RESTORING UNDERMINED INSTITUTIONS: HOW FIRMS COMBINE NONMARKET STRATEGIES TO RESPOND TO DIGITAL PIRACY

by

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DISSERTATION ABSTRACT

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Title: Restoring Undermined Institutions: How Firms Combine Nonmarket Strategies to Respond to Digital Piracy

How do firms strengthen their institutional environment after the unplanned and radical weakening of a strong regulatory institution? For some industries, regulative institutions play a dominant role in defining the institutional environment by providing stability and certainty for firms. Yet, environmental jolts can radically weaken regulative institutions causing increased uncertainty and instability in the institutional environment. Driven by this uncertainty, firms may attempt to strengthen their weakened institutional environment.

By exploring this question in the context of weakened copyright protection after the rise of digital piracy, I can make important contributions to the institutional change literature. Specifically, I build new theory on how firms coordinate actions targeting multiple institutional pillars (e.g. regulative and normative) to change their institutional environment and the institutional environment of different industries. I test these theories using a longitudinal dataset of the corporate political activity of copyright-reliant firms, and the copyright infringement takedown notices sent to Google.

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TABLE OF CONTENTS

LIST OF FIGURES

Figure Page

LIST OF TABLES

I. INTRODUCTION

Institutions are broadly defined as "cognitive, normative, and regulative structures and activities that provide stability and meaning to social activities" (Scott, 1995, p. 33). This broad definition captures the three types of institutions, called institutional pillars, which affect firm behavior. Regulative institutions include laws and public policies (North, 1990; Williamson, 2000), normative institutions are values and norms (March & Olsen, 1989), and cognitive institutions are the cultural and cognitive schema (DiMaggio, 1997). Much of the early institutional research in management has focused on how institutions shape firm behavior (DiMaggio & Powell, 1983).

Yet, since DiMaggio (1988) introduced the concept of institutional entrepreneurs, defined as firms intentionally creating divergent change in institutions, much organizational research has shifted the other direction to how firms change institutions (Battilana, Leca, & Boxenbaum, 2009; Micelotta, Lounsbury, & Greenwood, 2017). The institutional entrepreneurship research stream has demonstrated that while firms do face isomorphic pressures from institutions, they also can act with agency and change institutions (Battilana et al., 2009; Oliver, 1992). As such, scholars have spent much effort to improve our understanding of why and how firms change institutions.

Despite over 30 years of research on institutional change, new theoretical understanding and empirical evidence are consistently being added (Battilana et al., 2009; Micelotta et al., 2017). An apparent takeaway from this literature is that institutional change is a complex phenomenon that appears in many parts of society. Given how

complex institutional change is, it is not surprising that we still have much to learn about how firms change institutions.

Two areas particularly stand out as limiting our conceptualization of institutional change. First, institutional researchers readily recognize that all three institutional pillars (e.g., regulative, normative, and cognitive) are present and interconnected in an institutional environment, even if one pillar is dominant (Hirsch, 1997; Hoffman, 1999). Despite this recognition, most prior research on institutional change shows that firms only target a singular institutional pillar. Therefore, we know little about how firms target multiple institutional pillars to enact institutional change.

Despite the lack of research on firms targeting multiple institutional pillars, we have learned that other institutional actors, such as social movement organizations, target multiple institutional pillars (Hiatt, Sine, & Tolbert, 2009; B. G. King & Pearce, 2010). For example, the Woman's Christian Temperance Union social movement organization, founded in 1874, targeted cognitive, normative, and regulative institutional pillars in their push for Prohibition in the U.S (Hiatt et al., 2009; Wade, Swaminathan, & Saxon, 1998). As such, the social movement literature provides evidence that organizations can successfully enact institutional change by targeting multiple institutional pillars. However, as institutional change actors, social movement organizations greatly differ from firms in their motivation, resources, and position in the market environment (Ahuja & Yayavaram, 2011; Davis, McAdam, Scott, & Zald, 2005; B. G. King & Pearce, 2010; North, 1990). Therefore, it is likely that firms may differ in how they target multiple institutional pillars to enact institutional change.

As such, there is reason to believe that firms do target multiple institutional pillars and that doing so may increase their ability to enact institutional change. Therefore, new research is needed to better understand how and why firms target multiple institutional pillars to enact institutional change. Specifically, understanding the relationship between the mechanisms that target different institutional pillars is important, as it is possible that combining institutional pillars could result in a more effective approach to institutional change than targeting a single institutional pillar.

Additionally, studying how firms target multiple institutional pillars allows for exploring an adjacent area of institutional change that focuses on the tension between institutional actors during the change process. Institutional change is often a tense process involving multiple actors either for or against the change at hand (Seo & Creed, 2002). Prior research has identified organizations can be at odds with each other over institutional change, such as firms enacting change in a single industry, as in the case when accounting firms introduced a new organizational form (Greenwood & Suddaby, 2006). Another example of this tension is when social movement organizations are at odds with firms in an industry as the social movement organizations push for institutional change for issue improvement (Sine & David, 2003).

Yet, despite recognizing tensions around institutional change, we have little research that examines how firms in one industry can enact institutional change on firms in another industry. This is somewhat surprising, given firms may increase their performance by enacting institutional change on firms in another industry by engaging in rent-seeking (Ahuja & Yayavaram, 2011) or lowering transaction costs (North, 1990).

Therefore, new research is needed that explores how firms enact institutional change on firms in different industries. Specifically, researching the relationship between the mechanisms that target different institutional pillars may provide insights into how these mechanisms can be used for offensive actions to enact institutional change, or as defensive actions to prevent the institutional change from occurring.

My dissertation aims to provide new theoretical and empirical knowledge to fill these critical gaps in the institutional change literature. I achieve this by focusing on a novel institutional problem that allows for exploring these two areas. The institutional problem asks how firms strengthen their institutional environment after the unplanned and radical weakening of strong regulative institutions? When strong regulative institutional environments radically weaken, the economic incentives and sanctions that constrained firm behavior are greatly reduced (North, 1990; Oliver, 1992; Peng & Heath, 1996). The weakening of these constraints means a firm's past strategies may no longer be viable (Oliver, 1992). Additionally, firms face increased uncertainty on how to behave in this weakened environment (North, 1990). These challenges mean that firms will likely attempt to strengthen the radically weakened institution.

Firms attempting to strengthen their institutional environment after the unplanned and radical weakening of a strong regulatory institution face unique challenges. First, even though some regulative institutions are made ineffective, the overall government and legal structure that comprises regulative institutions are still present. Additionally, the specific regulations and policies affected are weakened but not removed. This means firms may be able to restore the regulative institutions to their former strength. However,

firms also can implement normative institutional change to strengthen their institutional environment. Yet, organizational scholars have little understanding of how firms strengthen the institutional environment in this scenario.

Prior research has explored some aspects of regulative institutional weakening. For example, research on deregulation investigates how the intentional and planned removal of regulations affects firm behavior (Haveman, 1993b; Kim, 2013; Sine & David, 2003). However, how firms are able to respond to regulative institutional weakening from deregulation differs significantly from unplanned regulative institutional weakening. With unplanned regulative institutional weakening, the regulative institution is still present but is ineffective, whereas with deregulation the regulative institution is fully removed. Therefore, firms in the deregulation scenario face such an altered regulatory environment that further regulative change action is unlikely (Dacin, Goodstein, & Scott, 2002). However, firms in the unplanned scenario can still pursue regulative change action. Thus, a gap remains in organizational scholars' understanding of how firms strengthen their institutional environment after the unplanned and radical weakening of strong regulatory institutions.

Additionally, even though the unplanned radical weakening of regulative institutions has been under-researched by organizational scholars, this scenario isbecoming more prominent in industry. As economies become more dependent on innovation for growth (Fagerberg & Verspagen, 2002) and technology-driven industries continue to grow (Bartels, 2017), it is likely that technology-based disruptions will increase (Khanagha, Ramezan Zadeh, Mihalache, & Volberda, 2018). Recent

technological disruption examples include autonomous car development challenging regulations on personal and commercial driving (Araya, 2019), and social media weakening regulations on political advertisement disclosures (M. Lee, 2018). As public policy often struggles to keep up with technological developments (Moses, 2007, 2013), firms will likely continue to face weakened regulative institutional environments in the future.

This dissertation will explore the remaining theoretical questions and growing practical relevance around how firms strengthen their institutional environment after the unplanned and radical weakening of strong regulative institutions. From this exploration, I build and test theory on how firms manage the relationship between regulative and normative institutional change action to strengthen their institutional environment. Additional theory is created on how firms combine these institutional change pillars through two nonmarket strategies, corporate political activity and industry self-regulation, to enact institutional change in a different industry.

Digital IP Institutional Environment

To explore how firms strengthen their institutional environment after the unplanned and radical weakening of strong regulative institutions, I focus on digital copyright intellectual property (IP) institutional environment, which is especially well suited for exploring the research question. Before digitization, the copyright institutional environment was comprised of strong, stable regulative institutions. However, the digital copyright IP institutional environment received a major exogenous environmental jolt in

the form of media digitization and the internet's proliferation, the result of which radically weakened the regulative institutions for copyright protection.

Since the digitization jolt, firms in the music, movies, and television industries have experienced major shifts in their ability to effectively protect and enforce their copyrights. Attempts to update regulative institutions, such as the Digital Millennium Copyright Act (1998), have been largely ineffective at strengthening digital copyright protection (N. R. Council, 2000; Guo & Meng, 2014). As such, digital copyright firms are operating in an environment without strong regulative institutions. Therefore, digital copyright firms face the challenge of needing to strengthen their institutional environment without reliance on the once-strong regulative institutions.

I use this context to test hypotheses about how firms use nonmarket strategies to instigate normative and regulative institutional change. Specifically, I explore how digital copyright firms use internet takedown requests made to online service providers such as web search engines. Internet takedown requests are requests made by copyright holders to online service providers to remove copyright-infringing material. By reviewing the legislative and market context of internet takedown requests, I show how internet takedown requests are used to apply pressure to online service providers to self-regulate. Additionally, I collected lobbying activity from digital copyright firms as a measure of corporate political activity for regulative institutional change. With these two primary datasets and the addition of multiple control data, I constructed a panel dataset from 2012 to 2018. Fixed effect models were used to test hypotheses about how firms engage in normative and regulative institutional change actions.

Findings and Contributions

The findings from this study inform the two targeted theoretical gaps in the institutional change literature discussed previously. First, this study theoretically and empirically demonstrates a positive relationship between regulative and normative change actions exists in some institutional environments. Specifically, as firms increase their engagement in regulative change action, their engagement in normative change action increases. This was demonstrated through findings that show increased corporate political activity from digital copyright firms is related to these firms placing increased normative change pressure on enabling firms to self-regulate. Further, this study shows that under the increased normative pressure, the enabling firms enact self-regulation that culminates in institutional change in the digital copyright institutional environment.

Second, this study theoretically and empirically illustrates how firms in one industry enact institutional change on firms in a different industry. Specifically, this study finds that digital copyright firms engage in a combination of corporate political activity for regulative institutional change and pressuring enabling firms to self-regulate for normative institutional change to enact institutional change in the web search industry. Further, this study theoretically and empirically shows that firms in industries reliant on digital copyrights engage in offensive institutional change actions, while firms in the web search industry respond with defensive institutional change actions.

While additional results provide more nuance to these two main contributions, which are discussed in Chapter 7, these two main findings make significant contributions to the institutional change literature. First, by illustrating how firms strategically

coordinate change action targeting multiple institutional pillars (e.g. regulative and normative), this study challenges the convention to keep regulative and normative institutional change separate (Scott, 2010). By realizing firms coordinate action to target multiple institutional pillars, our understanding of institutional change action and outcomes is increased.

Second, by illustrating how firms in one industry improve their business environment by intentionally changing the institutional environment, this study informs the established literature on how institutional change can be used for offensive strategic purposes (Ahuja & Yayavaram, 2011; Peng, Sun, Pinkham, & Chen, 2009). The view of institutional change as a competitive strategy has not received much attention in organizational research, though calls for more research in this area regularly occur (Ahuja & Yayavaram, 2011; Dorobantu, Kaul, & Zelner, 2017; Peng et al., 2009). However, given the impact on performance for both the offensive industry and the defensive industry, strategy scholars should be interested in this perspective.

These main findings and contributions are discussed more in detail in Chapter 7. Findings on nonmarket strategy coordination, foreign firms engaging in institutional change, changing IP institutional environment responses, and how firms respond to regulative institutional change are also discussed in Chapter 7.

The remainder of this dissertation begins with a literature review in Chapter 2. The literature review is structured in two main parts. The first part focuses on general institutional change and highlights how firms targeting multiple institutional pillars is under-researched. This includes a review of firm motivation for engaging in institutional

change and a discussion on Suchman's (1995a) institutional change model. Reviewing Suchman's model highlights a greater need for research into combining change actions to target multiple institutional pillars. Additionally, the deregulation and social movement literature are discussed, as these provide insights on firms targeting multiple institutional pillars. The second part focuses on institutional change research that is pertinent to the specific institutional problem for this study. This includes a brief review of institutional environments and a detailed review of IP institutional environments. Additionally, this section reviews nonmarket strategies as mechanisms for institutional change.

Chapter 3 provides an overview of the digital copyright institutional context which is the empirical setting for the dissertation. This includes a summary of the digitization jolt that weakened regulative institutions. Then I discuss the responses from regulators and digital copyright reliant firms to address the regulatory weakening.

In Chapter 4, I explore the institutional change sequence firms undertake to strengthen their institutional environment after the unplanned and radical weakening of a strong regulatory institution. I then focus on a specific aspect of this sequence, namely when firms engage in regulative and normative change actions simultaneously. To aid theory development in this aspect, I frame this theory in the context of the digital copyright institutional environment. By doing so, I create hypotheses about various aspects of how firms engage in regulative and normative institutional change actions in this environment.

In Chapter 5, I review the data and methods used to analyze the theory from Chapter 4. This includes a discussion on the construct validity and operationalization for

takedown notices as the primary dependent variable. Additionally, construct validity and operationalization for corporate political activity measures and various control variables are discussed. Finally, this chapter specifies the models used for testing the study's hypotheses.

Further, Chapter 6 discusses the results of the empirical tests for each hypothesis. Chapter 7 elaborates on how the empirical findings in Chapter 6 contribute to various areas of management theory. Chapter 7 is structured such that the first part discusses the broadest contributions to institutional change literature and the second part discusses more focused contributions to institutional change and nonmarket strategies literature. Finally, Chapter 8 provides reflections and closing remarks for the dissertation.

II. Literature Review

This dissertation aims to explore and contribute to the institutional change literature in two areas. The first area focuses on how firms simultaneously target multiple institutional pillars to enact change in their institutional environment. Therefore, I begin the literature review by providing an overview of why firms change institutions. Next, I review Suchman's (1995a) Multistage Model of Institutionalization as a basis for discussing how firms are faced with multiple options on how to enact institutional change. Additionally, Suchman's model is used to highlight that firms targeting multiple institutional pillars with their change actions is not well understood.

Next, I review the literature that relates to how firms target multiple institutional pillars to enact institutional change. This includes a review of the deregulation literature and how firms respond to regulative institutional weakening with normative institutional change action. Additionally, a review of the social movement literature shows how social movement organizations target multiple institutional pillars and, importantly, how social movement organizations differ from firms in their capacity as institutional change actors. Finally, this section concludes with a claim that the need exists to study how firms target multiple institutional pillars despite what we know from the existing literature.

The second area focuses on literature related to a novel institutional problem that allows for the study of how firms target multiple institutional pillars. The novel institutional problem asks how firms strengthen their institutional environment after the unplanned and radically weakening of a strong regulative institution. Next, a literature review related to this problem begins with a general review of institutional environments

before moving on to a focused exploration of IP institutional environments. Finally, a review of the nonmarket strategies literature is conducted to better understand the relationship between mechanisms for firms targeting multiple institutional pillars.

Institutional Change

Focusing on Firms

As mentioned in the introduction, institutional change research has been a popular area of study over the last three decades. Accordingly, it is necessary to focus the first area of the literature review on elements of institutional change that aid in understanding how firms target multiple institutional pillars. Additionally, I restrict the literature review to focus on macro institutional change, which focuses on organizations, as opposed to micro institutional change, which focuses on individual micro-level processes (see Reay, Golden-Biddle, & Germann, 2006). This is because firms are the focal institutional change actor for this study. Hence, most of the literature review is focused on firms as the institutional actor, except for the review of social movement organizations. As such, following is a review as to why firms engage in institutional change.

Why Firms Engage in Institutional Change

Prior research has identified several reasons firms engage in institutional change. The most dominant in the institutional change literature is that firms engage in institutional change to increase their legitimacy (Pacheco, York, Dean, & Sarasvathy, 2010). Legitimacy is defined as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions (Suchman, 1995b, p. 574)." Increased

legitimacy aids firms by helping them achieve organizational goals (DiMaggio, 1988; Pacheco et al., 2010). Institutional change action then increases a firm's legitimacy in a few ways.

The first occurs when an existing institution becomes misaligned with a firm's practices, which then threatens a firm's legitimacy (Oliver, 1992). When this occurs, firms will engage in institutional change action in an attempt to alter the institution to better align with their preferred behavior, which in turn increases the firm's legitimacy (Hiatt et al., 2009; Oliver, 1992). For example, Hiatt, Sine, & Tolbert's (2009) research on deinstitualization demonstrates how entrepreneurial soft drink companies increased their legitimacy by helping to instill new institutions around soft drinks as an acceptable alternative to alcohol after social movements led to delegitimizing alcohol consumption around Prohibition.

Alternatively, prior literature in institutional economics has focused on how firms use institutional change to increase their performance. One way firms increase their performance through institutional change is through rent-seeking. Firms engage in rent-seeking by using institutional change to gain unfair cost reductions or increase the cost for competitors (Ahuja & Yayavaram, 2011; Brownlow, 2007; Majumdar & Bhattacharjee, 2014). For example, Majumdar and Bhattacharjee's research (2014) on institutional change effects on manufacturing profitability in India, found that during times of strong government regimes, manufacturing firms engaged in rent-seeking by influencing politicians for more favorable contracts.

Further, increased performance can occur if a firm can change an institution in a way that lowers their transaction costs (North, 1990). As lower transaction costs may lead to improved economic performance, firms may engage in institutional change action to achieve a competitive advantage (North, 1991; Williamson, 1989). Additionally, firms can engage in institutional change action as a means to alter their field in a way in which they can utilize new internally developed competencies to create a competitive advantage (Garud, Jain, & Kumaraswamy, 2002; Rao, 1994). For example, Garud, Jain, and Kumaraswamy's (2002) research on institutional entrepreneurship in the promotion and adoption of technical standards shows how Sun Microsystems promoted Java adoption in an attempt to achieve a competitive advantage.

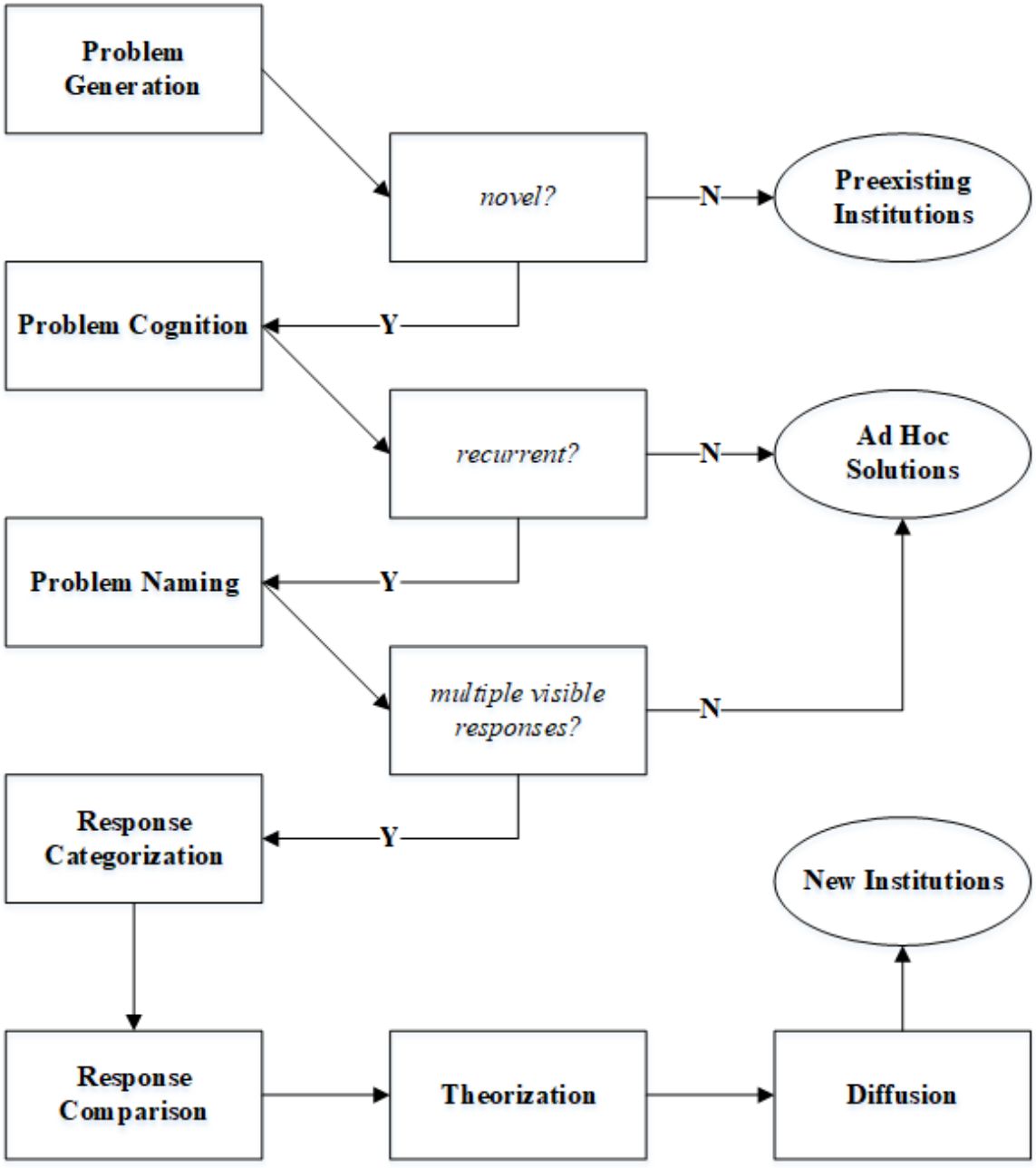
In summary, at a basic level, firms engage in institutional change to gain legitimacy or to gain an economic advantage through rent-seeking or lowering transaction costs. Hence, while institutional change is an infrequent occurrence, firms have meaningful motivation to engage in institutional change action when it is a suitable course of action. A look into why and how firms engage in institutional change via Suchman's Multistage Model of Institutionalization (1995a) follows.

Institutional Change Model

A major contributor as to why the institutional change literature is so vast is due to the multiple ways institutional change can manifest. To highlight some variance in institutional change actions, I first give a general overview of Mark Suchman's Multistage Model of Institutionalization (1995a) in Figure 1. Then I dive deeper into the

problem and response parts of the model to frame the theoretical motivation for this study.

Figure 1
Suchman's Multistage Model of Institutionalization



SOURCE: Suchman, M. C. (1995). Localism and globalism in institutional analysis: The emergence of contractual norms in venture finance. The institutional construction of organizations: International and longitudinal studies, 39-63.

The first step in Suchman's model is that a novel problem arises that is incongruent with the current institutional models. If a novel problem arises that can be solved with the current institutional framework, then there is no impetus for firms to enact institutional change. The second step is problem cognition in which actors regularly accept they are facing a problem which is more likely if the problem is large or recurrent. Next is problem naming where the problem is exemplified and associated with similar problems and available ad hoc solutions.

Assuming there is not an ad hoc solution to the problem and that multiple possible solutions are apparent, the model moves to response categorization. Response categorization allows actors to create a collection of alternative, workable strategies to the problem so the proposed solutions can be evaluated in the response comparison phase. After the solution evaluation process, actors then engage in theorization, which is a general account of how the institutional system works and which solutions will change the system to achieve the desired outcome. Finally, once the strategy and solution are chosen and acted upon, the solution can be spread within the social system in this institutional context. The diffusion of the new solution leads to institutionalization.

In summary, Suchman's model describes a general demand-side perspective on institutional change where institutional change is initiated by actors in response to a recurrent problem where no standard solution exists (Scott, 2013). While this model is heavily generalized, as empirical studies of institutional change reveal a more intricate process, it does highlight that the nature of the problem can lead to a large variance in

institutional change actions and outcomes. As such, the problem is the upstream beginning that affects the downstream response and eventual institutional change.

The large variance in institutional change actions and outcomes is highlighted by institutional researchers' multiple attempts to create comprehensive reviews of the institutional change literature (see Battilana et al., 2009; Hardy & Maguire, 2008; Micelotta et al., 2017; Pacheco et al., 2010). As such, perhaps it is not surprising that despite all the research on institutional change, there are still areas of institutional change that are less understood. One such area relates to the part of Suchman's model dealing with multiple visible responses and specifically to firms targeting multiple institutional pillars with their change actions.

Much institutional change research has focused on firms changing a specific institutional pillar (e.g. regulative, normative, or cognitive). However, institutional theorists accept that while the institutional environment may be dominated by one pillar at a given time, all three pillars are always present and interconnected (Hirsch, 1997; Hoffman, 1999). Yet, despite this recognition of the coexistence of institutional pillars, relatively little research has investigated how firms engage in multiple institutional change actions that target different institutional pillars. Therefore, the next section reviews existing literature related to firms targeting different institutional pillars.

Targeting Multiple Institutional Pillars

Prior studies that incorporate multiple institutional pillars into institutional change research generally fall into one of two areas. The first area centers on firms responding to changes in one institutional pillar by taking change action on a different institutional

pillar. This institutional phenomenon is exemplified by the deregulation literature. The second area is the social movement literature which focuses on social movement organizations as the focal actor.

Deregulation

Deregulation is the intentional and planned removal of regulations through government action (Haveman, 1993b; Haveman, Russo, & Meyer, 2001). One example is when the U.S. energy sector underwent deregulation in the late 1990s. The energy industry was transformed when restrictions that prevented private companies from producing and selling energy were removed (Delmas, Russo, & Montes−Sancho, 2007; Russo, 2001). Another example is the removal, in the 1980s, of federal and state regulations that set clear boundaries between different financial services (i.e. residential mortgages, credit cards, trust services) in the U.S. financial services industry. This allowed savings and loans financial-service firms to expand their offerings and compete in new markets (Haveman, 1993b; Haveman et al., 2001).

The deregulation literature has found deregulation can lead to a myriad of different firm-level outcomes, such as an increase of new entrants, firm survival, and organizational change (Haveman, 1993b; Haveman et al., 2001; Sine & David, 2003). However, from an institutional change perspective, studies have mainly focused on the initial regulative institutional change and a singular normative institutional change response.

For example, Haveman (1993a) finds that after the financial-service deregulation, new normative institutions on financial-service diversification were established by large

successful firms that influenced smaller firms in the financial services industry. Similar outcomes occurred in Nickerson and Silverman's study (2007) of the price and entry deregulation of the U.S. trucking industry in 1980. They found after deregulation new normative institutions were established that influenced trucking companies to hire more company drivers, as opposed to owner-operators, when similar trucking companies were located in the same region.

These examples show that deregulation does investigate multiple institutional pillars during the institutional change process. However, the different institutional pillars occur sequentially, with the removal of the regulative institution occurring first and the normative institutional change response from firms occurring after. Therefore, while the deregulation literature does provide increased understanding of how firms respond to regulative institutional change, it does little to further understanding of how firms target multiple institutional change pillars simultaneously.

Social Movements

Additionally, the recent focus of the social movement and organizational theory literature has begun to uncover how multiple institutional pillars can be combined. The recent social movement stream has focused on how social movement actors (i.e. environmental groups & temperance organizations) bring contention to markets in the midst of controversial issues (Davis et al., 2005; B. G. King & Pearce, 2010). As such, much of the social movement literature has focused on how social movement organizations enact institutional change in market environments.

The social movement literature is unique as it does evaluate how social movement actors use multiple institutional pillar change actions to change their institutional environment. Studies show how social movement actors use lobbying to enact regulative institutional change, while simultaneously attempting to sway public opinion by engaging in cognitive and normative institutional change actions (Hiatt et al., 2009; B. G. King & Pearce, 2010; Sine & Lee, 2009).

For example, Sine and Lee (2009) explained how environmental social movement actors, such as the Audubon Society and the Sierra Club, created cognitive and normative institutional change that promoted wind energy production by framing nonrenewable energy production as an environmental problem. Simultaneously, these same social movement organizations were lobbying state legislatures and regulators to change regulative institutions that allowed for easier entry into the wind energy market. In this way, the environmental social movement actors were able to engage all three institutional pillars simultaneously, which effectively changed the institutional environment around energy production.

Additionally, research about the temperance social movement that led to Prohibition U.S. in 1920 has shown a similar combination of institutional change pillars (Hiatt et al., 2009; Wade et al., 1998). The temperance social movement was headed by the Woman's Christian Temperance Union (WCTU) social movement organization. The WCTU led the temperance social movement and was able to change cognitive institutions by influencing public attitudes against drinking alcohol. Additionally, the WCTU lobbied for regulative institutional change to make alcohol consumption illegal, and created

normative institutional change by convincing public figures to speak out against alcohol consumption.

These examples show how social movement research does include multiple institutional pillars during the institutional change process. One reason social movement organizations target multiple institutional pillars is because they are on the fringe of the market environment, while the targets of their change actions (e.g. firms) are at the center (B. G. King & Pearce, 2010). This fringe positioning results in social movement organizations needing to create multiple points of leverage in order to have firms change their actions. Therefore, leveraging change action that targets different institutional pillars increases the likelihood of successful institutional change.

Additionally, social movement organizations are categorically different from the firms they are trying to change. First, social movement organizations generally have fewer resources and status than firms do. This makes it challenging for social movement organizations to influence policymakers to change the regulative institutional environment (Baron, 2001; O'Rourke, 2003). As such, social movement organizations target other institutional pillars as well as regulative institutional change.

Hence, the reasons social movement organizations target multiple institutional pillars may not be the same for firms. As firms are at the center of the market environment, they have higher status and power that allows for direct engagement with regulative institutions (Hillman & Hitt, 1999; Hillman, Keim, & Schuler, 2004). Therefore, in a similar case, firms may be able to engage regulative institutions directly and may not need to engage in change action that targets the other institutional pillars.

Second, social movement organizations differ from firms in key ways that affect how they can change institutions. First, social movement organizations engage in institutional change primarily for issue improvement (Davis et al., 2005; B. G. King & Pearce, 2010). On the other hand, firms may be motivated by increased performance through rent-seeking or lowering transaction costs to engage in institutional change. Since social movement organizations do not engage in institutional change for performance increases, firms engaging in institutional change for performance reasons may target multiple institutional pillars differently than social movement organizations.

These boundary conditions of the social movement research impose limits on the theoretical understanding of how firms target multiple institutional pillars. Therefore, more research is needed to understand how firms target multiple institutional pillars and the relationship between institutional change mechanisms.

Part One Summary

This literature review highlights that we know organizational institutional actors can and do target multiple institutional pillars to enact institutional change. Suchman's model, shown in Figure 1, recognizes that actors will have multiple options on how to enact institutional change. The deregulation literature has shown that changes to regulative institutions result in firms engaging in normative institutional change to optimize their institutional environment. Finally, the social movement literature has shown that social movement organizations target all three institutional pillars to enact institutional change.

However, there is still little understanding of how firms target multiple institutional pillars to enact institutional change. Specifically, the relationships between the mechanisms that target multiple institutional pillars are still not well understood. Similarly, we have limited understanding of how firms targeting multiple institutional pillars enact institutional change for other firms in their shared institutional environment. Therefore, further research is needed that explores these facets of firms targeting multiple institutional pillars.

In order to best explore these aforementioned facets, I am focusing on a novel institutional problem that provides a unique opportunity to study how firms target multiple institutional pillars. After describing the novel institutional problem, I will spend the rest of the chapter reviewing literature specific to the problem.

Defining and Exploring the Problem

The problem begins with the unplanned and radically weakening of a strong regulatory institutional environment. Without the mandates on appropriate behaviors of the former strong regulatory institution, firms will face new risks from other actors deviating from the prior agreed-upon appropriate behavior. The problem then becomes: how do firms strengthen their institutional environment after the unplanned and radical weakening of a strong regulatory institution?

Importantly, this problem is novel for institutional researchers. The closest area studied is deregulation, which has been studied in multiple contexts including the airline industry (Walker, Madsen, & Carini, 2002), telecommunications (Spiller, 1996), and those mentioned earlier in Chapter 2. While deregulation does provide examples of firms

responding to weakened regulative institutions, it is different from the focus of this study. Deregulation consists of a planned and intentional removal of regulation by policymakers. After policymakers remove a regulation, they are highly unlikely to create a new regulation that restores the regulative institution to its former strength. As such, firms affected by deregulation are unlikely to pursue regulative institutional change action to strengthen their institutional environment (Dacin et al., 2002). In contrast, this study is concerned with debilitating regulative institutions but not actually removing the institution. Hence, the regulations are still in place but can no longer be effectively enforced. This means that firms still have the option to pursue regulative institutional change. This difference is critical and motivates investigating the unplanned and radical weakening of a strong regulative institution as a separate institutional context.

By exploring this novel problem, I aim to theoretically contribute to two areas of institutional change that have remained under-researched. The first is how firms combine change actions that target multiple institutional pillars to change the overall institutional environment. The majority of institutional change literature has focused on institutional change efforts that target a single institutional pillar (e.g. regulative, normative, or cultural) (Battilana et al., 2009; Pacheco et al., 2010; Scott, 2010). Yet, firms may pursue multiple institutional change actions simultaneously that target different institutional pillars. Further, coordinating actions that target multiple institutional pillars may prove more beneficial in changing the overall institutional environment than targeting a single institutional pillar.

The second area is how firms create improvements to their business environment by enacting institutional change for firms in a different industry. Prior institutional change research has identified actors can be either an opponent or proponent of institutional change (Suddaby & Greenwood, 2005). However, opponent actors are usually either firms within the same industry or non-firm actors who are outside the industry (Battilana et al., 2009). Yet, when different industries have overlap in their institutional environments, it is possible for firms in one industry to benefit from institutional change enacted in firms in the other industry. However, there is little theoretical understanding of the offensive and defensive actions taken by firms in this scenario.

To expand the theoretical understanding of these two areas of institutional change, I explore the problem previously outlined. Therefore, the remainder of the literature review focuses on literature specific to this problem. This begins with a review of institutional environments and is followed by a focused review of IP institutional environments.

Institutional Environment

The combination of all three institutional pillars comprises a firm's institutional environment (Scott, 1995). Institutional environment affects firms by guiding their behavior toward acceptable practices (North, 1990; Ruef & Scott, 1998; Scott, 1995). How institutional environments affect firm behavior depends on several characteristics of the institutional environment. Characteristics pertinent for this study include institutional dominance in the environment, institutional environment strength, and institutional

stability. In the following sections, I review each of these institutional environment characteristics and how they affect firm behavior.

Institutional Dominance in the Environment

How institutional environments affect firm behavior depends greatly on which institution is dominant in the environment at a given time (Hirsch, 1975; Hoffman, 1999; Marquis & Raynard, 2015; Peng, 2003). Both regulative and normative institutions can dominate the environment. Regulative dominant institutional environments use laws, public policies, and property rights to create formal rules that provide economic incentives or sanctions to constrain firm behavior (North, 1990; Williamson, 2000). Regulative dominant institutional environments occur when regulations are well defined, readily apparent, and highly enforced.

An example of a regulative dominant institutional environment is shown in Sine and David's (2003) research on institutions in the U.S. electric power generation industry. In the early 1900s, the electric power generation industry, operating under little regulation, evolved into a monopoly where a few utility companies controlled most of the power generation market (Carley, 2011; Sine & David, 2003). Firms in the monopolized industry were accused of underserving rural areas, poor safety performance, and not cooperating with state regulators. In response to these issues, the federal government in 1935 created the Rural Electrification Administration regulatory agency and passed the Public Utility Holding Company Act to regulate the power generation industry. The new regulations resulted in breaking apart monopolistic firms into multiple smaller geographically bound electric utility companies. This new policy radically changed the

structure, operations, and ownership in the industry for several decades (Sine & David, 2003). This example demonstrates how regulative dominant institutional environments strongly affect firm behavior.

On the other side, normative dominant institutional environments use values, norms, and standards that utilize informal social pressure to constrain and enable firm behavior (Scott, 1995). Normative dominant institutional environments occur when pressures to conform to social norms are readily apparent and highly enforced.

An example of a normative dominant institutional environment is shown in Djelic and Ainamo's (1999) research on the luxury fashion industry. From the 1860s to the 1960s, the luxury fashion industry was comprised of a few Parisian fashion houses. These few fashion houses created and defined norms about the luxury fashion industry that manifested in strict rules fashion houses had to comply with to get the coveted *haute couture* designation. These rules included the number of employees working on the collections, number of spring and fall collections presented, and the use of live models (Crane, 1997; Djelic & Ainamo, 1999). The creation and adoption of these voluntary rules made it difficult for non-Parisian fashion houses to obtain the haute couture designation and compete in the luxury fashion industry. The presence of a dominant normative institution affected production levels, employment numbers, and blocked new firms entering the market (Djelic & Ainamo, 1999).

These two examples demonstrate a few important components of how dominant institutions affect firm behavior. First, as is well established in institutional literature, an institutional environment can be dominated by any single institutional pillar. Second,

when a single institutional pillar is dominant, that institution overwhelms the effects of other institutions. However, institutional composition in an environment is often more of a spectrum than a binary category. Even when an institutional environment is dominated by one institutional pillar, other institutions are still present and affect firm behavior, though to a lesser degree. Therefore, even in single pillar dominant institutional environments, there is a possibility to target non-dominant institutional pillars to enact some degree of institutional change. Thus, it is important to understand how non-dominant institutional pillars influence firm behavior, as these may become important targets for institutional change if the dominant institutional pillar weakens.

Institutional Environment Strength

Another institutional environment characteristic that affects firm behavior is the overall strength of the institutional environment. Institutional environmental strength refers to the robustness and intensity of the present institutions in the environment (Henisz, 2000; North, 1990; Scott, 1987). Strong institutional environments greater constrains firm behavior, as the institutions are more controlling, robust, and salient compared to weaker institutional environments (Marquis & Raynard, 2015; Peng, 2003). Additionally, strong institutional environments are more predictable which provides increased certainty for firms. In comparison, firms in weak institutional environments have less guidance on what behavior is allowable. Therefore, firms face an inherently higher level of uncertainty in weak institutional environments (North, 1986, 1990).

The literature on institutional environment strength is generally divided by institutional type. One set of literature investigates the effects of the regulative

institutional environment's strength on firm behavior. A major area of this literature focuses on IP rights and how well IP rights are defined and enforced. This literature often compares strong and weak IP institutional environments' effects on firm behavior and finds that stronger IP institutional environments are more conducive to firms engaging in activities with higher uncertainty. As such, stronger regulative institutional environments have been linked to higher levels of new product development (McCann & Bahl, 2017), R&D (Brown, Martinsson, & Petersen, 2017), innovation (Barbosa & Faria, 2011), patenting (Lerner, 2002; Park, 2008), technology transfer (Gans, Hsu, & Stern, 2008) and foreign direct investment (Cheung & Ping, 2004; Zhang & Song, 2001).

The other focus on institutional environment strength is on normative institutional strength. This research area compares how variance in social pressure and norms strength in an institutional environment affects firm behavior. Research in this area shows how strong normative institutions result in higher levels of firms adopting environmental and social programs. For example, Baughn, Chua, and Nuepert (2006) studied how normative institutions affect women's participation in entrepreneurship. Through a comparison across 38 countries, they found that countries with strong norms on general equality and support for female entrepreneurs had higher rates of female entrepreneurs even after controlling for general rates of entrepreneurship and economic development.

Institutional Environment Stability

A final characteristic is institutional stability, which is defined by the levels of institutional change occurring in the institutional environment (Peng, 2003; Williamson, 2000). Stable institutional environments are characterized by institutions that are steady

and change slowly. Stable institutional environments provide a predictable environment that allows firms to optimize their institutional engagement strategies to improve their competitive advantage (North, 1990). Transitioning institutional environments are characterized by institutions that are volatile and changing quickly (Peng, 2003). Transitioning institutional environments provide an unpredictable environment that increases uncertainty for firms as they navigate the changing institutional environment (Hoskisson, Eden, Lau, & Wright, 2000; K. E. Meyer, Estrin, Bhaumik, & Peng, 2009; Peng, 2003).

Stability in institutional environments is often implicit in research and is usually associated with strong institutional environments (Peng et al., 2009). As such, stability is usually only mentioned when comparing stable to transitioning institutional environments (Chakrabarti, Singh, & Mahmood, 2007; Lin, Peng, Yang, & Sun, 2009). Since the institutional environment is not significantly changing, researchers treat the institutional environment as fixed and focus on other aspects of firm behavior. As such, research in stable institutional environments often is concerned with how firms optimize their behavior to improve their competitive advantage (Shinkle, Kriauciunas, & Hundley, 2013; Somaya, 2012). For example, research shows that pursuing a pure strategy of either cost leadership or differentiation leads to better performance in stable institutional environments than it does in transitioning institutional environments (Shinkle et al., 2013).

As is the case with the emerging economies literature (Marquis & Raynard, 2015; Peng, 2003), transitioning institutional environments research mainly includes

institutional environment strengthening. Emerging economies are "low-income, rapid-growth countries using economic liberalization as their primary engine growth" (Hoskisson et al., 2000, p. 249). The institutional environment in emerging economies is inherently weak and characterized by less developed regulative institutions and governments, which cause firms to rely on normative institutions (K. G.-L. Huang, Geng, & Wang, 2017; Marquis & Raynard, 2015). However, the institutional environment is transitioning by becoming more developed and stronger. Firms operating in these institutional environments must balance utilizing the developing regulative institutions with the normative institutions present before the transition (K. G.-L. Huang et al., 2017).

Additionally, transitioning institutional environments include strong institutional environments weakening, as is the case with deregulation. As discussed previously in the literature review, deregulation is the intentional and planned removal of regulations through government action (Haveman, 1993a). The result of deregulation is a weakened institutional environment where the prior constraints pre-deregulation are no longer present. These lack of constraints allow firms to greatly alter their behavior from pre-deregulation, which range from higher firm entrant levels (Sine & David, 2003), to increase in differentiation strategy use (Delmas et al., 2007), and to increased CEO succession (Haveman et al., 2001).

Institutional Environments: General to Specific

This review utilized studies across many contexts to demonstrate the multiple ways institutional environment affect firm behavior. Highlighted in this review is the

relative lack of literature on the unplanned and radical weakening of a strong regulatory institution. Therefore, focusing on a specific institutional environment where this occurs will aid in exploring the main research question. With this in mind, the next part of the review focuses on IP institutional environments.

I choose the IP institutional environment context for several reasons. First, IP institutional environments are likely to contain strong regulative institutions. The literature on the laws and policies of formal IP rights is well developed and provides a clear understanding of the regulative institutional environment. Second, recent research has explored how firms engage with normative institutions in response to a weak IP institutional environment. Therefore, a base level of understanding exists on how firms engage with both regulative and normative institutions in this context. Finally, due to an exogenous environmental jolt, some regulative IP institutions have undergone an unplanned radical weakening. Thus, IP institutional environment context is well suited for increasing the theoretical understanding of how firms strengthen their institutional environment, after the unplanned and radical weakening of a strong regulatory institution, by potentially targeting multiple institutional pillars.

IP Institutional Environments

Many firms rely on IP creation or acquisition as a core strength for their competitive advantage (Ahuja, Lampert, & Tandon, 2008). These firms appropriate value from their IP by making and selling products or services based on the IP or by selling, licensing, or distributing the IP (James, Leiblein, & Lu, 2013; Pisano & Teece, 2007). As such, the ability of firms to appropriate value from their IP is paramount to their success

(Reitzig & Puranam, 2009; Teece, 1986). Yet, threats to IP appropriation exists from other entities using the IP without permission and suitable payment (Cohen, Nelson, & Walsh, 2000; Teece, 1986). If a firm cannot appropriate value from its IP, the firm's competitive advantage is threatened and the firm may fail.

To ensure firms engage in innovative activity, governments support appropriation by creating policies and laws that provide legal IP protection (Arrow, 1962; Besen & Raskind, 1991). The overall intent of these laws is twofold. First, IP laws provide a way for firms to legally define and declare their IP. These legal declarations are often in the forms of patents, copyrights, or trademarks dependent on the IP's nature. Second, if an entity uses another firm's IP without permission, the offending entity will be punished and held legally responsible. These punitive actions could include monetary fines, product recalls, or criminal charges (Besen & Raskind, 1991). Therefore, in addition to IP protection laws, an effective legal system is needed to uphold IP rights and enforce action against entities that offend on IP rights.

Additionally, firms engage in informal IP protection, which involves either avoiding the formal IP protection set up by regulative institutions or engaging in normative social pressure to protect IP. These informal IP protection tactics include secrecy and trust-based networks (Contigiani, Hsu, & Barankay, 2018; K. G.-L. Huang et al., 2017; Nelson, 2016). Secrecy for IP appropriation includes intentionally not sharing IP developments with others to prevent imitation (Contigiani et al., 2018). Yet organizations engaging in secrecy may choose to selectively share IP developments and trust the secret will not be disseminated widely (Nelson, 2016). Similarly, firms may form

trust-based networks with firms that may imitate their IP (K. G.-L. Huang et al., 2017). The hope is that the social pressures from the trust-based relationship will prevent these firms from imitating the IP.

Therefore, the full IP institutional environment includes both formal and informal IP protection strategies. To aid in our understanding of how the institutional environment affects how firms use formal and informal IP strategies, I conduct a literature review of different IP institutional environments. For this literature review, I categorized IP institutional environments based on the institutional environment's strength and stability. Table 1 shows this IP institutional environment categorization. For each category, I review the institutional environment characteristics along with how firms engage with formal and informal IP strategies. Table 2 summarizes the findings of the literature review.

Table 1
IP Institutional Environment Classification

IP Institutional Environment Classification

Institutional Strength	Stable	Transitioning
Strong	Strong-Stable	Strong-Weakening
Weak	Weak-Stable	Weak-Strengthening

Institutional Stability

Table 2
IP Institutional Environment Category Characteristics

IP Institutional Environment Category	Strong-Stable		Weak-Stable		Weak-Strengthening	
IP Institutional Environment Characteristics	Established IP defining & protection policies Legal system enforces IP Policies High levels of R&D and innovative activity Example Countries: U.S. Germany, Japan, France	Lerner, 2002 Park, 2008 Lanjouw & Lerner 2001 Rudy & Black 2018 Ginarte & Park, 1997 Ginarte & Park, 1997 Lerner, 2002 Park, 2008 Barbosa & Faria, 2011	Non-existent or inadequate IP defining and protection policies Incapable or ineffective legal system enforces IP policies Low levels of R&D, innovation, and foreign direct investment Example Countries: pre-mid 1990s China, less industrialized countries in Central America and Eastern Europe	Lerner, 2002 Park, 2008 Zhao, 2006 Ginarte & Park, 1997 Park, 2008 Javorcik, 2002 K.G. Huang, 2010 Li, 2012 Rapp & Rozek, 1990	IP defining and protection policies are newly in place Legal system is beginning to actively enforce IP policies Increasing levels of R&D, innovation, and foreign direct investment Example Country: China post mid-1990s	K. G. L. Huang, Geng & Wang, 2017 K. G. Huang, 2010 Cheung & Ping, 2004 Zhang & Song, 2001 Park, 2008 K. G. L. Huang et al. 2017

Table 2
IP Institutional Environment Category Characteristics (Continued)

IP Institutional Environment Category	Strong-Stable	Weak-Stable	Weak-Strengthening
Formal IP Strategy	<u>General</u> Heavy engagement in formal IP strategies — Lerner, 2002; Park, 2008 <u>Specific</u> Multiple strategies around patenting and legal system enforcement — Somaya 2003, 2012; James et al. 2013	<u>General</u> Avoid formal IP strategies when possible — Zhao, 2006 <u>Specific</u> Shorten lead time from patent to product release — de Faria & Sofka 2010; Zhao 2006 Self-cite for patents/rely on internal knowledge	<u>General</u> Increased engagement in formal IP strategies — K. G. Huang, 2010 <u>Specific</u> Patent filings increase — K. G. Huang, 2010

Informal IP Strategy	General Informal IP strategies present but industry-dependent Specific Secrecy & Sharing	Png, 2017 Png, 2017 Nelson, 2016	General Heavy engagement in informal IP strategies Specific Secrecy & Sharing Trust-based networks	Zhao 2006 de Faria & Sofka 2010 de Faria & Sofka 2010 Xin & Pearce 1996	General Informal IP strategy use Specific Alliance with government-owned entities Trust-based networks	Huang et al. 2017 Rong et al., 2017 Huang et al. 2017

Strong-Stable Institutional Environment

The first IP institutional environment identified in the literature is strong-stable. These environments are strong due to their developed IP defining and protection policies (Lerner, 2002; Park, 2008). Additionally, strength is provided by the legal system actively and predictably enforcing IP policies (Lanjouw & Lerner, 2001; Rudy & Black, 2018). These environments are stable, as the existing IP policies are established and unlikely to undergo radical change (Paik & Zhu, 2016). While IP policy changes still occur in these environments, new IP policies generally offer incremental changes to existing strong IP policies (Park, 2008).

Strong-stable IP institutions are found in countries such as the U.S., Germany, Japan, and France (Ginarte & Park, 1997; Lerner, 2002; Park, 2008). These countries share similar characteristics of highly industrialized and developed economies (Park, 2008). Additionally, these countries have high levels of R&D and innovative activity (Barbosa & Faria, 2011; Ginarte & Park, 1997). Countries in this environment rarely change their IP institutions, but still participate in international IP rights standards. However, their role in these standards is to provide a model for IP institutions which they plan to disseminate to countries in weaker IP institutional environments (Gervais, 1998; Park, 2008).

Strong-Stable Firm IP Institution Engagement Strategy

Strong-stable IP institutional environments help lower uncertainty and transaction costs for firms, as they can reasonably rely on the institutions to prevent IP appropriation threats (North, 1986, 1990; Teece, 1986). Due to the reliability of the regulative

institutions, firms are more concerned with strategies on how to engage with IP policies and laws to achieve a competitive advantage instead of being concerned with the enforceability of IP laws (James et al., 2013; Somaya, 2012). To demonstrate how firms engage with IP institutions in strong-stable environments, I review firm IP strategies. IP strategies, especially patent strategies, in strong-stable institutional environments are prevalent enough to have developed into a category of strategic management research. A patent strategy review article by Somaya (2012) lays out three generic patent strategies firms use in strong-stable IP institutional environments. These three strategies - (1) proprietary, (2) defensive, and (3) leveraging - demonstrate how firms utilize formal IP policies and court systems to maximize their IP appropriation and achieve a competitive advantage.

The first category, proprietary strategies, pertains to firms using patents to prevent other firms from imitating their IP and hence protect their competitive advantage (Lippman & Rumelt, 2003; Somaya, 2012). A popular proprietary strategy is fencing in which firms patent the original IP as well as adjacent and downstream IP to block competitors from accessing the technological space (Granstrand, 1999; Ziedonis, 2004). For example, pharmaceutical firms often file multiple patents that are related to a new drug to prevent rival firms from developing similar drugs (Sternitzke, 2013). Additionally, firms using proprietary strategies are likely to commercialize the IP themselves and will not license the IP to other firms (Teece, 1986). With a proprietary strategy, firms are likely to use the court system to aggressively pursue any patent

infringers (Polidoro Jr & Toh, 2011) and are unlikely to settle out of court (Somaya, 2003).

The second category, defensive strategy, pertains to firms using patents to protect themselves from patent infringement claims by other firms. This strategy affords the firm space to commercialize its IP without interference from patent claims by other firms (Somaya, 2012). A popular defensive strategy is for firms to build large patent portfolios from either their patents or purchased patents (Hall & Ziedonis, 2001). For example, firms in the U.S. semiconductor industry made large capital investments to create new IP in order to build large defensive patent portfolios (Hall & Ziedonis, 2001). Additionally, firms pursuing a defensive strategy are more likely to settle IP infringement lawsuits (Somaya, 2003).

The third category, leveraging strategy, pertains to firms using patents for their bargaining power to generate rents even though the patent is not useful for the firm to develop additional IP (Somaya, 2012). This strategy may be employed, for example, when firms use patents for the sole purpose of licensing (Arora & Ceccagnoli, 2006; Arora & Fosfuri, 2003). A newer leveraging strategy is called patent trolls, and it occurs when firms acquire patents for the sole purpose of suing R&D intensive firms for patent infringement (Reitzig, Henkel, & Heath, 2007; Steensma, Chari, & Heidl, 2015).

In strong-stable IP institutional environments, informal IP strategies are present as alternatives to formal IP strategies. Firms engage in trade secrecy, intentionally not disclosing IP developments, to protect their IP from being imitated. Secrecy is used to protect IP before commercialization and as a substitute for patenting when firms believe

information disclosure in the patenting process may accelerate competitor imitation (Cohen et al., 2000; James et al., 2013). The hidden nature of secrecy makes it difficult to measure its overall use in IP protection. However, several studies have found that secrecy is a common IP protection strategy used by firms in strong-stable IP institutional environments (Cohen et al., 2000; Levin et al., 1987; Png, 2017).

While secrecy is based on the premise of not sharing, sometimes knowledge sharing is required for further IP development. In these cases, secrecy strategies include normative social pressure. For example, research on university R&D shows that some universities engaged in secrecy will still share secrets with select trust-based partners (Nelson, 2016). Interestingly, strong-stable IP institutional environments have taken action to create regulative institutions around informal IP strategies. For example, the Uniform Trade Secrets Act was created in the U.S. to provide legal protections for trade secrets and punishes firms that obtain trade secrets through improper means (Png, 2017). However, even trade secrets are formally protected by laws such as the Uniform Trade Secrets Act (Png, 2017).

Weak-Stable Institutional Environment

The next IP institutional environment category to be reviewed is weak-stable. These environments are considered weak because either adequate IP rights do not exist (Lerner, 2002; Park, 2008), or they do exist but the legal system to enforce IP rights is inadequate (Zhao, 2006). These environments are stable in that no or little new IP policies or legal system changes are being introduced. The stable designation does not imply that weak IP institutions cannot change and develop into stronger institutions (Peng & Heath,

1996). Instead, stable in this context means that under the current circumstances the IP institutions are not developing further.

Weak-stable environments are generally found in countries with developing economies (Ginarte & Park, 1997; Lerner, 2002). Examples include pre-1995 China and less industrialized countries in Central America and Eastern Europe (K. G. Huang, 2010; Li, 2012; Rapp & Rozek, 1990). These countries are less economically developed and have low levels of R&D activity (Ginarte & Park, 1997; Park, 2008). Further, countries in weak-stable environments receive less direct investment from foreign firms due to concerns over IP protection (Javorcik, 2002).

Weak-Stable Firm IP Institution Engagement Strategy

In contrast to the strong IP rights contexts, firms in weak institutional IP rights contexts assume their IP is not adequately protected and it will be infringed upon (Marquis & Raynard, 2015; K. E. Meyer et al., 2009). To combat this concern firms take on a variety of IP protection strategies while engaging in innovative activities (Rong, Wu, & Boeing, 2017; Zhao, 2006). One action is to rely more heavily on the firm's internal knowledge as opposed to external firm knowledge (Zhao, 2006). Zhao (2006) found that when multinational companies (MNC) operate in countries with weak IP rights, the MNCs file patents with more self-citations than in countries with strong IP rights. The idea behind this activity is that limiting exposure to other firms in a weak IP context will help protect their IP from infringement.

Similarly, de Faria and Sofka (2010) found that MNCs operating in countries with weak IP rights will implement additional IP protection strategies. For example, MNCs

will wait to file patents until the IP is ready for commercialization in order to extend the time their product has on the market before competitors imitate their IP. Additionally, MNCs may forego patents all together and just engage in secrecy or complex product design to make imitation more difficult. However, when these same MNCs operate in a strong-stable IP institutional environment they rely heavily on the patent system. These examples show the variety of concerns firms have about protecting their IP rights in weak institutions.

The lack of regulative IP institutions in weak-stable IP institutional environments does not prevent domestic firms from creating IP. As such, domestic firms often rely on informal IP strategies such as social networks with other firms to build trust and provide IP protection (Holmes Jr, Miller, Hitt, & Salmador, 2013; Xin & Pearce, 1996). For example, Xin and Pearce (1996) leveraged regional institutional strength variances in China to examine network reliance differences for IP protection. They found that the less developed the region's institutions were, the more firms relied on strong trust-based network ties for IP protection.

Weak-Strengthening Transition IP Institutional Environments

The third IP institutional environment identified in the literature is weak-strengthening. These environments are in the process of transitioning from weak IP institutions to stronger IP institutions (K. G. Huang, 2010; Park, 2008). As such, IP defining and protection policies are newly in place and the legal system is beginning to actively enforce the IP policies (K. G.-L. Huang et al., 2017). However, IP institutions

are not as strong, predictable, or reliable as in strong-stable environments. Additionally, IP imitation is still present even though regulative IP institutions are strengthening.

Weak-strengthening IP institutional environments are generally found in countries that are transitioning to a developing economy (Park, 2008). A prime example is China after the mid-1990s. In the mid-1990s China implemented new IP rights and since then patenting activity in China has steadily climbed (K. G. Huang, 2010). This has coincided with a large increase in R&D activities within the country along with a greater volume of foreign direct investment (Cheung & Ping, 2004; Zhang & Song, 2001). However, despite the growth in R&D activity and patents, IP imitation and theft is still a major concern in China. For example, in 2019 the U.S. stated that China's weak IP protections are a major reason for unsuccessful trade negotiations between the countries (Rosenbaum, 2019).

Weak-Strengthening Firm IP Institution Engagement Strategy

Firms in weak-strengthening IP institutional environments experience aspects of weak-stable and strong-stable IP institutional environments. On one side, research has found that firms engage more with formal IP strategies as the institutional environment strengthens (Holmes Jr et al., 2013; Xin & Pearce, 1996). For example, studies on China's IP institutions show firms have steadily increased domestic patent filings since the mid-1990s (K. G. Huang, 2010). Additionally, Xin and Pearce (1996) found that firms in more institutionally developed areas of China rely more on formal IP strategies to protect their IP than firms in less institutionally developed areas in China. These

studies suggest that as weak regulative IP institutions become stronger, firms adapt their strategies away from informal IP strategies and toward formal IP strategies.

However, in weak-strengthening IP intuitional environments, the informal IP strategies before the institutional transition are still present. The presence of these informal IP strategies results in a combination of formal and informal IP strategy engagement (K. G.-L. Huang et al., 2017; Xin & Pearce, 1996). For example, Huang et al. (2017) found that after a major strengthening of regulative IP institutions in China in 2001, domestic firms still relied on informal IP strategies, whereas foreign firms relied on formal IP strategies. This variance in institutional engagement is due to domestic firms being embedded in the informal IP strategies that were prevalent in the weaker institutional environment before the transition. Another strategy firms use in weak IP institutional environments is to align themselves with government-owned organizations so they can receive increased regulative IP institutional protection due to the government interest in their firm (Rong et al., 2017). Rong et al. (2017) found that firms in China that obtain Chinese institutional investors innovate more than firms that do not obtain institutional investments.

IP Institutional Engagement Strategies: The Missing Category

The literature review on IP institutional environment found three main categories based on the IP institutional strength and state: (1) strong-stable, (2) weak-stable, and (3) weak-strengthening. However, based on the two-by-two categorization by institutional environment strength and state, a category is missing.

Strong-weakening IP institutional environments are absent from the IP institutional environment literature. This absence is largely due to the rarity of such scenarios. In general, institutions are difficult to change, let alone radically weaken (North, 1990, 1991). Yet, while IP institutional environments radically weakening have been under-researched, other institutional environment research demonstrates that institutions can be radically weakened by exogenous environmental jolts (A. D. Meyer, 1982).

Therefore, to better understand strong-weakening IP institutional environments, I first review the literature on environmental jolts. I then focus on the specific IP institutional environment of copyrights in the digital age. I review how digitization acted as an environmental jolt that weakened regulative copyright protecting institutions. I then review the weakened regulative institutions around digital copyright protection and discuss how this affects firms operating in this institutional environment.

Environmental Jolts: How Strong Institutions Become Weak

Environmental jolts are exogenous extraordinary events that disrupt organizational fields (A. D. Meyer, 1982). Researchers have documented a variety of environmental jolts including technological disruption (Tushman & Anderson, 1986), political and social upheavals (Newman, 2000), and major regulative changes (Sine & David, 2003). For example, Newman (2000) uses the demise of communism in countries located in Central and Eastern Europe as an example of an environmental jolt that impacted politics, society, the legal system, and markets.

Environmental jolts have a variety of effects on firms and industries. One set of findings shows that environmental jolts cause organizational change, ranging from relatively minor changes in processes and systems, to relatively major changes such as reconfiguring strategic orientation (A. D. Meyer, 1982; A. D. Meyer, Brooks, & Goes, 1990). In addition, if an environmental jolt is big enough it can restructure the industry. For example, Sine and David (2003) show how, after decades of stability in the U.S. electric utility industry, an oil crisis led to immense growth and expansion in the industry and resulted in thousands of new venture independent electrical producers entering the field.

Environmental jolts also have the ability to radically change regulative institutions (Battilana et al., 2009; Newman, 2000). Regulative institutions can be affected by environmental jolts if governments and policymakers are greatly influenced by the jolt. For example, when nations in Central and Eastern Europe changed from a communist societal structure to a more democratic and market-based society and economy, the laws and legal systems associated with the old regime radically changed (Newman, 2000). Additionally, environmental jolts can change market conditions to the point that governments introduce new policies to adapt to these new conditions. For example, risky banking practices around subprime mortgages led to the 2008 financial crisis, which severely weakened economies around the world. In response to the financial crisis, U.S. policymakers introduced the Dodd-Frank Act, which introduced new regulations on banks to promote financial stability and increase consumer protection (Kroszner & Strahan, 2011).

Environmental jolts have the ability to radically change an institutional environment and as such are often studied as precursors of institutional change (Sine & David, 2003). Therefore, it is reasonable that firms experiencing the unplanned and radically weakening of a strong regulatory institutional environment will take institutional change actions. As such, the next section reviews nonmarket strategies as likely mechanisms firms will use to enact institutional change.

Nonmarket Strategies as Mechanisms of Institutional Change

As previously stated, firms experiencing the unplanned and radically weakening of a strong regulatory institutional environment will likely take institutional change action. As such, this study is interested in how firms will target multiple institutional pillars to strengthen this institutional environment. Therefore, change actions that target different institutional pillars need to be reviewed in order to create theory that explains the relationship between the institutional change mechanisms. As such, I have chosen to focus on nonmarket strategies as institutional change mechanisms as they allow for the clear identification of how the mechanism targets a particular institutional pillar.

Nonmarket strategies are actions firms take outside the traditional market environment to manage their institutional environment in order to improve firm performance (Baron, 1995; Mellahi, Frynas, Sun, & Siegel, 2016). There are multiple actions firms take that are categorized as nonmarket strategies, which include corporate political activity (Bonardi, Hillman, & Keim, 2005; Bonardi, Holburn, & Vanden Bergh, 2006), corporate social responsibility (Aguilera, Rupp, Williams, & Ganapathi, 2007), industry self-regulation (A. A. King & Lenox, 2000), and alliances with firms (B. H. Lee,

Struben, & Bingham, 2018) and nonmarket stakeholders (Hillman & Keim, 2001) (Dorobantu et al., 2017). While each nonmarket strategy is often studied by itself, an underlying theme in the nonmarket strategy literature is that firms use nonmarket strategies to change institutions in response to weak institutional environments or decreased firm performance (Dorobantu et al., 2017; Rudy & Johnson, 2016).

Important for this study, nonmarket strategies provide a method for changing both regulative institutions and normative institutions. Corporate political activity (CPA) is commonly used by firms to directly target regulative institutional change. Industry self-regulation is used to implement normative institutional change. Therefore, what follows is a review of the CPA and industry self-regulation literature. I do so in order to later explore theories on how firms may use these mechanisms to target multiple institutional pillars in response to the unplanned and radical weakening of strong regulative institutions.

Corporate Political Activity

Public policy is responsible for establishing the legal and regulatory conditions and ramifications that influence firm market behavior (Baron, 1995; Hillman et al., 2004). Therefore, firms engage in CPA in efforts to influence regulative institutions, such as policy and political institutions, in order to improve their competitive advantage (Bonardi et al., 2005; Bonardi et al., 2006; Hillman et al., 2004). Firms engage in CPA through lobbying efforts, donating to political action committees (PAC), and contributing to election campaigns (Hillman et al., 2004; Meznar & Nigh, 1995).

CPA activity has steadily increased in the U.S. (Lux, Crook, & Woehr, 2011). Since the passing of Citizens United vs Federal Election Commission (2010) ruling, which removed limits on corporate donations to political organizations and campaigns, corporate spending on CPA activity has greatly increased. For example, from 2008, the year the last U.S. presidential election took place before the formation of Citizens United, to the latest U.S. presidential election in 2016, top corporation U.S. election donations increased from approximately $130 million to $712 million (Center for Responsive Politics, 2019b). Even though PAC donations have increased, lobbying activity remains the highest CPA expenditure in the U.S., reaching $3.4 billion in 2018 (Center for Responsive Politics, 2019b). Similarly, research in CPA has expanded since the new millennia and now includes findings on firm, institutional, industry, country-level differences, outcomes, and various strategic approaches in an assortment of empirical settings (Hillman et al., 2004; Macher & Mayo, 2015; Mellahi et al., 2016).

CPA Strategies & Approaches

The most expansive CPA types are classified as proactive or reactive (Hillman et al., 2004). Proactive CPA involves influencing the actual policy being created whereas reactive CPA involves responding to a previously implemented policy to ensure compliance (Meznar & Nigh, 1995). Generally, reactive CPA has less to do with institutional change as it occurs after the institutional changing policy takes place. Therefore, proactive CPA is the focus of institutional change research.

Proactive CPA can involve a variety of firm activities. Some activities are more docile, such as providing feedback to policymakers on proposed legislation impacts.

Other actions are more oppositional, such as intentionally weakening firm regulations, and other activities are more incentivized, such as lobbying and campaign contributions and PAC (Hillman et al., 2004; Meznar & Nigh, 1995). Much of these efforts are driven by firm financial donations, either directly to political entities, or through the use of political action committees (PAC) or lobbying activity (Lux et al., 2011; Magee, 2002). A meta-analysis by Lux, Crook, and Woehr (2011) shows that firms do experience increases in economic performance after participating in CPA. The variety of activities highlights that agency firms have to influence public policymakers and actively shape institutions. Yet, not all firms engage equally in CPA, as researchers have identified several firm characteristics that influence the likelihood of firms pursuing a CPA non-market strategy.

Firm size has been one of the most researched antecedents for firms engaging in CPA activity (Hillman et al., 2004; Macher & Mayo, 2015). In general, extant research shows larger firms are more likely to engage in CPA (Hansen & Mitchell, 2000; Hillman et al., 2004; Schuler, Rehbein, & Cramer, 2002) and more likely to believe that engaging in CPA will affect policy (Macher & Mayo, 2015). The theory behind these findings is that larger firms have more resources to engage in CPA, have more economic power, and represent more potential sway with voters (Hillman et al., 2004). Smaller firms may still engage in CPA yet are more likely to do so with collective action in order to pool their resources (Hillman & Hitt, 1999). Collective action in CPA often results in participation in PACs (Hansen & Mitchell, 2000; Masters & Keim, 1985). Though large firms do

participate in PACs, they may also act alone due to their greater resource pool (Boies, 1989).

Another characteristic that affects a firm's CPA activity is if the firm has domestic or foreign headquarters outside of the nation where the public policy takes place. While nations vary on their political finance laws, many nations do allow foreign firm investment. In the U.S., foreign firms are not allowed to donate directly to election campaigns but are allowed to donate through wholly-owned subsidiaries based in the U.S. or through PACs (Commission, 2015). Therefore, foreign firms ultimately do have the ability to make financial contributions to U.S. based elections. However, research shows that foreign firms are less likely to engage in lobbying and PAC activity than domestic firms (Hansen & Mitchell, 2000, 2001). This is attributed to firms following behavioral norms of entities not influencing foreign elections (Hansen & Mitchell, 2000). Further, foreign firms may curb CPA to avoid being seen as interfering or meddling in foreign politics (Hansen & Mitchell, 2001)

Issue Saliency and CPA

In addition to firm characteristics, issue saliency is an important antecedent to CPA (Caldeira, Hojnacki, & Wright, 2000; Henisz & Zelner, 2005; Hillman et al., 2004; Keim & Zeithaml, 1986). Issue saliency is how much the issue at hand is expected to impact the firm's performance and strategic action (Hillman et al., 2004; Schuler & Rehbein, 1997). The more an issue impacts a firm, the more likely the firm will take action (Caldeira et al., 2000; Vogel, 1996). Additionally, the more salient an issue, the more intense the CPA action will be (Bonardi & Keim, 2005; Getz, 1997). For example,

when health issues from smoking became widely known and accepted as true, tobacco firms became more aggressive in their CPA efforts in the European Union (Bonardi & Keim, 2005).

In summary, CPA provides a way for firms to influence regulative institutions. By engaging in CPA, firms can influence the policy that directly affects their firm, their industry, or possibly firms in other industries.

Industry Self-Regulation

Industry self-regulation is comprised of the voluntary actions firms take to govern their industries (A. A. King & Lenox, 2000). Industry self-regulation provides a mechanism for implementing normative institutional change and often includes the voluntary adoption of industry standards, such as the ISO 4001 environmental management standard (A. A. King, Lenox, & Terlaak, 2005). Other examples of industry self-regulation include the chemical industry Responsible Care program, enacted to reduce harmful externalities in the chemical industry (A. A. King & Lenox, 2000), and Canada's Oil Sands Innovation Alliance efforts to improve Canada's oil sands industry environmental impact (Bowen, Bansal, & Slawinski, 2018).

Industry self-regulation research has largely focused on environmental issues relating to firms and managing common-pool resources (Bowen et al., 2018; A. A. King & Lenox, 2000; A. A. King et al., 2005; Ostrom, 1990; Russo & Harrison, 2005). However, not all industry self-regulation revolves around the environment or resources. For example, when compared to bureaucratic and legal action taken against firms, industry self-regulation has been shown to be more effective in getting firms to admit to

wrongdoing by issuing corrected corporate earnings (Pfarrer, Smith, Bartol, Khanin, & Zhang, 2008). Additionally, recent research has looked at industry self-regulation from Dutch financial firms looking to increase their board of directors' gender diversity (Shi, Swinkels, & Van der Lecq, 2017).

A commonality in the industry self-regulation research is that self-regulation stems from firms reacting to an issue or problem facing the industry. Not surprisingly, a main goal of industry self-regulation is for the issue to be mitigated, improved, or avoided (Barnett & King, 2008; A. A. King & Lenox, 2000). Yet, issue improvement is not always an outcome for industry self-regulation. For example, the chemical industry formed the Responsible Care program in part to reduce the harmful environmental impact of chemical production. Yet, King and Lenox (2000) found that firms that voluntarily participated in the Responsible Care program did not increase their environmental improvement rate over nonparticipant firms. This was due in part to opportunistic firms who joined the Responsible Care program for reputational gain and did not actually improve their environmental performance. Similarly, empirical studies have shown that the adoption of ISO 4001 environmental standard does not lead to an improvement in environmental performance (Darnall & Sides, 2008; Russo & Harrison, 2005). Although industry self-regulation does not always directly improve the issue at hand, firms still benefit in other ways.

Industry self-regulation can also enact problem prevention that averts negative events from one firm's problems affecting other firms in that industry (Barnett & King, 2008). For example, Barnett and King's (2008) study on the U.S. chemical industry found

firms faced increased public and government criticism after major industrial accidents in the chemical industry, which negatively affected stock prices. However, after the forming of the Responsible Care program, firms that participated in the program experienced less severe drops in stock prices after industrial accidents compared to firms that did not participate. This implies that industry self-regulation does insulate participating firms from other negative events experienced by other firms.

Trade Associations & Industry Self-Regulation

While industry self-regulation is often started around an issue facing an industry, an underlying sub-theme in the industry self-regulation literature is the role of trade associations in organizing the response to the problem. The purpose of trade associations is to advance their member firms shared interests (Barnett, 2013). As such, trade associations often play an active and key role in implementing industry self-regulation (Barnett, 2013; A. A. King & Lenox, 2000; Lenox & Nash, 2003). For example, the Responsible Care Program, a prominent example in industry self-regulation literature, was started by the Chemistry Industry Association of Canada in 1984 before being adopted by the American Chemistry Council in 1988 (A. C. Council, 2019). Research on trade associations shows they are uniquely positioned to implement industry self-regulation (Barnett, 2013; Lenox & Nash, 2003).

First, trade associations are designed to respond to shared problems facing the industry (Barnett, 2013). Therefore, when a major negative event occurs, such as the large chemical spills that led to the Responsible Care Program, trade associations can collectively respond for their member firms (A. A. King & Lenox, 2000; Lenox & Nash,

2003). Second, trade associations have established relationships with member firms and are seen to act in their best interests. This puts trade associations in a unique position to oversee and verify self-regulation action, as well as to apply normative pressure on member firms to comply (Lenox & Nash, 2003). For example, the American Textile Manufacturers Institute (ATMI) created the Encouraging Environmental Excellence initiative in 1992 to promote pro-environmental practices in the textile industry (Conover, 1993). After the creation of the initiative, the ATMI recruited member firms to join the initiative and then oversaw their compliance with the standards (Lenox & Nash, 2003).

Additionally, trade associations provide a means for firms to join in collective action to address industry issues (Barnett, 2013; Lenox & Nash, 2003). This is especially beneficial for small firms that likely do not have the resources or status to influence the industry on their own (Barnett, 2013; Sherer & Lee, 2002). However, while trade associations due give small firms a means to join collective action, the agenda of trade associations are influenced more by larger firms (Barnett, 2013).

Industry Self-Regulation & Governmental Regulation

Another area of industry self-regulation that stems from problems facing the industry, is how industry self-regulation is related to government regulation. Even though industry self-regulation is voluntary and not mandated by governments, there are direct ties between industry self-regulation and government regulations. The first connection relates to the threat of government regulation to following through on commitments to self-regulate. Short and Toffel (2010) found that firms were more likely to comply with the self-imposed reduction of air pollutants when government monitoring was high, even

though there were no direct sanctions. This suggests that the threat of new or increased government regulations motivates firms to engage and follow through with industry self-regulation. Additionally, actual sanctions or actions by government regulation may not be needed to spur firm action, as merely the threat of action may cause firms to self-regulate.

Further, firms use industry self-regulation as a means to avoid or postpone government regulation (Gupta & Lad, 1983; Lenox, 2006). When government regulators respond to negative industry events with threats of new regulation, firms face uncertainty about how restricting and extensive the regulations may be. Therefore, firms enact industry self-regulation to create a more favorable regulation as well as to avoid additional government regulation (Fremeth & Shaver, 2014; Lenox, 2006). Further, firms that may be opposed to the industry self-regulation may still adopt the self-regulation measures to prevent stricter government directives (Lenox, 2006).

While much of the industry self-regulation literature focuses on government regulations impacting industry self-regulation, a subset of research studies the opposite - industry self-regulation's impact on government regulation. While this area of research has received little attention, what has been published shows that industry self-regulation driven initiatives can be adopted and made into formal government regulations (Gulbrandsen, 2014; B. H. Lee, 2009). Research in the organic food industry demonstrates how local industry efforts to define the organic food standard and certification have been adopted by local government officials in cities in several U.S. states (B. H. Lee, 2009). Similarly, a study of the European timber industry shows that procurement standards initiated by the timber industry, which ensure legality and

sustainability of timber procurement, have been adopted as official policy in certain regions (Brack, 2008; Gulbrandsen, 2014). These studies suggest that industry self-regulation may influence governments to formalize industry set regulations.

Connecting CPA and Industry Self-Regulation

This review separately discusses CPA and industry self-regulation as mechanisms for institutional change. However, these two mechanisms are related by industry self-regulation's ability to prevent government regulation. Therefore, if a firm engages in CPA to create regulative institutional change that will affect a different firm's institutional environment, the other firm can potentially mitigate the effectiveness of the CPA by engaging in self-regulation. In this way, CPA represents an offensive institutional change action and industry self-regulation represents a defensive institutional change action. Therefore, firms can combine these two nonmarket strategies to simultaneously target regulative and normative institutional pillars. This relationship between mechanisms provides the basis for creating new theory on how firms target multiple institutional pillars and is discussed in Chapter 4.

Literature Review Summary and Remaining Questions

This literature review began by highlighting the lack of understanding about how firms target multiple institutional pillars when enacting institutional change. This knowledge gap motivates researchers to take a focused look at a novel institutional problem, specifically how firms may strengthen their institutional environment after the unplanned and radical weakening of a strong regulative institution. Several aspects pertinent to expanding our theoretical understanding related to firms targeting multiple

institutional pillars were highlighted through the exploration of the literature surrounding the novel institutional problem.

First, institutional environments affect firm behavior. Specifically, strong stable regulative institutional environments use incentives and sanctions to define appropriate firm behavior. Second, firms adapt their strategies to changes in the institutional environment. Therefore, as the regulative institutions radically weaken, firms will change their behavior to suit their new institutional environment. Third, firms engage in institutional change to strengthen an institutional environment and improve their performance. These may include regulative and normative change actions. Specifically, the nonmarket strategies of CPA for regulative change and industry self-regulation for normative change were highlighted as likely change actions and as a means to better understand the mechanisms between regulative and normative institutional change.

The literature review highlights that firms are likely to engage in institutional change action to strengthen their institutional environment after the unplanned and radical weakening of a strong regulatory institution. However, we know little about the institutional change process firms use in this scenario. Additionally, the prior literature does not suggest how firms will manage the relationship between regulative and normative institutional change actions to strengthen their institutional environment. For example, how does engagement in regulative change affect engagement in normative change? Additionally, how does normative change success affect further regulative and normative change action? Therefore, in Chapter 4, I develop theory on how firms use regulative and normative institutional change action to strengthen their institutional

environment after the unplanned and radical weakening of a strong regulatory institution.

To aid in framing the theory, Chapter 3 first describes the digital copyright institutional environment context that is used for the analysis of this dissertation.

III. Digital Copyright Context

The purpose of Chapter 3 is to provide background on the digital copyright institutional environment. The digital copyright context exemplifies an institutional environment where a once strong regulative institution underwent an unplanned radical weakening. As such, understanding this specific institutional context will aid in framing the theoretical contributions in Chapter 4. Chapter 3 begins with an explanation of the unplanned radical weakening of the digital copyright environment. Then, responses from regulators and digital copyright reliant firms to the weakening are discussed.

Digitization as an Environmental Jolt

An important environmental jolt in recent history is the shift to the information age, which encompasses the digitization of information and the proliferation of the internet. While digitization and the internet have affected almost every part of society, the impact on IP and especially copyright enforcement has been profound. The National Research Council formed and commissioned the Committee on Intellectual Property Rights and Emerging Information Infrastructure to assess the impact of digitization and the internet on IP. The committee published its findings in 2000 and deemed the issues facing digital copyright enforcement as the digital dilemma (N. R. Council, 2000).

The committee's findings state two main events have fueled the digital dilemma. The first is that technological advancements have radically altered how information is

published, reproduced, distributed, and controlled. This is due to three main technological advancements. First, information switching from physical to digital format has fundamentally altered the ease and economics of reproduction. The costs to reproduce and nearly perfectly replicate information are incredibly low for both the lawful IP holder and those illegally copying the IP. Second, the speeds of computer networks are fast enough to transmit digital information quickly and inexpensively. This has greatly lowered the costs of distributing information. Finally, the proliferation of the World Wide Web means most of the industrialized world can access information easily and relatively inexpensively.

The second main event is that the digital information infrastructure has integrated into everyday life for much of society. For example, many people stream music, television shows, and/or movies multiple times a day. This frequent access can and is being paired with casual illegal access to digital copyrighted material (N. R. Council, 2000).

These changes brought on by the digitization of information and the internet have greatly affected firms that rely heavily on copyright protection. Firms in industries such as movies, television, music, and software have experienced major threats as digital piracy has become prominent (Peitz & Waelbroeck, 2006; Siwek, 2006, 2007). While difficult to accurately calculate, industry studies have estimated the cost of digital piracy in the US movie industry to be $6 billion in 2006 and in the US music industry $12.5 billion in 2007 (Siwek, 2006, 2007). Estimates for the software industry show the value of unlicensed PC software installations in 2011 was $63 billion worldwide, with the U.S.

comprising almost $10 billion (BSA, 2018). Further, industry analysis predicts digital piracy will become an even bigger issue in the future as future technology changes, such as 3D printing, could bring a new host of digital piracy concerns (Depoorter, 2013).

While digitization has created opportunities for widespread digital piracy to hurt firm performance, it has also created new growth opportunities for digital copyright firms. For example, both the movie and television industries have experienced tremendous growth due to digitization increasing user access to movies and shows (Waldfogel, 2017). However, even with the new opportunities brought by digitization, digital piracy remains a serious and continuing issue for digital copyright firms. As such, I now review how digitization weakened the regulative institutions around copyright protection.

Digitization: Weakening Regulative IP Institutions

The combination of digitization and the internet has created an incredible environmental jolt for firms reliant on copyrights. Pre-digitization firms operated in a strong-stable IP institutional environment. In this environment, firms could generally rely on copyright protection policies and legal systems to protect their copyrights from illegal use and distribution. However, the changes digitization brought to copyrighted media, made the existing U.S. copyright laws less effective. As such, the U.S. made several changes to copyright policy. The first two changes, the Audio Home Recording Act of 1992 (AHRA) (1992) and the No Electronic Theft Act (NET Act) (1997), were small policy changes that did pave the way for a larger policy change in the future.

The AHRA provided the first updates regarding digital IP to copyright law in the U.S. and made two important contributions to future laws. First, the AHRA created the first anti-circumvention copyright for digital IP by stating that individuals could make first-generation copies (i.e. a single copy) of legally purchased music for non-commercial use. However, second-generation copies (i.e. copy of a copy) are illegal. Second, the AHRA made the first technological limit to digital IP rights by requiring digital audio recording devices sold or manufactured in the U.S. to include the Serial Copy Management System (SCMS). SCMS was designed to prevent individuals from making second-generation copies by using technology that allows only one copy to be made.

The NET Act's main contribution was extending the definition of criminal copyright infringement to include illegally copying copyright material for an individual's own use, even if that use is not commercially or financially beneficial to the individual. Prior to the NET ACT, criminal copyright infringement only occurred if the individual used the copyrighted material for commercial purposes or gained financially from it as per the Copyright Act of 1976 (1976). This change essentially started treating digital copyrighted material in a similar fashion to physical space theft, like shoplifting (Goldman, 2003).

Both the AHRA and NET Act were ultimately unsuccessful in preventing digital piracy as standalone policies. However, these laws did directly influence the Digital Millennium Copyright Act (DMCA) (1998) which is the main U.S. policy change for digital copyright protection.

DMCA

The DMCA attempted to update U.S. copyright laws by enabling firms to protect their copyrights from illegal use and distribution in the digital age through two main avenues. First, the DMCA expanded the scope of restrictions for technology that circumvents copyright protection technologies to include manufacturers and distributors of products or services that allow for circumvention. Further, it expanded penalties for those engaging in anti-circumvention of copyright protection technologies. Second, the DMCA created the notice and takedown system for removing copyright-infringing material from online sources. The notice and takedown system works by copyright holders sending notices to online service providers, such as web search engine and media hosting sites, informing these providers that copyright-infringing media is being hosted on their online service. The online service providers then remove the copyright-infringing material. By removing the copyright-infringing material expeditiously, online service providers are provided with safe harbor which protects them from any legal liability from hosting the copyright-infringing material.

Despite these updates to copyright law, the DMCA has largely been considered ineffective at preventing digital piracy (Boyden, 2013; Hargreaves, 2011). The major issue cited by critics is that the notice takedown system is ineffective at preventing digital piracy, as copyright infringing users can easily repost the copyright-infringing material once it is taken down. Additionally, critics claim that the DMCA does not put enough pressure on online service providers to proactively remove and prevent copyright-infringing media (Sag, 2017). As it stands, online service providers have to only respond to requests to remove copyright-infringing material and do not have to proactively

remove or prevent copyright-infringing material. Critics from the music and movie industries call for a more proactive role of online service providers to remove or restrict copyrighted material without requests from copyright holders (Boyden, 2013).

Additionally, firms have attempted to use the legal system to combat both firms that enable and individuals who engage in digital piracy. The most notable legal action comes from the Record Industry Association (RIAA) against Napster. Napster was a pioneer peer-to-peer file-sharing service that allowed users to upload and then freely share digital media with other users. Napster, operating between 1999 and 2001, quickly became popular and at its peak had 80 million registered users (Gowan, 2012). While Napster's users could share a variety of digital files, Napster was mainly used for sharing digital music recordings. This is largely due to digital audio files having a smaller file size and were, therefore, faster to share compared to digital video files. The RIAA claimed that 90% of the music recordings shared on Napster infringed upon the copyrights held by RIAA member music labels. This led to a lawsuit by the RIAA against Napster seeking over $100 million in copyright infringement damages (Berschadsky, 1999). The legal and financial peril caused Napster to cease operation in 2001. However, other peer-to-peer services quickly took its place and Napster's closing did little to stop digital piracy.

The peer-to-peer services that replaced Napster made changes to how digital media was stored that protected them from legal action. Napster centrally stored digital files on their own servers, whereas new peer-to-peer services decentralized file storage by having users store the files on their own computers. This inability to legally pursue the

new peer-to-peer services lead the RIAA to alter their legal strategy. Instead of taking legal action against the peer-to-peer services, the RIAA decided to file lawsuits against individual users of peer-to-peer services. This resulted in 6,200 lawsuits filed by the RIAA against individuals for copyright violation (Groennings, 2005). These lawsuits charged approximately $10,000 of damages per copyrighted song, which resulted in charges of over $500,000 per individual. Most of these lawsuits were settled out of court for between $3,000 to $11,000. Some of these cases did end up in court, including a famous case awarding the RIAA over $200,000 for a single mother of two illegally sharing 24 songs (Foundation, 2008). Similarly, the Motion Picture Association of America (MPAA) followed this individual lawsuit strategy in 2004 (Groennings, 2005). The RIAA and MPAA realized they could not bring lawsuits against every individual engaging in illegal file-sharing, however, they hoped these lawsuits would serve as a deterrent.

While these individual lawsuits did garner much media attention, their impact on digital piracy was minimal. Studies showed a decline in user engagement of popular peer-to-peer services (i.e. KaZaa and Morpheous) whose users were targeted by lawsuits (Bhattacharjee, Gopal, Lertwachara, & Marsden, 2006; Groennings, 2005). However, the overall effect on peer-to-peer service use was negligible, as users switched to new peer-to-peer services that were more secure and anonymous (Groennings, 2005). Further, public opinion was not in the favor of the individual lawsuits, which hurt the RIAA's public image (Groennings, 2005). This is due in part to a few high profile lawsuits that were either mistaken identity - an astrophysics professor named Usher was falsely

accused of illegally sharing the music artist Usher's songs - or against sympathetic cases, such as single mothers with little income (Foundation, 2008; Groennings, 2005). Additionally, public sentiment saw little harm in file-sharing. A popular news article at the time sums up well the sentiment about the individual lawsuits, "The battle against file-sharing has become the entertainment industry's version of the War on Drugs, an expensive, protracted, apparently ineffective and seemingly misguided battle against contraband that many suggest does little harm" (Manjoo, 2002, p. 1).

Changes to digital copyright policies and legal attempts to enforce digital copyrights have overall been ineffective at preventing digital piracy. These failed attempts highlight how the existing institutions involved with copyright protection are inadequate in the digital era. Providing further evidence for this claim are technical reports from researchers in the United States (N. R. Council, 2000) and the United Kingdom (Hargreaves, 2011), along with economic analysis (Varian, 2005), which have identified the existing regulative institutions that once protected intellectual property are failing in the wake of digitization. Additionally, legal case studies have shown that digital copyright firms may find better success using normative institutions to strengthen digital copyright protection, given the weak state of formal copyright protection (Priest, 2015).

Therefore, firms are left with attempting to change the institutions related to digital IP rights. As such, I focus the next part of the literature review on nonmarket strategies' role in institutional change.

IV. THEORY

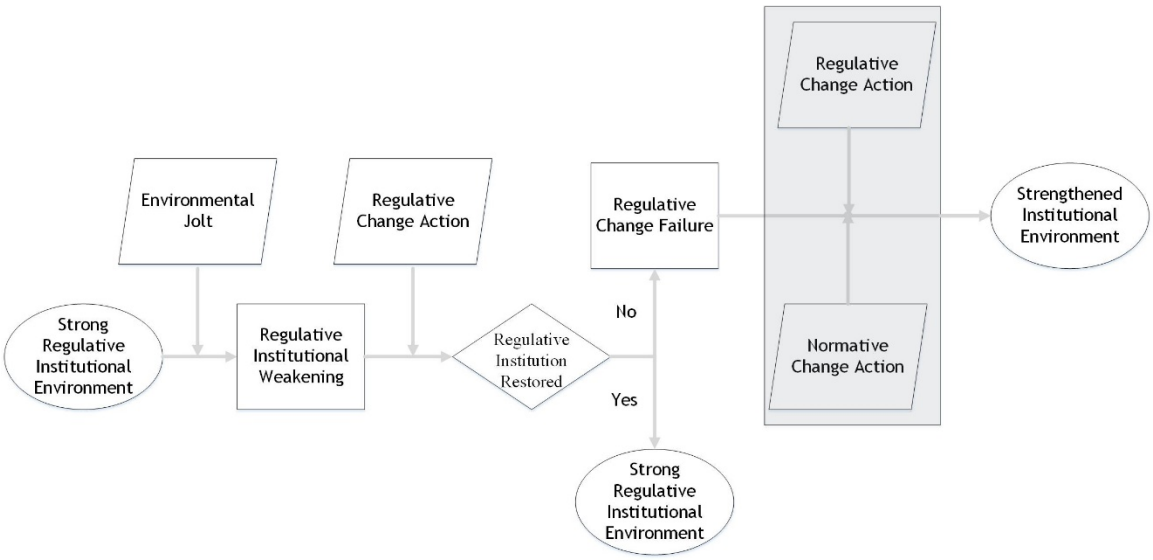
The prior chapters provide a path forward for improving the theoretical understanding of how firms strengthen their institutional environment after the unplanned and radical weakening of a strong regulative institution. The literature review highlights three key aspects of the relationship between firms and their institutional environment that are useful for theory building. First, firms adapt their strategies to their institutional environment. Second, institutional environments can be radically weakened by exogenous events which may affect a firm's strategic effectiveness. Third, in response to institutional weakening, firms may endogenously change the institutional environment through regulative and normative change action to improve firm performance. Together these aspects demonstrate that given unfavorable conditions delivered by their institutional environment firms may implement institutional change action.

Yet, how firms manage the relationship between regulative and normative change action in this environment is not well understood. Therefore, in this chapter, I build theory regarding various aspects of how firms use regulative and normative change action. I begin by exploring the timing of regulative and normative change action in this environment. I then focus on a specific aspect of this process in which regulative and normative change actions occur simultaneously. For this aspect, I create testable hypotheses regarding various facets of how firms use regulative and normative change actions to strengthen their institutional environment.

Sequence: Regulative to Normative Change Action

To begin understanding how firms strengthen their institutional environment after regulative institutions are radically weakened by environmental jolts, I first examine the sequence of institutional change. Figure 2 illustrates the sequence for strengthening the institutional environment after the unplanned and radical weakening of a strong regulatory institution. The sequence shows that, after regulative institutions radically weaken, firms will take regulative change action. However, assuming that the regulative change action is not successful, firms will engage in both normative and regulative change actions to attempt to strengthen the institutional environment. The following paragraphs describe the rationale for this institutional change sequence.

Figure 2: Sequence Model for Institutional Change in Response to Unplanned and Radical Weakening of Strong Regulative Institution



Firms operating in institutional environments dominated by strong stable regulative institutions become reliant on the regulative institutions to define and enforce acceptable behavior. As such, firms design their strategies around the regulative defined

behaviors and work under the assumption that firms that violate the regulative institutions will be penalized. However, once the regulative institutions are radically weakened by the environmental jolt, the regulative institutions no longer effectively enforce the associated regulations. This results in regulative institution-dependent strategies no longer being viable for firms, which creates great uncertainty and lowers performance. Therefore, firms will attempt to strengthen the weakened institutional environment as quickly as possible.

The fastest way for firms to strengthen a weakened regulative institution environment is to engage in change action to restore the regulative institution. If the regulative change action is successful in restoring the regulative institutions, the institutional environment will return to a strong and stable state and firms can continue their prior strategies. Further, in an environment previously dominated by strong regulative institutions, restoring regulative institutions will provide more certainty than creating new strong normative institutions. This is because firms already understand how the prior regulative institutions defined and enforced acceptable firm behavior. However, if a new normative institution is created, greater uncertainty exists for firms in how the new normative institutions will constrain firm behavior and how firms will respond to the new institution. Therefore, restoring the regulative institutions is a better option than creating a new normative institution. Thus, firms will first engage in regulative institutional change action to strengthen their institutional environment.

Yet, while regulative institutional change action is the likely first choice for firms to strengthen their institutional environment, it may not be effective. First, the effects of

the environmental jolt that caused the regulative institutional weakening are still present. This means regulative change action will need to effectively address the changes brought by the environmental jolt. However, regulative institutions often have difficulty in adapting to environmental jolts, especially when the jolt is related to technological development (Moses, 2007, 2013). Research by Moses (2007, 2013) demonstrates that technological development often weakens existing laws and that policymakers generally struggle to make timely and effective changes in response to technological development. Therefore, regulative change action to restore the regulative institutions may very well be ineffective.

Thus, if the regulative change attempts are not successful, firms are then likely to pursue other institutional change strategies. As such, firms are likely to engage in normative change action to attempt to strengthen the institutional environment after regulative change attempts have failed. Normative institutional change will attempt to use new values, norms, or standards that use social pressure to shape firm behavior in a way that strengthens the institutional environment. While normative change attempts may restore strength to the institutional environment, replacing regulative institutions with normative institutions is difficult. Unlike regulative institutions, normative institutions cannot rely on financial incentives and sanctions to define and enforce firm behavior. As such, creating enough social pressure to enforce specific behaviors at a similar level of the regulative institution is extremely difficult. Therefore, firms are unlikely to pursue normative change action as the sole institutional change strategy.

Instead, firms will use a combination of normative and regulative change actions to strengthen their institutional environment. By using institutional change actions that target both institutional pillars, firms may be able to increase their overall pressure to strengthen the institutional environment. Further, targeting one institutional pillar may bolster the effectiveness of the change action targeting the other institutional pillar. For instance, firms can use the threat of regulative institutional change to encourage other firms to adopt the normative institutional change. Thus, the final aspect of the sequence model is firms engaging in regulative and normative change actions simultaneously.

Yet, how firms manage this relationship between regulative and normative institutional change action is not well understood. Therefore, the following theoretical development aims to improve the understanding of this relationship. I now use the theoretical context discussed in Chapter 3 to aid in developing this theory.

Digital Copyright Institutional Environment

To develop theory on how firms manage the relationship between regulative and normative change action to strengthen their institutional environment, I utilize the context of IP institutional environments in the digital age. Specifically, I focus on how firms attempt to strengthen the institutional environment for copyright protection in the U.S. after the rise of digital piracy.

The combination of digitization and the internet has created an incredible environmental jolt for firms reliant on copyrights for IP appropriation. Pre-digitization firms operated in strong-stable IP institutional environments. These firms could generally rely on formal IP policies and legal systems to protect their copyrights from illegal use

and distribution. However, during post-digitization, these same regulative institutions were no longer effective at protecting copyrights. Therefore, firms will take action to strengthen their digital copyright institutional environment.

The prior presence of a strong regulative institution that legally supported copyright protection suggests a sequence of institutional change that begins with regulative institution restoration attempts. As such, digital copyright firms begin the institutional strengthening sequence by engaging in CPA action to strengthen digital copyright policy (Nimmer, 2001). The result of these CPA efforts was the DMCA, which was the major update to copyright policy in the U.S.

As previously reviewed, the DMCA was ineffective at protecting copyrights. This policy failure meant that it was not only digital copyright firms that could not rely on the current regulative institutions, but also that subsequent regulative intuitional change action would likely be ineffective for some time. This is because subsequent regulative change is unlikely after a broad policy update like the DMCA (Patashnik, 2014). Further, despite strong CPA efforts from digital copyright firms, the DMCA was still ineffective at preventing digital piracy. As such, there is no guarantee that future CPA efforts will result in effective policy changes. Therefore, after the regulative change action results were found ineffective, digital copyright firms engaged in normative institutional change action.

Digital copyright firms face an interesting problem when trying to apply normative institutional change. The relationship between the digital copyright firm and individuals engaging in digital piracy is not direct. For individuals to engage in digital

piracy, they must have digital access to the copyrighted material. Digital access to the copyrighted material is provided by online services providers such as web search engines. Therefore, digital copyright firms will need to use normative pressure on online service providers to strengthen copyright protection. Additionally, online service providers that enable access to digital copyrighted material are now deemed *enabling firms* and their associated industries as *enabling industries.* Figure 3 illustrates the relationship of digital copyright firms in enabling firms and digital copyright infringers.

Figure 3: Digital Copyright Firms Relationship Graph

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Given this relationship, digital copyright firms are likely to use normative pressure on enabling firms to improve digital copyright protection. For example, if digital copyright firms can pressure enabling firms to restrict access to or pro-actively remove copyright-infringing material, digital copyright protection will be strengthened. Therefore, digital copyright firms are likely to use normative pressure to influence enabling firms to self-regulate in order to strengthen digital copyright protection. In this

context, self-regulation includes additional actions enabling firms take to proactively prevent online copyright infringement, remove copyright-infringing material, or punish copyright infringing entities that goes beyond what is required by the DMCA.

Further, many firms affected by weakening digital copyright protection will engage in applying pressure to enabling firms to self-regulate. However, not all digital copyright firms will participate equally in applying pressure. The following section develops hypotheses about how different aspects of CPA engagement affect the level of pressure digital copyright firms place on enabling firms to self-regulate.

CPA Engagement

As discussed in Chapter 2, firms in a radically weakened regulatory institutional environment are apt to engage in both regulative and normative institutional change to restore their institutional environment. Therefore, the first set of hypotheses examines the relationship between the nonmarket strategies related to regulative and normative institution change, CPA and industry self-regulation. Additionally, firms can choose to engage in CPA directly or indirectly through joining a trade association. Therefore, theory is created for each approach, as well as for comparing the two approaches.

To begin, all firms located in the same jurisdiction as the regulative institutions have the potential to engage directly in CPA as an institutional change action. However, only a subset of these firms will engage in CPA, as significant resources and expertise are needed to engage in direct CPA. Firms must commit financial resources to pay lobbyists and make PAC donations, and have expertise on how to engage in CPA effectively. This resource commitment and internal expertise signals a belief that regulative institutional

change is an effective mechanism to strengthen digital copyright protection. Therefore, firms engaging in direct CPA will look to increase the effectiveness of their CPA efforts to strengthen regulative institutions.

Firms engaging in direct CPA will strengthen their regulative change actions by placing increased normative pressure on the enabling firms to self-regulate. Direct CPA firms will use this increased normative pressure as evidence of failed regulative institutions by applying the logic that if the regulative institutions were effective, then enabling firm self-regulation would not be needed. Therefore, by applying increased normative pressure, these firms are providing evidence to policymakers that additional formal policy is required to strengthen digital copyright protection. Thus, I predict that firms that directly engage in higher levels of CPA will apply higher levels of pressure for enabling industries to self-regulate.

Hypothesis 1: The more firms directly engage in CPA, the more pressure they will place on enabling firms to self-regulate.

Trade Associations and Indirect CPA Engagement

When choosing to engage in institutional change action, firms must choose to act individually or collectively. As trade associations are common means of collective action for institutional change (Barnett, 2013), I focus this section on trade associations' role in strengthening the digital copyright institutional environment.

Trade associations are designed to address collective issues facing their member firms. As such, when an issue becomes highly salient and shared among the trade association member firms, the trade association should take action. Given the severe

impact digital piracy has on digital copyright firms, associated trade associations will actively address digital piracy. Therefore, trade associations will pursue viable avenues for strengthening copyright protection for their member firms.

One avenue for trade associations to strengthen copyright protection is to influence regulative institutions through CPA. Trade associations can engage in the same type of CPA actions as individual firms and some do so regularly. Therefore, it is likely some trade associations will engage in CPA to strengthen regulative institutions around digital copyright protection for their member firms.

Trade associations that engage in CPA gain expertise and experience in engaging in institutional change action. This institutional change experience increases the trade associations' legitimacy as an institutional change agent (Maguire, Hardy, & Lawrence, 2004). As higher legitimacy is an antecedent of institutional change action (Suchman, 1995b), this greater legitimacy increases the likelihood trade associations will coordinate with their member firms to engage in higher levels of normative change action. Therefore, member firms will increase their pressure on enabling industries to self-regulate in order to increase the effectiveness of the joint institutional change action between the firm and their trade association.

Hypothesis 2: The more firms engage in CPA indirectly through their trade association, the more pressure they will place on enabling firms to self-regulate.

As discussed previously, firms can engage in CPA either directly or through a trade association. Both avenues of CPA engagement are similar in that each is used as an attempt to change regulative institutions and engagement in both is predicted to lead to

placing increasing pressure on enabling industries to self-regulate. However, these two approaches differ in resource commitment, expertise needed to engage in CPA, and legitimacy as an institutional change actor. Therefore, the following hypothesis explores how a firm's choice to engage in CPA, directly or indirectly through a trade association, affects the level of pressure they place on enabling firms to self-regulate.

Contributing to a trade association to engage in CPA on your behalf, as well as engaging in CPA directly, takes a significant amount of resources. While trade associations do share the costs of CPA amongst its members, firms need to be a top contributor to the trade association to ensure their interests are prioritized over other members (Barnett, 2013). Thus, while firms hiring lobbyists to engage directly in CPA is likely more costly than contributing money to a trade association, the monetary resource allocation difference may not be significant enough to illicit different behavior, with how firms coordinate their nonmarket strategies.

Yet, for a firm to engage in CPA directly requires specific knowledge of the CPA process and political capital (Bonardi et al., 2006; Bonardi & Keim, 2005), because firms engaging in indirect CPA do not have this knowledge and expertise, as the knowledge and expertise resides with the trade association. Additionally, firms that engage in direct CPA have an increased reputation with the policymakers compared to firms that engage in CPA indirectly. Therefore, firms that engage in CPA directly increase their legitimacy as institutional change actors. This results in firms that engage in CPA directly, having higher legitimacy as institutional change actors than firms engaging in CPA indirectly through trade associations. This increased legitimacy, as well as increased knowledge,

expertise, and reputation will result in firms engaging directly in CPA placing more pressure on enabling industries to self-regulate than firms indirectly engaging in CPA through trade associations.

Hypothesis 3: Firms that engage in CPA directly will place greater pressure on enabling industries to self-regulate than firms who indirectly engage in CPA through trade associations.

Foreign Firms and CPA Access

While the previous hypotheses examined the relationship between CPA engagement and pressuring enabling firms to self-regulate, not all firms have access to CPA. Even though digital copyright infringement affects firms globally, the major web search firms are based in the U.S. and are therefore operating under U.S. law. This, in turn, will have ramifications for foreign firms applying pressure on enabling firms to self-regulate.

Foreign firms do not have the same access to CPA as domestic firms. This is due to legal statutes that prevent firm interference in foreign governments. Additionally, social norms exist that prevent firms from directly influencing foreign governments. Therefore, since foreign firms cannot engage in CPA, they must pursue other avenues if they wish to strengthen digital copyright institutions.

As foreign firms do not have access to regulative institutional change, normative institutional change through pressuring enabling firms to self-regulate is their only recourse. As this is their sole available action, foreign firms will put additional effort into normative institutional change. Therefore, relative to domestic firms that have CPA

access but do not engage in CPA, I predict foreign firms without CPA access will place more pressure on enabling firms to self-regulate.

However, the positive effect of engaging in regulative institutional change action, and on placing increased pressure on enabling firms to self-regulate described in H1 and H2, is greater than the positive effect of not having CPA access that foreign firms experience. This is due to the reinforcing relationship between regulative and normative institutional change that results in CPA engagement leading to increased pressure on enabling firms to self-regulate. This reinforcing relationship causes a stronger effect than the absence of a regulative institutional change option. Therefore, I predict relative to domestic firms that engage in CPA, foreign firms without CPA access will place less pressure on enabling firms to self-regulate.

Hypothesis 4: Firms without CPA access will place greater pressure on enabling firms to self-regulate than firms with CPA access that do not engage in CPA but less than firms that do engage in CPA.

Enabling Firms Self-Regulation

Firms in enabling industries are facing dual pressures that may significantly affect their strategic actions. First, as theorized previously, enabling firms are under pressure from digital copyright firms to implement self-regulating measures to strengthen digital copyright protections. While the pressure to self-regulate may be immense, self-regulation is still a voluntary action. Therefore, enabling firms may choose not to self-regulate.

The second pressure affecting enabling industries is the threat of new or expanded government regulations. Digital copyright firms are engaging in CPA to influence policymakers to strengthen digital copyright policy. Changes to digital copyright policy may result in new and stronger government regulations on enabling firms. As these regulations are mandatory, enabling firms would have to comply.

These dual pressures result in two diverging regulatory paths. On one side is self-regulation, where enabling firms choose what regulations are created and how they are implemented. On the other side are regulations created by new government policies, where enabling firms have less influence over the policies and must comply with the regulations. Therefore, enabling firms will choose to self-regulate in order to keep more control over the regulations being implemented and to prevent or delay further regulations.

However, enabling firms are still acting in their own self-interest. Therefore, enabling firms will self-regulate the minimal amount they believe will satisfy policymakers and prevent further regulation. As such, digital copyright firms will likely not be satisfied with the extent of the self-regulating actions from enabling firms. However, digital copyright firms will still view these self-regulating actions as a victory and that the pressure they are applying is working. Therefore, after enabling firms implement self-regulating action, digital copyright firms will increase pressure in hopes of encouraging more self-regulating actions.

Additionally, digital copyright firms will use self-regulation from enabling firms, as evidence that enabling firms are culpable in enabling digital copyright infringement.

They will use this evidence to attempt to influence policymakers to increase regulations on enabling industries. This will lead to an increase in CPA activity by digital copyright firms after enabling firms implement self-regulation. Finally, enabling firms also engage in their own CPA efforts to prevent further government regulations. Therefore, enabling firms will use their self-regulating action as evidence that they are capable of regulating themselves and no further government regulation is needed. Thus, I predict that enabling industries will increase their CPA activity after they implement self-regulation.

Thus, I propose the following three hypotheses regarding enabling implementing self-regulation and further institutional change action.

Hypothesis 5: After enabling firms implement self-regulation, external pressure to self-regulate from digital copyright firms will increase.

Hypothesis 6: After enabling firms implement self-regulation, CPA from digital copyright firms will increase.

Issue Saliency & Copyright Strategy

Issue saliency is a key antecedent for firms to engage in institutional change actions. Unless the issue directly hurts a firm's competitive advantage, a firm is not likely to engage in institutional change actions. While digital piracy is a broad, salient issue that affects firms in multiple industries, not all firms are affected the same. First, issue saliency can be determined by how much copyright infringement occurs through enabling firms. This type of issue saliency can aggregate to industry differences. For example, estimates show that less than half of software piracy happens from online websites, whereas in the music and movie industry, almost all piracy happens online (Economics,

2017; Gantz et al., 2013). Therefore, firms in which the higher proportion of copyright infringement occurs online, experience higher issue saliency.

Additionally, issue saliency varies depending on how much digital piracy affects firm copyright strategy. The dominant copyright strategy is the traditional distribution strategy. In this approach, firms create copyrighted media and then sell distribution rights to distributor firms, who then sell or rent the copyrighted media to end customers. Firms using this strategy heavily rely on distribution fees for revenue. Therefore, digital piracy poses a great threat to these firms. If end customers can access copyright-infringing media, they will not pay the distributors for access to the copyrighted media. This, in turn, reduces the potential revenue for distributors and copyright producing firms. Thus, issue saliency is very high for firms engaging in a distribution strategy.

Another copyright strategy is based on distributors gathering copyrights from multiple firms and creating a subscription service to access the copyrighted media. For these firms, primary revenue comes from subscription fees to access the copyrighted media. However, these firms may also produce their own original copyrighted media to include in their subscription service. For these firms, digital piracy of their original copyrighted media does negatively affect their revenue. However, digital piracy may increase viewers of their original copyrighted media and ultimately attract more users to the subscription service. Additionally, only a portion of revenue comes from original content, as these firms still rely heavily on licensing other copyrighted media from other firms. Thus, issue saliency is low for these firms.

An alternative strategy is to use copyrighted material to create demand for a suite of related products. In this approach, firms still use the traditional distribution strategy for the copyrighted media. However, they also generate great revenue by selling related products. Therefore, digital piracy negatively affects their copyright distribution revenue. However, related product revenue is not negatively affected and may benefit from increased viewership. Thus, issue saliency is moderate for these firms.

The variance in issue saliency based on the proportion of copyright infringement happening online, and differing copyright strategies, leads to the seventh hypothesis.

Hypothesis 7: The stronger the issue salience for firms, the greater the pressure to self-regulate they will place on enabling industries

V. RESEARCH METHODS

To empirically test the hypotheses about how firms strengthen the institutional environment to increase copyright protection, I build a longitudinal dataset comprised of copyright takedown notices from digital copyright firms. To justify the construct validity of this data, I first review the DMCA provision that creates the copyright takedown notice system and how firms use the system. I then operationalize the copyright takedown notices as a primary data source. Further, I discuss the operationalization of CPA measure, issue saliency, and various firm characteristics that complete the longitudinal dataset. Finally, I conclude with the model specifications of how each hypothesis will be tested.

Firm Sample & Timeline

The firm population for this study was comprised of the three industries - movies, television, and music - most impacted by digital piracy (Blackburn, Eisenach, & Harrison Jr, 2019; Economics, 2017; Poort, Quintais, van der Ende, Yagafarova, & Hageraats, 2018). Firm activity related to digital copyright protection was observed and recorded quarterly from 2012 to 2018. Specifying quarterly activity provided the granularity needed to capture product release schedules that is related to digital piracy activity (Morris, 2019).

The core sample from these industries was constructed by identifying the top 65 firms in each industry based on annual sales size. Selecting the 65 largest firms in each industry ensured that the firms included are likely to have high status and substantial resources, both of which are found to be indicators for firms engaging in institutional

change (Greenwood & Suddaby, 2006). The Mergent Intellect database was used to identify firms in each industry based on NAICS codes.

However, this sampling strategy would miss smaller firms that create popular copyrighted media that may be affected by digital copyright infringement. Small firms experiencing digital copyright infringement are likely to have fewer financial resources and revenue diversity compared to larger firms and therefore may be at a greater risk of failure. Thus, small firms may have high issue salience, which is an indicator for institutional change action (Henisz & Zelner, 2005), while also having lower status, which has also been shown to be an indicator of institutional change action (Garud et al., 2002; Haveman & Rao, 1997). Therefore, the core sample was supplemented by adding firms that have popular copyrighted media in each industry. Details on the process of identifying popular copyrighted media in each industry are found in the *Popularity* section in this chapter. Additionally, firms in China were not included in this sample due to the differences in copyright laws and acceptance of digital copyright infringement within the country (Brodbeck, 2013; Rapoza, 2012).

Finally, firms that were listed independently in the sample, but operate under the direct control of their parent company, were removed from the sample. These procedures resulted in a sample of 196 firms (N) with 77 from the movie industry, 60 from the television industry, and 59 from the music industry. Additionally, quarterly observations from 2012 to 2018, for a total T = 28, are used to capture fluctuations in institutional change responses that may be tied to industry product seasonality (i.e. movie, TV, and music releases). The 2012 to 2018 timeframe was chosen as this was when digital

copyright firms have been most active in pressuring enabling firms to self-regulate. The resulting sample is N = 196 and T =28 for 5,448 firm quarter observations.

Copyright Takedown Notice Construct Validity

DMCA Takedown Notices and Safe Harbor

As previously mentioned, the DMCA is the main U.S. policy change regarding digital copyright protection. DMCA Title II included the Online Copyright Infringement Liability Limitation Act. Title II creates significant limitations on who can be held responsible for enabling copyright infringement. Specifically, Title II gives safe harbor to internet service providers which are defined broadly as "a provider of online services or network access" (17 U.S.C. § 512(c)(1)). In practice, this means websites who either host digital material like YouTube, search engines that allow finding copyrighted material like Google, or internet service providers that physically provide consumers with internet service, such AT&T or Comcast Xfinity, are all classified as service providers. Title II states that service providers are granted safe harbor, and therefore safe from legal action in the event they host copyrighting infringement files, if they comply with safe harbor guidelines.

The safe harbor protections that shield service providers from legal responsibility for hosting copyright-infringing materials are contingent on compliance with the notice and takedown system. The notice and takedown system established a quick method for copyright owners to notify a service provider about illegally shared copyright material so the infringing material can be removed. Prior to the DMCA takedown system, copyright holders had to go through the court system to legally have copyright infringing material

removed. Traditional court systems posed problems for digital copyright firms, as going through the court system takes considerable time and the court systems were not designed to handle the large number of copyright-infringing material removal requests post-digitization. Therefore, for copyright holders, the DMCA takedown system provided a quicker method to remove copyright-infringing material from the internet.

The first step of the DMCA takedown system procedure is the copyright holder, or an agent working on behalf of the copyright holder, identifying copyright infringing material on the internet. A notice is then sent to the service provider who hosts the copyrighted material. The notice contains information of what the copyrighted material is, who owns the copyright, who is submitting the takedown notice, where the copyrighted infringing material is located on the internet (i.e. URL), and a signature certifying the notice is accurate and a good faith belief the material is violating the copyright. Once the notice is received by the online service provider, the online service provider sends a notice to the alleged offending party that they are sharing copyright-infringing material and this material will be removed. The DMCA states that the online service provider is then to remove or disable the copyright-infringing material expeditiously. If the alleged offending party disputes the cited material copyright claim, they can file a counter-notice claim to which the service provider must then respond.

Takedown Procedure Ineffectiveness

The DMCA designed the takedown system to work quickly and effectively. However, technology and user innovation made the takedown system ineffective at stopping digital piracy. For example, a takedown notice includes a specific URL for the

copyright-infringing material. Once the takedown notice is processed, this URL is removed by the online service provider. However, this is often ineffective, as sharers of copyrighted material often use automatic processes to post the same content under a new URL. Further, URLs are specific and link to an exact web page. Websites that intentionally host copyright-infringing material contain many URLs that are extensions of its overall domain name. So even if several URLs are removed, the overall domain continues to operate.

This example highlights a problem with the DMCA takedown procedure. It is easy for hosts of copyright-infringing material to circumnavigate the takedown procedure. As such, digital piracy has continued to increase (Boyden, 2013). However, as long as service providers comply with the takedown procedure, even if it is not effective, they are granted safe harbor. This ineffectiveness is why digital IP firms, especially in the music and movie industries, have repeatedly called to make changes to the DMCA safe harbor classification.

Calls to Change the Safe Harbor Statute

Digital copyright-related trade associations foresaw the ineffectiveness of the DMCA takedown procedure. For example, during the creation of the DMCA ,the RIAA stated to policymakers that the takedown procedure would be ineffective and do little to stop copyright infringers (Imfeld & Ekstrand, 2005). As such, trade associations have placed a large share of the blame for the DMCA's ineffectiveness on the safe harbor protection for service providers (Bridy, 2016; Sag, 2017). They argue that the DMCA safe harbor clause does not put enough onus on service providers to prevent digital

piracy. Therefore, digital copyright firms and trade associations have lobbied Congress to alter the DCMA safe harbor statute. Proposed changes include making service providers responsible for actively screening copyrighted infringing material without having copyright owners send notices (Sag, 2017). Additionally, some trade associations have lobbied for more radical changes to the DMCA that will remove safe harbor status for service providers if they do not take a more active and effective role in removing and preventing copyright infringing material (Doroshow & Wilkens, 2016).

Given the pressure online service providers are facing from digital copyright firms, some service providers are making voluntary improvements to prevent digital piracy beyond the scope of the DMCA. These additional efforts have been deemed DMCA-plus (Bridy, 2016). For example, Google has implemented a demotion signal policy that buries domains in Google Web Search results that receive many copyright infringement notices (Donaldson, 2017). While the demotion signal policy does not fully remove a domain from the internet, as that is outside of Google's abilities, it does make the domain highly unlikely to be discovered by a web search.

Additionally, YouTube has introduced its Content ID program which allows content owners, which may include copyright owners but is open to all original content, to create a unique identification for their original content material they upload to YouTube (Sag, 2017). The Content ID program works by having the content creator register the original content with YouTube. YouTube then checks the registered content against other media posted on YouTube. If the found media is automatically determined to use the original content without permission, the media is flagged and the Content ID

owner is notified. The Content ID owner can then either have the media removed or choose to let the media stay.

While DMCA-plus efforts are voluntary, they are viewed as being the result of threats of further government regulations brought on by lobbying efforts by digital IP firms (Bridy, 2015, 2016). In evidence of this, the RIAA, along with other music trade associations, submitted a letter to the Copyright Office in 2017 saying these new DMCA-plus efforts show progress in service providers taking more responsibility for upholding copyrights. However, the trade associations argued that if these efforts are not enough, and if more concessions are not made, further government regulatory action will be required (Doroshow & Wilkens, 2016).

Operationalization of Dependent Variables

Internet Takedown Notices

At the surface level, internet takedown notices are about removing copyright-infringing material. However, a deeper look shows that internet takedown notices are used for pressuring online service providers to self-regulate. To begin, internet takedown notices are ineffective at preventing digital piracy. As explained previously, after receiving a takedown notice, online service providers are only required to remove the offending URL, which is ineffective at preventing digital copyright infringement. Digital copyright firms have even admitted the takedown notice system is not useful for preventing digital piracy. In response for public comment about digital copyright protection from the U.S. Copyright Office, the RIAA said takedown notices are ineffective at preventing digital piracy and the takedown system “results in an endless

game of whack-a-mole, with infringing content that is removed from a site one moment reposted to the same site and other sites moments later, to be repeated *ad infinitem*" (Doroshow & Wilkens, 2016, pp. 7-8).

Second, digital copyright firms are using takedown notices as evidence that online service providers need to self-regulate. In a joint letter from various music trade associations, including the RIAA, to the U.S. copyright office, the music associations state that online service providers cannot comply with such a high volume of takedown notices (Rosenthal & Metalitz, 2016). The music associations use this claim to motivate several suggestions for online service providers to self-regulate. These include complete removal of repeat infringers from the online service, automated systems to accept and takedown notices and remove copyright-infringing material, and screening media for copyright infringement before it is posted to the online service (Doroshow & Wilkens, 2016; Rosenthal & Metalitz, 2016). Further, music associations have directly called for online service providers to self-regulate. However, they have also made it clear that if online service providers do not self-regulate, then formal regulations should be created by the government. For example, the closing paragraph of one letter from music associations to the U.S. Copyright Office states:

> "Service providers, including large technology companies, can help to restore much of the balance Congress intended to strike by agreeing to adopt standard technical measures and/or voluntary measures to address the DMCA safe harbors' key failings. The Music Community stands ready to work with service providers and other copyright owners on the development and implementation of standard technical measures and voluntary measures. However, to the extent such measures are not forthcoming, legislative solutions will be necessary to restore the balance Congress intended (Doroshow & Wilkens, 2016, pp. 14-15)."

Finally, online service providers have stated they implemented self-regulation actions due to the pressure received from takedown requests. In an article written by Caleb Donaldson, copyright counsel at Google, and published in the American Bar Association's publication *Landslide*, Donaldson lays out Google's self-regulation action in response to takedown notices (Donaldson, 2017). The self-regulation actions include a demotion signal that buries repeat infringing domains in Google's web search results and an ads policy enforcement campaign that does not allow large commercial piracy sites from receiving ad money on Google. Additionally, Google published a public document titled "How Google Fights Piracy" (Oyama, 2016) that discusses their self-regulation actions in response to pressure from digital copyright firms. Therefore, I conclude that takedown notices are an act of applying pressure to enabling industries to self-regulate.

Each takedown notice includes the name of the copyright holder, the sender of the takedown notice (i.e. copyright holder or their agent), the copyrighted material being infringed upon, the copyright offending URL and domain, and the date and time the takedown notice was sent. From the takedown notice, a count of URLs requested to be removed can be created from each copyright holder for each year quarter. The URLs removed count is the main dependent variable for this study.

Google Takedown Notices

In an effort to show transparency, compliance to the DMCA, and efforts to curb digital piracy, Google has made all DMCA takedown notices they have received from 2011 to present available to the public. Takedown notices procedures have been in place since soon after the DMCA was introduced in 1998. However, takedown notices were not

often used until after 2010. For example, Google received takedown notices for 558 million URLs in 2015, which is more than all takedown notices received from 1998 to 2010 (Oyama, 2016). The large increase in takedown notice use comes from copyright firms implementing automated bots to find and send takedown notices. Therefore, the 2012 to 2018 timeline captures the vast majority of takedown notices.

Additionally, Google Web Search represents 92.86% of all web searches worldwide (Statcounter, 2019). As such, Google has a monopoly on the web search industry. Therefore, by analyzing takedown notices sent to Google, I was able to analyze the most important actor in the web search industry.

CPA Variables

For the CPA measure, I use lobbying activity made by firms on copyright issues. Lobbying activity was chosen as the CPA measure for a few reasons. First, lobbying activity can be tracked to specific issues, whereas other CPA types, like campaign and PAC donations, cannot. Therefore, using lobbying activity allows for direct measurement of CPA activity on digital copyright enforcement and not just general CPA engagement. Second, through the Lobbying Disclosure Act of 1995 and the House Leadership Open Government Act of 2007, all lobbying activity is recorded and made publicly available. These records take the form of a lobbying report. A separate lobbying report is required for each lobbying action a firm takes. Therefore, lobbying activity and intensity can be measured by counting the lobbying reports.

For this study, lobbying activity was obtained from the OpenSecrets.org website hosted by the Center for Responsive Politics (Center for Responsive Politics, 2019a).

OpenSecrets.org allows users to select lobbying activity by issue; the website included a Copyright, Patent, & Trademark category. Lobbying reports for each firm in this category were read to determine if the lobbying effort was focused on digital copyright protection. The lobbying dollars were then recorded from the lobbying reports along with the year and quarter the lobbying activity occurred. Additionally, the number of separate lobbying reports was counted as an alternative measure of lobbying activity.

The various lobbying activities were operationalized into two sets of variables. The first set relates to direct lobbying activity, which corresponds to firms in the sample that directly engaged in lobbying activity. The direct lobbying activity variables include direct lobbying dollars and direct lobbying report counts. The log of the direct lobbying dollars variable was taken to control for outliers. Additionally, the variable direct CPA active is a categorical variable that denotes if a firm engaged in digital copyright related lobbying anytime during the study.

The second set relates to indirect lobbying activity, which corresponds to firms that have trade associations engage in lobbying on their behalf. These variables were created by first identifying trade associations that engaged in digital copyright lobbying activity. Next, the member list for each trade association was found either through the trade association's website or through news articles about the trade association. Then, the lobbying dollars spent and the number of lobbying reports filed by the trade association were divided equally among the member firms. The divided values are then assigned to each member firm that appears in the sample to create the variables' indirect lobbying dollars and indirect lobbying report count. The log of the indirect lobbying dollars

variable was taken to control for outliers. Finally, the variable indirect CPA active is a categorical variable that denotes if a firm's trade association engaged in digital copyright related lobbying anytime during the study.

Operationalization of Independent Variables

CPA Access: Foreign or Domestic

In order to operationalize firm's CPA access, each firm's country location was recorded. Firms located in the US were coded as having CPA access and firms located outside the US were coded as not having CPA access.

Self-Regulation Events

During the time span of this study, Google enacted two self-regulation events. The first self-regulation event took place in August 2012, at which time Google created a new procedure that down ranks a website that receives large numbers of DMCA takedown requests in Google's search ranking. This tactic, deemed "demotion signal", essentially buries the website in the search results, which means it is highly unlikely to be accessed through Google's search engine. This procedure change goes beyond what is legally required by the DMCA. Again, the DMCA only requires the full offending URL to be removed, whereas this procedure punishes the whole domain.

The second self-regulation event took place in October 2014. This event consisted of Google removing the ability for websites that receive large numbers of DMCA takedown requests from receiving advertising revenue from Google. Additionally, Google revised its demotion signal strategy to encompass a larger number of digital piracy websites.

Both self-regulation events were identified from a report on Google's search algorithm update history (Linkgraph, 2019). Each self-regulation event was coded for the year quarter the event took place, as well as the successive quarter after the event.

Issue Saliency

The issue saliency measure was designed to better understand how different copyright strategies affect the level of normative pressure firms place on enabling industries to self-regulate as described in Chapter 4, hypotheses 7. To create the issue saliency measure, I recorded the annual sales dollars of licensed merchandise for firms. For entertainment-based companies, such as the firms in the study's sample, licensed merchandise sales are a direct derivative of copyrighted media. By measuring the amount of licensed merchandise sales from firms, I can better understand how their copyright strategy may or may not be affected by digital copyright infringement. Therefore, firms with high amounts of licensed merchandise are less incentivized to prevent digital piracy.

To obtain licensed merchandise sales numbers for the firms in the sample, I used the Top 150 Global Licensors list published in License Global magazine, published by Informa (License Global, 2018). Since 2012, License Global has published an annual list of the top 150 firms based on licensed merchandise sales. Firms from the sample were matched to the list for 2012 through 2018. For years, when a firm did not appear in the list, the annual merchandise sales figures were found in other popular press articles or company statements. Finally, the licensed merchandise sales were divided by the firm's annual sales to create the variable merchandise to sales ratio.

Operationalization of Control Variables

Popularity

An obvious driver of digital copyright infringement that needs to be controlled is the popularity of the copyrighted media produced by each firm. If a firm produces highly popular media, the chances for digital copyright infringement increase, and therefore, the more likely the firm is to engage in actions to prevent digital piracy. Therefore, I recorded the global popularity data for the movie, music, and television industries for every year quarter from 2012 – 2018.

For movie popularity, I collected data on the global top 100 movie box office earnings from The Numbers (Numbers, 2018). The Numbers is a movie earnings website which includes an annual list of top global box-office earners. Including the top 100 movies each year allows for a movie copyright popularity measure that captures not only blockbusters, but also movies from smaller movie production firms that were successful. Each movie appearing in the top 100 list was matched to the movie studio that owned the copyright to the movie. Each movie was given a count of 1 for the year quarter it was released, as well as for the next year quarter to account for movie popularity after the initial release. The movie count was then aggregated for each copyright-owning firm on a year quarter basis and matched to the study's sample.

For music popularity, I collected data on the weekly global top 40 songs from Media Traffic (Media Traffic, 2018). Media Traffic is a music popularity chart website which includes a weekly top United World Chart that is an aggregate of global popular songs based on streaming, paid download, and airplay. The top 40 songs were included as this is a standard number of songs to include music popularity charts and allows for a

diverse sample of popular songs. Each song appearing in the United World Chart list was matched to the record company that owned the copyright to the song. Each song was given a count of 1 for the year quarter it appears on the chart. The song count was then aggregated for each copyright-owning firm on a year quarter basis and matched to the study's sample.

For TV popularity, I collected data on the global top popularity TV series through Internet Movie database (IMDB, 2018). Given the changing nature of TV viewing during this time, from traditional TV providers to streaming, the measure needed to account for overall TV series popularity and not just network ratings. Therefore, I used IMDB's TV series popularity rankings based on a minimum average user rating of 7 out of 10, and a rating count of at least 10,000 individual ratings for TV series active in the 2012 to 2018 timeframe. The minimum of 7 rating and 10,000 individual ratings has been used in popular news articles on popular TV shows. Additionally, using these criteria helps ensure that the TV shows included in the variable are sufficiently popular to warrant individuals to engage in digital copyright infringement to watch them. Each series appearing in the IMDB popularity list was matched to the TV studio that owned the copyright to the series. Each series was a count of 1 for the year quarter it was active. The series count was then aggregated for each copyright-owning firm on a year quarter basis and matched to the study's sample.

The three industry-specific popularity measures were then combined to an overall popularity measure.

Takedown Agent

As many firms outsource the DMCA takedown procedure to specialized firms, it is important to control for differences in the takedown agents' abilities to process the DMCA takedowns. Therefore, each takedown notice is coded for the takedown agent that the copyright holder used. This was then used to create a takedown agent ID variable that gives a unique ID to each takedown agent. Two-hundred and three different takedown agents appear in the sample.

Sales

Annual sales for the whole company were included as a measure of firm size as larger firms have a greater chance to produce more copyrighted media. The sales data was obtained from the Mergent Intellect database (Mergent Intellect, 2019)

Industry

As this is a multi-industry study, each firm's industry was coded as a categorical variable to control for inherent industry differences.

Variable Table

Table 3 shows the variable name, operationalization, and source for each variable in the study.

Table 3
Variable Name, Operationalization, and Source for Each Variable

Category	Variable	Operationalization	Source
DV	Pressure to self-regulate	Takedown URLs removed (log)	Google Transparency Report
IV	CPA Access	Firm location: domestic (1) or foreign (0)	Mergent Intellect
	Direct CPA activity	Firm direct lobbying activity Firm direct lobbying dollars (log) Firm direct lobbying reports	Center for Responsive Politics
	Indirect CPA activity	Firm indirect lobbying activity Firm indirect lobbying dollars (log) Firm indirect lobbying reports	Center for Responsive Politics
	Self-Regulation Event	Categorical coding for the self-regulation event quarter (1), the following quarter (1), and the preceding quarter (0)	Linkgraph
	Issue saliency	Licensed Merchandise Sales to Annual Sales Ratio	License Global
Control	Takedown Agent	Takedown agent firm id	Google Transparency
	Copyright popularity	Movie popularity Music song popularity TV show popularity	The Numbers Media Traffic Internet Movie Database
	Size	Annual Sales (log)	Mergent Intellect
	Industry	Industry code	Mergent Intellect

Descriptive Statistics

Table 4 provides descriptive statistics and correlations for the variables used in the study. Of note in the table is that many correlation values are statistically significant at the $p < 0.05$ level, however, this is expected with the large number of observations in the study. Additionally, a few variables are highly correlated. The first sets of highly correlated variables are related to direct lobbying variables. Direct Active Lobbying has a

correlation value of 0.87 with Direct Lobbying Dollars and Direct Lobbying Dollars has a correlation value of 0.91 with Direct Lobbying Reports. These high correlation values are expected, as the three variables are all different measures for the direct lobbying activity construct. Similarly, Indirect Active Lobbying and Indirect Lobbying dollars have a correlation value of 0.69, and Indirect Lobbying Dollars and Indirect Lobbying Reports have a correlation value of 0.84. Again, these high correlation values are expected, as the three variables are all different measures for the indirect lobbying activity construct.

Statistical Estimation Approach

By combining these measures, a longitudinal database was created that allowed for testing the dissertation's hypotheses. As is the case with longitudinal data, it is important to test for, and if needed control for, time-invariant changes, autocorrelation, and heteroskedasticity. Therefore, a Hausman test (Hausman, 1978) was conducted to test if a fixed-effects model is appropriate to use in order to control for time-invariant changes. The Hausman test resulted in $p = 0.14$ which rejects the null hypothesis and indicates a fixed effect model is appropriate.

Table 4
Descriptive Statistics and Correlation Table for Variables in the Study

		M	SD	1	2	3	4	5	6	7	8	9	10	11
1	Takedown URLs Removed (log)	3.16	4.77	1.00*										
2	Foreign Firms	0.62	0.48	-0.19*	1.00*									
3	Direct Active Lobbying	0.04	0.20	0.32*	-0.26*	1.00*								
4	Direct Lobbying Dollars (log)	0.34	1.88	0.29*	-0.23*	0.87*	1.00*							
5	Direct Lobbying Reports (count)	0.04	0.21	0.29*	-0.21*	0.51*	0.91*	1.00*						
6	Indirect Active Lobbying	0.06	0.23	0.23*	-0.27*	-0.05*	-0.04*	-0.04*	1.00*					
7	Indirect Lobbying Dollars (log)	0.79	2.75	0.36*	-0.33*	0.51*	0.42*	0.40*	0.69*	1.00*				
8	Indirect Lobbying Reports (count)	0.07	0.31	0.30*	-0.24*	0.44*	0.43*	0.38*	0.53*	0.84*	1.00*			
9	Merchandise to Sales Ratio	0.03	0.13	0.24*	-0.21*	0.21*	0.14*	0.16*	0.43*	0.44*	0.23*	1.00*		
10	Copyright Popularity	0.90	3.55	0.09*	0.08*	0.08*	0.04*	0.04*	-0.01	0.04*	0.01	0.12*	1.00*	
11	Annual Sales (log)	18.18	2.59	0.16*	0.11*	0.15*	0.19*	0.19*	0.22*	0.23*	0.21*	0.21*	0.14*	1.00*

Note: N = 5,448, * p<0.05

Additionally, a Wooldridge test (Wooldridge, 2002) was conducted to test if autocorrelation was present in the panel data. The Wooldridge test resulted in a p = 0.00, which supports the null hypothesis and indicates autocorrelation is present and robust standard errors should be used to control for autocorrelation. Finally, a Breusch-Pagan test (Breusch & Pagan, 1979) was conducted to test if heteroskedasticity was present in the panel data. The Breusch-Pagan test resulted in a p = 0.27, which rejects the null hypothesis and indicates heteroskedasticity is not present.

Theses combination of results indicates a fixed-effects model, with year quarter fixed effects and with robust standard errors, clustered at the firm level, is appropriate for the primary model. In the section below, I describe the model specification for testing each hypothesis.

Model Specifications

Hypothesis 1 predicts that the more firms directly engage in CPA, the more pressure they will place on enabling firms to self-regulate. For all analyses related to hypothesis 1, the sample is restricted to firms that have access to CPA. Equation 1a is:

Eq 1a:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Direct\_Active\_Lobbying_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \epsilon_{it}$$

where the dependent variable is the log number of URLs removed taken from the firm's takedown requests, α is a fixed-effects control for time-invariant changes in copyright firms, $Direct\_Active\_Lobbying$ is a binary variable based on if a firm directly engaged in lobbying for digital copyright issues during the study's timeframe, $\delta Quarter$ is quarterly time fixed effects, $\delta Agent$ is fixed effects for the takedown agent used,

Controls are copyright popularity, annual sales, and industry code, i denotes the copyright firm, and t denotes the year quarter. The robust standard errors are clustered at the copyright firm level.

Additionally, to better understand the relationship between CPA and self-regulation, two additional tests were run. Equation 1b replaces $Direct\_Active\_Lobbying$ with $Direct\_lobbying\_dollars$ a log value of direct lobbying dollars spent on digital copyright issues. Equation 1c replaces $Direct\_Active\_Lobbying$ with $Direct\_lobbying\_reports$ a count value of direct lobbying reports filed on digital copyright issues.

Eq 1b:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Direct\_lobbying\_dollars_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \varepsilon_{it}$$

Eq 1c:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Direct\_lobbying\_reports_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \varepsilon_{it}$$

Hypothesis 2 predicts that the more firms engage in CPA indirectly through their trade association, the more pressure they will place on enabling firms to self-regulate. For all analyses related to hypothesis 2, the sample is restricted to firms that have access to CPA. Equation 2 is:

Eq 2:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Indirect\_Active\_Lobbying_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + Controls_{it} + \varepsilon_{it}$$

where the dependent variable is the log number of URLs removed taken from the firm's takedown requests, α is a fixed-effects control for time-invariant changes in trade associations, $Indirect\_Active\_Lobbying$ is a binary variable based on if a firm indirectly engaged in lobbying for digital copyright issues through trade associations during the study's timeframe, $\delta Quarter$ is quarterly time fixed effects, $\delta Agent$ is fixed effects for the takedown agent used, Controls are copyright popularity, annual sales, and industry code, i denotes the copyright firm, t denotes the year quarter. The robust standard errors are clustered at the copyright firm level.

Eq 2b:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Indirect\_lobbying\_dollars_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \varepsilon_{it}$$

Eq 2c:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Indirect\_lobbying\_reports_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \varepsilon_{it}$$

Hypothesis 3 predicts that firms that engage in CPA directly will place greater pressure on enabling industries to self-regulate than firms who indirectly engage in CPA through trade associations. For all analyses related to hypothesis 3, the sample is restricted to firms that have access to CPA. Equation 3 is:

Eq 3a:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Indirect\_vs\_Direct\_Lobbying_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \varepsilon_{it}$$

where the dependent variable is the log number of URLs removed taken from the firm's takedown requests, α is a fixed-effects control for time-invariant changes in trade

associations, $Indirect\_vs\_Direct\_Lobbying$ is a categorical variable coded for if a firm engages in indirect lobbying (1) through trade associations or direct lobbying (2) for digital copyright issues, $\delta Quarter$ is quarterly time fixed effects, $\delta Agent$ is fixed effects for the takedown agent used, Controls are copyright popularity, annual sales, and industry code, i denotes the copyright firm, t denotes the year quarter. The robust standard errors are clustered at the copyright firm level.

Additionally, to further understand how direct and indirect lobbying activities differ, equation 3b adds domestic firms that do not engage in any lobbying as a reference category to the $Indirect\_vs\_Direct\_Lobbying$ variable. The new categorical variable, $Indirect\_vs\_Direct\_vs\_None\_Lobbying$, codes domestic firms that do not engage in lobbying (1), firms that engage in indirect lobbying through trade associations (2), and firms that engage in direct lobbying (3). Equation 3b is:

Eq 3b:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Indirect\_vs\_Direct\_vs\_None\_Lobbying_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \varepsilon_{it}$$

Additionally, to better understand how firm size may influence the relationship between both direct and indirect CPA engagement, and pressuring enabling firms to self-regulate, two additional tests were run. Equation 3c investigates how firm size interacts with indirect CPA engagement by adding $CPA_Active_Sales_Interaction$to the equation, which interacts indirect lobbying active firms with annual sales. Equation 3d takes the same approach as equation 3c, yet looks at how being directly CPA active interacts with firm size.

Eq 3c:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Indirect\_CPA\_Active_{it} + \beta_2 CPA\_Active\_Sales\_Interaction_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \varepsilon_{it}$$

Eq 3d:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Direct\_CPA\_Active_{it} + \beta_2 CPA\_Active\_Sales\_Interaction_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \varepsilon_{it}$$

Hypothesis 4 predicts that firms without CPA access will place greater pressure on enabling firms to self-regulate than firms with CPA access that do not engage in CPA, but less than firms that do engage in CPA. For all analyses related to hypothesis 4, the full sample of firms is used. Equation 4a is:

Eq 4a:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Foreign\_vs\_Direct\_vs\_None\_Lobbying_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \varepsilon_{it}$$

where the dependent variable is the log number of URLs removed taken from the firm's takedown requests, α is a fixed-effects control for time-invariant changes in copyright firms, $Foreign\_vs\_Direct\_vs\_None\_Lobbying$ codes domestic firms that do not engage in lobbying (1), firms that engage in direct lobbying (2), and foreign firms (3), $\delta Quarter$ is quarterly time fixed effects, $\delta Agent$ is fixed effects for the takedown agent used, Controls are copyright popularity, annual sales, and industry code, i denotes the copyright firm, t denotes the year quarter. The robust standard errors are clustered at the copyright firm level. Additionally, the copyright popularity control is not a significant predictor of the number of URLs removed when foreign firms are added to the sample. Therefore, equation 4a was rerun in equation 4b with the copyright popularity control removed.

Additionally, to better understand how foreign firms without CPA access differ in the pressure they place on enabling firms to self-regulate, firms that engage in indirect lobbying activity are added for a categorical comparison in equation 4c. Equation 4c is:

Eq 4a:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Foreign\_vs\_Direct\_vs\_Indirect\_vs\_None\_Lobbying_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \varepsilon_{it}$$

where $Foreign\_vs\_Direct\_vs\_Indirect\_None\_Lobbying$ codes domestic firms that do not engage in lobbying (1), firms that engage in direct lobbying (2), foreign firms (3), and firms that engage in indirect lobbying as (4). The rest of the equation remains the same as equation 4a. Additionally, equation 4c was rerun without the copyright popularity control in equation 4d.

Hypothesis 5 predicts that after enabling firms implement self-regulation, external pressure to self-regulate from digital copyright firms will increase. For all analyses related to hypothesis 5, the full sample of firms is used. Equation 5a is:

Eq 5a:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Self\_Regulation\_Event_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \varepsilon_{it}$$

where the dependent variable is the log number of URLs removed taken from the firm's takedown requests, *Self-Regulation_Event* is a categorical event that codes the year quarter the self-regulation event takes place as a 1 and the two successive year quarters as a 2. The *Self-Regulation_Event* is run three ways in equation 5a. First, it is with both events combined, second is event 1 only, and third is event 2 only. Additionally, $\delta Quarter$ is quarterly time fixed effects, $\delta Agent$ is fixed effects for the takedown agent

used, Controls are copyright popularity, annual sales, and industry code, i denotes the copyright firm, t denotes the year quarter. The robust standard errors are clustered at the copyright firm level.

Hypothesis 6 predicts that after enabling firms implement self-regulation, CPA from digital copyright firms will increase. For all analyses related to hypothesis 6, the full sample of firms is used. Equation 6a is:

Eq 6a:

$$log\_lobbying\_dollars_{it} = \alpha_i + \beta_1 Self\_Regulation\_Event_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \varepsilon_{it}$$

where the dependent variable is lobbying dollars spent on digital copyright protection, *Self-Regulation_Event* is a categorical event that codes the year quarter the self-regulation event takes place as a 1 and the two successive year quarters as a 2. The *Self-Regulation_Event* is run three ways in equation 6a. First, it is with both events combined, second is event 1 only, and third is event 2 only. Additionally, $\delta Quarter$ is quarterly time fixed effects, $\delta Agent$ is fixed effects for the takedown agent used, Controls are annual sales, and industry code, i denotes the copyright firm, t denotes the year quarter. The robust standard errors are clustered at the copyright firm level.

Additionally, equation 6b switching the dependent variable to lobbying reports filed on digital copyright issues.

Eq 6b:

$$lobbying\_reports_{it} = \alpha_i + \beta_1 Self\_Regulation\_Event_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \varepsilon_{it}$$

Hypothesis 7 predicts the stronger the issue salience for firms, the greater the pressure to self-regulate they will place on enabling industries. To fully test this hypothesis, I run the analysis with two different data samples. The first analysis uses the fully matched dataset, which includes firms from all industries present in the dataset. This test gives a better understanding of what firms and industries are actively pressuring enabling industries to self-regulate. For all analyses related to hypothesis 7, the full sample of firms is used. Equation 7 is:

Eq 7:

$$log\_url\_removed_{it} = \alpha_i + \beta_1 Merchandise\_sales\_ratio_{it} + \delta Quarter_t + \delta Agent_{it} + Controls_{it} + \epsilon_{it}$$

where the dependent variable is the log number of URLs removed taken from the firm's takedown requests, $Merchandise\_sales\_ratio$ is the ratio of annual sales dollars from licensed merchandise to annual sales, $\delta Quarter$ is quarterly time fixed effects, $\delta Agent$ is fixed effects for the takedown agent used, Controls are copyright popularity, annual sales, and industry code, i denotes the copyright firm, t denotes the year quarter. The robust standard errors are clustered at the copyright firm level.

VI. RESULTS

The following chapter describes and interprets the results of the study's empirical analysis. The use of panel data allowed for the comparison of between firm differences, as well as changes in firms over time. As a reminder, the panel data are set on a year quarter basis and time fixed effects were used. Additionally, the same set of control variables discussed in Chapter 5 are used for every model unless otherwise specified. Further, variance explained, the r-squared percentage was reported for all models. Finally, the dependent variable for all models is the log number of URLs removed taken from takedown requests. The sole exception is for model 6, which uses lobbying activity in terms of lobbying dollars and lobbying reports filed as the dependent variable.

CPA Engagement Effects on Pressure to Self-Regulate

Direct CPA Engagement

Table 5 reports the test results for Hypothesis 1. Hypothesis 1 predicts the more firms engage in direct CPA, the more pressure they will place on enabling firms to self-regulate. For testing hypothesis 1, the sample was restricted to firms that have access to CPA, as they are located in the US. First, a controls-only model was run that results in an Annual Sales (log) coefficient of 0.25 significant at $p = 0.00$, with robust standard errors of 0.03, and a Copyright Popularity coefficient of 0.11 significant at $p = 0.00$, and with robust standard errors of 0.04. Industry, takedown agent, and quarterly fixed effects are applied to the control model. Industry categorical differences are not significant in the control model and use the movie industry as the reference category. Further, the controls-

only model applies to all models for hypothesis 1, 2, and 3, as each of these models use the same sample and dependent variable.

Model 1a tested the categorical effect of a firm engaging in direct active lobbying anytime throughout the study, and is represented by the Direct Active Lobbying variable. The Direct Active Lobbying coefficient was 3.16 significant at $p = 0.00$ and with robust standard errors of 0.72. This test can be interpreted as firms that engage in direct lobbying request 316% more URLs through the takedown system than firms that do not engage in direct CPA. Additionally, none of the control variables are significant in this model.

Model 1b provides a more granular test by examining the effect of changes in direct lobbying dollars (log). This test shows the Direct Lobbying Dollars variable was 0.24 significant at $p = 0.00$ and with robust standard errors of 0.08. This result can be interpreted as a 1% increase in direct lobbying spending on copyright issues is associated with a 24% increase in the number of URLs removed through the takedown system. Control variables for Model 1b are not significant.

Model 1c tests the effect of changes in direct lobbying reports filed. This test shows the Direct Lobbying Report variable was 1.71 significant at $p = 0.00$ and with robust standard errors of 0.60. This result can be interpreted as a single count increase in lobbying reports filed on copyright issues is associated with a 171% increase in the number of URLs removed through the takedown system. Control variables for Model 1c are not significant.

Models 1a, 1b, and 1c taken together provide strong support for hypothesis 1 in that the more firms engage directly in CPA, the more normative pressure they will place

on enabling firms. The strong differential effect of active direct CPA shown in model 1a demonstrates that firms that engage in direct CPA are more active in general than firms that do not engage in CPA. The additional findings from model 1b and 1c show that higher levels of direct CPA are related to increased normative pressure on enabling firms to self-regulate. Further, models 1a, 1b, and 1c were rerun with the full sample of firms, which includes foreign firms without CPA access as a robustness check. All findings were similar in direction, level, and significance.

Indirect CPA Engagement

Table 6 reports the test results for Hypothesis 2. Hypothesis 2 predicts the more firms engage in CPA indirectly through their trade association, the more pressure they will place on enabling firms to self-regulate. For testing hypothesis 2, the sample was restricted to firms that have access to CPA by being located in the US. Model 2a tested the categorical effect of a firm engaging in indirect lobbying through their trade associations anytime throughout the study, represented by the Indirect Active Lobbying variable. The Indirect Active Lobbying coefficient was 2.39 significant at $p = 0.00$ and with robust standard errors of 0.73. This result can be interpreted as firms that engage in indirect CPA through their trade association request 239% more URLs through the takedown system. Additionally, the control variable Annual Sales coefficient was 0.17 significant at $p = 0.02$ with robust standard errors of 0.07.

Table 5
Fixed Effects Estimation of Direct CPA Engagement on Changes in URLs Removed through Takedown Notices

Variable	Controls Only	Model 1a	Model 1b	Model 1c
Direct Active Lobbying		3.16 [0.00] (0.72)		
Direct Lobbying Dollars (log)			0.24 [0.00] (0.08)	
Direct Lobbying Report (count)				1.71 [0.00] (0.60)
Annual Sales (log)	0.25 [0.00] (0.03)	0.13 [0.16] (0.09)	0.13 [0.22] (0.11)	0.15 [0.13] (0.10)
Copyright Popularity	0.11 [0.00] (0.04)	0.08 [0.16] (0.05)	0.11 [0.12] (0.07)	0.10 [0.15] (0.07)
TV Industry (2)	-0.07 [0.78] (0.25)	-0.85 [0.24] (0.72)	-0.40 [0.55] (0.67)	-0.58 [0.42] (0.72)
Music Industry (3)	0.06 [0.89]	1.60 [0.14]	1.31 [0.27]	0.58 [0.57]

	(0.39)	(1.08)	(1.19)	(1.02)
Takedown Agent FE	yes	Yes	yes	yes
Year Quarter FE	yes	Yes	yes	yes
Observations	2,072	2,072	2,072	2,072
R-sq (%)	69.73	74.48	72.47	71.83

Note: Robust standard errors are listed in parentheses below the β coefficient. P values are listed in

brackets to the right of the β coefficient. Industry effects are in reference to the movie industry.

Model 2b provides a more granular test by examining the effect of changes in indirect lobbying dollars (log). This test shows the Indirect Lobbying Dollars variable coefficient was 0.23 significant at p = 0.00 and with robust standard errors of 0.07. This result can be interpreted as a 1% increase in lobbying spending on copyright issues is associated with a 23% increase in the number of URLs removed through the takedown system. Additionally, the control variable Annual Sales coefficient was 0.15 significant at p = 0.04 with robust standard errors of 0.11.

Model 2c tests the effect of changes in lobbying reports filed. This test shows the Indirect Lobbying Report variable coefficient was 1.55 significant at p = 0.02 and with robust standard errors of 0.72. This result can be interpreted as a single count increase in lobbying reports filed on copyright issues is associated with a 155% increase in the number of URLs removed through the takedown system. Additionally, the control variable Annual Sales coefficient was 0.17 significant at p = 0.04 with robust standard errors of 0.08.

Models 2a, 2b, and 2c taken together provide strong support for hypothesis 2 in that the more firms engage indirectly in CPA through their trade associations, the more normative pressure they will place on enabling firms. The strong differential effect of active direct CPA shown in model 2a demonstrates that firms that engage in indirect CPA are more active in general than firms that do not engage in CPA. The additional findings from model 2b and 2c display that higher levels of indirect CPA are related to increased normative pressure on enabling firms to self-regulate. Further, models 2a, 2b, and 2c were rerun with the full sample of firms, which includes foreign firms without CPA

access as a robustness check. All findings were similar in direction, level, and significance.

Direct vs Indirect CPA Engagement

Tables 7 and 8 report the test results for hypothesis 3. Hypothesis 3 predicts firms that engage in CPA directly will place greater pressure on enabling industries to self-regulate than firms who indirectly engage in CPA through trade associations. For testing hypothesis 3, the sample was restricted to firms that have access to CPA by being located in the US. Model 3a, shown in Table 7, tested the effect by creating a categorical code of indirect lobbying activity (0) and direct CPA activity (1) by the Indirect vs Direct Lobbying variable. This test shows the Indirect vs Direct Lobbying variable coefficient was 1.47 significant at $p = 0.06$ and with robust standard errors of 0.78. This result can be interpreted as firms that engage in direct CPA request 147% more URLs through the takedown system than firms that engage in indirect CPA through trade associations. Additionally, there is a large effect for the music industry with a coefficient of 4.23 significant at the 0.00 level and with robust standard errors of 1.31.

Model 3b, shown in Table 7, aims to further understand the differences between direct and indirect CPA activity by comparing firms that engage in direct lobbying and firms that engage in indirect lobbying to domestic firms that do not engage in any lobbying. Making this comparison allows observing if the two groups have different size beta coefficients. This test shows that compared to domestic firms that do not engage in lobbying the Indirect Active Lobbying variable coefficient was 1.70 significant at $p =$

0.02 and with robust standard errors of 0.74, and the Direct Active Lobbying variable coefficient was 3.81 significant at p = 0.00 and with robust standard errors of 0.70.

Table 6
Fixed Effects Estimation of Indirect CPA Engagement on Changes in URLs Removed through Takedown Notices

Variable	Model 2a	Model 2b	Model 2c
Indirect Active Lobbying	2.39 [0.00] (0.73)		
Indirect Lobbying Dollars (log)		0.23 [0.00] (0.07)	
Indirect Lobbying Report (count)			1.55 [0.02] (0.72)
Annual Sales (log)	0.17 [0.02] (0.07)	0.15 [0.04] (0.11)	0.17 [0.04] (0.08)
Copyright Popularity	0.04 [0.63] (0.08)	0.04 [0.62] (0.08)	0.08 [0.31] (0.07)
TV Industry (2)	-1.05 [0.19] (0.79)	-0.66 [0.38] (0.75)	-0.44 [0.51] (0.68)
Music Industry (3)	-0.27 [0.71] (0.72)	-0.25 [0.73] (0.72)	-0.40 [0.64] (0.87)
Takedown Agent FE	yes	yes	yes

Year Quarter FE	yes	yes	yes
Observations	2,072	2,072	2,072
R-sq (%)	74.04	73.71	72.32

Note: Robust standard errors are listed in parentheses below the β coefficient

P values are listed in brackets to the right of the β coefficient

Industry effects are in reference to the movie industry

Further, a Wald test comparing the indirect active lobbying category to the direct active lobbying category resulted in a p = 0.00, which suggests that including both variables results in a statistically significant better model fit.

Model 3c and 3d, shown in Table 8, aim to further understand the differences between direct and indirect CPA activity by understanding the role firm size plays in both approaches to CPA. Therefore, both direct active lobbying and indirect active lobbying were separately interacted with annual sales to better understand the relationship between firm size and CPA engagement. To aid in interpretability, the interaction variable uses billions of dollars as the sales unit.

Model 3c investigates this interaction effect on indirect lobbying activity. With the interaction included, the main effect of the Indirect Active Lobbying coefficient was 0.86 with p = 0.09 and with robust standard errors of 0.50 and the Indirect Active Lobbying x Sales (B) coefficient was -0.13 with p = 0.65 and with robust standard errors of 0.28. Additionally, the control variable Annual Sales coefficient was 0.15 significant at p = 0.04 with robust standard errors of 0.11.

Model 3d investigates the sales interaction effect on direct lobbying activity. With the interaction included, the main effect of the Direct Active Lobbying coefficient was 3.55 with $p = 0.00$ and with robust standard errors of 0.78 and the Direct Active Lobbying x Sales (B) coefficient was -0.07 with $p = 0.12$ and with robust standard errors of 0.04. Additionally, the control variable Annual Sales coefficient was 0.17 significant at $p = 0.04$ with robust standard errors of 0.08.

Models 3a and 3b provide strong support for hypothesis 3 in that firms that engage in CPA directly will place greater pressure on enabling industries to self-regulate than firms who indirectly engage in CPA through trade associations. The findings from model 3a and 3b are supported by the prior findings in models 1 and 2 that show a stronger effect for direct CPA than indirect CPA. Additionally, the strong music industry effect in model 3a suggests that firms in the music industry may be responsible for the difference in behavior observed between direct and indirect CPA firms. Therefore, as a robustness check, the firms in the music industry were dropped from the sample and the model was rerun; all findings were similar in direction, level, and significance.

The additional findings from model 3c and 3d that investigate how firm size, represented by annual sales, interacts with CPA activity are inconclusive. Both the indirect lobbying and sales interaction and the direct lobbying and sales interaction show a negative but non-significant effect. Together, these results suggest that CPA does not have an economically significant interaction with firm size in terms of applying normative pressure on enabling firms to self-regulate.

CPA Access

Table 9 reports the test results for Hypothesis 4. Hypothesis 4 predicts Firms without CPA access will place greater pressure on enabling firms to self-regulate than firms with CPA access that do not engage in CPA, but less than firms that do engage in CPA. For testing hypothesis 4, the sample included firms based in the US and abroad. First, a controls-only model was run that results in an Annual Sales (log) coefficient of 0.15 significant at p = 0.10 and with robust standard errors of 0.09, and a Copyright Popularity coefficient of -0.01 with p = 0.73 and with robust standard errors of 0.03. As copyright popularity is not significant, it should not be included in the model. However, as copyright popularity is significant in the reduced sample of only US-based firms, which are included, it still may be beneficial to include copyright popularity in the model. Therefore, each model is run with and without the copyright popularity variable.

Additionally, industry, takedown agent, and quarterly fixed effects are applied to the control model. Industry categorical differences are not significant in the control model and use the movie industry as the reference category. Further, the controls-only model applies to all models for hypothesis 4, 5, and 7, as each of these models use the same sample and dependent variable.

Table 7
Fixed Effects Estimation of Differences of Direct vs Indirect CPA Engagement on Changes in URLs Removed through Takedown Notices

Variable	Model 3a	Model 3b
Indirect (1) vs Direct (2) Lobbying	1.47 [0.06] (0.78)	

Indirect Active Lobbying (2)		1.70 [0.02] (0.74)
Direct Active Lobbying (3)		3.81 [0.00] (0.70)
Annual Sales (log)	0.04 [0.67] (0.10)	0.09 [0.26] (0.08)
Copyright Popularity	0.13 [0.28] (0.12)	0.04 [0.55] (0.06)
TV Industry (2)	-1.39 [0.16] (0.99)	-1.09 [0.12] (0.70)
Music Industry (3)	4.23 [0.00] (1.31)	1.81 [0.07] (1.00)
Takedown Agent FE	yes	yes
Year Quarter FE	yes	yes
Observations	2,072	2,072
R-sq (%)	74.77	76.20

Note: Robust standard errors are listed in parentheses below the β coefficient

P values are listed in brackets to the right of the β coefficient

Model 2b lobbying categories are compared to firms with no lobbying activity

Industry effects are in reference to the movie industry

Table 8
Fixed Effects Estimation of Differences of Direct and Indirect CPA Engagement Interaction with Sales on Changes in URLs Removed through Takedown Notices

Variable	Model 3c	Model 3d
Indirect Active Lobbying	0.86 [0.09] (0.50)	
Direct Active Lobbying		3.55 [0.00] (0.78)
Indirect Active Lobbying x Sales (B)	-0.13 [0.65] (0.28)	
Direct Active Lobbying x Sales (B)		-0.07 [0.12] (0.04)
Annual Sales (log)	0.15 [0.04] (0.11)	0.17 [0.04] (0.08)
Copyright Popularity	0.04 [0.62] (0.08)	0.08 [0.31] (0.07)
TV Industry (2)	-0.66 [0.38] (0.75)	-0.44 [0.51] (0.68)
Music Industry (3)	-0.25 [0.73] (0.72)	-0.40 [0.64] (0.87)
Takedown Agent FE	yes	yes

Year Quarter FE	yes	yes
Observations	2,072	2,072
R-sq (%)	70.08	74.64

Note: Robust standard errors are listed in parentheses below the β coefficient

P values are listed in brackets to the right of the β coefficient

Industry effects are in reference to the movie industry

Model 4a tested the effect by creating a categorical variable with domestic firms with CPA access that do not engage in lobbying (1), firms engaged in direct lobbying (2), and foreign firms (3). This test shows that, compared to domestic firms with CPA access that do not engage in lobbying, the Direct Active Lobbying variable coefficient was 3.27, significant at $p = 0.00$ and with robust standard errors of 0.75, and the Foreign Firms variable coefficient was 1.28 significant at $p = 0.04$, and with robust standard errors of 0.63.

Further, a Wald test comparing the direct active lobbying category to the foreign firm category resulted in a $p = 0.00$, which suggests that including both variables results in a statistically significant better model fit. Therefore, these results can be interpreted as firms that do not have CPA access request 128% more URLs through the takedown system than firms that have CPA access and do not engage in lobbying, which is fewer URLs than firms that engage in direct CPA, which request 327% more URLs through the takedown system than firms that have CPA access and do not engage in lobbying. Additionally, none of the control variables are significant in this model.

Further, model 4b runs the same test as model 4a but removes the copyright popularity control variable. These results are similar to model 4a, with the Direct Active Lobbying variable coefficient was 3.52 significant at $p = 0.00$ and with robust standard errors of 0.83 and the Foreign Firms variable coefficient was 1.12 with $p = 0.06$ and with robust standard errors of 0.60. Additionally, there is an effect for the TV industry with a coefficient of -0.95 with $p = 0.10$ and with robust standard errors of 0.58.

Model 4c aims to further understand the effect of CPA access on pressuring enabling firms to self-regulate by adding indirect active lobbying as a category (4) to the CPA access categorical variable used in Model 4a. This test shows that compared to domestic firms with CPA access that do not engage in lobbying the Direct Active Lobbying variable coefficient was 3.83 significant at $p = 0.00$ and with robust standard errors of 0.73, the Foreign Firms variable coefficient was 1.62 significant at $p = 0.00$ and with robust standard errors of 0.54, and the Indirect Active Lobbying variable coefficient was 1.86 significant at $p = 0.01$ with robust standard errors of 0.71.

Further separate Wald tests comparing the direct active lobbying category to the foreign firm category, the indirect active lobbying category to the foreign firm category, and the direct active lobbying category to the indirect active lobbying category all resulted in a $p = 0.00$, which suggests that including all variables results in statistically significant better model fit. Therefore, these results can be interpreted as firms that do not have CPA access request 162% more URLs through the takedown system than firms that have CPA access and do not engage in lobbying, which is fewer URLs than firms that

engage in direct CPA which request 402% more URLs through the takedown system than firms that have CPA access and do not engage in lobbying, and less than firms that engage in indirect CPA which request 181% more URLs through the takedown system than firms that have CPA access and do not engage in lobbying. Additionally, there is an effect for the TV industry with a coefficient of -0.95 with $p = 0.10$ and with robust standard errors of 0.58.

Finally, model 4d runs the same test as model 4c but removes the copyright popularity control variable. This test shows that, compared to domestic firms with CPA access that do not engage in lobbying, the Direct Active Lobbying variable coefficient was 4.02 significant at $p = 0.00$ and with robust standard errors of 0.80, the Foreign Firms variable coefficient was 1.45 significant at $p = 0.01$ and with robust standard errors of 0.53, and the Indirect Active Lobbying variable coefficient was 1.81 significant at $p = 0.03$ with robust standard errors of 0.84. Additionally, there is an effect for the TV industry with a coefficient of -1.03 with $p = 0.07$ and with robust standard errors of 0.57.

Taken together, Model 4a, 4b, 4c, and 4f offer strong support for hypothesis 4. Firms without CPA access will place greater pressure on enabling firms to self-regulate than firms with CPA access that do not engage in CPA, but less than firms that do engage in CPA. Admittedly, there is not a true counterfactual for hypothesis 4. This is due to the CPA access construct, which is based on if the firm is located in the same country as the established regulative institution. Thus, another interpretation of this construct is comparing firms located in the US to firms outside the US. Therefore, a better

counterfactual would be foreign firms that have access to CPA. However, these firms do not exist due to CPA restrictions on foreign entities in the US.

Yet, with these limitations recognized, there is still a case that firms without CPA access are placing more pressure on enabling firms to self-regulate than firms that have CPA access but do not engage in CPA. Supporting this is that the copyright popularity control variable is not significant when firms without CPA access are included and the annual sales control variable is only mildly significant at $p = 0.10$. This provides evidence that it is not only the largest firms without CPA access nor the firms with the most popular copyrights that are applying normative pressure on enabling firms to self-regulate. Instead, it could be because these firms do not have access to regulatory institutional change mechanisms and therefore can only use normative institutional change mechanisms. Further discussion of these findings and the recognized limitations can be found in Chapter 7.

Table 9
Fixed Effects Estimation of No CPA Access on Changes in URLs Removed through Takedown Notices

Variable	Controls Only	Model 4a	Model 4b	Model 4c	Model 4d
Direct Active Lobbying (2)		3.27 [0.00] (0.75)	3.52 [0.00] (0.83)	3.83 [0.00] (0.73)	4.02 [0.00] (0.80)
Foreign Firms (3)		1.28 [0.04] (0.63)	1.12 [0.06] (0.60)	1.62 [0.00] (0.54)	1.45 [0.01] (0.53)
Indirect Active Lobbying (4)				1.86 [0.01] (0.71)	1.81 [0.03] (0.84)
Annual Sales (log)	0.15 [0.10] (0.09)	0.06 [0.45] (0.08)	0.06 [0.50] (0.09)	0.03 [0.67] (0.07)	0.02 [0.76] (0.08)
Copyright Popularity	-0.01 [0.73] (0.03)	-0.02 [0.50] (0.04)		-0.03 [0.36] (0.04)	
TV Industry (2)	-0.35 [0.57] (0.62)	-0.82 [0.15] (0.58)	-0.95 [0.10] (0.58)	-0.93 [0.10] (0.57)	-1.03 [0.07] (0.57)

Music Industry (3)	0.82 [0.34] (0.86)	1.25 [0.19] (0.96)	0.28 [0.77] (0.97)	1.32 [0.16] (0.94)	0.31 [0.74] (0.94)
Takedown Agent FE	yes	Yes	yes	yes	yes
Year Quarter FE	yes	Yes	yes	yes	yes
Observations	5,448	5,448	5,448	5,448	5,448
R-sq (%)	60.44	64.47	62.48	65.7	63.91

Note: Robust standard errors are listed in parentheses below the β coefficient. P values are listed in brackets to the

right of the β coefficient. Lobbying categories are compared to firms with no lobbying activity.

Industry effects are in reference to the movie industry.

Responses to Self-Regulation Events

Table 10 reports the test results for hypothesis 5. Hypothesis 5 predicts that after enabling firms implement self-regulation, external pressure to self-regulate from digital copyright firms will increase. For testing hypothesis 5, the full sample of domestic and foreign firms was used. Model 5a tests the increase from the pre-self-regulation event quarter to the two post-self-regulation event quarters, which is represented in the post-self-regulation event variable. Model 5a tests both self-regulation events together. The Post Self-Regulation Event coefficient was 3.35 significant at $p = 0.00$ and with a robust standard error of 0.89. This result can be interpreted as firms request 335% more URLs through the takedown system during the post-self-regulation event period than the pre-self-regulation event period. Additionally, control variables for model 5a were not significant.

Model 5b investigates the first self-regulation event by itself. The Post Self-Regulation Event coefficient was 1.74 significant at $p = 0.00$ and with a robust standard error of 0.61. This result can be interpreted as firms request 174% more URLs through the takedown system during the post-self-regulation event period than the pre-self-regulation event period. Additionally, there was a strong effect with the TV industry coefficient was -4.10 significant at $p = 0.01$ and with robust standard errors of 1.52.

Model 5c investigates the second self-regulation event by itself. The Post Self-Regulation Event coefficient was 0.23 but not significant with $p = 0.27$ and with a robust standard error of 0.20. Additionally, control variables for model 5c were not significant.

Models 5a, 5b, and 5c taken together provide support for hypothesis 5, that after enabling firms implement self-regulation, external pressure to self-regulate from digital copyright firms will increase. Interestingly, the positive but non-significant result in model 5c does suggest some limitations for this hypothesis. Model 5a, which tests both self-regulation events together, and model 5b that tests the first self-regulation event, are both positive, strong, and significant effects. However, model 5c, which tests the second self-regulation, is positive but not significant. An explanation for this diminished effect may reside in the nature of the self-regulation event.

The first self-regulation event, the implementation of Google's demotion signal policy, was a dramatic change that actually gave copyright owners an additional action to take to reduce digital piracy. The second self-regulation event was a smaller change that augmented the demotion signal policy to also remove any advertising revenue from the offending domains. As much of the ad revenue from offending domains was reduced from the original demotion signal, the further removal of all ad revenue was seen as a lesser event. Therefore, the smaller and non-significant effect in model 5c suggests that the severity of the self-regulation event may affect how institutional rival firms respond to the self-regulation.

Tables 11 and 12 reports the test results for Hypothesis 6. Hypothesis 6 predicts that after enabling firms implement self-regulation, CPA from digital copyright firms will increase. For testing hypothesis 6, the full sample of domestic and foreign firms was used. First, a controls-only model was run that resulted in an Annual Sales (log) coefficient of 0.49 significant at $p = 0.01$, and with a robust standard error of 0.17 and a

Copyright Popularity coefficient of 0.02, with p = 0.81 and with a robust standard error of 0.04. Therefore, the Copyright Popularity variable was not included. Industry, takedown agent, and quarterly fixed effects are applied to the control model.

Table 10
Fixed Effects Estimation of Response to Self-Regulation Events on Changes in URLs Removed through Takedown Notices

Variable	Model 5a All Events	Model 5b Event 1	Model 5c Event 2
Post-Self-Regulation Event	3.35[0.00] (0.89)	1.74 [0.00] (0.61)	0.23[0.27] (0.20)
Annual Sales (log)	0.17 [0.31] (0.17)	0.59 [0.00] (0.14)	-0.15 [0.47] (0.21)
Copyright Popularity	-0.08 [0.18] (0.06)	-0.29 [0.21] (0.16)	-0.01 [0.81] (0.06)
TV Industry (2)	-1.63 [0.13] (1.08)	-4.10 [0.01] (1.52)	-0.23 [0.86] (1.32)
Music Industry (3)	-1.17 [0.34] (1.23)	-2.28 [0.36] (2.49)	-1.50 [0.21] (1.20)
Takedown Agent FE	yes	yes	yes
Year Quarter FE	yes	yes	yes
Observations	5,488	5,488	5,488

R-sq (%)	63.98	70.07	64.28

Note: Robust standard errors are listed in parentheses below the β coefficient

P values are listed in brackets to the right of the β coefficient

Industry effects are in reference to the movie industry

Industry categorical differences use the movie industry as the reference category and show the Music Industry coefficient was -5.28 with p = 0.04 and with robust standard errors of 2.51.

Models 6a, 6b, and 6c test the increase of lobbying dollars (log) from the pre-self-regulation event quarter to the two post-self-regulation event quarters, which is represented in the Post Self-Regulation Event variable. The results for these models are shown in Table 11. Model 6a tests both self-regulation events together. The Post Self-Regulation Event coefficient was 1.11, but not significant at p = 0.21 and with a robust standard error of 0.88. Additionally, the TV Industry coefficient was 3.85 with p = 0.05 and with robust standard errors of 1.95, and the Music Industry coefficient was -7.14 with p = 0.00 and with robust standard errors of 2.44.

Model 6b investigates the first self-regulation event by itself. The Post Self-Regulation Event coefficient was 0.22, but not significant at p = 0.29 and with a robust standard error of 0.21. Additionally, the TV Industry coefficient was 6.80 with p = 0.00 and with robust standard errors of 2.0.

Model 6c investigates the second self-regulation event by itself. The Post Self-Regulation Event coefficient was -0.03, but not significant at p = 0.47 and with a robust standard error of 0.04. Additionally, no control variables in model 6c were significant.

Models 6d, 6e, and 6f test the increase of direct lobbying reports (count) from the pre-self-regulation event quarter to the two post-self-regulation event quarters, which is represented in the Post Self-Regulation Event variable. The results for these models are shown in Table 12. Model 6d tests both self-regulation events together. The Post Self-Regulation Event coefficient was 0.04, but not significant at p = 0.66 and with a robust standard error of 0.09. Additionally, the control variable Annual Sales coefficient was 0.05 with p = 0.07 and with robust standard errors of 0.03. Further, the TV Industry coefficient was 0.59 with p = 0.04 and with robust standard errors of 0.29, and the Music Industry coefficient was -0.58 with p = 0.01 and with robust standard errors of 0.21.

Model 6e investigates the first self-regulation event by itself. The Post Self-Regulation Event coefficient was -0.02, but not significant at p = 0.58 and with a robust standard error of 0.03. Additionally, the TV Industry coefficient was 6.80 with p = 0.00 and with robust standard errors of 2.0. Also, the control variable Annual Sales coefficient was 0.06 with p = 0.05 and with robust standard errors of 0.03. Further, the TV Industry coefficient was 0.93 with p = 0.00 and with robust standard errors of 0.29.

Model 6f investigates the second self-regulation event by itself. The Post Self-Regulation Event coefficient was -0.02, but not significant at p = 0.59 and with a robust standard error of 0.03. Additionally, no control variables in model 6f were significant.

All the model 6 tests taken together clearly due not support hypothesis 6 ,that after enabling firms implement self-regulation, CPA from digital copyright firms will increase. Additionally, several robustness checks were run that varied the length of lag of the post-self-regulation event period which also resulted in non-significant results. From

this analysis, it is safe to reject this hypothesis. However, organizational researchers' understanding of CPA strategy is limited and this analysis highlights the need for more research in CPA strategy, as discussed further in Chapter 7.

Issue Saliency and Copyright Strategy Effects on Pressure to Self-Regulate

Table 13 reports the test results for Hypothesis 7. Hypothesis 7 predicts the stronger the issue salience for firms, the greater the pressure to self-regulate they will place on enabling industries. For model 7a, the full sample of domestic and foreign firms was used. Model 7a tests the effect of how firms with lower issue saliency, due to their copyright strategy, pressure enabling firms to self-regulate by using the Merchandise to Sales Ratio variable. The Merchandise to Sales Ratio coefficient was 0.00 and significant at $p = 0.04$ and with a robust standard error of 0.04. Additionally, the Annual Sales variable coefficient was 0.15 with $p = 0.10$ and with robust standard errors of 0.09.

Table 11
Fixed Effects Estimation of Response to Self-Regulation Events on Changes in CPA Engagement

Variable	Controls Only	Model 6a All Events	Model 6b Event 1	Model 6c Event 2
Post-Self-Regulation Event		1.11 [0.21]	0.22 [0.29]	-0.03 [0.47]
		(0.88)	(0.21)	(0.04)
Annual Sales (log)	0.49 [0.01]	0.48 [0.05]	0.59 [0.06]	0.28 [0.31]
	(0.17)	(0.25)	(0.31)	(0.28)
Copyright Popularity	0.02 [0.81]			
	(0.09)			
TV Industry (2)	1.41 [0.27]	3.85 [0.05]	6.80 [0.00]	4.21 [0.24]
	(1.27)	(1.98)	(2.01)	(3.55)
Music Industry (3)	-5.28 [0.04]	-7.14 [0.00]	-0.52 [0.66]	-5.42 [0.20]
	(2.51)	(2.44)	(1.18)	(4.18)
Takedown Agent FE	yes	yes	yes	yes
Year Quarter FE	yes	yes	yes	yes
Observations	2,072	2,072	2,072	2,072
R-sq (%)	58.06	75.74	57.07	75.89

Note: Robust standard errors are listed in parentheses below the β coefficient

P values are listed in brackets to the right of the β coefficient

Industry effects are in reference to the movie industry

Table 12
Fixed Effects Estimation of Response to Self-Regulation Events on Changes in CPA Engagement

Variable	Controls Only	Model 6d All Events	Model 6e Event 1	Model 6f Event 2
Post-Self-Regulation Event		0.04 [0.66]	-0.02 [0.58]	-0.02 [0.59]
		(0.09)	(0.03)	(0.03)
Annual Sales (log)	0.06 [0.01]	0.05 [0.07]	0.06 [0.05]	0.04 [0.27]
	(0.02)	(0.03)	(0.03)	(0.04)
Copyright Popularity	0.01 [0.41]			
	(0.01)			
TV Industry (2)	0.29 [0.11]	0.59 [0.04]	0.93 [0.00]	0.59 [0.13]
	(0.19)	(0.29)	(0.29)	(0.39)

Music Industry (3)	-0.31 [0.06]	-0.58 [0.01]	-0.08 [0.49]	-0.51 [0.28]
	(0.16)	(0.21)	(0.12)	(0.08)
Takedown Agent FE	yes	yes	yes	yes
Year Quarter FE	yes	yes	yes	yes
Observations	2,072	2,072	2,072	2,072
R-sq (%)	52.1	77.26	69.04	80.66

Note: Robust standard errors are listed in parentheses below the β coefficient

P values are listed in brackets to the right of the β coefficient

Industry effects are in reference to the movie industry

Further, the Music Industry coefficient was -0.58 with p = 0.01 and with robust standard errors of 0.21. While the Merchandise to Sales Ratio was a statistically significant predictor of URLs removed, it is not economically significant with 0.00 coefficient. Due to the negative music industry effect found in model 7a, firms in the music industry were dropped in the sample for model 7b to see if they were driving the small result. In model 7b, the Merchandise to Sales Ratio coefficient was 0.00 and not significant at p = 0.92 and with a robust standard error of 0.04. Additionally, the control variables in model 7b were not significant.

Finally, as most of the firms with licensed merchandise sales were in the movie industry, model 7c reduces the sample further to focus just on firms in the movie industry. In model 7c, the Merchandise to Sales Ratio coefficient was 0.02 and not significant at p = 0.81 and with a robust standard error of 0.07. Additionally, the control variables in model 7c were not significant.

Models 7a, 7b, and 7c taken together do not support hypothesis 7: the stronger the issue salience for firms, the greater the pressure to self-regulate they will place on enabling industries. However, the lack of support for this hypothesis does not insinuate that issue saliency is not important for institutional change action. Instead, the fault may lie in the reasoning for hypothesis 7, specifically, the assumption leading to hypothesis 7, that firms that generate large revenue from copyrighted media through means other than distribution, such as licensed merchandise based on the copyrighted media, are less concerned with digital copyright infringement. In retrospect, these firms are likely still concerned about digital copyright infringement, as it is directly related to overall

copyright protection. Since the key strategy is to generate revenue from copyrighted media, through both distribution and licensed merchandise, protecting copyrights is generally important.

Table 13
Fixed Effects Estimation of Copyright Strategy driven Issue Saliency on Changes in URLs Removed through Takedown Notices

Variable	Model 7a All Industries	Model 7b Movie & TV	Model 7c Movie Only
Merchandise to Sales Ratio	0.00 [0.04] (0.04)	0.00 [0.92] (0.04)	0.02 [0.81] (0.07)
Annual Sales (log)	0.15 [0.10] (0.09)	0.09 [0.39] (0.10)	0.13 [0.32] (0.04)
Copyright Popularity	-0.01 [0.72] (0.03)	-0.00 [0.94] (0.04)	-0.02 [0.63] (0.04)
TV Industry (2)	-0.35 [0.57] (0.82)	-0.28 [0.67] (0.65)	
Music Industry (3)	-0.58 [0.01] (0.21)		
Takedown Agent FE	yes	yes	yes
Year Quarter FE	yes	yes	yes
Observations	5,488	3,836	2,156
R-sq (%)	77.26	65.56	74.51

Note: Robust standard errors are listed in parentheses below the β coefficient

P values are listed in brackets to the right of the β coefficient

Industry effects are in reference to the movie industry

Summary

Chapter 6 provides a series of analyses to test the study's seven hypotheses. Table 14 provides a summary of which hypotheses were supported.

Table 14
Hypotheses Support Summary

Hyp.	Statement	Supported
H1	The more firms directly engage in CPA, the more pressure they will place on enabling firms to self-regulate.	yes
H2	The more firms engage in CPA indirectly through their trade association, the more pressure they will place on enabling firms to self-regulate.	yes
H3	Firms that engage in CPA directly will place greater pressure on enabling industries to self-regulate than firms who indirectly engage in CPA through trade associations.	yes
H4	Firms without CPA access will place greater pressure on enabling firms to self-regulate than firms with CPA access that do not engage in CPA but less than firms that do engage in CPA.	yes
H5	After enabling firms implement self-regulation, external pressure to self-regulate from digital copyright firms will increase.	yes
H6	After enabling firms implement self-regulation, CPA from digital copyright firms will increase.	no
H7	The stronger the issue salience for firms, the greater the pressure to self-regulate they will place on enabling industries	no

VII. DISCUSSION

This dissertation has provided a focused look into how firms strengthen their institutional environment after the unplanned and radical weakening of a strong regulative institution, by studying and empirically analyzing their institutional response to digital piracy. By doing so, this dissertation provides new understanding to several areas of management theory including institutional change and nonmarket strategies. The following chapter discusses this dissertation's contribution to management theory, as well as boundary conditions, implications for practitioners and policymakers, and areas for future studies.

Theoretical Contributions

Institutional Change Contributions

To begin the discussion on this dissertation's theoretical contribution, I start with the broadest contributions relating to institutional change and how firms target multiple institutional pillars, before moving to more focused contributions. As such, I will now describe four findings that provide new information to the institutional change literature. Then, I will describe how these four findings inform Suchman's institutionalization model and relate these findings to the broader institutional change literature. Finally, I discuss how these findings generalize beyond Suchman's model by discussing their relation to Scott's institutionalization model.

The first two findings deal with the relationship between institutional change mechanisms targeting regulative and normative institutional pillars. This dissertation's first finding is that firms engage simultaneously in change actions that target the

regulative and normative pillars in order to change their institutional environment. The second finding expands on the first, by establishing that firms engaging in regulative institutional change actions increase their level of engagement in normative institutional change actions. These findings were empirically established by showing that the more digital copyright firms engaged in CPA for regulative institutional change, the more normative change pressure they placed on enabling firms to self-regulate.

Additionally, these two findings provide evidence for the third finding, specifically that firms in one industry take institutional change action to change the institutional environment for firms in a different industry. Further, these industries are not traditional market rivals, but instead have overlapping institutional environments. This finding was empirically established by analysis that showed that digital copyright firms place pressure on enabling firms to self-regulate for normative institutional change.

Finally, the fourth finding suggests that firms without access to regulative institutional change increase their levels of engagement in normative institutional change. This finding was empirically established by analysis showing that digital copyright firms that do not have CPA access placed more pressure on enabling firms to self-regulate for normative institutional change than firms that do have CPA access but did not engage in CPA.

I now return to Suchman's (1995a) Multistage Model of Institutionalization discussed in Chapter 2. To begin, I claimed that the multiple visible response area of Suchman's model was under-researched. Through the subsequent literature review, I explained how most institutional change research focuses on actors targeting a single

institutional pillar. Further, research that does investigate actors targeting multiple institutional pillars has focused on social movement organizations and not firms as the focal actor.

Therefore, findings one and two from this dissertation help inform Suchman's model about how multiple visible responses can include firms targeting multiple institutional pillars with their change action. Specifically, this expands the response-comparison phase to include combining change action that targets multiple institutional pillars. Additionally, the response comparison phase should include that combining change action that targets multiple institutional pillars can increase the strength of the overall institutional change effort. Also, finding four expands the response comparison to include how the inability to target a particular institutional pillar may result in increased engagement in other institutional pillars.

Finally, finding three expands both the response comparison and the diffusion section of Suchman's model. The response-comparison phase can be expanded to include firms targeting other industries when the two industries' institutional environments overlap. This, in turn, informs the diffusion section of Suchman's model by showing how firms need to plan for their institutional environments being changed by firms in different industries and take responsive action if needed.

Each of these findings informs Suchman's model in a way that provides new perspectives on how firms changing institutions are studied. First, these findings inform the broad firms engaging in institutional change literature (David, Sine, & Haveman, 2013; Greenwood & Suddaby, 2006; Haveman, 1993a; Haveman et al., 2001; Peng,

2003). Institutional researchers need to be aware that firms may coordinate the simultaneous targeting of multiple institutional pillars. Even if it appears obvious that a firm is targeting a specific institutional pillar, scholars should still investigate if the firms are additionally targeting other institutional pillars. This is especially important, as this dissertation shows how targeting one institutional pillar increases the level of institutional change action targeting a different institutional pillar. Therefore, if scholars do not entertain that firms may be targeting multiple institutional pillars, they could be missing an important aspect of the institutional change strategy.

While this dissertation shows that scholars should look for firms targeting multiple institutional pillars, they should also account for when a firm is not able to pursue a particular institutional pillar. This finding informs the growing research on firms engaging in institutional change in foreign countries where they likely have limited access to regulative institutions (K. G.-L. Huang et al., 2017; K. E. Meyer et al., 2009; Peng, 2003; Xin & Pearce, 1996). This dissertation shows how the inability to pursue one institutional pillar can result in increased institutional change engagement targeting a different pillar. Therefore, scholars need to account for not just the presence of targeting multiple institutional pillars, but of the absence of targeting singular institutional pillars as well.

These findings, taken as a whole, suggest that institutional scholars should be cautious when studying institutional change action that appears to target only one institutional pillar. There is a possibility that firms could be simultaneously engaging in institutional change action that targets different institutional pillars. Additionally, if a firm

is only targeting one institutional pillar, the absence of other institutional pillars needs to be accounted for. As such, these recommendations for institutional researchers echo remarks from leaders in the field that call for more understanding of the scope of institutional change (Micelotta et al., 2017).

Additionally, institutional researchers need to expand the idea of institutional opponents and proponents (Battilana et al., 2009; Suddaby & Greenwood, 2005) to include firms in different industries. As such, the concept of firms enacting institutional change in firms in different industries brings new opportunities for scholars to see how firms use institutional change to either engage in rent-seeking, or lower their transaction costs. By having this expanded view of how firms can enact institutional change on firms in different industries, there is potential to expand the institutional change literature to include a strategic perspective. While such calls to combine the strategy and institutional change perspectives are intermittently repeated (Ahuja & Yayavaram, 2011; Dorobantu et al., 2017; Peng et al., 2009), there is still relatively little research in this area compared to the rest of the institutional change literature.

While these general contributions do expand the institutional change literature, I recognize the boundary conditions to this study which are discussed in the next section. However, I do believe these findings add to the general institutional change literature. For example, while I chose to focus on Suchman's model in the literature review, as it offers a more detailed description of choosing between multiple institutional change responses, these findings still relate to other institutionalization models such as Scott's (1994) Top-Down and Bottom-Up Process of Institutional Creation and Diffusion model.

Scott's model describes a process of institutions diffusing sanctions to actors (i.e. top-down) and the actors engaged in negotiation and invention that influence the institutions (i.e. bottom-up). While Scott's model is intentionally vague to fit many scenarios of institutionalization, this dissertation's findings on the relationship between regulative and normative institutional change can help expand both the bottom-up and top-down processes in Scott's model. From the bottom-up process, findings one and two provide more nuance in how targeting both regulative and normative institutional pillars simultaneously can increase the effectiveness of institutional change action.

Additionally, finding four expands the bottom-up process by showing how the inability to target the regulative institutional pillar can lead to increases in targeting the normative institutional pillars. Further, finding three informs both the bottom-up and top-down processes. The bottom-up process is expanded to include firms enacting institutional change in different industries. Therefore, the top-down process needs to include sanctions from new institutional arrangements that were constructed by firms in different industries.

In summary, the findings from this dissertation encourage a different perspective on how firms engaging in institutional change are studied. However, despite the general claims of these findings, firms may not target multiple institutional pillars in response to every institutional problem. Additionally, if firms do target multiple institutional pillars, they may not do so in the same way as found in this dissertation. Therefore, the next section lays out the boundary conditions for this study before discussing the more focused findings from the dissertation.

Boundary Conditions of the Institutional Problem

To begin the discussion on this dissertation's more specific theoretical contributions, I return to the novel problem that started this dissertation. As described at the beginning of Chapter 2, the nature of the problem that leads to institutional change is responsible for what types of institutional action and outcomes will occur. Therefore, any institutional change study should make clear the boundaries of the theoretical contribution. Only through a clear understanding of boundary conditions, can scholars better understand how institutional change works in varying conditions and determine what theory generalizes to broader contexts. As such, I will now briefly restate the institutional problem and then layout boundary conditions for the theoretical findings.

As stated in Chapter 2, the problem began with the unplanned and radical weakening of a strong regulatory institutional environment. Without the mandates on appropriate behaviors of the former strong regulatory institution, firms faced new risks from other actors deviating from the prior agreed-upon appropriate behavior. Therefore, the institutional change question was: how do firms strengthen their institutional environment after the unplanned and radical weakening of a strong regulatory institution?

This problem sets several boundary conditions that are dependent on the institutional context. First, regulatory institutional change needs to be a valid and obvious avenue for firms to pursue. Since the institutional environment was dominated by a regulatory institution, it is logical that firms will pursue regulatory institutional change post weakening. Therefore, institutional environments dominated by either cultural or normative institutions will inherently require a different institutional change response.

The second boundary condition from the institutional context is that the regulative institutional weakening must be unplanned and severe. If the regulative weakening was planned, as in the case of deregulation, then further regulatory institutional change is unlikely. Firms are unlikely to engage in regulative institutional change to have regulations reinstated after deregulation due to the low likelihood of success. Additionally, even if the regulative institutional weakening was unplanned it needs to be severe enough to warrant an institutional change response as suggested by Suchman's (1995a) Multistage Model of Institutionalization discussed in Chapter 2.

Further, some important boundaries stem from the study's empirical context. The first boundary condition is the relationship between digital copyright firms and enabling firms. This relationship is unique in that each group's institutional environment overlaps. This institutional environment overlap allows for the possibility of changing the other group's institutional environment for improvements in their own institutional environment. Without this overlap, firms would have no incentive to change a separate group's institutional environment.

The second boundary condition from the empirical context, is that firms in both groups are resource-rich and powerful. The resource abundance and high power allow both groups to engage in institutional change actions with greater efficacy. If one group of firms were resource-constrained and had low power, they would be unlikely to engage in institutional change action that would influence the other group.

These boundary conditions are necessary to understand how this dissertation's findings contribute to our theoretical understanding of institutional change. However, just

because these boundary conditions set limits to the study's theoretical findings, it does not mean these findings are not generalizable to other institutional change contexts and other areas of management theory. Therefore, the broader implications of this study will be discussed after the specific theoretical contributions discussion.

Regulative and Normative Institutional Change Implication

The first set of hypotheses focuses on various aspects of how CPA engagement from firms affects the level of normative pressure they place on enabling firms to self-regulate. One of the major theoretical contributions comes from the strong support of hypothesis 1 that demonstrates the more firms engage in direct CPA, the more normative pressure they place on enabling firms to self-regulate.

From a general institutional change perspective, a theoretical contribution is made by providing evidence that firms engage strategically in regulative institutional change and normative institutional change simultaneously. More specifically, increased engagement in action for changing regulative institutions is related to increases in engaging in normative institutional change action. This relationship provides new understanding of how firms coordinate and combine change actions that target different institutional pillars to improve the overall institutional environment. For instance, digital copyright firms that engage in direct CPA for regulative institutional change, place the most pressure on enabling firms to self-regulate for normative institutional change. Theoretically, this opens a new lens to view how firms engage in institutional change, as most studies have focused on changing a single institutional pillar.

Additionally, this finding challenges the assumption that normative institutional change is less utilitarian and self-interest driven than regulative institutional change actions (Granovetter, 1985; North, 1990; Scott, 2010). The digital copyright firms in this study strategically use normative institutional change action for their own self-interest and improvement of their business environment. This finding gives credence to the call to study institutional change with a more strategy focused lens (Ahuja & Yayavaram, 2011; Dorobantu et al., 2017; Peng et al., 2009).

Further, this finding provides a better understanding of the regulative institutional change process. While regulative institutional change has long been recognized, the understanding of how regulative institutional change has occurred remains relatively static. Previous studies focus on how firms directly engage with policymakers and regulators via CPA to change regulative institutions (Hillman et al., 2004). Yet, how firms use other actions to bolster their regulative change attempts are under-researched. This study's finding - that normative institutional change bolsters regulative institutional change - provides a more nuanced understanding as to how firms engage in regulative institutional change. This finding opens the door to examine relationships between cultural institutional change and regulative change as well.

This finding also provides a new theoretical understanding of the nonmarket strategy literature. First, pressure for industries to self-regulate has thus far only been viewed as originating from government regulators (A. A. King & Lenox, 2000). This study demonstrates that pressure to self-regulate can come from firms outside the focal

industry. This by itself opens up the industry self-regulation literature to a more strategic perspective on how institutional rivals may pressure other industries to self-regulate.

Additionally, while both CPA and self-regulation have been mapped to regulative and normative institutional change respectively, there has been no study that evaluates their relationship. By demonstrating that increased CPA activity is related to increased pressure to self-regulate, we begin to understand how nonmarket strategies are combined to create institutional change and improve the institutional environment. This finding is a foray into empirically understanding the relationship between different nonmarket strategies. As the nonmarket strategy literature has grown, researchers have recently called for studies evaluating the relationship between different nonmarket strategies (Dorobantu et al., 2017; Mellahi et al., 2016).

Indirectly Engaging in Institutional Change

Hypotheses 2 and 3 investigate the effects of firms engaging in CPA indirectly through trade associations on the level of normative pressures placed on enabling firms to self-regulate. Taken together, these hypotheses show that firms engaging in CPA indirectly place higher levels of pressure on enabling firms to self-regulate than firms that do not engage in CPA, but less than firms that engage in CPA directly. These findings provide some interesting theoretical contributions to the role trade associations play in institutional change.

First, while trade associations have long been recognized as institutional change actors (Galvin, 2002; Lenway & Rehbein, 1991), little has been theorized and tested about their institutional change performance as compared to firms engaging directly in

institutional change. The results suggest that the firms acting indirectly through trade associations have lower legitimacy as institutional change actors than firms acting directly as an institutional change agent. Perhaps a limit to this finding is that the industries in this study contained many large firms that have the ability to engage directly in institutional change. This finding may not hold for industries comprised of smaller firms.

Additionally, the finding in hypothesis 3 - that firms that engage in more indirect CPA place less pressure on enabling firms to self-regulate than firms that engage in less indirect CPA - is theoretically interesting. This finding suggests that the more often firms have a trade association act on their behalf, the less direct institutional change action they will take themselves. This finding is reinforced by Barnett's (2013) findings that large resource-rich firms dominate trade associations' strategic direction.

Foreign Firms Role in Domestic Institutional Change

Hypothesis 4 investigates the role of foreign firms that do not have access to CPA on the level of normative pressures placed on enabling firms to self-regulate. The findings were that foreign firms, that inherently do not have CPA access, place more pressure on enabling firms to self-regulate than domestic firms that do not engage in CPA. However, foreign firms also placed less pressure on enabling firms to self-regulate than domestic firms that engage in CPA.

These findings provide additional understanding of the literature on how foreign actors engage in institutional change. Most of the institutional change literature that includes foreign actors focuses on foreign actors in emerging economies (Peng, 2003;

Peng & Heath, 1996). However, little is known about foreign firms engaging in institutional change in developed economies. This finding suggests that foreign firms will pursue other institutional change actions when the regulative institutional change avenue is blocked. Additionally, their level of engagement will be greater than domestic firms that do not engage in regulative institutional change, but less than domestic firms that do engage in regulative institutional change.

These findings are especially intriguing considering the current concerns in the US about foreign influence in social media to shape the US political landscape. Given this study found that foreign firms pursued normative change when regulative change was restricted, it is plausible that foreign firms would also pursue cognitive institutional change in different settings. Therefore, this finding opens up new avenues for institutional scholars to better understand how foreign firms influence domestic regulative institutions.

Response to Self-Regulation

Hypotheses 5 and 6 explored the responses of digital copyright firms to the enabling firm's self-regulation events. The support of hypothesis 5 demonstrates that digital copyright firms respond to self-regulation events with increased normative pressure for more self-regulation. This finding gives new insight into the strategic use of normative pressure and self-regulation from both an offensive and defensive perspective. As such, it expands our knowledge about the relationship between institutional rivals pressuring firms in other industries to self-regulate, as was discussed previously.

From the offensive perspective, the self-regulation event is a sign of the successful use of normative pressure and as an indication to increase normative pressure for hopes of more self-regulation. From a defensive perspective, firms implementing self-regulation should be prepared for an increase in normative pressure after implementing self-regulation.

Additionally, the threat of more regulation still looms for defensive firms, and self-regulation is shown to be an effective defensive measure at preventing regulation. Therefore, defensive firms need to weigh the risks when deciding whether or not to implement self-regulation. The risk of implementing self-regulation is an increase in normative pressure from your institutional rival, while decreasing the chances of additional government regulation. This option is desirable if the threat of government regulation is high or the normative pressure from the institutional rival firms is weak enough to ignore. The other option is to not implement self-regulation and increase the chance of additional government regulations, while keeping normative pressure from institutional rivals lower. This option is desirable if the threat of additional government regulations is weak or the defensive firm fears an increase in normative pressure from institutional rival firms.

The strategic implications from the offensive and defensive perspective of self-regulation give credence to the recent calls to understand nonmarket strategy from a strategic perspective (Dorobantu et al., 2017; Mellahi et al., 2016). Researchers have only recently been looking at nonmarket strategy in a competitive lens (Dorobantu et al., 2017; Rudy & Johnson, 2016) and as such, strategy scholars know little about how firms

respond to strategic events with nonmarket strategy. This gap is exemplified by the lack of findings for hypothesis 6 that investigated the CPA response to self-regulation events.

Though hypothesis 6 is clearly not supported, it does raise the issue of organizational scholars' lack of understanding about how firms strategically engage in CPA. While it is recognized why firms engage in CPA, the nuances of how firms engage in CPA are understudied. New research should investigate how firms vary CPA engagement based on industry and competitor events, as well as political events.

Generalizing the Findings and Future Studies

As I chose to open the discussion chapter with boundary conditions for this study, I am intentional in my constraint to not overgeneralize the theoretical contributions. However, I do believe these findings are more than just a description of the fight for digital copyright protection. Hence, the following section discusses how these findings generalize to management research. In addition, I also discuss how future studies can expand the new theory generated in this study.

The first generalized area is this study demonstrates how firms can strengthen their institutional change efforts by coordinating actions that target multiple institutional pillars. While this study shows how normative and regulative change actions are used in conjunction to change the institutional environment, other combinations including cultural institutions are possible. Therefore, researchers should look to understand how combining change actions that target different institutional pillars could strengthen and weaken each other. For example, it is possible that cultural institutional change could turn actors against an existing regulative institution, which may encourage regulative

institutional change. While not every institutional context is ripe for coordinated change actions that target multiple institutional pillars, researchers should look for contexts to create institutional context typologies where coordinated or solo institutional pillar targeting strategies are better suited.

Additionally, this study investigates an empirical context - the unplanned and radical weakening of a strong regulative institutional environment - in which little attention has been given. However, it is easy to imagine an increase in scenarios where strong regulative institutions are radically weakened. With the exponential increase in technological change and the inability for policymakers to respond effectively to technological change, this institutional context is likely to become more common. While the exact findings of this study are likely to not generalize to every similar institutional context, I predict some findings will. The coordination of targeting multiple institutional pillars is probable given the high likelihood of a sole regulative institutional change response being unsuccessful.

More research is needed in empirical contexts where the unplanned and radical weakening of regulative institutions occurs to be able to create comparative studies of how institutional change happens in this institutional context scenario. A similar institutional environment context surrounds the fight between rideshare companies and taxi companies in how rideshare is regulated. In the US, taxi service is heavily regulated at the municipal level. These regulations include limits on the number of taxis, areas of operation, special licensing for drivers, and fare rates. However, rideshare companies such as Uber and Lyft were able to circumnavigate the regulations in many cities. The

ride shares companies were able to do this by claiming they were not taxi services and have no employees, as they only coordinate service for independent contractors. Over the last few years, municipalities have passed specific regulations for rideshare companies, but rideshare is still significantly less regulated than taxis (Cetin & Deakin, 2019).

From an institutional perspective, the private car for hire industry was under a strong regulative environment. However, the meteoric rise of rideshare radically weakened the institutional environments for this industry. Again, researching this institutional context could provide a good comparison for this study. There are some differences with this context that could provide especially interesting contrasts. The first is that the taxi companies have many fewer financial resources compared to the digital copyright firms in this study, which may limit the strength of their institutional change actions. However, taxi companies may be powerful in other ways, such as having close ties to the local government. Additionally, the taxi context contains municipal level regulations instead of the federal level regulations of the digital copyright context and may therefore also show differences.

Another similar institutional context surrounds the opioid crisis in the US and other countries. Every process in the opioid life cycle, from manufacturing, distribution, and prescription, to individual possession, is heavily regulated. Yet, despite these heavy regulations, many pharmaceutical companies, medical clinics, and pharmacies across the US were knowingly oversupplying regional populations with an incredibly high number of opioids. The oversupply, paired with the highly addictive opioids, caused an opioid epidemic in the US and other countries (DeWeerdt, 2019)

From an institutional perspective, pharmaceutical drug manufacturing and distribution operated in a once strong regulative institutional environment. However, the regulative institutional environment was weakened enough to allow pharmaceutical companies, medical clinics, and pharmacies oversupply opioids. Studying both how this regulatory institutional environment radically weakened and the institutional change response after the opioid epidemic, though it is still unfolding, may provide interesting parallels and differences to this study.

Another piece of new theory generated from this study that generalizes to other contexts is how foreign actors with restricted access to domestic regulative institutions will pursue institutional change by targeting other institutional pillars. Given how many issues have global implications, yet fall under regional regulative jurisdiction, it is likely there exist many issues where foreign actors will benefit from institutional change in other countries. Since direct regulative institutional change through CPA is unlikely, these foreign actors will engage in other types of institutional changes. Again, while this study focuses on normative change, cultural institutional change actions may also come into play. Therefore, future research can look at both offensive measures from foreign actors and defensive measures to stop or lessen foreign influence.

An interesting institutional context for focusing on foreign actors targeting multiple institutional pillars is US-based social media being influenced by foreign actors during the 2016 election. From an institutional perspective, foreign actors are prohibited from influencing other nations' democratic elections, and hence a direct path to regulative institution change is limited. However, Russian-backed agents, creating fake news and

propagating misinformation on social media, were able to influence the regulative institutional change process. Additionally, there has been no new policy to regulate social media's vulnerabilities to foreign actors influencing political information since the 2016 election. Yet, multiple social media firms have enacted self-regulation in order to quell the influence of foreign actors (Kozlowska, 2019). Again, a study on this institutional context could expand the findings from this study about foreign actors targeting different institutional pillars to indirectly influence regulative institutions.

Another theoretical contribution from this study that is likely to generalize is the now deeper understanding of industry self-regulation. This study demonstrates how pressure for industries to self-regulate does not have to only come from government regulators, but may also come from firms in peripheral industries that will benefit from the self-regulation. This contribution opens a new lens to view how firms benefit from pressuring firms in other industries to self-regulate and supports the institutional change as a strategy perspective (Ahuja & Yayavaram, 2011; Peng et al., 2009). This strategy may be useful for firms in established industries to slow the progress of firms in fast-growing nascent industries or in established industries that are branching into a new space.

Further, historically nonmarket strategies have been studied separately. However, there is a growing call for action for research to integrate different types of nonmarket strategies (Doh, Lawton, & Rajwani, 2012; Dorobantu et al., 2017; Mellahi et al., 2016). This dissertation aids this integration by providing empirical evidence and a theoretical

explanation that CPA and industry self-regulation are linked as offensive and defensive actions for institutional change.

Finally, this dissertation contributes to the IP institutional environment literature. Research in this area has recently expanded with the inclusion of IP appropriation in weak and transitioning economies (K. G.-L. Huang et al., 2017; Zhao, 2006). However, IP institutional environment research has largely ignored contexts where strong IP institutional environments are weakening (Greenstein, Lerner, & Stern, 2013). The findings from this study show a strong institutional response to restore IP rights. While I do expect industries in similar IP institutional environments to have a similar institutional response, this may not be the case for all industries.

Other industries may choose to forego an institutional change response and instead choose different product-based options. For example, some software companies have chosen to pursue software as a service that provides and hosts the software which makes it copyright infringement more difficult (Atkinson & Draheim, 2013). Other software firms have chosen to move to a subscription model where they offer frequent updates to the software. This model diminishes the effects of digital copyright infringement, as older software versions are no longer supported and missing critical updates (Hill, 2007). These alternative approaches suggest that there are differences in how industries will respond to weakening regulative institutions that are based on the ability to protect IP with market-based solutions. Therefore, comparative studies of different industries response to the general regulative institutional weakening of IP rights

may yield new understanding about when firms choose institutional change or a different path.

Limitations

As with any study, this dissertation contains some limitations. First, this study develops and tests hypotheses based on a specific institutional context. As discussed at length in the boundary conditions section of this chapter, focusing on one institutional context limits the generalizability of the findings. As such, more research is needed in different institutional contexts to better understand how the findings on both how firms target multiple institutional pillars to enact institutional change and how firms strengthen their institutional environment after the unplanned and radical weakening of the strong regulative institutions generalize to other settings. As such, several additional institutional contexts that are suitable for future studies were discussed throughout this chapter.

The second limitation is that the measure for CPA in this study only includes lobbying activity. Lobbying activity was used as the CPA measure, as it can be directly linked from the firm to the digital copyright issue, whereas other forms of CPA cannot, such as political action committees (PAC) donations for candidate elections. However, several digital copyright firms in the sample likely donated to PACs explicitly to influence the digital copyright issue. Unfortunately for researchers, the laws around PAC donations do not require the focal issue to be disclosed, as is the case with lobbying. Additionally, PACs can easily hide the identity of donors through the common practice of creating an NGO to handle the candidate election donations, as NGOs are not required to

disclose their donors (Barker & Wang, 2011). This is commonly known as "dark money" and presents a challenge for researchers measuring firms CPA.

Another limitation is concerned with hypothesis 4, which makes predictions about firms without CPA access. The without CPA access variable is operationalized where all foreign firms are categorized as not having CPA access. This operationalization then groups all foreign firms together, which likely includes several other differences compared to domestic firms besides just not having CPA access. Therefore, the operationalization can also be interpreted as firms located in the US or outside the US. Ideally, an operationalization would exist where some foreign firms have CPA access and some do not. However, this is not possible given the geographic constraint to CPA access in the US.

Management Implications

The primary managerial implication comes from the use of nonmarket strategies for improvements to a firm's business environment. In general, managers faced with a changing institutional context that significantly harms their performance should view nonmarket strategies as a way to improve their business environment, even if the results may not be immediate. More specifically, firms engaging in CPA should investigate if other nonmarket strategies, such as pressuring further industries to self-regulate, may bolster their institutional change actions.

From a defensive perspective, firms who are facing the potential of regulative institutional change from the actions of firms in other industries should investigate self-regulation as a means to prevent or weaken these attempts. However, defensive firms

should weigh this option with the likelihood that normative pressure from institutional rival firms will likely increase. Thus, determining which is the bigger threat, the chance of new regulations or increased normative pressure, may decide their self-regulation strategy.

Slightly more general, established firms should be sure to include an institutional impact component when assessing the emergence and rise of new technologies and industries. This is especially so for firms that model their behavior on regulative institutions. By identifying an institutional threat before it is fully realized, firms can take preemptive actions, both with policymakers and with firms enabling the technological change that may lessen the institutional impact of the new technology.

Policy Implications

This study's first policy implication is rather straightforward and nothing new for policymakers. When firms are faced with an unplanned and radical regulatory weakening, they will attempt to influence policymakers to create new regulations that restore the regulative strength. If these efforts are unsuccessful, firms will take improving their business environment into their own hands and pursue other institutional change actions. Therefore, the issue for policymakers is: will firms or the government create new institutions that affect society.

Further, this study highlights how technological change can weaken long-standing institutions and highlights how complex technological change can be. From a policy perspective, it can be quite daunting to create regulations that mitigate the negative effects of technological change. However, policymakers need to make strong efforts to

understand the technological change and its impact on industry and broader society. Again, given the rapid pace of technological change, I expect policymakers will continue to struggle in this area.

VIII. Conclusion

This dissertation provided a deep exploration of a novel institutional question: how do firms restore strength to their institutional environment after the unplanned and radical weakening of a strong regulatory institution. Through analyzing this institutional problem, new theory was created and tested that led to two primary contributions and two secondary contributions to the institutional change literature. These contributions, which are discussed in detail in Chapter 7, are briefly reviewed presently.

The first primary contribution was the new theory created on the positive relationship between regulative and normative change actions. This theory was supported by empirically showing the more digital copyright firms engage in CPA, the more normative pressure they place on enabling firms to self-regulate. By demonstrating theoretically and empirically how firms use target multiple institutional pillars in this institutional context, a new avenue is opened for institutional change researchers. Future research can compare how firms target multiple institutional pillars, including cultural institutions, in different institutional contexts to further elaborate on this theory.

The second primary contribution was the new theory that shows how firms in one industry attempt to improve their business environment by engaging in institutional change action against firms in a different industry. This theory was demonstrated by the collection of supported hypotheses related to offensive actions from digital copyright firms directed at enabling firms. This theoretical contribution opens up institutional change research to include a more strategy-based focus in which firms may improve their business environment by enacting institutional change on firms in different industries.

The first secondary theoretical contribution was the new theory on how the inability to directly enact regulative institutional change is related to foreign firms increasing their normative institutional change actions, compared to domestic firms that do not engage in CPA. This theory was supported by empirically showing that foreign digital copyright firms without CPA access place more normative pressure on enabling firms than domestic firms with CPA access but do not engage in CPA. The implication of this theory encourages researchers to reexamine foreign firms in institutional change. Further, researchers should not assume that foreign firms are unable to change regulative institutions just because they do not have the direct ability to do so.

The second, new secondary theoretical contribution theory explains the relationship between two nonmarket strategies CPA and industry self-regulation, and how they can be combined to form institutional change strategies for firms to improve their business environment. This theory was supported by empirically showing the more digital copyright firms engage in CPA, the more normative pressure they place on enabling firms to self-regulate. Additionally, new theory was created and supported regarding the dynamics of industry self-regulation that shows how the pressure to self-regulate can come from firms in different industries. Both of these contributions provide evidence that nonmarket strategies can and should be studied as strategic actions to improve firm performance by changing the business environment.

These four theoretical contributions taken together demonstrate that firms can engage in dynamic and orchestrated institutional change strategies to improve their business environment. Further, institutional change strategy can include changing firms

in different industries institutional environment, which may lead to a decline in the other industry's business environment. Collectively, these contributions lead to strong support for studying institutional change as a dynamic and orchestrated strategy used by firms.

My plan is for this dissertation to spur a research stream for myself, and hopefully others, that studies institutional change from a more strategy-based perspective. While some efforts have been made to study institutional change from a strategy perspective (Ahuja & Yayavaram, 2011; Peng et al., 2009), this area has seen relatively little attention in the management field. Given the increasing power of firms in society, and the potential for institutional change to affect the broader society, this research perspective will only continue to grow in importance. I look forward to the theoretical and empirical contributions I can make in this area.

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