriptive multiple case study design enabled exploration of how law firm leaders felt technology is affecting the legal profession, if at all. I gathered data using semistructured interviews and document reviews in order to build my understanding and knowledge surrounding the strategies leaders at U.S. law firms use to address the potentially detrimental influences of DT, such as AI and ML, on their organizations. In Section 3, I include an overview of the study and a presentation of findings from the analysis of the collected data. I also include an analysis of the research to the application of professional practice as well as the recommendations, reflections, and conclusions resulting from the study.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative, descriptive multiple case study was to explore strategies that law firm leaders in the United States use to address the potentially detrimental influences of DTs, such as AI and ML, on their organizations. Three senior legal technology executives from each of two case studies, both international law firms with a presence in California, participated in the study. An analysis of participant interview responses and archival data provided the data for me to explore the research question. Through the data analysis process, four key themes emerged. The legal technology leaders acknowledged the legal ecosystem as an open system at the macro level, influenced by behaviors or actions originating outside organizational boundaries. The leaders also recognized the need within the overall legal ecosystem to better differentiate between true disruption and marketing hyperbole that misrepresents the innovativeness and potential of the product. Specifically, such misrepresentation often presents a technology update as a DI, when in fact that innovation is merely an incremental improvement that will not disrupt or realign the industry. Such misrepresentation can result in unrealistic customer and public expectations that cannot be met. In addition, these leaders described the current application of AI and ML as augmenting and not currently displacing traditional legal work. Finally, the participants identified a need for firms to either partner with external innovators or to invest more heavily in internal innovation generation as a method of better driving disruption.

Presentation of Findings

The overarching research question for this study was: What strategies do law firm leaders use to address the disruptive systems influences of DTs, such as AI and ML? I used semistructured interviews with open-ended questions (see Appendix A) and analyzed memos, marketing material, research material, and other archival documents that participants provided. I conducted data analysis using a mix of inductive and deductive coding with the research tool, Dedoose. Based on the data analysis, four key themes emerged: (a) recognizing legal ecosystems and legal firms are, at the macro level, open systems, but organizational subsystems often function as semiclosed systems; (b) acknowledging that, while DT represents the most significant potential challenge in the near future, the immediate challenge is in incrementally improving technology that requires organizational adjustments; (c) recognizing the need for firms to invest more heavily in innovation generation activities; and (d) realizing the need for increased utilization of augmenting technologies, such as AI or ML, to streamline nonadvisory outputs.

Theme 1: Law as an Open System

The responses of Participants B001, B003, and L003 to Interview Questions 2, 4, 5, and 6 indicated that the participants from each case recognize the influences of external boundary activities, such as inputs from clients or technology vendors. A legal technology executive (B003) described the legal system as being open, with many external technology innovations influencing the system. Participant B003 went on to state that organizational structure and individual resistance inhibit potential beneficial

operational synergies necessary for the development of disruptive technologies. B003 stated,

> I think it's an open system. No, I, I would definitely say it's an open system, where, you know, we, well, especially with disruptive technologies through other technologies, I mean, we, the, legal system has to adjust, and react just like any other, industry would, to new technologies, and to, other influences. I mean, certainly the, you know, the two that were mentioned earlier like artificial intelligence, machine-learning applications. Also, just bigger factors like globalization, have impact on, on, the legal industry, and, nothing's immune from those outside influences.

Participant B001 echoed those sentiments but also described the inputs from clients and government agencies that drive a significant portion of the firm's strategy. Legal technology executive L001 pointed to external innovations being adopted by firms as well as the impact of competitors and new entrants on the overall legal ecosystem. While Participant L003 acknowledged the legal system as open at the macro level, L003 described the challenges of leveraging broader system synergies to influence the organizational process, due in large part to the segregation of resources and information within these organizations. L003 stated,

> And while it's valuable, what's more, valuable is if the legal community as a whole put all of that information together and used what everybody knew, but there is not a desire in the current setup . . . Now, I think that the new cloud-based or, you know, I'll call them third generation software [tools] that are being

> created, are actually being created with an eye towards being a more open system, a more big-data system where this kind of collaborative efforts can be utilized across, you know, every organization.

Horst et al. (2015) argued that in an open structure, the external environment affects the organizations' internal operations. These interactions occur through the exchange of information in the form of inputs and outputs to the legal ecosystem. Horst et al., further claimed that such structures are divided by a permeable boundary between the firm and the environment. Some of the influences described as influencing the organization included company personnel, marketing channels, and the inputs and other materials involved (Horst et al., 2015). In describing the legal ecosystem as open, all six participants agreed that their organizations, at least at the macro level, should be classified as open structures. All participants acknowledged that their organizations are influenced by external forces, such as clients, government agencies, and technology vendors. However, 67% (i.e., four) of the participants thought that most of their organization's subsystems were not significantly or directly affected by those external forces. Specifically, B001, B002, L002, and L003 pointed to some influences arising from these sources but not to an extent that was significantly driving internal strategies. Participant L001 provided organizational artifacts in the form of collected surveys and deployment documentation. According to Participant L001, the surveys and associated articles were reviewed by the organization as part of the organization's strategic development. Although the artifacts provided contained a breadth of information related to legal technology adoption, the overarching theme from these materials pointed to the

external influences of clients as a driving force behind DT adoption, a theme echoed by the study participants.

All six participants described experiencing at least some challenges related to both flow and synergy at the departmental or subsystem level, where departments or functions and personnel often operate in isolation, limiting the exchange of ideas and resources. participants B002, B003, and L003 lamented a lack of synergy among departments and firms, and L002 described a lack of willingness within law firms to move past local system boundaries and create synergies across departments in a way that might improve adoption and idea generation within the organization. Participant B001 expanded on these sentiments by describing environments in which adoption of DTs, such as AI and ML, were often siloed within the subsystem, such as IT, slowing adoption across other levels of the organization. Figure 1 illustrates the application of the systems theory of management using the framework LoPucki (1996) described. According to LoPucki, applying a systems framework to the legal ecosystem allows practitioners to address the complexities of the legal ecosystem, including evaluating external threats and opportunities originating outside traditional organizational boundaries.

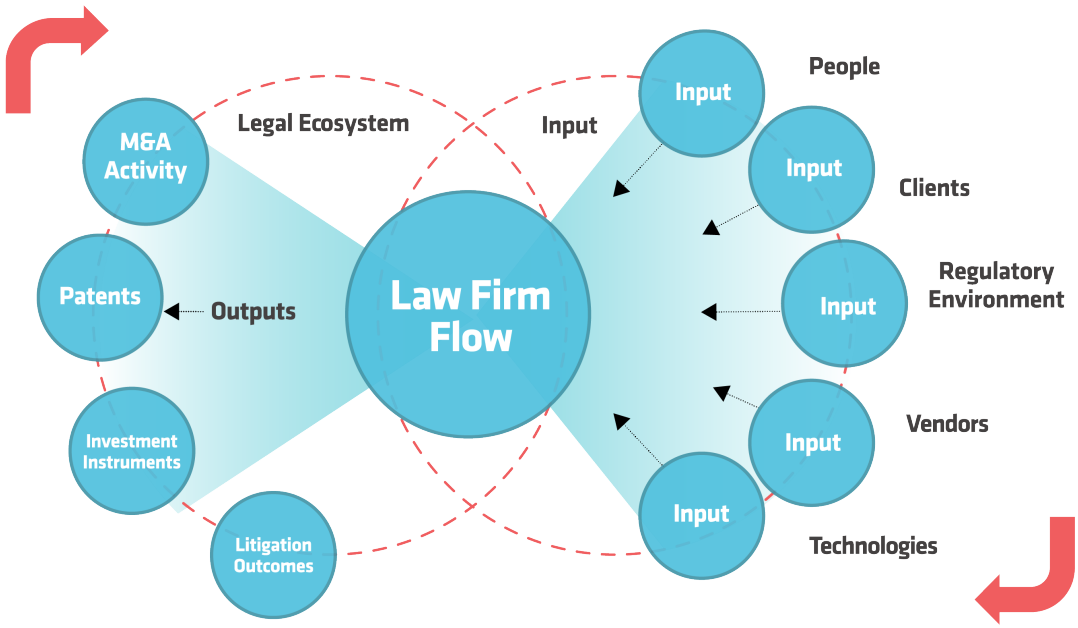


Figure 1. Original rendering applying the systems theory of management to the legal ecosystem. Adapted from the systems approach to law. Cornell Law Review LoPucki 1996.

In describing solutions to these challenges, Participants B001 and L001 described the importance of improving cross-boundary activity as an effective strategy for both developing and deploying DT solutions. Participant B002 expanded on that strategy by citing the synergies achieved by leveraging tools beyond their intended purposes, such as using ML tools designed to streamline eDiscovery review for tasks with due diligence within transactional practices. Participant L003 cited exploring synergies from outside the legal system, such as potentially leveraging photo recognition AI tools from tech companies, such as Google, to solve problems related to finding handwritten documents within litigation review databases. The participant responses contributing to Theme 1 are aligned with the system literature as well as the conceptual framework. Susskind and Susskind (2016) taught that the legal ecosystem exists as a subsystem within a larger

system of the professions, with each subsystem influencing one another. Susskind (2013) went on to claim that, if removed from the broader system, these mechanical functions could not operate as independent systems because they are dependent upon the organization as a whole.

According to Horst et al. (2015), the systems theory of management dictates that organizations exist in an environment, surrounded by significant forces that determine the progression of activities within the company. As such, Horst et al. claimed organizations might choose to operate in either an open or closed system structure. In the open structure, Horst et al. argued that the external environment affects organizations, with interactions occurring through the exchange of information, input, and output to the ecosystem. Horst et al. went on to claim that such systems are divided by a permeable boundary between the firm and the environment through social, political, and economic systems. The influences described included company personnel, marketing channels, and the inputs and other materials involved (Horst et al., 2015). The study participants agreed that the legal ecosystem as a whole is open, and as such, subject to outside influences from external organizations, such as vendors, clients, and government agencies. In addition, participants illustrated the ways in which external influences combine with cross-boundary activity influences in internal strategy related to potential DTs, such as AI and ML. Table 1 illustrates the frequency with which participants mentioned the law as an open system.

Table 1

Law as an Open System (Frequency)

Participant	Interview Questions	Number of References
B001	2,5,6	10
B002	2,4,5,6	12
B003	2,4,6	7
L001	2,4,5,6	8
L002	1,2,5,6	6
L003	2,4,5,6	9

Note. Illustrates the frequency of participants mentioning the law as an open system.

Theme 2: Differentiation Between Disruption and Incremental Improvement

Epstein (2014) asserted that, of the systems-related drivers currently affecting the legal ecosystem, technology-driven disruption likely poses the greatest threat to traditional law-related business models. Remus and Levy (2015) explored the current capabilities of ML and AI technologies and concluded that true disruption to traditional legal models is unlikely, due in part to the nuanced and normative nature of the practice of law. Remus and Levy (2015) further postulated that while these technologies may ultimately change some legal processes, these changes will be more evolutionary, enhancing rather than displacing the work performed by most lawyers and paralegals.

Of the participants, 83% (i.e., five) concurred with Remus and Levy's (2015) opinion that current technologies, while innovative, are merely augmenting the work of lawyers and professional staff in large firms. L003 cited the limited displacement forecasted by Epstein (2014), specifically in the area of document review, a practice that

once involved hiring dozens of associates to review hundreds of boxes of documents by hand. From a strategic standpoint, Participant L003 pointed out that displacement of personnel involved in these now commoditized tasks has led to opportunities elsewhere in the organization. Specifically, Participant L003 pointed to the creation of new positions within the organization, such as professional technologists and data scientists, who work hand in hand with the firm's lawyers to improve the overall quality of the service while simultaneously driving down costs.

In responses to Questions 1 and 3, Participants B001, L002, and L003 agreed that changes in traditional models were occurring; however, nearly all Participants agreed that any material changes were happening at the lower end of the market, often in areas related to automating commoditized tasks or where appropriate to improve the quality of outputs. All six participants echoed at least some the opinions Remus and Levy (2015) expressed, agreeing that many of the technologies and changes in the industry are merely incremental in nature, often augmenting and not replacing the work performed by lawyers or paralegals. Among the law firm leaders interviewed, all six participants expressed at least some skepticism over how deeply their competitors were innovating through the deployment of DTs, with L002 and L003 describing a chasm between the perception of disruption levels in the ecosystem and realities as seen in practice. Participant B001 cited the marketing hyperbolae often used to describe technologies or trends in industry seminars and workshops, and L003 expanded on this theme, describing a disconnect within the ecosystem, where mere incremental innovations, process improvements, or reimagined workflows are often touted as disruptive. L003 stated,

> And, I- I- I think that there's a disconnect kind of the marketing talk that happens and then how do you practically use this, in a positive way.
>
> Um, the other I think is a lack of focusing on what matters the most to the audience, to the legal audience. So, there's a lot of talk about finding the smoking gun using this type of technology and while that's important and while this, and- and- and while things like machine learning, things like, you know concept clustering, artificial intelligence, data modeling, et cetera. All of this can lead to that smoking gun, you know, that- that key document you're looking for. More of the practical usefulness is in reducing the noise and increasing the fidelity of what you're looking at. And I think that there's been a little bit too much focus on the, you know, magic button of you'll find exactly what you're . . . You know, gonna hit the button and it's gonna say to give you what your, you care about.

Among the law firm leaders interviewed, L001, L003, and B002 argued that holding an early adopter position is preferable to that of a follower as a strategy for evaluating and deploying legal technology. This sentiment was echoed by Participants L002 and B003, both of whom concurred that comparing the tactics technology companies use to sell AI and ML tools in the ecosystem to the hyperbolic tactics employed by the snake oil salesmen of old, who often sold elixirs based on the exaggerated claims. Participant B002 stated,

> I think it has had limited impact so far other than a sales technique or as a series of buds, buzz words, um, and, you know, there, there's a, there, there's a lot of talk, uh, about how it is happening. And I, uh, I, I definitely believe that it will

> happen and have a large impact, but I think it's a lot like self-driving cars where the people who are, uh, you know, are, are, are selling it are a bit overzealous and are, you know, tend to be on the charlatan side of things as opposed to having any real plan to use it in a meaningful way. Uh, e, e, either currently or in the near-term future.

Responses from Participants L002, L003, B001, and B003 to Interview Questions 2–8, as well as archival documents from each case, indicated that both organizations actively engaged in the monitoring of DT trends and frequently reviewed surveys and industry reports related to disruption, as well other pertinent issues related to legal technology in an effort to monitor adoption of such tools. Prior to participating in an initial interview, Participant L001 provided me with several archival documents via secure file transfer protocol. Among those documents were industry reports related to technology and DI within the broader legal ecosystem, as well as internal documents describing the deployment of AI and ML tools used to augment specific areas of practice within the organization. Participant B003 also provided a number of archival documents, including a document with an announcement of a partnership with an external vendor specializing in AI tools for litigation and of a firm-sponsored seminar related to driving DI in several key market areas. Another organizational document was an article the firm advising external lawyers wrote on the best practices to avoid disruption.

The disconnect between the marketing hyperbole and true disruption is supported by the archival materials. Figure 2, containing an excerpt from a 2018 industry report by Thompson Hine, was one of the documents I reviewed as part of Participant L001's

internal strategy. Participant L001 revealed in this document that, from the perception of clients, only 4% of their external firms have engaged in significant innovation, with 45% citing innovation as modest.

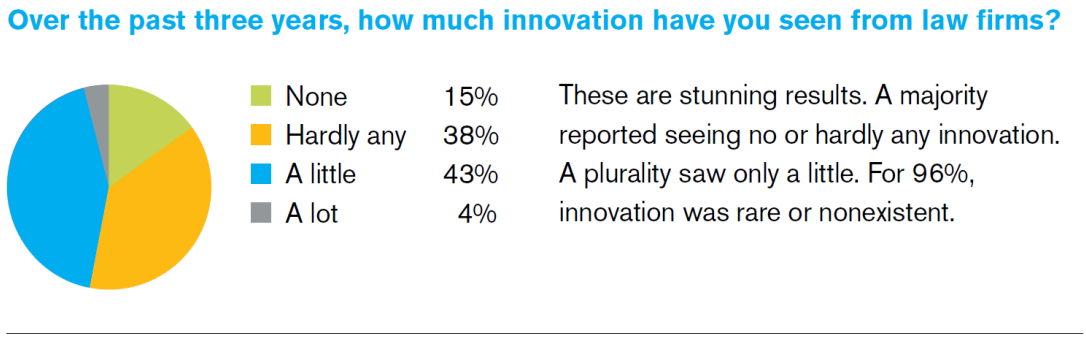
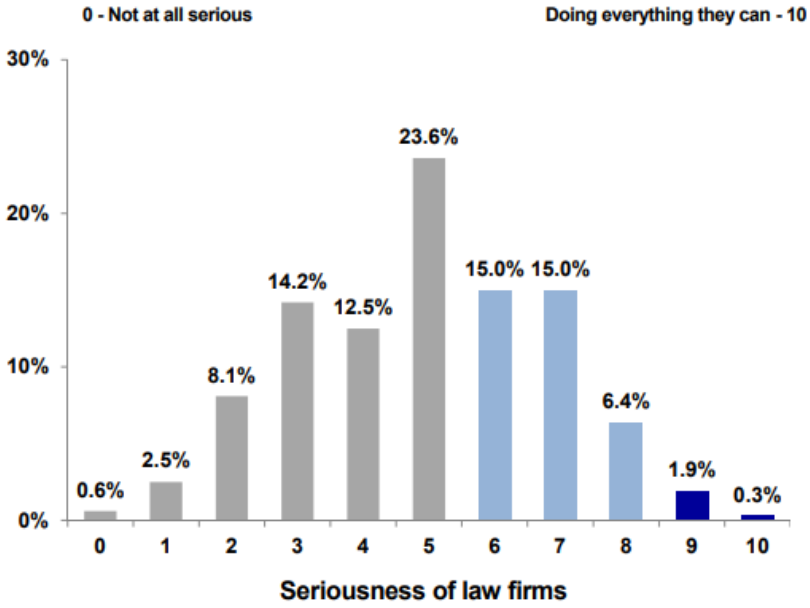


Figure 2. Industry report; Closing the Innovation Gap. A direct excerpt from an industry report reviewed by participants in case two as part of an internal strategic review. The authors of the report point to a disconnect between marketing hyperbole and true innovation within the legal ecosystem (Copyright 2017 by Thompson Hine. Reprinted with permission).

The archival document cited in Figure 3, a 2017 industry report from Weil (2017), purports to show a significant disconnect between what firms are describing as DI and the perceptions of their corporate clients. Most notably, based on the survey of corporate legal services clients, there is a perception that only 2% of firms are engaged in any real innovation. The 2017 survey polled managing partners and C level employees at 798 U.S. law firms that employed 50 or more lawyers. Participation included 386 firms (48%), including 50% of the 350 largest U.S. law firms and 50% of the AmLaw 200. Weil found that 94 of the respondents thought that improving efficiency would continue to be a more permanent trend, but only 49% have made the changes required to improve the efficiency of legal service delivery. Weil noted that the two efficiency techniques of knowledge management had not yet born out the success and credible results that firms had hoped

for. According to Weil, these techniques seek to change the established behavior of lawyers that has become fundamental and are therefore difficult to alter from a culture change perspective. This overarching theme that emerged from the artifacts aligned with the responses from Participants L001, L002, L003, B001, and B003 that constituted theme two. For example, the survey data provided by Participant L001 mirrored the sentiments of the interviewees with regard to technology adoption serving to augment lawyer and paralegal activity as opposed to serving as a catalyst for disruption. Moreover, the focus on externally driving lawyer behavior to improve outcomes aligns directly with the conceptual framework. Among the tenants of the system theory of management are the concepts of inputs, outputs, and flow, often driven by influence origination outside of organization boundaries. Both the artifacts provided by L001 as well as interview responses from all six participants pointed to external influences on inputs, flows, and outputs as well as the strategies employed to address those influences.

Q: In your opinion, in 2017 how serious are law firms about changing their legal service delivery model to provide greater value to clients (as opposed to simply reducing rates)?



	LOW						MODERATE			HIGH	
RATING	0	1	2	3	4	5	6	7	8	9	10
RESPONSE	61.5%						36.4%			2.2%	

Median rating: 5

Figure 3. Industry report; 2017 Law Firms in Transition Survey. A direct excerpt from an industry report reviewed by participants in case two as part of an internal strategic review. The authors of the report point to the disconnect between marketing hyperbole and true innovation within the legal ecosystem (copyright 2017 Altman Weil, Inc., www.altmanweil.com/LFiT2017. Reprinted with permission. All rights reserved).

From a strategic planning perspective, Participants L002 and L003 described a number of areas where DT was potentially deployed to improve the overall workflows in areas such as contract preparation, transactional closings, eDiscovery, and workflow automation or case management. All three participants from case two pointed to specific solutions, such as the adoption of Doxly, a closing room tool, and Kira, an AI-based contract assembly tool. These types of document automation tools assist, or augment, work performed by legal professionals through the use of logic-based systems designed to leverage preexisting data to generate entirely new documents. Participant L002 cited the deployment of litigation focused tools, such as Brainspace, Relativity RAL, and Tableau in an effort to streamline the identification, collection, and production of electronically stored information in response to a request for production. Participant L003 also noted that the organization had recently deployed CaseText, a research tool from CARA A.I., designed to streamline legal research at a far lower price threshold than its more established competitors, Lexis and Westlaw. Participant B003 pointed to a partnership with the eDiscovery provider Logikcull, which is a hosted review tool aimed at streamlining and partially automating the document review process. Participants L001 and B003 provided archival documents in the form of internal product announcements, which aligned with the responses that comprise Theme two. Each of the archival materials documented the internal release of these products. Moreover, each of the products was described as augmenting and not displacing existing lawyers and professional staff.

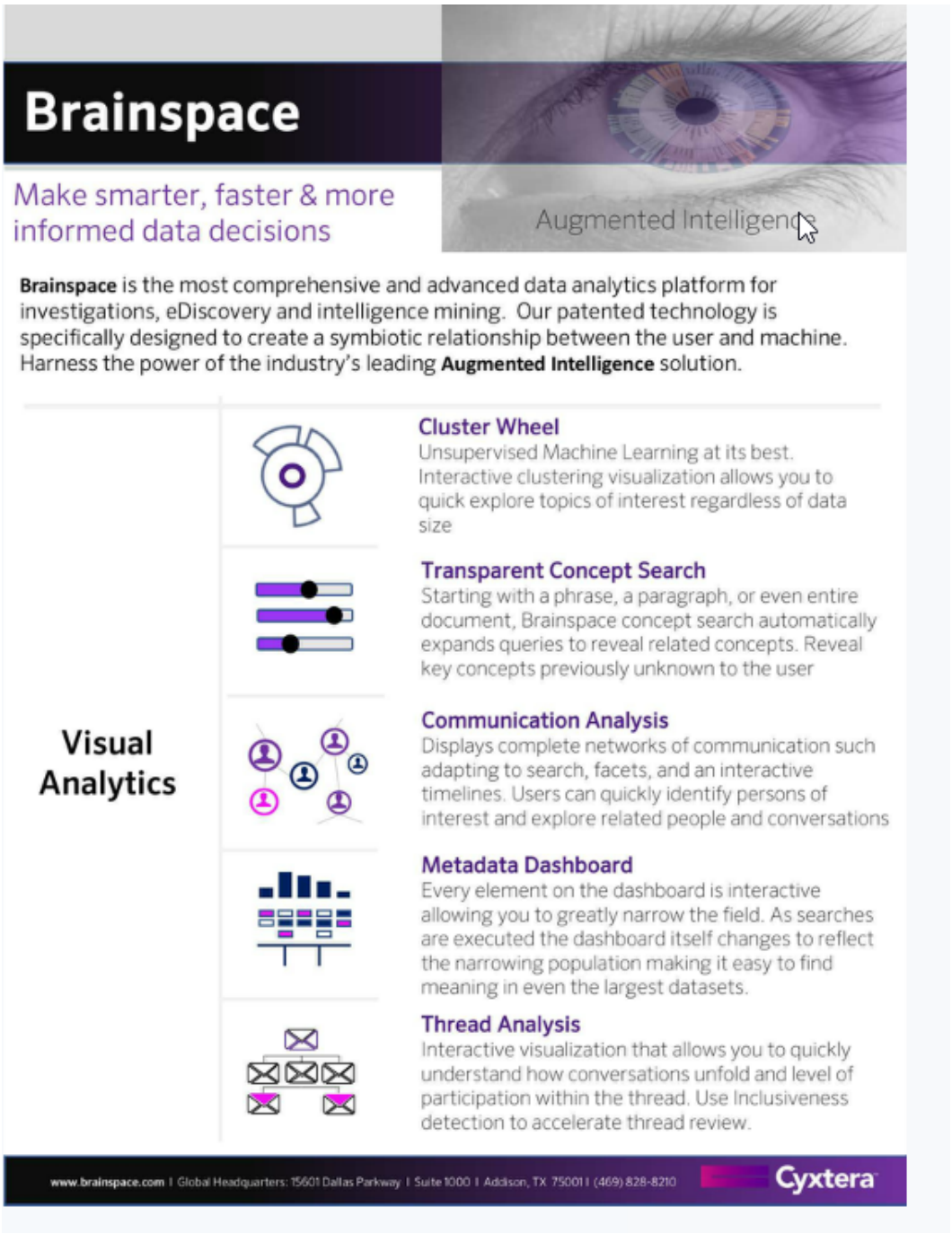


Figure 4. Product Brochure; Brainspace dipicting a cluster wheel visualization. An archival document from participant L001provided to internal users in preparation of roll out. The tool was described as an augmented intelligence solution providing advanced analytics for investigations, eDiscovery, and intelligence mining (Brainspace 2019; Reprinted with permission. All rights reserved).

Participants B002 and B003 from case one discussed deploying analytics and forecasting tools such as Lex Machina, a platform used to calculate the outcomes of patent cases across the United States. In addition to providing historical case data, predictive tools such as Lex Machina leverage predictive analytics that identifies relationships within the data using statistical models. These models can then be used to create more accurate business forecasts or case outcomes for better prediction of future events and better decision making. According to Participant B001, although Lex Machina provides valuable metrics that can be used for strategic forecasting, the predictive features of the application were used less by the firm, due in large part to a lack of confidence in the tool's ability to accurately forecast outcomes. Although the innovations cited by B001 and B003 from case one and all three participants in case two can be described as more incremental in nature, the potential for improving flow while simultaneously increasing outputs remains an essential aspect of innovations strategy.

Participants B001, B002, L001, L002, and L003 from cases one and two pointed to areas where competitive advantage might be achieved through either improved access to advisory services or by creating new practice areas. Participants B001 and B002 provided examples of areas where entire practices might be built through the creation of advanced advisory services in areas such as intellectual property, privacy law, and compliance. Participant L002 discussed the potential for eliminating lower-level work, allowing senior lawyers to reduce the time spent on mundane tasks, ultimately freeing them up to work on higher-level projects. In Table 2, I illustrate the frequency at which participants mentioned the law as a system.

Table 2

Disruption vs. Incremental Improvement (Frequency)

Participant	Interview Questions	Number of References
B001	1,3,4	32
B002	1,3,4,6,7	23
B003	1,2,4,6	22
L001	2,4,5,6,7,8	30
L002	1,4,6,7,8	19
L003	2,4,5,6	34

Note, Table 2 reflects the frequency at which participants mentioned incremental innovation

Theme 3: Innovation Generation

Questions 1, 5, 6, 7, 8, and 9 of the interviews allowed participants to provide a detailed description of DT strategies and challenges experienced within their organizations. A theme that emerged from the data was the need to formally drive internal innovation strategy through external partnerships, dedicated internal departments, or through wholly owned subsidiaries focused on the development of innovative products. Participants B001, B003, L001, and L002 pointed to a more formal approach to developing and executing innovation strategies, citing formal innovation generation activities. Participants L001 and L002 cited an approach that involved a significant focus on incorporating innovation strategy into new practice areas and less on technology solutions. Participants B001, B002, and L001also cited innovation practices among peer firms.

Participant L002 referred to the growth of innovation incubators within the legal sector as a means of developing innovations, and Participant L003 described several innovation development partnerships among law firms and external technology developers as an important aspect of strategy. Participant B003 also described alliances among law firms and external technology companies as important to overall strategy, specifically in areas such as eDiscovery. participants from both cases further extolled the potential benefits of deploying DIs as a means of decreasing time spent on low value activities, freeing lawyers and professional staff to focus on increasing revenue-related outputs through improved advisory activity. Participant B001 concurred, stating that much of the current innovation strategy involved automating work at the bottom of the chain in a manner that freed partners and senior staff to generate higher value outputs for institutional clients.

Participant B002 lamented the lack of cross-departmental synergy in the firms and described an environment in which innovation was taking place, but often within siloed departments. Participant B001 echoed these sentiments and recommended breaking down boundaries in a way that better ensures that organizational subject matter experts would have more input into the design and functionality of AI and ML tools. Participants B001, B002, L001, and L003 also recommended improving cross-departmental pollination of technology, including ensuring disparate departments continue to share the any organizational learning around DT with members of other departments. To that end, Participants L001 and L002, consisting of 66% of the participants in group two suggested exposing a broader scope of personnel in firm innovation generation activity. Of the

methods deployed to improve innovation activity, strategic partnerships with vendors or others outside the traditional law firm environment were cited, with 83% of the participants, including B001, B002, L001, L002, and L003 citing improving strategic positioning as a result of these types of partnerships. This improved positioning, according to participants L001 and L002 in case two, was most apparent in external recognition of the firm in the form of awards and recognition within the legal press. participant L002 described the reasoning for preferring partnerships below.

> I think that that is true. I mean, vendors, if they can do things cheaper, faster, better with disruptive technologies, that will, uh, take into, the– then law firms will take that into account, right, and, you know, those kinds of say things get passed onto clients. Uh, law firms certainly are welcome to. Um, yeah, it's, uh, technology that makes things better, but again, um, only if things are proven. So you know, a vendor may be able to develop something outside of the law firm.

Participant L002 expressed a similar sentiment and described the benefits of working with technology partners outside of the legal marketplace. According to Participant L002, these technology organizations are often better capitalized than their legal-only peers, and many of the tools they create for a more general audience can be customized for use within the legal ecosystem. Participant L002 stated,

> Well, yeah, I think, I, I think that where there has been success it's been because it isn't directed strictly at the legal technology vertical, that it's something that is more generalizable from an artificial intelligence perspective and that it was often, you know, the, the underlying technology was already in the works or developed

> for, for the, for other purposes. And, uh, you know, so, so I guess I, I'm not necessarily saying that it's because law, like law firms, are backward. I think part of it is just that these things take a lot of research and development dollars and, uh, they're not going to spend that kind of research and development dollars on a niche industry where the, whatever they learn from an artificial intelligence perspective isn't more generalizable.

According to Simon, Lindsay, Sosa, and Comparato (2018), advanced technologies, such as AI and ML, are becoming more affordable and well on their way toward automating at least some of the work currently performed by lawyers and professional staff. Simon et al. pointed to other markets in which assembly-line workers, stockbrokers, and travel agents have seen their industries universally transformed. Moreover, combined advances in the availability of big data and natural language processing have revolutionized the predictive capabilities of many decision algorithms, facilitating such advancements as autonomous vehicles. Simon et al. described an ever-growing entanglement between technology and a new era of legal services, claiming that practitioners in the near future will rely on algorithms to automate time-consuming tasks typically assigned to junior lawyers or professional staff. Table 3 has the frequency with which participants described innovation generation, supporting the emergence of law as an open system as a theme.

Table 3

Innovation Generation Activities (Frequency)

Participant	Interview Questions	Number of References
B001	1,7,8	15
B002	1,7,8,9	13
B003	1,8,9	13
L001	1,7,8,9	11
L002	5,6,7	17
L003	1,6,7	11

Note. Table 3 reflects the frequency at which participants described innovation generation activities as a theme.

Theme 4: Application of AI or ML to Streamline Nonadvisory Outputs

Despite the broad focus on the potential threats of DI on the legal ecosystem, law firm leaders appear to be focusing their core innovation strategies in areas such as process improvement, automation, and practice augmentation. When asked about strategies to address DT, all six participants cited the deployment of practice augmentation tools, such as those used for research, document assembly, eDiscovery, and diligence. Participants B001, B002, L002, and L003 described leveraging assistive technologies designed to improve quality and speed outputs. Participant B002 described business process automation software as providing significant benefit by automating routine sub processes in a manner that allows the practitioner and automated system to operate as a seamless unit. These systems, according to Participant B002, are not intended to replace human

output, but instead automate specific routine tasks at various stages in the process, improving quality and standardizing flow along the way. Participant B002 stated,

> I mean, so we've done a, we, we've done a lot with, um, with business process automation, um, and basically defining, uh, you know, this, this is not, you know, this is not necessarily disruptive in the sense that artificial intelligence is, but it's basically we take a business process and we, uh, codify it and automate the things that we can, uh, so that we can sort of offer some, uh, you know, self service aspects to our customers and, um, we can speed up the creation of, of various things that used to all be done by hand. So, uh, our, our focus has been more on automation as a disruptor as opposed to artificial intelligence.

Participant L001 described several augmenting technologies that have been deployed within the organization over the previous 2 years, including automation tools for transactional closings, legal research, contract drafting, eDiscovery analytics, and predictive technologies. To support these claims, Participant L001 provided organizational artifacts and multiple internal memoranda announcing the deployment of tools, such as Doxly, Kira, Brainspace, and Kara AI. Participant L003 expanded on this theme, citing augmentation and incremental innovation as a core strategy for addressing disruption. Participant L003 pointed to improved synergies among lawyers, technologists, and tools as providing a significant competitive advantage. Participant L003 stated,

> I think that the organization that can marry lawyers and technologists together, you know, legal services delivery model that leverages this type of forward-facing and back office and does it in kind of, in a, in a process oriented fashion have an

> extreme advantage going forward in the legal services delivery models of the future. Especially around things like litigation, uh, diligence reviews, uh, anything that's document intensive or unstructured document intensive. I think less on the structured side. I think the structured side is a whole another, uh, world and there's probably a lot of great application of technology. But in the unstructured e-mail electronic documents world, I- I mean I think there's a lot of competitive advantage that could be brought to bear. But it requires a paradigm shift, right? It requires the lawyers acknowledging that technologists are part of the legal services delivery model.

Participants B001, B003, L002, and L003 from cases one and two described augmentation as essential in their organizations, with 66% (i.e., four) citing incremental innovation as a core element of long-term strategy. Participant B001 acknowledged that a core challenge to addressing potential disruption was a lack of clarity within the ecosystem around the definition of disruption. Table 4 has the frequency with which participants described streamlining nonadvisory outputs as a theme.

Table 4

Streamlining Nonadvisory Outputs (Frequency)

Participant	Interview Questions	Number of References
B001	3,7,8	6
B002	1,3,7,8	12
B003	7	9
L001	3,7,8	11
L002	7,8	9
L003	3,7,8	5

Note. Table 4 reflects the frequency at which participants described streamlining non-advisory outputs as a theme

Applications to Professional Practice

The specific organizational problem that formed the basis of this research was the perceived, potential threat from DT, such as AI and ML, in large law firms and the strategies employed to address those threats by law firm leaders. participants in this study provided strategies that law firm leaders might employ to protect their organizations from potential threats while simultaneously adopting some forms of DT as a means of building competitive advantage. There were several recommendations made with regard to addressing DT, demonstrating that leaders could potentially adopt one or several best practices for addressing potentially DT. Moreover, Participants B001, B002, L002 and L003 stated that, while they agreed that DT could potentially threaten their organizations at some point in the future, media predictions claiming that law firms, especially large international firms might soon fail, were largely overblown. Participants B001, B002,

L002, and L003 agreed that much of the prognostication was being driven by marketing hyperbole generated largely by legal technology companies hoping to capitalize on fears of an industry collapse. Participants B001, B002, and L002 also agreed that adoption of DT as a means of improving both quality and operational efficiency could improve a firm's strategic position within the legal ecosystem. After analyzing the collected data, I identified four primary themes: (a) recognizing legal ecosystem and legal firms are, at the macro level, open systems, but organizational subsystems often function as semi-closed systems; (b) acknowledging that, while DT represents the most significant potential challenge in the near future, the immediate challenge is incrementally improving technology that requires organizational adjustments; (c) recognizing the need for firms to invest more heavily in innovation generation activities; and (d) realizing the need for increased utilization of augmenting technologies, such as AI or ML, to streamline nonadvisory outputs.

Leaders actively seeking to implement DT strategies in their organizations require current information related to the potential state of disruption within the legal ecosystem due to the evolving nature of the technologies involved. The knowledge gleaned could enable law firm leaders to ensure appropriate processes and strategies are in place to address potential DT. In addition, the information could allow law firm leaders to prepare for previously unanticipated disruption events.

Identifying the strategies law firm leaders use to address potential disruption from DT, such as AI and ML, is imperative for building competitive advantage. Based on my research findings, the most significant contribution may be acknowledging that, while DT

represents the most significant potential long-term challenge to firms, learning to leverage in the near future, the immediate challenge for law firm leaders lies in the ability to leverage incremental innovations improving technology that requires organizational adjustments. Law firm leaders could potentially adjust their innovation strategies to include more sustaining innovations designed to augment the work performed by lawyers and professional staff in an effort to benefit from improving already existing processes. This includes the potential deployment of incremental and process innovations with tools such as business process automation software, automated decision trees, and other forms of augmenting technologies.

In my findings, I introduced potential applications to professional practice by identifying the strategies law firm leaders employ to address the impact of potential DT on their firms. Remus and Levy (2015) explored the current capabilities of ML and AI technologies and concluded that true disruption to traditional legal models is unlikely, due in part to the nuanced and normative nature of the practice of law. Remus and Levy further postulated that, while these technologies may ultimately change some legal processes, these changes will be more evolutionary, enhancing rather than displacing the work performed by most lawyers and paralegals. In all, 83% of the study participants concurred with Remus and Levy's opinion that current technologies, while innovative, are merely augmenting the work of lawyers and professional staff in large firms. Participants from both Cases 1 and 2 cited specifically the importance of improving processes at the lower end of the value chain, such as document review, a practice that once involved hiring dozens of associates to review hundreds of boxes of documents by

hand. While arguably displacing the workers once performing these tasks, this evolution from traditional linear review to a human-machine hybrid approach may lead to opportunities elsewhere in the organization. Specifically, the participants described witnessing an increase in the creation of new positions within the organization, such as professional technologists, data scientists, and even chief innovation officers working hand in hand with a firm's lawyers to improve the overall quality of the service while simultaneously driving down the costs of lower value outputs.

The results from this study might provide additional material for law firm leaders to employ in championing strategies aimed at addressing DT. Petrick and Martinelli (2012) explored methods for driving DI and noted that doing so requires companies to possess strategies to better forecast nonobvious problems that might require solutions at a future point in time. The researchers acknowledged that such an approach might be challenging for companies and laid out a strategy that included monitoring external environments through a process known as road mapping. This road mapping allows organizations to anticipate and plan for innovation. The findings of the study may contribute to broader industry and educational research related to formal DT strategies. Moreover, I found in this study a need to view strategies related to potential DT within the context of the broader legal ecosystem.

Implications for Social Change

In the United States, researchers describe enormous gaps in cost, quality, and delivery of services for low-to-moderate income consumers (see Cabral, Chavan, Clarke, & Greacen, 2012; Hadfield, 2014). According to the Bennmen Center for Justice, more

than 80% of low-income people experience challenges related to securing legal representation in civil matters (Simshaw, 2018). In exploring this challenge, the nonprofit Legal Services Corporation calculated the gap in access to legal services as the unmet need for access to legal services and the resources currently available to address those needs (Simshaw, 2018). Moreover, by adopting strategies related to DT, such as AI and ML, firms and organizations providing services to these constituencies could potentially lower costs and create tangible improvements related to the availability of legal services within underserved communities (Simshaw, 2018). Based on my findings, organizations faced with these challenges could potentially benefit from the types of cross-boundary activity found to increase innovation activity with private law firms and legal departments.

Moreover, I am beginning to see some of these strategies applied at the nonprofit and public benefit level. According to a February 2019 article in the nonscholarly publication *Legal Tech News*, early attempts at applying DT, such as AI and ML, to these types of challenges are beginning to take shape. Under a partnership between Microsoft, Legal Services Corporation, the Pew Charitable Trusts, and Pro Bono Net, legal professionals and computer scientists are coming together to help close the chasm between those without the resources to avail themselves of legal services and the expertise needed to help these individuals navigate complex legal processes. Although the systems do not provide direct legal advice, they may prove invaluable in providing guidance to those willing to work through the processes on their own. The product known

as Navigator uses artificial intelligence to eliminate the need for consumers to know or understand legalese or complex legal terminology (Ready, 2019).

By adopting similar strategies, nonprofit and social justice legal services providers could potentially improve their offerings by automating many standardized processes they currently perform, freeing their lawyers and support staff to focus on the more complex issues facing their clients without incurring additional costs in human capital and training (Murray, 2016). Also, by exploring the strategies employed by firms to address DT, such as AI and ML, organizations could potentially benefit from an opportunity to improve the delivery of legal services to the point of lowering the overall costs of producing legal services to the public at large. Hagan (2016) predicted that the broader deployment of DT could result in the adoption of consumer-facing, self-help legal tools designed to provide consumers with legal information, or that might assist users with completing documentation or settling a dispute without the need for lawyers or the courts. According to Murray (2016), society may ultimately benefit from social innovation that breaks down barriers to legal access. Such innovation might lead to an increase within the legal sector of new social enterprises, such as low-profit limited liability companies, benefit corporations, and social purpose corporations, as alternatives to existing entities that currently leave a large segment of the population underserved (Murray, 2016).

Recommendations for Action

Markides (2013) explored ways in which to combine DIT with strategic planning by melding of Porter's (1998) five forces framework with what Markides described as a

DI strategy, as a means of developing a competitive advantage. According to Markides, although a limited number of products and services remain correctly classified as DIs, the specific strategic path in growing markets for DIs can vary dramatically based on the innovation type and its placement. Moreover, Markides argued that while low-cost DIs may come to dominate the market, not all products or services at the bottom of the product pyramid will necessarily succeed. Based on the research findings, I recommend the following actions:

Law firm leaders should adopt a systems approach strategy to defending against any potential threats from DT that effectively integrates all the components, such as people, processes, and systems. By mapping both existing internal resources as well as potential external influences in the chain and formally identifying threats and opportunities within the legal ecosystem, organizations can better forecast and protect against potential threats. Such mapping might include metrics pertaining to activity originating from outside organizational boundaries.

Law firm leaders should adopt a systems approach strategy to defending against any potential threats from DT that effectively integrates all the components, such as people, processes, and systems. By mapping both existing internal resources as well as potential external influences in the chain and formally identifying threats and opportunities within the legal ecosystem, organizations can better forecast and protect against potential threats. Additionally, law firm readers should leverage learning from individuals responsible for managing and implementing, and managing these people processes, and systems.

Law firm leaders should champion an organizational culture that fosters innovative thinking across all departments and levels of the firm. By developing policies that align the organizational culture with the goal of exploring and selectively deploying disruptive technologies within their organizations, firm leaders might develop further strategies to minimize external threats from these technologies. As part of this systems analysis, law firm leaders should dedicate resources to measuring and defining disruption within the ecosystem in a way that differentiates truly disruptive technologies from the marketing hyperbole

Law firm leaders should consider strategic partnerships to fill any gaps in innovation strategy that might otherwise be outside the core expertise of the organization. By leveraging existing relationships with technology vendors or consultants, firms might improve time to market for new innovations. Moreover, by applying the combined knowledge or expertise of both the law firm and external provider, firms could potentially discover novel ways of addressing their legal technology challenges. Moreover, such partnerships might allow firms to apply already existing technology designed for other sectors to challenges facing the legal profession in ways not originally anticipated by the developer.

Law firm leaders should embrace an organizational culture that encourages experimentation and reduces the stigma of failure. Although law firms, and by nature their leadership, tend to be highly averse to nearly any risk, viewing internal strategic projects as venture investments in which a percentage is expected to fail, could lead to more open collaboration and increased innovation activity over all. This can be achieved

by driving the culture to embrace startup culture, in which it is understood and expected that, by design, a given number of products or services may never reach maturity.

Law firm leaders should adjust their innovation strategy to include sustaining innovations designed to augment the work performed by lawyers and professional staff. Although research and commentary around DT dominate the literature and popular press, many firms might benefit from improving already existing processes. This includes the potential deployment of incremental and process innovations with tools, such as business process automation software, automated decision trees, and other forms of augmenting technologies.

Law firm leaders should encourage partners and professional staff to remain aware of potential threats from DT. While many firms currently employ highly-skilled technical staff in both their IT and professional services groups, these individuals are often segregated from the legal teams in organizational silos. These professional technologists can include technicians, project managers, data scientists, statisticians, and programmers. Breaking down these organizational silos and integrating professional staff with legal teams could potentially speed organizational learning related to any potential threats or opportunities. Several of the research participants noted that proactively evaluating and exploring potentially disruptive technologies through the development of idea labs, participation in legal technology events, and improving synergies through cross-boundary activities to technology tools and education, can provide an opportunity for law firm leaders and their staff to evaluate, explore, and exploit technologies to enhance competitive advantage and guard against external disruption threats.

I will seek to disseminate my research findings through industry publications, academic journals, and conferences focused on innovation within the legal sector. According to Yin (2013), the goal of the research is not just to create new information through scientific study, but to share it broadly; therefore, the dissemination of my research findings through additional sources is an essential element of the overall research process. Moreover, after reviewing my research in derivative publications, law firm leaders could integrate elements of my study within internal training, strategy material, or innovation development programs.

Recommendations for Further Research

The findings, recommendations, and conclusions stemming from this research study may contribute to existing and future research and strategies law firm leaders could employ to address potentially disruptive technologies in the legal ecosystem. McGinnis and Pearce (2014) described the potential threats posed by legal technology disruption, pointing to the increased adoption of machine learning and analytics tools as leading to the growing commoditization of once bespoke services, driving increased competition in market models and ultimately weakening lawyers ‘marketing power over legal services. Further, because I focused my research on technology disruption, areas ripe for exploration remain ever-evolving. There are topics related to emerging technologies and developing roles in law firms, which I do not reference in this study, such as the rise of the chief innovation officer or technological innovations such as cryptocurrency and Blockchain technologies. Moreover, I also do not touch on other areas of potential disruption to the legal ecosystem, such as the perceived potential threats presented by

large accounting firms seeking to expand their business to include bundled legal services. These partnerships are similar to existing agreements occurring in the big four accountancy firms, which are beginning to partner with legal services providers in the European Union. I also do not focus on non-lawyer encroachment into this space by startups, such as Legalzoom and Rocket Lawyer.

One potential limitation identified in my study was that the selection of geographically dispersed participants resulted in an inability to visit all of the participants in a live environment, which could have resulted in deeper observational and descriptive notes related to observing the participants in their home environment. By leveraging video conferencing technology to provide richer feedback, I overcame the challenge and it did not materialize as a threat to data validity. In this research study, I also utilized a small sample size consisting of two cases studies with two large law firms with a presence in California. Future researchers studying DT might consider expanding the sample size to include smaller firms and other regions of the United States. In this research, I also selected the multicase study design. Researchers choosing to employ a different research design, such as the phenomenological design, might provide an opportunity to explore perceptions and experiences across a larger sample size.

In addition, quantitative researchers might examine the number of DT programs or implementation across a broader demographic in an effort to calculate deployments and adoption across the entire industry. Thematically, my research findings demonstrate a need for law firm leaders to proactively drive their organizations to explore the threats and benefits of various disruptive technologies within their firms. Researchers could

expand on my research findings by examining the effects of potentially DIs across various practice areas and organization types.

Reflections

My doctoral study experience enhanced my scholarly knowledge related to disruptive technologies in the legal ecosystem. The insight I gained by interacting with participants at the two organizations under study will benefit my current and future career goals. Using open-ended questions in this study offered an opportunity for an in-depth discussion and exploration of the topic with the study participants, which aligned with recent industry data, surveys, and reports related to the threats of potentially disruptive technologies in large U.S. law firms, and further enhanced my awareness of the need for proactive monitoring and exploration of these technologies. I gained personal knowledge related the way affected firms, most specifically those in my case studies, address threats from DT.

Conclusion

The objective of this qualitative multiple study was to explore the strategies that law firm leaders use to address the potential threats of DT on their organizations, such as AI and ML. I selected two cases studies for this research; both were international law firms with a presence in California. Utilizing open-ended questions, recent industry reports, and internal strategy materials as the archival documents, I collected and triangulated data to answer the research question.

Four themes emerged during data analysis related to the strategies law firm leaders use to address the disruptive systems influences of DT, such as AI and ML, on

their organizations. These themes were: (a) recognizing legal ecosystem and legal firms are, at the macro level, open systems, but organizational subsystems often function as semi-closed systems; (b) acknowledging that while DT represents the most significant potential challenge in the near future, the immediate challenge is incrementally improving technology that requires organizational adjustments; (c) recognizing the need for firms to invest more heavily in innovation generation activities; and (d) realizing the need for increased utilization of augmenting technologies, such as AI or ML, to streamline nonadvisory outputs. Each of these themes suggest that while DI may pose a a moderate threat, there are also advantages to adopting DI as a formal aspect of organizational strategy.

I found a need for legal technology leaders to work toward improving internal synergies by breaking down system boundaries at the firm and sub department level. I found a need for law firm leaders to explore improving flow by integrating technologies such as AI and ML as a means of augmenting internal operations and streamline nonadvisory outputs. Finally, I suggest a possible need for law firm leaders to dedicate internal resources to developing cross-boundary partnerships and internal exploratory groups to focus efforts on either developing or better leveraging potentially DT such as AI and ML in their organizations.

Reflecting on my experiences throughout this research process, I found that the interpretations of what constitutes disruptive technologies varied from firm to firm and across the entire ecosystem. I also found a disconnect between the often-hyperbolic marketing claims related to potentially disruptive technologies and actual practice. The

participants in this study opined on their organizations' strategies for addressing disruptive technologies. I was pleased to hear participants from both organizations indicate the need for technology leaders to play a more proactive role in addressing these potential threats

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Appendix A: Review Protocol

a. Begin Protocol

b. Introduce myself to the interviewee.

c. Provide a high-level overview of the study, and answer questions regarding the study or process.

d. Present and review the consent form with the interviewee, and respond to any questions or concerns regarding the form or process.

e. Ensure interviewee signs the consent form prior to the interview.

f. Provide the interviewee with a copy of the signed consent form.

g. Initiate the digital recording device and record relevant date and time information in the journal.

h. Begin recording by introducing the interviewees with the assigned pseudonym.

i. Begin interview with the first question, taking as much time as needed to get through the entire list.

j. Proceed with additional follow-up or clarifying question. Follow up with additional questions.

k. Conclude the interview and explain the member-checking process.

l. End the interview

Appendix B: Code Application and Distribution

Descriptor Set: Participants Sort Field: Title (Down)

Descriptor Field \ Codes	Innovation - AI - Machine Learning	Innovation - Business Process	Innovation - Contract Assembly	Innovation - Disruptive Innovation	Innovation - Due Diligence	Innovation - Incremental Innovation	Innovation - Innovation - eDiscovery	Innovation - Legal Operations	Innovation - Legal Practice	Innovation - Legal Research	Innovation - Marketing Hyperbole	SYSTEMS - Feedback	SYSTEMS - Flow	SYSTEMS - Input	SYSTEMS - Open/Closed System	SYSTEMS - Output	SYSTEMS - Sub-System	SYSTEMS - Synergy	SYSTEMS - System Boundary	Strategy - Competitive Advantage	Strategy - Competitive Convergence	Strategy - Culture Change	Strategy - Entry Barriers	Strategy - Threat of Substitutes
User: B001	6	4	3	8	4	10	2	6	6	2	12	8	11	9	24	3	8	5	6	6	10	7	7	1
User: B002	27	17	10	17	4	34	6	19	17	5	19	4	8	17	26	12	10	11	7	18	7	22	15	12
User: B003	8	5	3	7	2	10	2	6	6	2	10	6	7	8	12	2	3	5	3	8	5	2	6	2
User: L001	10	11	6	13	6	23	9	18	23	1	11	6	23	24	40	20	5	8	10	16	5	18	5	11
User: L002	21	15	1	22	1	28	2	20	14	1	14	7	23	24	17	17	7	13	10	32	24	17	20	11
User: L003	9	1	2	4	2	4	1	4	5	1	4	7	11	7	12	8	5	13	9	3	3	2	3	2
Case: Case 1	41	26	16	32	10	54	10	31	29	9	41	18	26	34	62	17	21	21	16	32	22	31	28	15
Case: Case 2	40	27	9	39	9	55	12	42	42	3	29	20	57	55	69	45	17	34	29	51	32	37	28	24

Appendix C: Organizational Artifacts Considered

1. Article written by the CMO of case 1 advising peer firms on strategies related to disruptive innovation.
2. Survey data provided by case 1used for internal strategy purposes.
3. Internal Memo announcing the deployment of Kara A.I.
4. Internal Memo describing the release of CASETEXT.
5. Internal Memo describing the deployment of Brainspace Analytics
6. Internal Memo discussing the pending implementation of Doxly for use in transactional practice
7. Survey data used for internal analysis of innovation activities by law firms.

Appendix D: Permission to Reprint Chart

[redacted]

RE: Permission to Cite Figures from Closing the Innovation Gap.

9:56 AM
Details

DR

Siri found updated contact info in this email: Deborah Read mobile: (216) 513-3880 update...

Don:

Thanks for your kind words about our innovation study. You may use our question and graphic with attribution to [redacted] and the name of our study. The permitted use is for you in your personal capacity in the pursuit of your studies, not for [redacted] use. I think this is what you intended, but please confirm. We would love to see your study when you finish it. We are keenly interested in this topic.

If you need anything further, please contact [redacted] our Media Relations Manager, copied above.

Best,

[redacted]

[redacted]

Atlanta | Chicago | Cincinnati | Cleveland | Columbus | Dayton | New York | Washington, D.C.

[redacted]

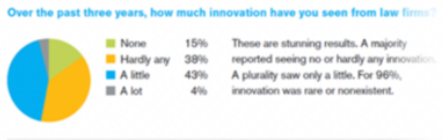
Subject: Permission to Cite Figures from Closing the Innovation Gap.

CAUTION EXTERNAL EMAIL

Deborah, I hope this message finds you well. I am in the process of finalizing my doctoral study related to *Disruptive Innovation within the Legal Ecosystem* and would like to use/cite the graphic below for a section on innovation marketing hyperbole as it relates to legal technology.

In addition to pursuing my doctorate, I currently work as a regional manager within our legal technology advisory group and am impressed that your firm put in the time and effort to conduct the survey. Well done.

Don



Appendix E: Permission to Reprint Chart: Altman Weil

[redacted]

Dear Mr. Billings,

Altman Weil is pleased to grant you permission to reprint the *2017 Law Firms in Transition Survey* chart you have cited below (*…in 2017 how serious are law firms about changing their legal service delivery model*) in your doctoral study on Disruptive Innovation within the Legal Ecosystem.

We ask only that you use the chart as it appears without changes, and with the following citation:

"2017 Law Firms in Transition Survey, Altman Weil, Inc., www.altmanweil.com/LFiT2017. Reprinted with permission. All rights reserved."

Thank you for your interest in the survey and best of luck with your thesis.

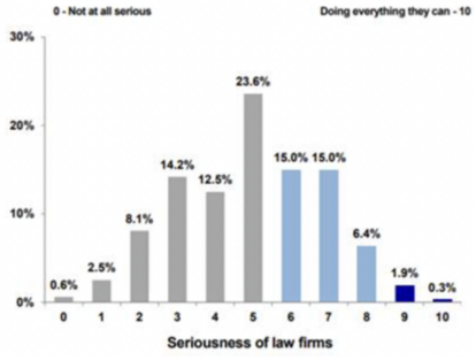
[redacted]

[redacted]

Good afternoon. I hope this message finds you well. I am currently a doctoral candidate in the process of completing my doctoral study on Disruptive Innovation within the Legal Ecosystem and I am requesting permissions to use the graphic below in my study; specifically within a subsection focused on law firm innovation hyperbole. I would obviously cite the report and include the appropriate attribution.

Thank you for your time and I look forward to hearing from you.

Q: In your opinion, in 2017 how serious are law firms about changing their legal service delivery model to provide greater value to clients (as opposed to simply reducing rates)?



	LOW						MODERATE			HIGH	
RATING	0	1	2	3	4	5	6	7	8	9	10
RESPONSE	61.5%						36.4%			2.2%	

Median rating: 5

Appendix F: Permission to Reprint Image: Brainspace

Move to...

From: [redacted]
Date: Tuesday, Jun 25, 2019, 11:30 AM
To: Billings, Donald <dbillings@sidley.com>
Subject: Re: Permission to use Figure in Doctoral Study

Yes sure no problem. Not sure if it's possible but would be great to have a note that the image in the eye is a Brainspace visualization called the Cluster Wheel.

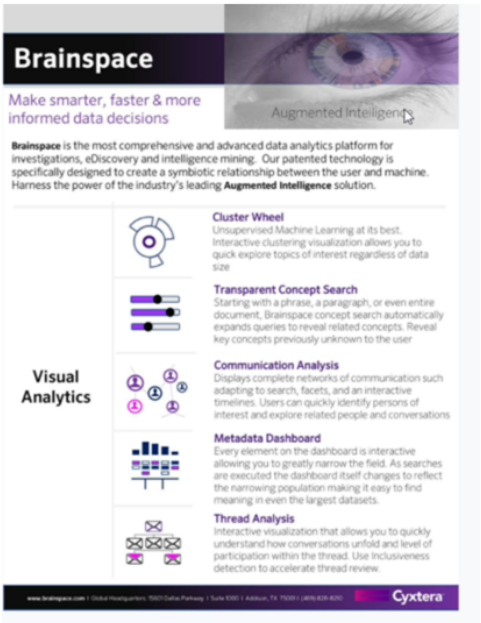
[redacted]
Director of Marketing
Brainspace
[redacted]

Brainspace
Analyst
GET CERTIFIED ONLINE
CLICK HERE

From: [redacted]
Date: Tuesday, June 25, 2019 at 11:59 AM
To: [redacted]
Subject: Permission to use Figure in Doctoral Study

[redacted] I hope your morning is going well. In addition to working for [redacted] I am in the very final stages of completing a doctoral study exploring disruptive innovation in the legal ecosystem. As part of that process I would like to request permission to use the image below as a figure in the study related to technologies firms are adopting as part of their innovation strategy.

Don



[redacted]