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Contract Adjudication in a Collaborative Economy¹

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Abstract:

In order to explore the debate between contextualist versus formalist contract interpretation, this article examines dispute resolution procedures in a novel class of contracts: agreements governing inter-firm collaboration. Analysis of these contracts reveals that they include arbitration clauses significantly more frequently than other commercial contracts. This observation, when considered in light of the complex escalation procedures these contracts also institute for resolving disputes, raises the puzzle: why do collaborators avoid litigation?

The article's central claim is that litigation is shunned because contemporary contextualist contract law poorly interprets the meaning of collaborative activity. Note, however, that contextualism's deficiencies do not inevitably recommend a return to formalism: formalism's justifications are problematic at best when applied to collaborative production relationships. Thus, this article considers the possibility of transcending the debate between contextualist and formalist enforcement, finding promise in the application of the "experimentalist" model of adjudication, theorized to describe current trends in public law litigation, as a template for modern contract enforcement.

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What is the role of the court in contemporary capitalism? The conventional wisdom in the economics literature is that, through consistent enforcement of property rights, courts provide the stability and certainty necessary for investment.³ Committing resources into an uncertain endeavor is less risky where one can rely on a court to protect one's proprietary claim to the revenue stream resulting from one's investment. Thus, by enforcing executory agreements, contract law provides the infrastructure necessary for the interpersonal, intertemporal exchange that constitutes modern markets.⁴

This story grows complicated, however, when one acknowledges the reality of contractual incompleteness. Due to limits of foresight, resources, and/or language, events inevitably arise that a written contract does not clearly cover.⁵ By overlooking contingencies that are as unforeseeable as they are unavoidable, incomplete contracts challenge the court's presumed ability to enforce executory agreements. The question then is what the court is to do with these contractual "gaps."

To date, the perennial debate between "formalist" and "contextualist" contract enforcement has framed whatever solutions are proposed for the problem of contractual incompleteness.⁶ Both sides agree that contract enforcement takes place within a constellation of interdependent governance institutions: formal enforcement mechanisms, such as courts, operate side-by-side with informal constraints, such as reputation effects.⁷ However, the camps do not agree over how these complementary institutions should interact. According to contextualists, the court itself, using informal business norms as a guide, should proactively fill the agreement's gap on behalf of the parties.⁸ On the other

³ Avner Greif, *Commitment, Coercion, and Markets: The Nature and Dynamics of Institutions Supporting Exchange*, in HANDBOOK OF NEW INSTITUTIONAL ECONOMICS 727, 730 (Claude Menard and Mary Shirley, eds., 2005); see also Michael Trebilcock and Jing Leng, *The Role of Formal Contract Law and Enforcement in Economic Development*, 92 VA. L. REV. 1517, 1502-25 (2007); for the canonical work in this area, see NORTH, DOUGLASS, INSTITUTIONS, INSTITUTIONAL CHANGE, AND ECONOMIC PERFORMANCE (1990); for pioneering empirical research, see Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Schleifer, and Robert Vishny, *Law and Finance*, 106 J. OF POLITICAL ECONOMY 1113 (1998). This perspective on law's role in markets traces its roots to Max Weber's work. See Max Weber, *LAW IN ECONOMY AND SOCIETY*, (1954) (translation from Max Weber, *Wirtschaft und Gesellschaft*, 2d ed. (1925)). At its bluntest, this view leads to the minimalist conception of the courts' role. See e.g. Alan Schwartz & Robert Scott, *Contract Theory and the Limits of Contract Law*, 113 YALE L. J. 541, 546 (2003) ("a modern commercial economy can function well with little more than honest courts and a set of enforcement rules.") [hereinafter Schwartz & Scott, *Limits of Contract Law*].

⁴ See MORTON HORWITZ, *THE TRANSFORMATION OF AMERICAN LAW 1780-1860* 174 (1977) ("[T]he moment at which courts focus on expectation damages rather than restitution or specific performance to give a remedy for nondelivery is... [when] [c]ontract then becomes an instrument for protecting against changes in supply and price in a market economy.").

⁵ See Robert Scott & George Triantis, *Incomplete Contracts and the Theory of Contract Design*, 56 CASE W. RES. L. REV. 187, 190 (2004).

⁶ For a concise overview of the debate, see Robert Scott, *The Case for Formalism in Relational Contract*, 94 NW. U.L. REV. 847, 849-53 (2000) [hereinafter Scott, *Case for Formalism*].

⁷ *Id.* at 852 ("The debate that divides the academics who think about these questions is not over the nature of contract as an institution. We are all relationalists now. In that sense Macneil and Macaulay have swept the field. Contract, we now know, is complex and subjective and synthetic in every sense of those terms. The debate, rather, is over the proper nature of contract law. All contracts are relational, complex and subjective.").

⁸ See discussion in Part 2.2 *infra*.

hand, modern formalists argue that a court asked to enforce an incomplete contract should cling to a minimalist understanding of its role and refuse to extrapolate the contract's indefinite language to reach the unforeseen situation. Such addresses incompleteness because formalism creates incentives for parties to draft clearer agreements and/or because informal governance, primarily reputational effects, will compensate for the courts' minimalized role.⁹ Thus, defining the court's proper role in enforcing executory contracts has been cast largely as an interpretive problem.¹⁰

Inspired by recent research, which argues that transaction type determines whether contextualism or formalism is more appropriate,¹¹ this article explores the contextualism versus formalism debate by examining the contracts that govern the inter-firm collaboration that characterizes the modern economy. Over the past thirty years, networked forms of production—such as strategic alliances, joint ventures, just-in-time arrangements, etc.—have become a regular fixture on the economic landscape.¹² These collaborative relationships typically have an innovative element at their core: parties often partner in order to access competencies which, when combined with in-house assets, allow them to escape commodity pricing.¹³ To govern these collaborations, parties have developed a new type of contractual governance mechanism that, by institutionalizing a bilateral experimentation process, allows parties to control behavior in an environment where they are still learning the scope and scale of what it is they are trying to innovate.¹⁴ Rather than setting forth discrete items for performance like a traditional executory contract, these mechanisms generate rolling rules that govern parties' behavior through the transparency that results from joint discovery. To capture these contracts' role in fostering innovation and to differentiate them from typical executory agreements, I refer to these contracts as “generative.”

⁹ See discussion in Part 3.2 *infra*.

¹⁰ Benjamin E. Hermalin, Avery W. Katz & Richard Craswell, *The Law and Economics of Contracts*, in THE HANDBOOK OF LAW & ECONOMICS 63 (A. Mitchell Polinsky & Steven Shavell, eds., 2006) (“Probably the most common source of contractual disputes is differences in interpretation, if only because the parties have limited incentive to pursue a dispute if they can foresee and agree upon its likely outcome. The problem of contract interpretation thus provides a central backdrop for the law of contracts, which contains many rules and principles that are designed to address it.”).

¹¹ See e.g. Theodore Eisenberg & Geoffrey Miller, *The Flight from Arbitration: An Empirical Study of Ex Ante Arbitration Clauses in the Contracts of Publicly Held Companies*, 56 DEPAUL LAW REVIEW 335 (2007) (arguing that preference for arbitration depends, in part, on transaction type) [hereinafter Eisenberg & Miller, *Flight from Arbitration*]; Adam B. Badawi, *The Attributes of Transactions and Interpretive Preferences: The Limits and Borders of Contractual Formalism* (Bepress working paper, 2007), available at: http://works.bepress.com/adam_b_badawi/3 (presenting a theoretical model centered on transaction characteristics that attempts to explaining parties' preferences for contextualist or formalist interpretation).

¹² See generally Walter Powell, *Neither Market nor Hierarchy: Network Forms of Organization*, 12 RESEARCH IN ORGANIZATIONAL BEHAVIOR 295 (1990).

¹³ JOSH WHITFORD, THE NEW OLD ECONOMY: NETWORKS, INSTITUTIONS, AND THE ORGANIZATIONAL TRANSFORMATION OF AMERICAN MANUFACTURING 69 (2005).

¹⁴ A thorough discussion of these new contract mechanisms is provided in Matthew Jennejohn, *Collaboration, Innovation, and Contract Design*, 14 STAN. J. L., BUS. & FIN. (forthcoming Autumn 2008); also available as Columbia Center for Law and Economic Studies, Working Paper No. 319 (2007) at <http://ssrn.com/abstract=1014420> [hereinafter Jennejohn, *Contract Design*].

Examination of these contracts raises questions that perhaps give reason to transcend the binary framework of contextualist versus formalist contract enforcement. Generative contracts are different from other common commercial contracts not only by incorporating rolling rules but also by including alternative dispute resolution (“ADR”) mechanisms at a significantly higher rate: compared to the general average of 10.64% across a variety of types of commercial agreements,¹⁵ generative contracts include arbitration clauses at a significantly higher rate—49.73%.¹⁶ Furthermore, these contracts typically incorporate complex dispute escalation procedures that attempt to create resolutions before resorting to an outside tribunal.¹⁷ Thus, a puzzle arises: why do firms avoid litigation when they collaborate on an innovative project compared to when they enter into other transactions?

This puzzle highlights the more abstract question of which approach, contextualism or formalism, is more appropriate for interpreting the contracts of the networked economy. My argument, which is divided into three separate movements, is that perhaps neither contextualism nor formalism should be applied. First, my central claim is that collaborators embrace ADR because the conventional paradigm of contract enforcement in the United States—that of parties seeking to vindicate rights before a detached tribunal, which interprets their commitments with the contextualist doctrines found in the Uniform Commercial Code (“UCC”) and the Second Restatement of Contracts (“2d Restatement”)—is counterproductive as applied to disputes arising in a networked economy. Contextualist doctrines, such as course of performance, that are supposed to create flexibility for parties, undermine collaborations because there is a constant risk that a collaborators’ experimentation will be interpreted as a modification of the contract. Furthermore, doctrines such as trade usage, which use wider industry norms to interpret the meaning of a contract, will likely lead the court astray since collaborators are often actively trying to forsake industry conventions as they innovate. Thus, collaborators have abandoned conventional contract enforcement for private alternatives.

Collaborators’ embrace of arbitration, however, does not necessarily belie or require a return to formalism. My second argument is that only a particular version of formalist theory can explain why formalism complements parties’ choice to use escalation and arbitration, and that even this explanation is strained. As traditionally formulated, there are two standard arguments for formalism: one, formalism creates better incentives for parties to draft clearer agreements (standardization theory); and two, formalism better allows informal governance to flourish (self-enforcement theory). In conventional form, both arguments are insufficient. Standardization theory fails because the endemic uncertainty that attends innovative activity precludes parties from creating standardized contractual terms that a court can readily recognize—collaborations are simply too unique for meaningful standardization to be possible. Traditional self-enforcement theory also fails because reputational information does not circulate easily: first, contrary to conventional wisdom, inter-firm collaborations are often neither lengthy nor repeated; and, second, global industry networks, through which reputational

¹⁵ Eisenberg & Miller, *Flight from Arbitration* at 356.

¹⁶ See discussion Part 1 *infra*.

¹⁷ See discussion Part 1 *infra*.

information flows, are both heterogeneous and dynamic. There is a possibility, however, that self-enforcement theory, if amended, may explain parties' behavior: these new contracts could be understood as formal attempts to approximate informal governance mechanisms. In other words, where parties cannot rely on informal trust and reputation to control unforeseeable contingencies, they attempt to recreate such mechanisms through formal contracts. This explanation roughly corresponds to the stylized account of private-ordering that originated in Ellickson's research: where public enforcement institutions are sub-optimal, parties create private adjudicatory institutions to compensate.¹⁸ While this may be true to a certain extent, important theoretical issues emerge upon closer scrutiny. Namely, this "formalization of the informal" view, by collapsing the dichotomy between formal and informal governance, obfuscates self-enforcement theory's core assumption about the tension between parties' need for firm planning and their need for long-term flexibility. Without this foundation, the grounds on which self-enforcement theory can proceed are unclear. Thus, while formalism may have purchase when applied to collaborations, it is only through the rather fraught application of a certain theoretical strain.

Thus, with contextualism unconvincing and formalism difficult at best, my third—and most tentative—argument is that a new conception of contract enforcement may be necessary.¹⁹ Such a re-conception is available in the "experimentalist" model of adjudication that Professors Dorf and Sabel have developed to theorize the transformation of public law litigation.²⁰ Experimentalist theory provides a ready approach to resolving disputes between new economy collaborators because the same logic of social cooperation that animates Dorf and Sabel's model is reflected in the generative contracts that I have identified. Whereas traditional executory contracts outline future rights and duties, of which the failure to perform authorizes an aggrieved party to seek damages for its unrealized expectations, generative contracts establish a framework of bilateral experimentation that not only guides the parties towards discovering the collaboration's innovative potential but also polices against defection. With the drug treatment court as its exemplar, experimentalist adjudication mirrors this exploratory model of social organization: rather than vindicating rights, an experimentalist tribunal repairs a collaboration's malfunctioning learning process as the court collaborates with the parties in discovering and continually improving upon piecemeal solutions. More specifically, the court's task is to help the parties set a series of performance benchmarks, monitor progress and aide in the detection and correction of emergent errors, and, if necessary, discipline recalcitrant collaborators through penalty defaults. Experimentalism fights fire with fire. In short, an experimentalist model of adjudication, which highlights the tribunal's role in problem-solving rather than rights vindication, may best explain the system of dispute resolution that collaborators are trying to approximate through a mix of escalation provisions and arbitration clauses.

¹⁸ See generally ROBERT ELICKSON, *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* (1991).

¹⁹ For a practical perspective on the need for a new paradigm, see Jeswald Salacuse, *So What Is the Deal Anyway? Contracts and Relationships as Negotiating Goals*, 14 *NEGOTIATION JOURNAL* 5 (1998).

²⁰ See e.g. Michael Dorf & Charles Sabel, *A Constitution of Democratic Experimentalism*, 98 *COLUM. L. REV.* 267 (1998); Michael Dorf & Charles Sabel, *Drug Treatment Courts and Emergent Experimentalist Government*, 54 *VAND. L. REV.* 831 (2000).

Exploring the relationship between collaborative production and contract adjudication provides new insights into a wide range of current debates. First, by raising the question of law's role in supporting innovation-centered transactions, this article provides a new avenue for policymakers, hoping to strengthen the often fragile inter-firm networks upon which the modern global economy depends, to pursue. Recent weaknesses in Boeing's collaborations with suppliers in the 787 Dreamliner project,²¹ perhaps the most visible inter-firm collaboration to date, indicates the urgent need for more thorough understanding in this regard. The theoretical analysis presented here provides judges, arbitrators, and counsel with an overarching framework to inform their approach to dysfunctional collaborations. Second, this article addresses the under-theorized topic of contract law's role in facilitating economic innovation—while the relationship between law and innovation has received extensive attention in the antitrust and intellectual property literatures, it has been routinely overlooked among contract scholars. Third, and finally, by re-conceptualizing the court's place in capitalism, this article suggests a new view of the law's role in promoting and sustaining economic development.

Lest I oversell, it is important to note this article's limits. First, the article uses contract "interpretation" as a proxy for a wider discussion regarding the nature of contract law. Thus, I do not directly address the important related issues of contract formation, breach, damages, etc. I believe that focusing on interpretation captures the essence of the issues at hand, since interpreting the meaning of the agreement is often an enforcing court's central task. Second, I adopt the view from the law & economics literature that interpretation is a matter of the court's ability to access the information necessary to discern the meaning of a contract.²² Thus, I do not address the large literature discussing the linguistic issues found in the interpretation of any written document.²³ This is not an article about language. Third, for brevity's sake, I have often had to gloss over interesting and important nuances. This article is a preliminary study, an outline of a tentative theory shared in order to inspire debate; more thorough treatment awaits a more accommodating format.

The article is organized as follows: Part I discusses the recent development of collaborative production and the novel contract mechanisms that the private bar has created to govern this new form of economic organization. To frame the subsequent

²¹ See e.g. Hal Weitzman, *Boeing Admits Dreamliner Rethink*, FINANCIAL TIMES, March 19, 2008; Leslie Wayne, *Latest Delay Puts Boeing's Dreamliner a Year Behind*, NY TIMES, April 9, 2008.

²² Hermalin, Craswell, and Katz, *supra* note __, at 64 ("From a theoretical perspective, it is useful to model a contract as a mapping from *verifiable* events to outcomes. For instance, an insurance contract could contain a provision that related damage to one's car (a verifiable event) to a payment to the insured (an outcome). In this context, 'verifiable' means an event is observable not only by the parties to the contract, but also by any third party (e.g., a judge) who might be called upon to adjudicate a dispute. The focus on verifiable events is motivated as follows. Were an outcome contingent on an unverifiable event (i.e., one not observable to the third party), then there would be no way for the third party to judge the extent of breach of contract (if any) or even who breached (if anyone did). Hence, a contractual obligation that is contingent on an unverifiable event cannot be effectively enforced by a third party.") (original emphasis).

²³ See Kent Greenawalt, *A Pluralist Approach to Interpretation: Wills and Contracts*, 42 SAN DIEGO L. REV. 533, 539-43 (2005).

discussion of the courts' proper role in this new economic order, Part I presents simple descriptive statistics which show that collaborators avoid litigating disputes far more frequently when compared with other commercial agreements. Part II conducts a more comprehensive, though still methodologically modest, analysis that suggests that the inappropriateness of contemporary contextualist contract laws cause collaborators to shun the courts. The bulk of Part II is a theoretical discussion explicating why contextualist doctrines fail when applied to disputes between new economy collaborators. Part III explains why the standard arguments for a return to formalism are unconvincing and why even an amended theory is strained. Part IV examines the possibility that a model of experimentalist adjudication may best explain the complementarities between formal enforcement and collaborative contracting. Finally, Part V summarizes the article's findings and outlines my argument's policy ramifications.

1. The Emergent Infrastructure of the Network Economy

The evolution of contract enforcement that is explored in this article is a response to an ongoing transformation in the organization of the modern economy. In this section, I outline the pertinent characteristics of this transformation. First, to provide background, I describe the general traits of the new networked economy, using a collaboration involving Boeing as an illustrative case study. Second, I outline the pragmatic governance mechanisms which parties use to direct their collaborations. Understanding the differences between these new contractual arrangements and traditional executory agreements provides necessary context for later theoretical arguments regarding the limits of conventional contract adjudication. Finally, I present evidence showing that generative contracts include arbitration clauses far more frequently than other commercial agreements, raising the question of why parties avoid litigating these new contractual relationships.

1.1 Three Hallmarks of the "New Economy"

The "new economy" has passed in the last decade from over-hyped miracle to vulnerable but persistent reality. Here "new economy" refers to a production system, found in both "new" and "old" industries alike,²⁴ defined by three complementary features: first, the de-integration of the vertically-integrated firm; second, the increasing prevalence of product innovation as the criterion upon which companies compete; and third, the use of collaborative arrangements as both a replacement for vertical integration and a means for accelerating innovation processes. Globalization, another characteristic of the new economy, underlies all three in that increased exposure to foreign markets pushes firms to embrace the three complementary strategies.

Over the first three quarters of the 20th century, firms vertically integrated production—i.e. design, manufacture, and marketing processes were all under the control

²⁴ Thus, Josh Whitford refers to the "new old economy"—e.g. manufacturing industries where traditional processes are giving way to new modes of production. Whitford, *supra* note __, at 2.

of a single authority.²⁵ Beginning around the late 1970s, however, firms began deverticalizing: shedding processes not located within the firms' core competencies.²⁶ Resulting from deverticalization are not only leaner but also more interconnected firms.²⁷ This network structure arises as manufacturers simultaneously give more business to fewer suppliers and encourage those suppliers to build relationships with end-users and other suppliers.²⁸ Firms pursue this strategy not only out of intentions to cost-save (the much-heralded impetus behind outsourcing) but also because "[b]y divesting non-core functions, lead firms can more quickly reap value from innovations while spreading risk in volatile markets."²⁹ The networks between firms that arise are crucial to innovation: in order to compete in the "high-speed learning race" characteristic of the new economy,³⁰ firms must "build and maintain an increasing number of 'knowledge nodes' with lead users, universities, technical-service institutes, [and] user communities."³¹ Within these networks, firms engage in disciplined experimentation to realize innovative product development.³²

A quick glance at rough industry statistics suggests that collaborative production is not an outlier; rather, it appears to be an increasingly frequent phenomenon worldwide.³³ For instance, the international electronic contract manufacturing industry,

²⁵ ALFRED CHANDLER, *THE VISIBLE HAND: THE MANAGERIAL REVOLUTION IN AMERICAN BUSINESS* 285-6 (1977) ("The modern industrial enterprise—the archetype of today's giant corporation—resulted from the integration of the processes of mass production with those of mass distribution within a single business firm. . . . By 1917 the integrated industrial enterprise had become the most powerful institution in American business and, indeed, in the entire American economy.").

²⁶ Robert C. Feenstra, *Integration of Trade and Disintegration of Production in the Global Economy*, 12 J. OF ECON. PERSPECTIVES 31, 31 (1998); see also Whitford, *supra* note __, at 17 (describing the shift of "once-vertically-integrated manufacturers" from using *capacity* to *specialized* subcontracting)(original italics).

²⁷ Powell, *supra* note __, at 301 ("Many firms are no longer structured like medieval kingdoms, walled off and protected from hostile outside forces. Instead we find companies involved in an intricate latticework of collaborative ventures with other firms, most of whom are ostensibly competitors."); Luigi Zingales, *In Search of Foundations*, 55 J. OF FINANCE 1623, 1626 (2000); Richard Florida, *Regional Creative Destruction: Production Organization, Globalization, and the Economic Transformation of the Midwest*, 72 ECON. GEOGRAPHY 314, 327 (1996).

²⁸ Whitford, *supra* note __, at 17 ("OEMs give more business to fewer suppliers, and forge closer relationships with a core strategic group that they hope to align with their own goals. Importantly, these key suppliers are not envisioned as mere satellites orbiting a dominant but benevolent patron, dependent and beholden. Rather, in a practice somewhat in tension with the desire to extract priority treatment when needed, OEMs push many of their suppliers to be more independent and to work closely with other customers and end-use industries.").

²⁹ Timothy Sturgeon, *Modular Production Networks: A New American Model of Industrial Organization*, 11 INDUSTRIAL AND CORPORATE CHANGE 451, 452 (2002).

³⁰ Whitford, *supra* note __, at 18 (citing DIMAGGIO, *THE TWENTY-FIRST CENTURY FIRM* 222 (2001)); see also ROBERT PITOFSKY, HARVEY J. GOLDSCHMID & DIANE P. WOOD, *TRADE REGULATION: CASES AND MATERIALS* 402 (5th ed. 2003) ("In many high-tech industries, and increasingly in modern economies generally, successful innovation is a key to commercial success.").

³¹ Foss, *supra* note __; see generally, Walter Powell & Stine Grodal, *Networks of Innovators*, in *THE OXFORD HANDBOOK OF INNOVATION* 56 (Jan Fagerberg, David Mowery, and Richard Nelson, eds., 2005).

³² See e.g. Kathleen M. Eisenhardt & Behnam N. Tabrizi, *Accelerating Adaptive Processes: Product Innovation in the Global Computer Industry*, 40 ADMINISTRATIVE SCIENCE QUARTERLY 84 (1995).

³³ For a thorough overview of the spread of networked economic organization, see MANUEL CASTELLS, *THE RISE OF THE NETWORK SOCIETY*, VOL. 1, 2D ED., 163-215 (2000).

which is frequently studied in the deverticalization literature,³⁴ grew from a \$10 billion market in the early 1990s to an estimated \$275 billion by 2007.³⁵ Other industries have also deverticalized production: the number of R&D collaborations in the biotechnology sector increased ten-fold from the late 1970s to the end of the 1990s;³⁶ US firms' spending on offshored software development amounted to \$5.5 billion in 2000, with estimates of \$17.6 billion by 2008.³⁷ Thus, deverticalization is increasingly a matter of global importance.

1.2 Case Study: Production of the Boeing 787

Boeing's recent effort to make the manufacture of its commercial airplanes more collaborative provides a good example of deverticalization. Reacting to rapid loss of market share to Airbus, Boeing overhauled its product development process with an eye to replicating the Toyota model of collaboration.³⁸ Boeing's goal was to realize process innovations, such as reducing assembly time,³⁹ and product innovations, such as integrating carbon fiber composites into airframes in order to improve fuel efficiency.⁴⁰ Unlike its previous relationships with suppliers, who typically made parts according to Boeing's designs, Boeing's new approach "fully integrated partners into the entire product development process, from concept refinement to system-level design, manufacture, and delivery."⁴¹ For instance, Boeing manufactured only 35% of the critical components for the 787, setting up a separate umbrella organization, which included seven key partners, to handle the design and manufacture of the majority of the new plane's airframe.⁴² Boeing's in-house activity focused primarily on system interoperability and integration of the supply chain.⁴³ Boeing did perform some functions that overlapped with suppliers activities—for instance, it "retained strong cross-functional engineering capabilities in stress, integration, and weight"; however, this was to preserve the know-how necessary to coordinate what the various partners were doing.⁴⁴ The collaboration between Boeing and its suppliers was continuous: suppliers were consulted not only during the initial definition of specifications but also throughout

³⁴ See e.g. Sturgeon, supra note ____.

³⁵ PriceWaterhouseCoopers report available at http://www.pwc.com/techforecast/pdfs/EMS_Web.pdf

³⁶ Nadine Roijsackers & John Hagedoorn, *Inter-firm R&D Partnering in Pharmaceutical Biotechnology since 1975: Trends, Patterns, and Networks*, 35 RESEARCH POLICY 431, 432 (2006) (see fig. 1).

³⁷ SANDEEP SAHAY, BRIAN NICHOLSON, AND S. KRISHNA, GLOBAL IT OUTSOURCING: SOFTWARE DEVELOPMENT ACROSS BORDERS 11 (2003); see generally Gary Gereffi & Timothy Sturgeon, *Globalization, Employment, and Economic Development: A Briefing Paper 2* (Massachusetts Institute of Technology, working paper, 2004) available at <http://web.mit.edu/ipc/publications/pdf/04-007.pdf>.

³⁸ NATIONAL COUNCIL FOR ADVANCED MANUFACTURING, THE NETWORK-CENTRIC INNOVATION IMPERATIVE: HOW MANUFACTURERS WORK WITH THEIR SUPPLIERS TO DEVELOP NEW PRODUCTS 61, 69 (2006).

³⁹ Id. at 69.

⁴⁰ Id. at 62-3.

⁴¹ Id. at 62.

⁴² Id. at 64.

⁴³ Id.

⁴⁴ Id.; for a theoretical treatment of the decision to retain in-house competencies so as to facilitate knowledge transfer, see Stefano Brusoni, Andrea Principe & Keith Pavitt, *Knowledge Specialization, Organizational Coupling, and the Boundaries of the Firm: Why Do Firms Know More than They Make?*, 46 ADMIN. SCIENCE QUARTERLY 597, 597 (2001).

implementation.⁴⁵ Furthermore, the collaboration entailed what Boeing terms “holistic involvement”—suppliers not only collaborated on their particular component but worked together on how their respective subsystems were integrated.⁴⁶ This was accomplished by organizing hundreds of “volume teams,” which pooled engineers from all of the organizations involved in producing a particular component.⁴⁷ Thus, with a federated design and production process that blurred the boundaries between collaborating firms, the 787 exemplifies the deverticalization phenomenon we observe throughout the economy.

1.3 Pragmatic Governance and Generative Contracts

Deverticalized production seems to invite hold-ups.⁴⁸ Hold-up problems arise wherever firms make investments that have little or no value outside of the relation to which they are initially dedicated: when investments are highly relationship-specific the less vulnerable party can always threaten to withhold its contribution unless the terms of exchange are changed in its favor.⁴⁹ Vertical integration is typically viewed as the traditional mechanism for overcoming hold-ups: i.e. where relationship-specific investments stymie parties’ efforts to collaborate, it becomes efficient for one of the parties to acquire the other, thus governing the relationship through ownership rather than contract.⁵⁰ As Section A above illustrates, however, contemporary firms have been substituting property rights governance with contract mechanisms. This is puzzling because information asymmetries, transaction costs, and uncertainty⁵¹ preclude parties from being able to draft all of the terms necessary to eliminate all forms of potential opportunism. In other words, contracts are very incomplete. But if contracts are incomplete, what is governing these relationships?

1.3.1 Pragmatic Coordination Mechanisms

⁴⁵ NACFAM, supra note __, at 66.

⁴⁶ Id.

⁴⁷ Id. 66.

⁴⁸ See David Robinson & Toby Stuart, *Just How Incomplete Are Incomplete Contracts? Evidence from Biotech Strategic Alliances 1* (University of Chicago, working paper, 2000) (on file with the author) (“[C]ollaborative arrangements between distinct organizations are a popular and important method of organizing investment in this sector. This in spite of the fact that these deals appear ripe with opportunities to exploit serendipitous discoveries, mis-allocate resources, and otherwise violate the spirit, if not the letter, of an alliance agreement.”)

⁴⁹ The logic of the hold-up problem is that where a firm, such as Spirit Aerosystems, has invested in assets highly specific to the relationship, the opportunity arises for the other party to leverage this investment into concessions: due to the high-specificity of the investment, the second-best use of the invested assets is significantly lower than the first-best; thus, the firm will concede more of the bargain’s benefit to the party threatening to abandon the relationship. If parties are aware of this possibility before the bargain is struck, then they will be reluctant to bargain at all. A “hold-up” occurs. See Klein [1996], supra note __, at 444-5.

⁵⁰ See Klein, supra note __.

⁵¹ OLIVER HART, FIRMS, CONTRACTS, AND FINANCIAL STRUCTURE 23 (1995) (“First, in a complex and highly unpredictable world, it is hard for people to *think* very far ahead and to plan for all the various contingencies that may arise. Second, even if individual plans can be made, it is hard for the contracting parties to *negotiate* about these plans.... Third, even if the parties can plan and negotiate about the future, it may be very difficult for them to *write* their plans down in such a way that, in the event of a dispute and outside authority—a court, say—can figure out what these plans mean and enforce them.”)(original italics).

To govern collaboration, firms build novel governance systems into their contracts that limit opportunism by immersing parties in joint learning processes.⁵² These systems reflect three integrated mechanisms that Helper, MacDuffie, and Sabel have identified as the pillars of a new mode of economic organization they termed “pragmatic coordination”: simultaneous engineering, benchmarking, and error detection/correction institutions.⁵³ “Simultaneous engineering” is a catch-all phrase for the immediate, side-by-side cooperation between collaborators: also called “concurrent” engineering, it takes place where “‘upstream’ and ‘downstream’ steps proceed simultaneously, each taking account of the (changes in the) requirements of the other.”⁵⁴ “Benchmarking” is the origin of the creative collaborative process: without explicit instructions on how to innovate a solution for a particular problem, firms find an idea of how to proceed by probing possibilities and then building the results of this probing into flexible development plans.⁵⁵ Finally, “error detection and correction” is the process for changing rules that were originally approximated through benchmarking: as parties use techniques such as “root cause analysis”⁵⁶ to reveal the fundamental barriers to innovation, they alter corollary rules of performance without renegotiation.⁵⁷ The combined effect of these mechanisms is a robust if subtle governance system: as firms jointly inquire into what to produce and how to produce it, they publicize to each other information as the collaboration unfolds—this whittles away at information asymmetries that might arise and render parties vulnerable to exchange.⁵⁸ I.e., in an environment of open information, collaborators are able to monitor one another’s current behavior.⁵⁹ Transparency governs. Maintained “visibility” between parties allows them to adjust to change and to meet the potential of the collaboration.⁶⁰ Thus, these pragmatic mechanisms provide not only the framework for coordinating economic activity but also a governance mechanism with which to police potential defectors.

What makes these contract mechanisms so novel is that this joint learning process requires the parties to unilaterally set their performance standards. While these contract provisions require the parties to interact extensively, continuing performance is rarely negotiated explicitly. Rather, frameworks of information sharing are constructed and the parties’ explorations define the specific substance of the agreement’s unfolding

⁵² These new mechanisms and how they fit into current theories of contract design are explored in greater detail in this article’s sister paper. Jennejohn, *Contract Design* at 10-24.

⁵³ Susan Helper, John P. MacDuffie & Charles Sabel, *Pragmatic Collaborations: Advancing Knowledge While Controlling Opportunism*, 9 INDUSTRIAL AND CORPORATE CHANGE 443, 445 (2000).

⁵⁴ Sabel, Charles, *A Real-Time Revolution in Routines*, in THE FIRM AS A COLLABORATIVE COMMUNITY, Heckscher, Charles and Paul Adler, eds. 106, 151 (2006).

⁵⁵ *Id.*

⁵⁶ Jean-Paul MacDuffie, *The Road to “Root Cause”*: Shop-Floor Problem Solving at Three Auto Assembly Plants, 43 MANAGEMENT SCIENCE 479, 494 (1997)

⁵⁷ Sabel, supra note __ [Theory of a Real-time Revolution].

⁵⁸ *Id.*

⁵⁹ Sabel has referred to this as “learning by monitoring.” Charles Sabel, *Learning by Monitoring: The Institutions of Economic Development*, in HANDBOOK OF ECONOMIC SOCIOLOGY 137-65 (N. Smelser and R. Swedberg, eds., 1994).

⁶⁰ Harry Glasspiegel, *Pricing the Outsourcing Deal: Financial Drivers for Outsourcing Contracts*, in THE OUTSOURCING REVOLUTION 2005: PROTECTING CRITICAL BUSINESS FUNCTIONS 431, 434 (John F. Delaney & William A. Tanenbaum, eds., 2005).

requirements. Thus, rules “roll,”⁶¹ not through ongoing renegotiation but through the parties’ own progress through the process of continuous improvement.

These pragmatic governance mechanisms are responses to the collaborators’ need to learn about what it is they are actually doing. This is not simply a problem of information asymmetry. Rather, the ignorance involved here arises from innovation itself: as the collaborators jointly abandon convention and move into a novel production environment, both parties have equal trouble interpreting how new developments impact their respective self-interests.⁶² I.e. collaborators experience uncertainty—which has been created by their own purposeful actions and not by external events—that is endogenous to the relationship. In such a situation, the imperative is not to only prevent defection but also to promote joint learning. Pragmatic governance mechanisms are, thus, institutions that systematize this learning process.

An example might clarify why pragmatic governance mechanisms are necessary. Imagine that a couple and a babysitter are negotiating the terms of an agreement for an evening of care for the parents’ toddler. Due to transaction costs, the parties will be unable to draft a complete contract that determines all of the babysitter’s duties under any possible contingency. Thus, the parties might include a vague term, such as a “best efforts” clause, that is designed to align the babysitter’s performance to the parents’ interest if an unforeseen event occurs. However, one can imagine situations (especially if a unique or creative toddler is involved) where the babysitter and/or the parents are unable to determine with any clarity what “best efforts” entails in a given situation. For instance, assume not only that the child begins crying but also that the situation is one that is novel to both the babysitter and the parents—say, the child is truly inconsolable for the duration of the evening. Imagine that the babysitter tries every trick in his/her book to comfort the crying child, but to no avail. After much effort, the babysitter shrugs his/her shoulders and resigns to let the kid cry it out for the remainder of the evening even though this will result in a reduced payoff (the parents will be alarmed that their child, who has screamed for the entire evening, now is hoarse and appears traumatized). The limit in such a situation is not that the babysitter lacks the incentives to perform in a manner that meets the parents’ expectations; rather, it is that the babysitter lacks the information she needs to understand the situation and troubleshoot. This informational problem is not a simple matter of asymmetry: we assume that the parents do not have the information the babysitter needs to address the problem (e.g. this is the first time the parent’s have ever had their child behave so, this is the first time they have hired a babysitter, the parents are inept, etc.). Achieving “best efforts” here is a learning problem, not a motivational one. Incentives are necessary, of course, or there would be no reason to learn; however, where the problem is relationship-specific learning, incentives alone are insufficient to overcome ignorance. In other words, the problem is

⁶¹ See generally William Simon, *Toyota Jurisprudence: Legal Theory and Rolling Rule Regimes* (Columbia Center for Public Law & Legal Theory, Working Paper No. 479, 2004).

⁶² For a full discussion, see Jennejohn, *Contract Design* at 45-49.

that the principal wants the agent to exert “right efforts”—i.e. those efforts that appropriately diagnose and address the problem—not just “best efforts.”⁶³

Thus, to ensure the realization of “right efforts,” the parties systematize the learning process through the use of pragmatic governance mechanisms. This systematization not only promotes learning but also aligns the parties’ interests: as the collaborators’ learn together about what possible outcomes can result from their joint efforts, their self-interests converge accordingly.⁶⁴ Thus, these contracts can be considered *generative*—for, like a generative grammar, they provide the constituent parts from which an infinite set of possibilities can be constructed.⁶⁵

1.3.2 Case study: Production of the Boeing 787 Redux

The provisions found in two agreements between Boeing and Spirit Aerosystems, one of Boeing’s key suppliers in the design and production of the 787, provides a good example of the logic of continuous improvement and “rolling rules” that requires a new theory of contract design.⁶⁶ To establish the parameters of a just-in-time production relationship, the parties entered into an overarching General Terms Agreements (“GTA”) and a more detailed “Special Business Provisions” agreement (“SBP”). The agreements required Spirit to innovate not only new products but also new processes.⁶⁷ To govern this innovative collaboration, pragmatic mechanisms were included in the contracts. First, the contracts provided the preconditions for simultaneous engineering. The GTA established that “Boeing may, in its sole discretion and in coordination with Seller, and for such period as Boeing deems necessary, locate resident personnel (Resident Team) at Seller’s facility to assist or support Seller.”⁶⁸ The GTA also allowed Boeing to “have unencumbered access to Seller’s facility to operate or assist in operating the facility in order to assure completion of the requirements for the Order.”⁶⁹ Furthermore, the SBP included a reciprocal requirement that “Life Cycle Product Teams” from Spirit would be located at Boeing’s facilities.⁷⁰ Thus, teams from each party were co-located with each collaborator. The SBP also set up the conditions for an iterated design process: first, the back-and-forth of co-design was described; and second, Spirit was required to have IT systems compatible with Boeing to facilitate real time design collaboration.⁷¹ Thus, the parties established a regimen of simultaneous engineering.

⁶³ I am indebted to Josh Whitford for sharing in conversation this idea of the distinction between “best efforts” and “right efforts.” The term “right efforts” is his.

⁶⁴ For a discussion of this contentious issue, see Jennejohn, *Contract Design* at 56-58.

⁶⁵ See generally NOAM CHOMSKY, *TOPICS IN THE THEORY OF GENERATIVE GRAMMAR* (1966).

⁶⁶ Boeing-Spirit GTA and SBP, on file with the author.

⁶⁷ See e.g. Boeing-Spirit SBP at §3.3.4.2 (“As of the date hereof, [Spirit] is responsible for providing all New Contractor-Use Tooling (as defined in New Tooling) needed to manufacture and deliver Products as required in the performance of this SBP. Seller shall plan, design, manufacture or procure, and test all New Contractor-Use Tooling.”).

⁶⁸ Boeing-Spirit GTA at §5.2.

⁶⁹ Boeing-Spirit GTA at §13.2(F).

⁷⁰ Boeing-Spirit SBP at §3.3.5.

⁷¹ Id. at §12.8 (“Seller shall implement and maintain systems as required to ensure: i) compatibility with Boeing systems; and ii) Seller’s performance under this SBP, including, but not limited to, business, manufacturing and engineering systems.”)

Second, the contract set forth benchmarking terms. The first step in this regard was an initial planning process to assess Spirit’s available means for achieving the rough goals envisioned in the contract.⁷² Next, the results of this initial planning were incorporated into formal “Supplier Specification Plans” for each individual “Production Article” through the use of “Contract Change Notices”—i.e. Spirit could unilaterally alter the specifications for a Production Article where necessary.⁷³ These adjustments were organized and driven by the overarching Statement of Work, the primary benchmarking device, which established the “Baseline PRR Engineering Thresholds” and gave “summary matrices depicting the Engineering Delegation requirements for each product.”⁷⁴ These benchmarks were to be ratcheted-up (or down) on a yearly basis:

Each year, an adjustment will be made concurrent with the quantity based price adjustment process outlined within Attachment 20 to establish the appropriate threshold for each program for the following year. To calculate the new threshold, the PRR Engineering Thresholds per Airplane as identified above will be multiplied by [*****] (beta factor) times the change in delivery rates by program for the target year vs. 2003 Airplane Deliveries by Program. This value will then be added to (or subtracted from) the Baseline PRR Engineering Thresholds. In other words, the PRR Engineering Threshold for any given year will be increased (or decreased) by [*****] of the variation in airplane deliveries by program for that year versus 2003 airplane deliveries.⁷⁵

In order to maintain a consistent production plan in the face of such volatility, the contract also included a “Lead Time Matrix”—such was to allow the parties to accelerate or decelerate related production schedules vis-à-vis changes in a given product.⁷⁶ The benchmarking process was incentivized through a milestone system.⁷⁷ Finally, the contract made provision for the inclusion of new products developed during the collaboration into the pragmatic governance system.⁷⁸

Third, Boeing and Spirit established a robust error detection/correction system. Although a formal committee was not established, “authorized representatives” were chosen to act as both decisionmakers and liaisons.⁷⁹ Furthermore, the contract required that Spirit “will assign a full-time program manager whose exclusive responsibility will be to oversee and manage Seller’s performance.”⁸⁰ The heart of the error detection/correction mechanism was a “technical and cost improvement program” in

⁷² Boeing-Spirit SBP at §3.3.4.5.

⁷³ Id. at Attachment 2(A) (“The configuration of each Production Article shall be as described in the latest released Supplier Specification Plan (SSP) revision in the Order and/or in the Contract Change Notices.”).

⁷⁴ Id. at Attachment 4(A).

⁷⁵ Id. (redactions in the original).

⁷⁶ Id. at Attachment 6.

⁷⁷ Id. at §5.2.1; *see also* Id. at Attachment 4 (establishing which projects would be on the milestone track).

⁷⁸ *See e.g.* Id. at §4.5.

⁷⁹ *See e.g.* Id. at §3.4.10.

⁸⁰ Id. at §12.10.

which the partners would collaborate to identify “new technologies and process improvements intended to reduce [Spirit’s] costs or improve product performance.”⁸¹ Another program, the “Total Cost Management System,” tied such improvements to reductions in the overall price of the products Spirit was selling to Boeing.⁸² These programs were to apply not only to Spirit and Boeing but also to Spirit’s subcontractors.⁸³ This was part of a wider effort to further rationalize Boeing’s entire global supply chain.⁸⁴ In addition to the cost and performance improvement programs, another scheme required Boeing and Spirit to collaborate in improving production cycle times.⁸⁵

Progress through these programs was formally monitored through an extensive reporting system. First, Spirit was required to “provide to Boeing a Product Definition and manufacturing milestone chart identifying the major engineering, purchasing, planning, Tooling and manufacturing operations for the applicable Product(s).”⁸⁶ As design and production proceeded, regular “management reviews” to discuss “total cost performance and schedule performance” were to be held.⁸⁷ As errors were detected, Spirit was further required to make immediate “problem reports” that contained a “detailed description of the problem, impact on the program or affected tasks, and corrective/remedial action, with a recovery schedule.”⁸⁸ In light of the corrective measures identified in such reporting, Spirit was obligated to then “revise and maintain the production planning as required to support the production and certification of Production Articles.”⁸⁹ Boeing also had the right to alter the production plan in response to revisions.⁹⁰ To accommodate such change, a price-adjustment process was outlined.⁹¹ Thus, Spirit was pre-authorized to make unilateral changes as long as those changes fell within the remit of the Statement of Work (as found in Attachment 4 to the SBP)—only those changes too radical to be considered within the SOW were required to have written approval from Boeing.⁹² In this manner, the tentative performance requirements established in the initial benchmarking process were subject to continual revision through the error-detection/correction process.

An additional layer of complexity is found when one reads the GTA and SBP in conjunction with Boeing’s online supplier portal. The website is designed to be an interface where suppliers can find the most up-to-date versions of the clauses in their contracts with Boeing. For example, the website contains, among many other things, a database of the constituent clauses that comprise Boeing’s Quality Management System

⁸¹ Id. at §7.6.1.

⁸² Id. at §7.6.

⁸³ Id. at §12.11.

⁸⁴ Id. at §12.12.1.

⁸⁵ Id. at §12.7.

⁸⁶ Id. at §9.2.

⁸⁷ Id. at §9.3.

⁸⁸ Id. at §9.4.

⁸⁹ Id. at §3.4.7.

⁹⁰ See id. at §6.

⁹¹ Id. at §7.9; the formulae for adjusting prices is found in Attachment 20.

⁹² Id. at §24.0.

(BQMS),⁹³ which is a key component to the error detection/correction regimen that Boeing uses in its collaborations. Noting that “these clauses are living documents,” the website provides the latest version of particular modules of the BQMS, the date of the latest revision being given beside each contract clause.⁹⁴ Suppliers are encouraged to reference the database to keep track of the latest developments and their corresponding commitments.⁹⁵ This arrangement allows the clauses to be adjusted individually in real-time as necessities arise. In other words, one can think of the BQMS as a complex machine: when parts of the machine malfunction, the operators are able to replace the dysfunctional sub-system with an improved version. The “living” contract is the structure that provides both the architecture within which such change takes place and the interface through which the various portions of the pragmatic governance system communicate. In this fashion, the rules of the Boeing-Spirit collaboration rolled as the parties explored the possibilities of the partnership.

1.4 Generative Contracts and Dispute Resolution

Besides reflecting a new logic of contract design, generative contracts also embody a novel approach to the enforcement of contract terms. First, these contracts frequently incorporate elaborate “escalation procedures” by which increasingly senior levels of management are brought into the dispute resolution process. Second, a simple analysis of the incidence of arbitration clauses in generative contracts indicates that collaborators avoid resolving disputes through traditional litigation and rely heavily upon arbitration.

1.4.1 Escalation Procedures

Disputes among collaborators are addressed through an overarching “escalation” procedure in the generative contract.⁹⁶ This escalation procedure interfaces with and, in turn, resembles the problem-solving governance mechanisms discussed above. First, the escalation procedure is linked to the pragmatic governance mechanisms in the generative contract. For example, an alliance agreement between Cisco and KPMG provided for a series of metrics, dubbed “dashboard indicators,” for the parties to use as benchmarks

⁹³ <http://www.boeing.com/companyoffices/doingbiz/clauses/clauses.html#common>. Note that these quality clauses apply only to Boeing’s Integrated Defense System projects at one particular plant—when multiple types of projects are considered at various fabrication locations, the complexity and variety of Boeing’s contracting becomes dizzying. The reader is encouraged to explore the Supplier Website to gain a sense of the breadth and depth of Boeing’s efforts to coordinate its collaborations.

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ See generally Thomas Stipanowich, *Contract and Conflict Management*, 2001 WIS. L. REV. 831, 853 (2001) (“As lawyers and contracting parties have become more familiar with various strategies for out-of-court resolution of disputes, they have explored the possibilities of combining two or more approaches in multi-step dispute resolution pro-grams. Such stepped “filtering systems” - increasingly visible in construction, commercial and employment contracts as well as the voluntary system employed by e-Bay for resolution of thousands of buyer/seller disputes - begin with informal negotiation and, if necessary, proceed to mediation; arbitration or litigation remains a last resort. Anecdotal evidence suggests that it is a rare dispute that survives the initial steps of such programs.”) (internal citations omitted). For a European perspective, see Luc Demeyere, *About Dispute Resolution and Conflict Management*, 19 ARBITRATION INTERNATIONAL 313 (2003).

with which to assess the collaborations performance—disputes over whether these benchmarks were met were channeled into the escalation procedure.⁹⁷ Second, the escalation procedure fosters a process of collaborative problem solving when benchmarks are not met. For example, if a problem arises, disputes are first referred to an oversight committee:

5.3 Dispute Resolution/Escalation. In the event that a dispute arises between Cisco and KPMG pertaining to any matters which are the subject matter of the Alliance (a "Dispute"), and either Party so requests in writing, prior to the initiation of any formal legal action, the following dispute resolution process shall apply:

5.3.2 Technical Issues - Responsible Executives. If the Dispute involves a technical issue or any other non-sales related issue, the matter may, at the option of either Party, be submitted for discussion and resolution to the Responsible Executives of KPMG and Cisco ("Responsible Executives"), as identified in Exhibit C. The Responsible Executives shall be responsible for including any other relevant senior managers from their Party, such as any affected business unit general managers. The Responsible Executives shall use their good faith efforts to resolve the Dispute within ten (10) days. If the Responsible Executives are unable to resolve the Dispute in such period, the matter shall be referred to the Executive Sponsors for resolution.⁹⁸

Third, if the oversight committee is unable to broker an acceptable resolution, more senior executives from the collaborating firms are brought into the process:

5.3.3 Executive Sponsors. For all Disputes referred to the Executive Sponsors, the Executive Sponsors shall use their good faith efforts to resolve the Dispute within twenty (20) days after such referral. If the Executive Sponsors are unable to resolve the Dispute in such period, the Dispute shall be referred to the respective Chief Executive Officers of Cisco and KPMG for resolution.

5.3.4 Chief Executive Officers. For all Disputes referred to the Chief Executive Officers from the Executive Sponsors, the Chief Executive Officers shall use their good faith efforts to resolve the Dispute within twenty (20) days after such referral.⁹⁹

Each layer of the escalation process forces parties to release additional information: because disputes are costly (most collaborations move forward on a basis of unanimity),¹⁰⁰ senior executives naturally demand that subordinates prove that they are not simply being uncooperative or unduly sharp partners. This leads subordinates to reveal additional information in order to exhibit their sincerity. Finally, if a mutually agreeable solution has not been found after the inclusion of the executives in the process, recourse to ADR is then sought:

5.3.5 Mediation and Legal Action. In the event that the Chief Executive Officers are unable to resolve the Dispute within the period allowed, then either Party shall have the right to submit the Dispute to mediation in accordance with the terms of Section 10.1, unless the Chief Executive Officer of a Party notifies the other Party's Chief Executive

⁹⁷ Cisco-KPMG contract, dated 1 Dec 2000, §4.9(b), available at <http://contracts.onecle.com/bearingpoint/cisco.collab.1999.12.29.shtml>.

⁹⁸ *Id.* at §5.3.

⁹⁹ *Id.*

¹⁰⁰ Jennejohn, *Contract Design* at 45.

Officer in writing that mediation is not desired and would not be effective. In the event that the parties are unable to resolve the Dispute under such mediation (or either Party receives the notice declining mediation as set forth in this Section 5.3.5), then either Party shall have the right to pursue any remedies available to it relating to the Dispute under the terms of this Alliance Agreement or otherwise available to it under law or equity.”¹⁰¹

In short, this process is designed to create as many opportunities for crafting a collaborative solution as possible.¹⁰²

1.4.2 Puzzle: Why Do Generative Contracts Include Arbitration Clauses More Frequently Than Other Commercial Agreements?

As arbitration is often the capstone to the escalation procedure, there is also a general trend towards more frequent inclusion of arbitration clauses in generative contracts. When a sample of collaboration agreements¹⁰³ are compared against the results of Eisenberg and Miller’s recent study of the incidence of arbitration clauses in commercial contracts, it becomes apparent that collaborators resort to arbitration far more often than commercial parties resolving a more traditional dispute. This chart from Eisenberg and Miller’s analysis indicates that the inclusion of arbitration clauses in various types of commercial agreements is surprisingly low:

Contract type	Percentage without arb clause	Percentage w/ arb clause
Mergers	81.02%	18.98%
Bond indentures	99.35%	0.65%
Settlements	83.33%	16.67%
Securities purchase	88.26%	11.74%
Employment contracts	63.06%	36.94%
Licensing	66.67%	33.33%
Asset sale purchase	80.57%	19.43%
Credit commitments	97.69%	2.31%
Underwriting	99.72%	2.18%
Pooling & servicing	100%	0%
Security agreements	94.59%	5.41%
Trust agreements	100%	0%
Other	92.86%	7.14%
Total	89.36%	10.64%

¹⁰¹ Cisco-KPMG contract, supra note __, at §5.3.

¹⁰² Robert N. Dobbins, *The Layered Dispute Resolution Clause: From Boilerplate to Business Opportunity*, 1 Hastings Bus. L. J., 161,163 (2005) (“The goal of the Layered Clause is to maximize the opportunities to continue party-controlled and party-determinative resolution processes. It sets out distinct, time-triggered phases, with regular reminders that the contracting parties truly want to maintain their business relationship. The parties approach the precipice of the adjudicatory side of the dispute resolution continuum only after exhausting all other efforts to find their own solution; they cross the divide into quasi-judicial process only as a last resort.”). For a general discussion of ADR in the context of outsourcing contracts, which places mediation in a preliminary place to arbitration and/or litigation, see Kimball, supra note __, at 490-491.

¹⁰³ Collaboration agreements, a type of commercial contract that often incorporates the pragmatic governance mechanisms described above, provide a proxy for the wider population of generative contracts, which often go by idiosyncratic names.

Table One: Eisenberg & Miller's results¹⁰⁴

Thus, only 10.64% of the contracts Eisenberg and Miller studied incorporate an arbitration clause. Even those contract types that used arbitration most often—employment and licensing agreements—only included arbitration clauses 36.94% and 33.33% of the time respectively. Indeed, arbitration clauses were never or only nominally found in a number of agreement types: bond indentures, underwriting agreements, pooling & servicing agreements, and trust agreements.

By contrast, collaboration agreements use arbitration clauses at a significantly higher rate. My analysis of 8,705 collaboration agreements found that, overall from 1/1/1995 to 12/31/2005, parties included arbitration clauses in their contracts 49.73% of the time:

Time period	Sample size	# with arbitration clause	Percentage
1/1/1991-12/31/1991	0	0	0%
1/1/1992-12/31/1992	0	0	0%
1/1/1993-12/31/1993	6	6	100%
1/1/1994-12/31/1994	26	12	46.15%
1/1/1995-12/31/1995	79	37	46.84%
1/1/1996-12/31/1996	506	230	45.45%
1/1/1997-12/31/1997	737	411	55.77%
1/1/1998-12/31/1998	746	406	54.42%
1/1/1999-12/31/1999	708	326	46.05%
1/1/2000-12/31/2000	1348	694	51.48%
1/1/2001-12/31/2001	476	229	48.11%
1/1/2002-12/31/2002	619	298	48.14%
1/1/2003-12/31/2003	813	385	47.36%
1/1/2004-12/31/2004	1189	668	56.18%
1/1/2005-12/31/2005	1452	627	43.18%
1/1/1991-12/31/2005	8705	4329	49.73%

Table Two: Incidence of arbitration clauses in generative contracts¹⁰⁵

The high incidence of arbitration observed here parallels the frequent use of escalation clauses: of the 188 collaboration agreements I analyzed in the www.onecle.com database, 96 included escalation clauses (51.06%). The number of those agreements with escalation clauses that also included arbitration clauses provides a rough measure of interdependence between the two dispute resolution mechanisms: of the 127 agreements with arbitration clauses, 82 also had escalation procedures (64.56%). These results raise the obvious question: why do collaboration agreements include arbitration clauses more often than other commercial contracts?

1.5 Summary

¹⁰⁴ Id. at 22.

¹⁰⁵ Note that the sudden jump in the number of agreements from 1992 to 1994 is due to the SEC introducing its electronic database in 1994.

Before exploring the reasons behind the use of escalation clauses and the higher incidence of arbitration clauses in collaboration agreements, it is useful to review the ground that has been covered so far. In Part II, we have seen that, since the late 1970s, production has occurred increasingly in inter-firm networks, as companies have collaborated in order to achieve competitive advantage through the leveraging of rapid innovation. In order to govern this wide-spread deverticalization of production, parties have created novel contract terms that pragmatically control the parties' performances. This new type of contract, by instituting a joint learning system, establishes rolling rules that determine, and in turn are determined by, party behavior. Finally, in addition to these pragmatic governance mechanisms, generative contracts include escalation procedures and arbitration clauses at a far higher rate than comparable commercial agreements. Collaborators avoid litigating their disputes. In short, new developments in contractual governance and dispute resolution parallel the last quarter-century's transformation in economic organization.

2. Why Collaborators Abandon Conventional Court Enforcement

The arbitration statistics above raise the obvious question: why do parties to generative contracts avoid litigating their disputes? In this part, I argue that collaborators shun litigation because contemporary contract adjudication is fundamentally inappropriate for fixing dysfunctional learning systems. Contemporary contract enforcement, which I identify with the contextualist principles of the U.C.C. and the 2d Restatement,¹⁰⁶ is inappropriate because it engages the courts in a search for commercial customs that, in the new economy, often do not exist. First, courts' search for the customs of the immediate parties to the contract—i.e. the examination of parties' course of performance or course of dealing to interpret the agreement's meaning—undermines collaborations because it creates the risk that collaborators' experimentation will be interpreted as a modification of the contract. Second, courts' search for the customs of the parties' industry through doctrines such as trade usage, which use wider industry norms to interpret the meaning of a contract, will likely lead the court astray since collaborators are often actively trying to abandon industry conventions as they innovate. In short, contextualism's deficiencies can be summarized as the results of the theories' benighted conception of contractual intent.

2.1 Isolating the Causality

¹⁰⁶ While associating the U.C.C. and the 2d Restatement of Contracts with contextualism is uncontroversial, it is overbroad to consider *all* of contemporary contract law as entirely synonymous with contextualism for two reasons. First, there is evidence that formalist doctrines are routinely applied in modern common law contract adjudication. See Robert Scott, *A Theory of Self-Enforcing Indefinite Agreements*, 103 COLUM. L. REV. 1641, 1651-60 (2003) [hereinafter Scott, *Self-Enforcing Indefinite Agreements*]. Second, the division between formalism and contextualism is somewhat artificial—courts may often apply both types of doctrines simultaneously. Richard Posner, *The Law and Economics of Contract Interpretation*, 83 TEX. L. REV. 1581 (2005) (arguing that the choice to interpret contracts formally or contextually depends upon a case-by-case analysis of the trade-offs involved). Nonetheless, where broad theoretical arguments are made, the formalist/contextualist dichotomy is useful in that it allows for ready distinctions between competing ideas.

Before I can argue that collaborators avoid litigation because of contract law's inadequacies, I must rule out other explanations. Any number of things might cause collaborators' predilection for arbitration. For example, these collaborations may tend to cross borders more often compared to other agreements, in which situation parties often favor arbitral tribunals in order to avoid judicial provincialism. Or perhaps collaborators in particular industries disproportionately favor arbitration, thus skewing the results above. Therefore, it is necessary to isolate the causality animating collaborators' choice to include arbitration clauses in their contracts.

To reach the conclusion that collaborators choose arbitration because conventional contract doctrine is inappropriate, I employ a modest recreation of Eisenberg and Miller's analysis. Having found a range of arbitration use among contract types,¹⁰⁷ Eisenberg and Miller explored the effects of the following variables on parties' decision to use arbitration: contract type, international context, industry practice, contract standardization, choice of law, relational contracting, place of business, and attorney place of business.¹⁰⁸ My analysis is more limited in two respects. First, due to limited resources, I have focused my statistical analysis on the following variables: international context, industry practice, contract standardization, and choice of law.¹⁰⁹ Second, because I only look at one type of contract, I am unable to replicate Eisenberg and Miller's regression analysis. Nonetheless, while I intend to conduct a more robust analysis at a later date, I believe the results below are sufficiently reliable to draw initial conclusions.

Like Eisenberg and Miller, my results show a correlation between un-standardized contracts and high use of arbitration clauses. However, my findings differ from Eisenberg and Miller's in that international context, industry practice, and choice of law do not have a significant effect on the decision to include an arbitration clause. Thus, it appears that the lack of standardized contracting explains why collaborators choose arbitration.

2.1.1 Data

Due to limited resources, I was unable to analyze all 8,705 contracts presented above. Instead, I examined a more manageable set of 188 collaboration agreements taken from the www.onecle.com database.¹¹⁰ It is important to note that the [onecle.com](http://www.onecle.com) sample includes arbitration clauses at a higher rate than the 8,705 contracts I analyzed from the SEC's Edgar database: of the 188 collaboration agreements, 127 included arbitration clauses (67.55%).

¹⁰⁷ Eisenberg and Miller, *Flight from Arbitration* at 356.

¹⁰⁸ *Id.* at 356-74.

¹⁰⁹ Eisenberg and Miller identify these variables as the primary explanations of the choice to use an arbitration clause. *Id.* at 378.

¹¹⁰ www.onecle.com provides a database of several types of commercial contracts, taken from companies' SEC filings, to supplement its online continuing legal education service. For the collaboration agreement collection, see <http://contracts.onecle.com/type/90.shtml> (last visited 7 February 2008).

One possible reason for the high prevalence of arbitration clauses in collaboration agreements is that these transactions might tend to occur across borders—the idea being that parties to an international agreement are more likely to seek arbitration for neutrality reasons.¹¹¹ Indeed, Eisenberg and Miller found that international contracts included arbitration clauses at a higher rate.¹¹² Contrasting their findings, however, are the results below:

		<i>Incidence of arbitration clause</i>		
		No	Yes	Total
<i>International context</i>	Entirely domestic	49	93	142
	Cross-border transaction	12	34	46
Total		61	127	188

Table Three: crosstab of international context and incidence of arbitration

Thus, entirely domestic transactions used arbitration 66% of the time, while cross-border transactions did so 74% of the time. This result was not statistically significant ($p=1.124$). Therefore, there is little evidence suggesting that international dealings are driving the choice to use arbitration.

Another possible reason for the prevalence of arbitration clauses is that the parties' choice of law decision affects their decision regarding arbitration. For example, if the state law chosen is viewed as highly efficient, that might influence the parties to choose litigation over arbitration.¹¹³ Eisenberg and Miller found that contracts that chose California law contained arbitration clauses more frequently (24%) than those that chose Delaware (12%) or New York (4%) law.¹¹⁴ The following results contrast their findings, however:

		<i>Incidence of arbitration clause</i>		
		No	Yes	Total
<i>Choice of law</i>	Delaware	7	22	29
	New York	12	16	28
	California	12	23	35
	Other	30	66	96
Total		61	127	188

Table four: crosstab of choice of law and incidence of arbitration

Thus, Delaware collaboration agreements included arbitration clauses 76% of the time, New York 57%, California 66%, and other jurisdictions 69%. These differences were also not statistically significant ($p=2.415$). Therefore, there is little evidence that indicates that choice of law influences the choice to include an arbitration clause in collaboration agreements.

¹¹¹ See, e.g., Christopher R. Drahozal, *Privatizing Civil Justice: Commercial Arbitration and the Civil Justice System*, 9 KAN. J.L. & PUB. POL'Y 578, 580 (2000).

¹¹² Eisenberg and Miller, *Flight from Arbitration* at 356-58.

¹¹³ *Id.* at 366.

¹¹⁴ *Id.* at 367.

A third possible reason is that industry practice determines whether or not parties choose to use arbitration. For example, there may be a norm in a particular industry that arbitration clauses are regularly included in agreements. Eisenberg and Miller found that certain industries, such as construction and chemicals, included arbitration clauses in their contracts more frequently.¹¹⁵ The results below contrast their findings:

		<i>Incidence of arbitration clause</i>		
		No	Yes	Total
<i>Industry</i>	Internet-related	12	8	20
	Pharmaceuticals/biotechnology	17	62	79
	Software engineering	16	26	42
	Finance	2	5	7
	Telecommunications	4	18	22
	Other	10	8	18
Total		61	127	188

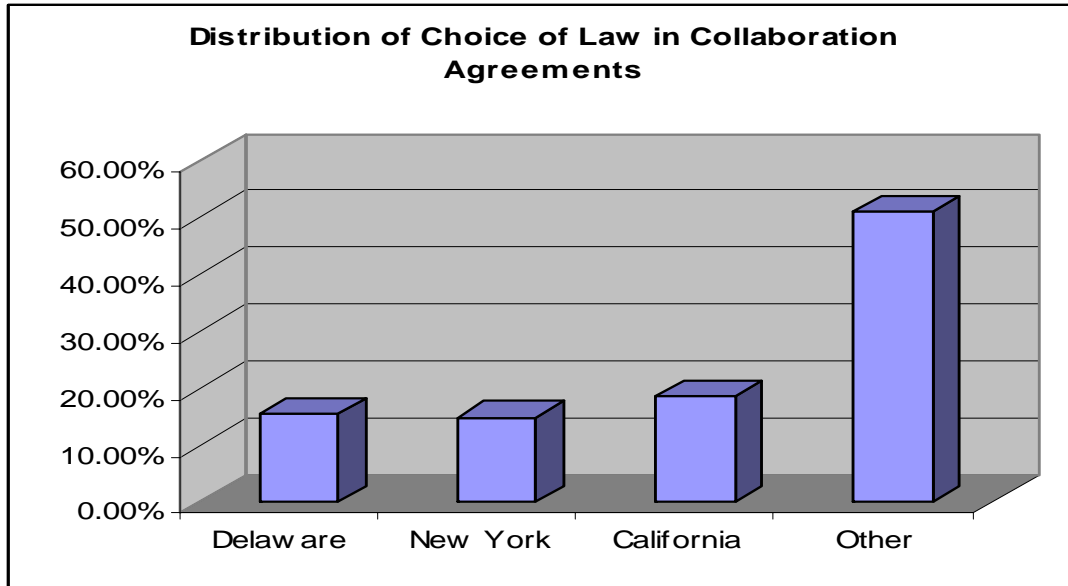
Table five: crosstab of industry type and incidence of arbitration

Thus, internet-related agreements included arbitration clauses 40% of the time, pharmaceuticals/biotechnology 78%, software engineering 62%, finance 71%, telecommunications 81%, and other industries 44%. While there is some variation between the industries, these differences were not statistically significant ($p=18.318$). Therefore, there is little reason to conclude that industry practice entirely explains the use of arbitration.

Finally, the level of standardization might be a reason that parties choose to include arbitration clauses in their contracts. Parties to highly standardized contracts may choose not to arbitrate since highly standardized contracts are perceived to have a low risk of litigation because the terms of the contracts are so familiar to the enforcing courts.¹¹⁶ Following Eisenberg and Miller's methodology, I measured the level of standardization according to the choice of law decision: highly standardized contracts are those that regularly choose the same jurisdiction's law. Eisenberg and Miller found that highly standardized contracts almost never use arbitration (only .9%), while low standardization is correlated with high use of arbitration (29.9%). The results below corroborate Eisenberg and Miller's findings:

¹¹⁵ Id. at 365-66.

¹¹⁶ Id. at 361.

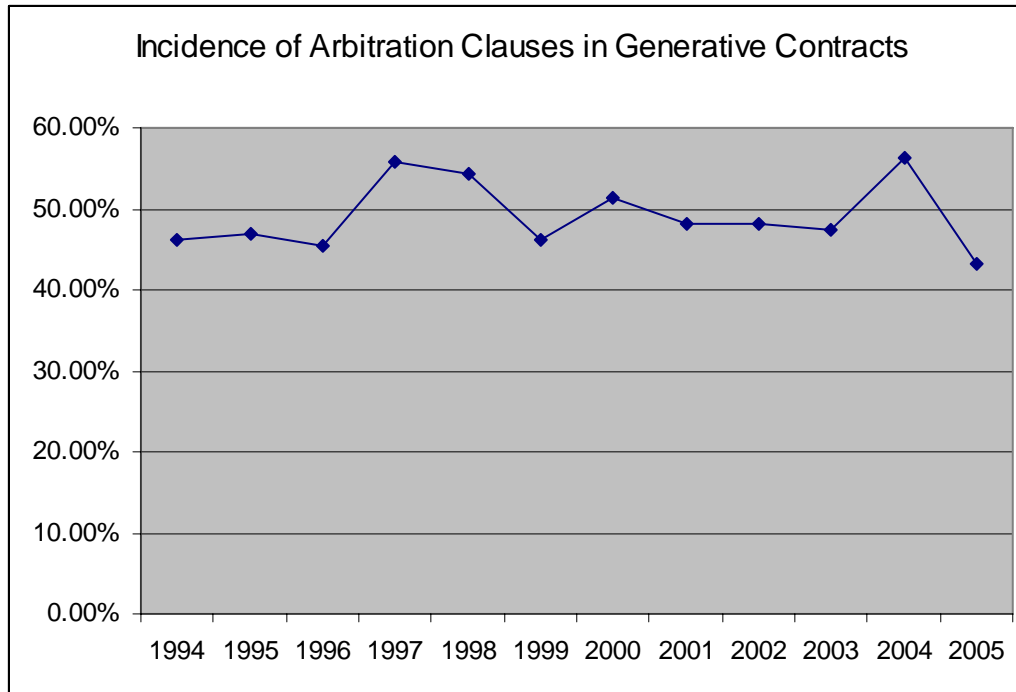


Graph one: distribution of choice of law among three primary jurisdictions

This histogram shows that collaboration agreements are un-standardized: there is a uniform distribution across the three major jurisdictions, and the majority of jurisdictions chosen fall within the “other” category. The single most frequently chosen jurisdiction, California, is only selected 19% of the time. In other words, parties differ widely in their choice of law decisions, leading us to conclude that collaboration agreements are highly un-standardized. Thus, like Eisenberg and Miller, I find a correlation between lack of standardization and the inclusion of arbitration clauses in a contract.

2.1.2 Understanding the lack of standardization

Arbitration’s resilience in generative contracts is puzzling. One would expect that, over time, arbitration would become progressively disfavored as the meaning of terms becomes standardized. However, as the results above indicate, the use of arbitration clauses has been steady over the years:



Graph two: Reproduction of the results in Table Two¹¹⁷

Furthermore, note that the eleven years of data presented above reflects only the time during which these contracts have been made available electronically through the SEC's Edgar system. Although it is difficult to pinpoint the precise time that practitioners began drafting the contracts that now fall within the generative category, it is safe to say that they began to become commonplace in the early to mid-1980s when outsourcing agreements, strategic alliances, collaboration agreements etc. entered the mainstream.¹¹⁸ Thus, lawyers and the courts have had over 20 years to render these contracts more standardized. One would think some common meanings would have emerged by now.¹¹⁹ Indeed, the Practising Law Institute has been covering these types of contracts for years.¹²⁰ Yet, low standardization persists.

Why do these contracts not become standardized? Now we come full circle: a contract that is explicitly designed to facilitate innovation—to institutionalize a joint experimentation process that allows the parties to learn what production decisions are possible—is one that routinely undermines the development of standardized meaning.

¹¹⁷ Results for years 1991, 1992, and 1993 were excluded as outliers.

¹¹⁸ See e.g. Thurston Moore, *Corporate Partnering: Product Driven Structures*, in CORPORATE PARTNERING 1989: ADVANTAGES FOR EMERGING AND ESTABLISHED COMPANIES 269 (Practising Law Institute 1989) (discussing a case study of a collaboration beginning in 1985); see also Thomas Jorde, *Acceptable Cooperation Among Competitors in the Face of Growing International Competition*, 58 ANTITRUST L. J. 529 (1989).

¹¹⁹ Note, for example, that Robert Scott has identified the emergence of a "rich menu of legally recognized, standardized terms and conventions" in particular service industries over a comparable period. Scott, *Case for Formalism* at 869.

¹²⁰ See e.g., PLI's Corporate Partnering series, which began in the 1980s; PLI's Strategic Alliances series, which began in the mid 1990s; and PLI's Outsourcing Revolution series, which began in the late 1990s.

Generative contracts are non-standard by definition. For parties to adopt standard practices pursuant to a generative contract is to empty the contract of its purpose: the parties are supposed to behave in an unexpected manner under the contract. The parties enter into the contract with only a roughly-conceived, inchoate intention toward what they want to realize from the collaboration. They do not simply intend to accomplish another iteration of the same outcome that they have reached before. Collaborators do not want standardized outcomes. This is why generative contracts are designed to institutionalize a process of bilateral experimentation. Thus, a community of meaning does not coalesce around this type of contract.

2.2 The Limits of Contemporary Contract Law: Contextualism Examined

In this section, I argue that contemporary contract law's inability to accurately interpret generative contracts explains the correlation between low standardization and incidence of arbitration. This persistent lack of standardization creates a two-fold challenge for a court interpreting a generative contract according to either the contextualist doctrines found in the U.C.C. and 2d Restatement: first, the court must understand the agreement through the noise created by diverse practices within a single industry; and, second, the court must parse the inconsistent prior dealings and current performances between the parties to the contract at issue. In short, the characteristics of generative contracts exacerbate those shortcomings that proponents of formalism have identified in contextualism: first, those doctrines, such as course of performance and trade usage, that are explicitly designed to increase flexibility actually undermine the dynamism they seek to foster; and second, it is difficult, if not impossible, for the courts to identify the norms of a relevant business community as contextualism often requires. Thus, collaborators avoid subjecting their disputes to an inappropriate resolution mechanism.

2.2.1 Contextualist theory

As convenient shorthand, this article conceptualizes contextualism as a set of contract doctrines that, in order to discern the meaning of an agreement, look not only to the written terms of the contract but also to wider "customs." This approach originates in Llewellyn and Corbin's original thesis that the courts should look to immanent business norms when interpreting agreements.¹²¹ While more detailed conceptions are certainly available,¹²² contextualism can be summarized in Scott's succinct description of the contextualist court as one that attempts to identify ex post the most efficient outcome to the disputed contract.¹²³

¹²¹ For discussion, see Lisa Bernstein, *Merchant Law in a Merchant Court: Rethinking the Code's Search for Immanent Business Norms*, 144 U. PA. L. REV. 1765, 1767-68 (1996) [hereinafter Bernstein, *Merchant Law*].

¹²² See e.g. Melvin Eisenberg, *Why There Is No Law of Relational Contracts*, 94 Nw. U. L. Rev. 805, 806-13 (2000); Charny, *supra* note __, at 842.

¹²³ Scott, *Case for Formalism* at 851 ("Rather than attempt to specify default rules that fill the gaps ex ante, the courts can seek to direct the ex post efficient result. That is, they can fill in the "right" result or the "right relational" result by imposing an equitable adjustment that takes all of the relational and contextual factors into account as they appear at the time of adjudication.")

2.2.2 Contextualism as applied to collaborative disputes

A number of critiques of contextualism have arisen over the last two decades. The first set of criticisms argues that the customs that contextualism attempts to reference when identifying the parties' obligations may well be inefficient. Within this set of critiques, two arguments are particularly noteworthy. First, Goetz and Scott argue that contextualism undermines innovation: "parties who develop innovative [contracts] bear significant, exogenous, legal risks"¹²⁴ because they do not know whether their unique forms of obligation will be recognized by a contextualist court.¹²⁵ Second, contextualism's flexibility provisions may also discourage temporarily efficient departures from the original agreement. Bernstein has argued that "[t]here are certain types of adjustments a transactor might be willing to make at many discrete points in an ongoing contractual relationship that she would nonetheless be unwilling to promise to make."¹²⁶ Because the UCC construes such flexibility to indicate adjustments to the contract, parties will be less likely to choose such beneficial adjustments.¹²⁷ There is reason to believe that Bernstein's argument is especially compelling in an innovative situation. This is because, in situations of high uncertainty, parties cannot immediately identify "bad" departures from "good" ones. Some passage of time is necessary for consequences to come into light. However, if parties do not object to non-conformity at the time it occurs, the courts, following the Code's course of performance doctrine, will likely interpret that as tacit acceptance of a modification.¹²⁸ Thus, there is a strong incentive for parties to object whenever there is a possibility that their collaborator's activity might amount to non-conforming behavior because they do not want to shut the door on later court enforcement. This paradoxical "rigidity effect"¹²⁹ undercuts the convention-spurning creativity that is innovation's sine qua non. The more collaborators' activities are circumscribed and generic, the less innovative these relationships become.

The second body of criticisms argues that local customs and industry practices are either unidentifiable by a court or non-existent altogether.¹³⁰ First, Eric Posner has argued that courts are often "radically incompetent" when tasked with the interpretation

¹²⁴ Goetz & Scott, *Limits of Contract Law* at 278.

¹²⁵ *Id.* at 320 ("Unfortunately, current [contextualist] rules of interpretation provide few effective mechanisms for distinguishing between apparent inconsistency and deliberate indeterminacy. For relational contractors, therefore, interpretive disputes will essentially be a lottery until the state provides the requisite instruments for more accurate signaling."); see also Scott, *Case for Formalism* at 854-55.

¹²⁶ Bernstein, *Merchant Law* at 1808.

¹²⁷ For a refinement of Bernstein's original argument see Omri Ben-Shahar, *Formalism in Contract Law: The Tentative Case Against Flexibility in Commercial Law*, 66 U. CHI. L. REV. 781, 792-6 (1999).

¹²⁸ UCC § 2-208(1) (inferring course of performance where it is "acquiesced in without objection.").

¹²⁹ "Rigidity effect" is Ben-Shahar's term for Bernstein's original insight. Ben-Shahar, *supra* note ___, at 795.

¹³⁰ Schwartz & Scott, *Limits of Contract Law* at 577 ("The textualist... claims that variance [in courts' interpretation of contract terms] does not shrink materially with a broader evidentiary base because contracts often have plain meanings. Hence, permitting parties to introduce additional evidence as to intent would generate costs in excess of gains.").

of an incomplete contract.¹³¹ This is not due to any lack of intelligence on the judiciary's part; rather, radical incompetence arises because "parties lack the clairvoyance needed to give courts the proper guidance if a dispute arises, and courts lack the genius that would be needed to enforce contracts properly in the absence of such guidance."¹³² In other words, due to the costs of verifying information, the courts are unable to parse behavior, either of the parties themselves or of the greater trade community in which they operate, that is not explicitly captured in the contract. Second, Lisa Bernstein's work suggests the possibility that generalized and potent commercial norms simply do not exist. Looking at attempts to codify commercial customs in the hay, grain and feed, textiles, and silk industries, Bernstein found that

The debates surrounding these codification efforts suggest that there was not widespread agreement among merchants as to either the meaning of common terms of trade or the content of many basic commercial practices. Rules committee debates sometimes went on for years, customs relating to important aspects of transactions were left uncodified because consensus could not be achieved, and in most industries drafting committees eventually engaged in only selective codification. In addition, over time, many associations came to explicitly concede that they were attempting to change rather than merely incorporate existing practices.¹³³

Thus, Bernstein argues that "'usages of trade' and 'commercial standards,' as those terms are used by the Code, may not consistently exist, even in relatively close-knit merchant communities."¹³⁴

What force do these arguments have when disputes between collaborators are considered? This section explores this question by examining three contextualist exceptions to the plain meaning rule: trade usage, course of dealing, and course of performance. My conclusion is that the two sets of anti-contextualist arguments outlined above have particular force when these doctrines are applied to situations of generative contracting.

Trade Usage

Reference to trade usage is available where the meaning of a technical term is common enough that there can be a justified expectation that the usage will be observed with respect to a given contract.¹³⁵ This rule applies not only where the contract term in question is vague¹³⁶ but also where the commonly understood meaning of the language is

¹³¹ Eric Posner, *A Theory of Contract Law Under Conditions of Radical Judicial Error* 7 (University of Chicago Law School, John M. Olin Law & Economics Working Paper No. 80 (2d Series), 1999) available at <http://ssrn.com/abstract=173788> [hereinafter Posner, *Radical Judicial Error*].

¹³² *Id.*

¹³³ Lisa Bernstein, *The Questionable Empirical Basis for Article 2's Incorporation Strategy: A Preliminary Study*, 66 U. CHI. L. REV. 710, 715 (1999) [hereinafter Bernstein, *Questionable Empirical Basis*].

¹³⁴ *Id.*

¹³⁵ Restatement (Second) of Contracts, §222.

¹³⁶ See e.g. *W.G. Cornell Co. v. United States*, 179 Ct. Cl. 651 (1967).

unambiguous.¹³⁷ Indeed, U.C.C. §2-202 provides that the court must admit trade usage not only to aid in the interpretation of the contract but even to “supplement” the agreements written terms (in contradistinction to the parol evidence rule).¹³⁸ At first glance, the trade usage rule appears appropriate for generative contracts in that it allows the courts to supply a supplemental term that fills a gap left in an incomplete contract.¹³⁹

The problem with using the trade usage doctrine to interpret a generative contract is that it is at best a blunt instrument. Following trade usage is problematic where parties are engaging in unique behavior directed towards innovating and investing in highly relationship-specific activities. There simply are no broad norms for the court to reference.¹⁴⁰ If relatively insular and established communities such as hay, grain and feed, textiles, and silk producers cannot agree on industry-wide norms,¹⁴¹ it is highly unlikely that volatile new economy industries are going to have identifiable usages. A practitioner suggested as much in the context of describing how parties set the terms of their strategic alliances: “the nature of each alliance is so sui generis that there can be a seemingly infinite variety of combinations from which parties may select provisions for their alliance.”¹⁴² Thus, it is unlikely that courts will find commonly held trade usages that apply to a dispute between collaborative innovators—the dynamic and heterogeneous markets in which new economy collaborators operate hamstrings the court in its attempt to not only “put itself into the shoes of the parties” but also to “adopt their vernacular.”¹⁴³ There is no common language to adopt. In the event that courts do think they can apply trade usage, they will only be able to clumsily interpret parties’ intentions through the dim lens of general experience.¹⁴⁴

Course of Dealing/Performance

If trade usage is too general a doctrine, then perhaps the doctrines of course of dealing and course of performance, which examine the parties’ own historical behavior, will provide a more accurate lens through which to scrutinize parties’ intent. Under the prior course of dealing doctrine, the meaning that the parties have attributed to the same term in similar, already-performed agreements will be presumed to reflect the parties’ intentions in the current disputed contract.¹⁴⁵ According to the course of performance doctrine, the parties’ own post-bargaining behavior is understood to reveal the parties’ intentions.¹⁴⁶ Thus, if parties consistently act in a manner that reveals a particular

¹³⁷ See e.g. *Gholson, Byars & Holmes Constr. Co. v. United States*, 173 Ct. Cl. 374 (1965).

¹³⁸ See also U.C.C. §2-202 comment 2 (explaining that trade usages are admissible to interpret or supplement unless trade meanings are carefully negated in the written agreement.).

¹³⁹ See e.g. *Thomas v. Gusto Records, Inc.*, 939 F.2d 395, 398 (6th Cir. 1991).

¹⁴⁰ Bernstein, *Questionable Empirical Basis* at 715 (arguing that industry norms “may not consistently exist, even in relatively close-knit merchant communities.”).

¹⁴¹ Bernstein failed to find coalesced norms in these four industries. *Id.* at 76.

¹⁴² Ruthanne Kurtyka, “The Way Out: Exiting the Strategic Alliance” in *Structuring, Negotiating & Implementing Strategic Alliances 2000* 285 (James Ashe-Taylor and Kenneth A. Clarke, eds., 2000).

¹⁴³ *Hurst v. W.J. Lake & Co.*, 141 Or. 306, 16 P.2d 627, 629 (1932).

¹⁴⁴ Bernstein, *Merchant Law* at 11.

¹⁴⁵ Corbin on Contracts, rev’d ed., vol. 5, §24.17; see also Ben-Shahar, *supra* note __, at pg 11.

¹⁴⁶ U.C.C. §2-208, Restatement 2d of Contracts §202(4).

interpretation, the court will adopt that interpretation over the written terms, even if the written terms are directly contradicted.¹⁴⁷

While course of dealing/performance provide a more detailed analysis of the parties' motivations than trade usage, there are three interrelated problems with the application of these doctrines to generative contracts. The first problem with relying on parties' course of performance or dealing to interpret parties' intent is that much of this information is unverifiable. I.e. courts have insufficient information from which to glean patterns in the disputants' behavior.¹⁴⁸ Although collaboration makes much information observable between the parties, broad verifiability is only possible where the pragmatic governance mechanisms are functioning properly. By the time the parties have resorted to the court, the information flows have long gone dry. Secondly, even if an abundance of information is available, the court will have to work that much harder to analyze it all; where judicial resources are scarce, there is no necessary reason that this analysis will be either thorough, probing, or accurate.¹⁴⁹ The constant experimentation that generative contracts institutionalize makes the process of aggregating observed behavior into common themes extremely, perhaps hopelessly, complex for the enforcement court. This is especially the case when one considers that many experimental activities result in "dead-ends." Should all of these experiments, both successful and unsuccessful, be included when interpreting the parties' intentions? If not, how should the court decide which ones should be considered and which should not? Thirdly, even if the parties' activities are verifiable, the court will have to rely on generalized experience to understand the very facts upon which it is supposed to render its decision. Due to the complexity of these collaborations, it is typically necessary for courts to rely upon expert testimony to interpret facts. Usually, experts are used to testify on manufacturing processes or lost profits damages. When doing so, experts use their wider experiences to make authoritative descriptions of the parties' activities.¹⁵⁰ Though expert testimony is

¹⁴⁷ See U.C.C. §2-202 (allowing for supplementation of the written terms through course of performance extrinsic evidence) and *Lancaster Glass Corp. v. Philips ECG, Inc.*, 835 F.2d 652, 653, 659-61 (6th Cir. 1987) (allowing course of performance evidence where the contract did not address the issue and expressly forbade course of dealing evidence).

¹⁴⁸ Charles Goetz & Robert Scott, *The Limits of Expanded Choice: An Analysis of the Interaction Between Express and Implied Contract Terms*, 73 CAL. L. REV. 261, 275-6 (1985) ("The process of implying terms from more narrowly focused experiences places a significant stress on the state's interpretive process. Whereas the court generally infers alleged industry-wide trade practices from a considerable mass of behavioral data, the alleged patterns in the behavior of particular parties may be derived from a quite limited number of occurrences. The number of observations may be so small that an observer would have difficulty distinguishing valid inferences from spurious ones. Courts experience grave difficulty determining the degree of repetition necessary to establish a "course" of conduct. Similarly, it may be difficult to determine whether a particular act sheds light on the ex ante meaning of the agreement or merely represents an ex post waiver of a term of the agreement. The finder of fact must engage in an error-prone inquiry whether the acts were ambiguous and, if not, whether they constitute a course of performance or waivers—unpatterned instances from which no inferences can be drawn.").

¹⁴⁹ Jillian Hadfield, *Judicial Competence and the Interpretation of Incomplete Contracts*, 23 J. LEGAL STUD. 159, 162 (1994) ("The reality of generalist courts, however, is that they possess only limited competence in any one area.").

¹⁵⁰ Learned Hand, "Historical and Practical Considerations Regarding Expert Testimony," 15 HARV. L. REV. 40, 54 (1901) ("The whole object of the expert is to tell the jury... general truths derived from his specialized experience.").

often seen as a finer tool with which courts can parse litigants' behavior, its reliance on generalization for its validity undermines its applicability where parties experiment. Collaborators' innovative approaches to high levels of uncertainty render the applicability of experts' general experience suspect because the innovators are trying to transcend that general experience. The "grave difficulty" courts have in "determining the degree of repetition necessary to establish a 'course' of conduct" only becomes more pronounced.¹⁵¹ In terms of promoting innovation, the very doctrines that courts consider tools are actually stumbling-blocks. Once again, the possibility of misinterpretation creates incentives for parties to avoid litigation.¹⁵²

2.2.3 *Lockheed v. galaxis USA*

While a complete analysis of recent contract disputes in the federal and state reporters is outside the scope of this paper, it is useful to observe an example of contextualist doctrines' impact on collaborations. Contextualism's inimical effect on collaborations is apparent in *Lockheed v. galaxis USA*, a dispute between two collaborators trying to design and manufacture a marketable satellite TV receiver for recreational watercraft.¹⁵³ With an eye towards potential litigation, Lockheed, concluding that there was "considerable risk" because of a "lack of a sufficient drawing package" at the start of the project, entered the collaboration "not want[ing] a considerable design effort required on their part, to ensure that they present[ed] back to [galaxis] the right kind of product, so that [galaxis could not] fault the manufacturing effort."¹⁵⁴ In other words, Lockheed was worried that its involvement in the design process would be interpreted as tacit concurrence with design decisions, thus exposing Lockheed to potential liability. Thus, a rigid formal division between design and manufacturing functions was included in the contract. Such a division was unnatural, however, considering that Lockheed inevitably participated directly and extensively in the collaborative design process: first, Lockheed repeatedly initiated design changes;¹⁵⁵ second, Lockheed became involved in software design issues with a German subsidiary involved in the collaboration;¹⁵⁶ and, third, the galaxis representative in overseeing design was a former Lockheed engineer that had been hired from the Lockheed team working on the project.¹⁵⁷ Nevertheless, the contract required the parties to maintain the strict division between design and manufacturing responsibility. This undermined the very dynamics that make collaborations productive: first, galaxis management frequently had to "stop all the changes unless they are officially approved and set out in drawings which are handed over to Lockheed;"¹⁵⁸ and, second, galaxis management frequently admonished its employees to cease unofficial "cross-talk" between themselves and

¹⁵¹ Goetz & Scott, *supra* note __, at 276.

¹⁵² Bernstein, *Merchant Law* at 12.

¹⁵³ *Lockheed Martin Corporation v. galaxis USA, Ltd.*, 222 Fed. Supp. 2d 1315, 1320-1 (M.D.Fl. 2002) [magistrate's recommendation and decision on summary judgment].

¹⁵⁴ *Lockheed v. galaxis USA*, [memorandum opinion and order] at 40 (quoting defendant's testimony).

¹⁵⁵ *See id.* at 41 (discussing how galaxis reviewed and accepted Lockheed's suggested design alterations).

¹⁵⁶ *Id.* at 42.

¹⁵⁷ *Id.* at 37, 42.

¹⁵⁸ *Id.* at 43.

Lockheed and to rather direct their feedback through the centralized approval process.¹⁵⁹ In other words, galaxis had to short-circuit both pragmatic governance's error detection/correction and simultaneous engineering mechanisms. Thus, the collaboration was hobbled from the start due to the parties' attempts to circumvent potential misinterpretation by the courts. Even more unfortunate, these attempts were vain since a dispute arose when galaxis attempted to formally amend the contract *ex post* to make Lockheed responsible for design changes.¹⁶⁰

2.3 Conclusion

Why do the contracts that govern the networked economy avoid litigation? The simple statistical analysis above, after discounting alternative explanations, corroborates Eisenberg and Miller's finding that ADR is preferred where contracts are non-standardized. The remainder of the section examined why contemporary contract doctrines are inappropriate for governing collaborations. It appears that collaborators have abandoned the courts largely because traditional litigation cannot efficiently cope with innovative relationships. Although contextualist doctrines are designed to provide flexibility for the bargainers, these doctrines ironically undermine innovative activity. Because conventional contract law is inappropriate, parties have fled litigation. In perspective, this means that the courts are de-coupling from the economy as the organization of production evolves.

3. A Return to Formalism?

The natural conclusion upon observing contextualism's inadequacies is that formalism wins by default. What else is there, after all? There is reason, however, to pause before concluding that collaborators' avoidance of contextualist doctrines amounts to formalism's triumph. This is because formalist theory, even after amendment, struggles to explain why formalist interpretation complements parties' choice to use escalation and arbitration. As traditionally formulated, the standard arguments for formalism, that formalism creates incentives for parties to draft clearer agreements (standardization theory) and that formalism allows informal governance to flourish (self-enforcement theory), are clearly insufficient. Standardization theory fails because the endemic uncertainty that attends innovative activity precludes parties from creating standardized contractual terms that a court can readily recognize—collaborations are simply too unique for meaningful standardization to be possible. Traditional self-enforcement theory fails because reputational information does not circulate easily on account of, first, contrary to conventional wisdom, inter-firm collaborations are often neither lengthy nor repeated and, second, global industry networks, through which reputational information flows, are both heterogeneous and dynamic. However, self-enforcement theory may explain parties' behavior if generative contracts are viewed as formal attempts to approximate informal governance mechanisms. In other words, where parties cannot rely on informal trust and reputation to control unforeseeable

¹⁵⁹ *Id.* at [get the pin cite].

¹⁶⁰ *Id.* at 52 (discussing galaxis trying to force Lockheed to accept design responsibility).

contingencies, they attempt to recreate such mechanisms through formal contracts. While this explanation roughly corresponds to the stylized account of private-ordering that originated in Ellickson's research,¹⁶¹ thinking of contracts between collaborators as akin to the "formalization of informal governance" nonetheless raises a number of theoretical problems which likely require a thorough-going reconsideration of self-enforcement theory's sociological foundation. Namely, this "formalization of the informal" view, by collapsing the dichotomy between formal and informal governance, obfuscates self-enforcement theory's core assumption about the tension between parties' need for firm planning and their need for long-term flexibility. Without this foundation, the grounds on which self-enforcement theory can proceed are, at best, unclear. Thus, while formalism may have purchase when applied to collaborations, it is only through the rather fraught application of a certain theoretical strain.

3.1 Formalist doctrines as applied to collaborations

But how can formalism be a potential solution to the problem of enforcing incomplete contracts, if contextualism's more flexible doctrines nevertheless misinterpret collaborative behavior? It is almost certain that formalism's more austere approach to interpretation will misread parties' intentions.¹⁶² After all of the arguments against Williston's theory over the years, the only argument for formalism is that formalism's limits are its very virtues. Less is more.

In this vein, formalists have advanced two general arguments for how formalism can succeed where contextualism has failed. First, formalism is more effective in governing incomplete contracts because minimalistic court intervention creates an incentive for parties to standardize clear contract terms that are readily recognized by the courts.¹⁶³ Second, by taking as their starting point the fact that exchange is embedded in society, formalists have argued in the alternative that shortcomings in formal enforcement are offset by informal governance mechanisms, most often reputational constraints.¹⁶⁴ In other words, if the parties are unable to articulate clear intentions, social norms compensate. While these creative arguments have produced numerous insights into common contracting behavior, neither theory convinces when applied to collaborations.

¹⁶¹ See Ellickson, *supra* note __.

¹⁶² Scott, *Case for Formalism* at 860 ("A return to a formalist conception of contract law (even one that is grounded in an instrumental pragmatism) will increase the number of disputed contracts in which enforcement is denied because the contract is found to be fatally incomplete and/or ambiguous.")

¹⁶³ *Id.* at 848 (claiming that formalism leads to "the evolutionary production of standardized and appropriately tailored contract terms.").

¹⁶⁴ Posner, *Radical Judicial Error* at 13-17; compare Scott, *Self-Enforcing Indefinite Agreements*, at 1643-45.

Application of the plain meaning,¹⁶⁵ parol evidence,¹⁶⁶ and indefiniteness¹⁶⁷ rules to generative contracting shows why formalism will result in under-enforcement. These doctrines result in under-enforcement, not because generative contracts are drafted poorly, but because the processual language used to establish pragmatic governance mechanisms requires a court to search the context of the agreement. For example, how is the court to interpret the meaning of a clause establishing a root cause analysis mechanism? Such a clause generally asks the parties to search the production process for errors and then trace the causes of those errors back to their origin.¹⁶⁸ What such a clause actually requires of a party in a given situation, however, is contingent upon the errors that actually arise. Intentions do not direct root cause analysis, problems do. Of course, should a dispute arise over the performance of the root cause analysis, the litigants will argue over the issue of whether the allegedly breaching party was focusing on the “right” error to analyze. Note, however, that there is no readily discernible underlying intent for the formalist court to use as a guide for understanding what the “right” outcome for this root cause analysis was actually to be. Therefore, standing on its own, a clause requiring root cause analysis does not clearly indicate what the parties committed to perform. Without recourse to prior course of dealing, course of performance, our negotiation evidence, it is doubtful that a court will feel sufficiently comfortable to enforce either party’s interpretation of the language. Thus, it is all too likely that the contract will be deemed un-enforceable due to indefiniteness.

3.2 The standard theories: Faith in bargainers’ foresight and in informal norms

Despite formalist doctrine’s tendency to under-enforce, there are nevertheless two plausible arguments for how formalistic interpretation can provide sufficient institutional support for generative contracts. First, formalism may create stronger incentives for parties to invest the resources necessary to draft clear and standardized contract terms that a court can readily interpret. Second, formalism’s informal governance mechanisms, such as reputation effects, may compensate for its deficiencies. In their traditional forms, neither theory is convincing.

3.2.1 Formalism and the codification of industry standards

The first argument, that formalism will facilitate the private development of general precedents and standards that are appropriate for generative contracts, is

¹⁶⁵ Largely a semantic theory of interpretation in contemporary application, the plain meaning rule requires that the court give language an interpretation that reflects the common meaning of the terms at issue. *See e.g. Lee v. Flintkote*, 593 F.2d 1275 (D.C. Cir. 1979). I.e. specially intended meanings are not entertained, except perhaps in the extreme case where the common understanding of a term appears entirely out of place. *First Nat’l Bank v. Mid-States Eng’g & Sales, Inc.* 103 Ill. App. 3d 572, 431 N.E.2d 1052 (1981).

¹⁶⁶ The parol evidence rule precludes the court from considering evidence of the parties’ prior negotiations where the substance of those negotiations contradicts the terms of a written, integrated agreement. *United States v. Triple A Mach. Shop, Inc.*, 857 F.2d 579 (9th Cir. 1988); Restatement (Second) of Contracts, §215.

¹⁶⁷ The indefiniteness doctrine requires the court to find that the essential terms of the contract were so vague so as to prevent the creation of a legally enforceable agreement. *See Soar v. National Football League Players’ Association*, 550 F.2d 1287 (1st Cir. 1977); *Varney v. Ditmars*, 111 N.E. 822, 824 (N.Y. 1916); *Cia. Naviera Somelga, S.A. v. M. Golodetz & Co.*, 189 F.Supp 90, 97 (D.Md. 1960).

¹⁶⁸ *See e.g. MacDuffie*, supra note __, at 494.

ultimately not convincing. By refusing to fill a gap in an incomplete contract, the court forces parties to figure out *ex ante* how to clearly allocate that particular risk in a manner that the court will be able to readily interpret. These optimal standards develop because formalism requires parties to develop “standard-form prototypes for expressly allocating common risks that contract law might otherwise have assigned by default.”¹⁶⁹ The problem with this argument in the case of generative contracts is that “common risks” are rare. Innovative collaborations are fraught with uncertainties to be sure; however, risks are usually unique rather than recurring.¹⁷⁰ Indeed, the primary reason that the parties organize generative contracts is to establish joint learning processes designed to overcome the endemic and fundamental uncertainty that attends innovation. As we know from the statistics above showing persistent lack of standardization, the contracts that result are “*so sui generis*” that one is not like the other.¹⁷¹ This means that parties will only infrequently have sufficient incentive to spend the resources necessary to craft clear and generalized standards.¹⁷² Furthermore, as David Charny points out, standardization of terms across an industry typically requires some sort of institutional intervention—either from a specialist court or a trade association—to assist in the articulation of general norms.¹⁷³ When this is taken into consideration, the minimalist approach originally pitched as a less costly alternative¹⁷⁴ to contextualism begins to appear rather dear. Thus, if general standards will not typically be forthcoming, another justification for formalism must be found.

3.2.2 Formalism and self-enforcing incomplete contracts

The second argument is that formalism’s limited judicial intervention will be offset by informal social constraints. Given empirical weight through the work of Lisa Bernstein and others,¹⁷⁵ the argument is that formalism is possible because informal governance mechanisms police parties’ behavior.¹⁷⁶ In this regard, formalist theorists build upon the pioneering relational contracting work of Stewart Macauley and Ian Macneil. Informal governance finds its origin in Macauley’s argument that the personal ties that develop over an extended relationship “exert pressure for conformity to

¹⁶⁹ Scott, *Case for Formalism* at 860.

¹⁷⁰ See e.g. Keith Pavitt, *Innovation Processes* in OXFORD HANDBOOK OF INNOVATION 87 (2005) (describing innovation processes as “contingent”).

¹⁷¹ Kurtyka, *supra* note __.

¹⁷² Eric Posner, *The Parol Evidence Rule, the Plain Meaning Rule, and the Principles of Contractual Interpretation*, 146 U. PENN. L. REV. 533, 545 (1998) (discussing that rigorous application of the parol evidence rule is a disadvantage if the transaction costs involved in creating a standardized meaning are greater than the value of the un-enforced promise.)

¹⁷³ Charny, *supra* note __, at 848-9.

¹⁷⁴ Scott, *Case for Formalism* at 861.

¹⁷⁵ See e.g. Lisa Bernstein, *Opting Out of the Legal System: Extralegal Contractual Relations in the Diamond Industry*, 21 J. LEGAL STUD. 115 (1992); Lisa Bernstein, *Private Commercial Law in the Cotton Industry: Creating Cooperation through Rules, Norms, and Institutions*, 99 MICH. L. REV. 1724 (2001); Barak Richman, *How Communities Create Economic Advantage: Jewish Diamond Merchants in New York* 22-51 (Harvard Law and Econ. Discussion Paper No. 384, 2004), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=349040.

¹⁷⁶ Scott, *Case for Formalism* at 860-1.

expectations.”¹⁷⁷ In Ian Macneil’s terminology, formal contractual promise is only one type of “exchange-projector” among many.¹⁷⁸ Informal “exchange projectors” typically fall within two types of social pressure, both closely-related: first, failing to conform to unwritten social norms results in damage to one’s reputation in the marketplace—reputational damage is important to actors intending to be repeat players;¹⁷⁹ and second, properly conforming to these social norms builds trust between parties¹⁸⁰—an incentive to conform because “[t]rust counteracts fear of opportunistic behavior and as a result, is likely to limit the transaction costs associated with an exchange.”¹⁸¹ I.e., minimal court intervention does not result in un-enforced agreements because the prospect of ruining one’s reputation in the market or of undermining a partner’s trust constrains a party from breaching.¹⁸² The interconnection between promissory and nonpromissory exchange mechanisms arises inevitably due to the limits of human rationality:

“[P]romissory projectors are always accompanied by nonpromissory projectors. This emanates from the interplay of the always present social matrix with the nature of promises themselves. Promises are inherently fragmentary. The human mind can focus on only a limited number of things at the same time, and, for reasons of efficiency, in fact focuses on even fewer than it can. Thus, promises can never encompass more than a fragment of the total situation. At least as fundamental, the amount of information available about the future is always only partial, and promises, however sweeping, can be understood only against the background. All this is part of what Herbert Simon calls bounded rationality.... Once promises are viewed as less than absolute, other exchange-projectors must come into play.”¹⁸³

Thus, informal norms govern where contracts are not complete because exchange is unavoidably embedded in wider social relationships: i.e. formal governance is available where parties can foresee outcomes and, as such, meets economic agents’ need for planning future activity; where outcomes cannot be foreseen, and flexibility in the transactional relationship is necessary, informal governance fills in the gaps.¹⁸⁴ Building on this foundation, the self-enforcement theory for formalism argues that, where flexibility is important, informal self-enforcement is often more efficient than court

¹⁷⁷ Stewart Macauley, *Non-Contractual Relations in Business: A Preliminary Study*, 28 AM. SOC. REV. 55, 63 (1963).

¹⁷⁸ David Campbell, ed., *THE RELATIONAL THEORY OF CONTRACT* 131-2 (2001).

¹⁷⁹ Ranjay Gulati, *Does Familiarity Breed Trust? The Implications of Repeated Ties on Contractual Choice in Alliances*, 38 ACADEMY OF MANAGEMENT JOURNAL 85, 93 (1995) (“reputational considerations... play an important role in each firm’s potential for future alliances.”).

¹⁸⁰ *Id.* at 92 (“At the organizational level, observers point to numerous examples of ‘preferential, stable, obligated, bilateral trading relationships’ to illustrate that firms develop close bonds with other firms through recurrent interactions.”).

¹⁸¹ *Id.* at 93.

¹⁸² For the pioneering formal work of this theory, see Benjamin Klein & Keith Leffler, *The Role of Market Forces in Assuring Contractual Performance*, 89 J. OF POLITICAL ECONOMY 615 (1981).

¹⁸³ Campbell, *supra* note __, at 132-3.

¹⁸⁴ Cite to Macneil’s discussion of the need for planning/flexibility [classical, neoclassical, and relational].

enforcement—therefore, formalism is not only possible but preferable, since it does not interfere with the more socially optimal allocation of resources.¹⁸⁵

For reputation effects to sufficiently constrain potential defection, there must be a sense of duration to the players' participation: either they must repeat games or, if games do not repeat between a dyad, they must at least consistently operate within the same market network.¹⁸⁶ However, neither of these conditions is likely to be met where collaboration is involved. First, it is not safe to assume that games repeat between collaborators. There appears to be little systematic empirical work available on whether games actually repeat between collaborators in high-tech industries; however, Baker, Gibbons, and Murphy note in one of their papers on contracting in the biotechnology industry that, of 12,500 strategic alliance agreements between biotech companies analyzed, 9462 pairs of firms never consummated more than one deal and only 57 pairs did more than five together.¹⁸⁷ Thus, they are left to argue that the *prospect* of continuing interactions—not actual repeated games—is what creates trust between the parties.¹⁸⁸ This seems a rather weak constraint. At the opening stages of a collaboration where relational ties are weak,¹⁸⁹ it is questionable whether “the prospect of continuing interactions” is enough to govern. Modern firms often require an intimate level of collaboration immediately: parties who have never collaborated before agree to exchange personnel, openly share proprietary information, rely upon just-in-time supplying, etc. Is the hope for continuing interactions enough to see parties through this period?

Furthermore, even if games do repeat and these relationships are, indeed, long-term, there is little reason to assume that trust will necessarily build over time. Whether or not Firm A trusts Firm B depends upon an ongoing judgment of whether B's activity conforms to particular behavioral norms—i.e. A must interpret B's decisions. As 20th century jurisprudence has taught us, interpretations are bound to be controversial.¹⁹⁰ Those of us who are considered untrustworthy rarely acquiesce to the negative judgment of our behavior; rather, we seek to justify our actions. Therefore, a relationship can be both functional and yet plagued by controversy and, thus, progress without the accumulation of trust: over time, some behavior might be classified as appropriate, some

¹⁸⁵ Scott, *Self-Enforcing Indefinite Agreements* at 1645.

¹⁸⁶ Schwartz & Scott, *Limits of Contract Law* at 558 (“For reputation to work, however, potential future contracting parties must be able conveniently to learn why the original parties' deal broke down. Reputations, therefore, are difficult to establish in large economies in which particular contracting parties often are anonymous. Rather, reputations work best in small trading communities, especially those with ethnically homogenous members, where everything that happens soon becomes common knowledge, and boycotts of bad actors are easy to enforce.”); see also Bentley Macleod, , *Reputations, Relationships, and the Enforcement of Incomplete Contracts* [Columbia Working Paper, presented at ALEA conference in 2006] at 25.

¹⁸⁷ George Baker, Robert Gibbons & Kevin Murphy, *Contracting for Control* 21 (Massachusetts Institute of Technology, working paper, (2006) (reasoning that the *possibility* of a long-term relationship is the source of reputational constraint)(italics added).

¹⁸⁸ *Id.*

¹⁸⁹ Christine Beckman, Pamela Haunschild, and Damon Philips, *Friends or Strangers? Firm-Specific Uncertainty, Market Uncertainty, and Network Partner Selection*, 15 ORGANIZATION SCIENCE 259, 261 (2004) (“New relationships, on average, are typically weaker... than existing relationships”).

¹⁹⁰ See generally RONALD DWORKIN, LAW'S EMPIRE (1986).

as inappropriate, and some as falling within a perpetually contentious “gray area.” All that may accumulate is argument. Indeed, research in the auto industry reveals that US companies who have sold for many years to a primary customer have less trust in that customer than in customers to whom they have sold for shorter time periods.¹⁹¹ Note also that researchers have described the dynamics between collaborating firms as “close but adversarial.”¹⁹² This is because modern inter-firm cooperation, which involves the constant disruption of routines, destabilizes relationships as much as it builds them. Collaborators walk the fine line between a manufacturer’s “legitimate (and effective) efforts to push suppliers to ferret out cost reductions” and an “inflexible application of a hard and nonnegotiable target.”¹⁹³ Thus, relations between customers and suppliers are “conflictual partnerships.”¹⁹⁴

Second, although dense networks appear a more convincing ground for a concern for reputation, there is even here cause for doubt. The argument regarding network density is that other market players, once they learn of the defecting party’s behavior, will be reluctant to transact with that party and, thus, will be able to extract a premium from that party in future dealings.¹⁹⁵ For firms located at the center of the network, information about their dealings can probably flow easily between companies. Thus, for these core firms, who are repeat players in the entire market, the reputational costs of renegeing may be high indeed. It is important to note, however, that these core firms also enjoy the status of industry heavy-weights: i.e. they have bargaining leverage which allows them to overlook reputational considerations.¹⁹⁶ Furthermore, if an industry network has a hub-and-spoke structure,¹⁹⁷ it seems far less likely that information about second- or third- tier firms will flow readily through the network.¹⁹⁸ The fact that firms are constantly entering and exiting a large and expanding global market such as biotechnology further complicates reputational constraints: such size and growth not only

¹⁹¹ Mori Sako & Susan Helper, *Determinants of Trust in Supplier Relationships: Evidence from the Automotive Industry in Japan and the United States*, 34 J. OF ECON. BEHAVIOR AND ORG. 387, 400 (1998) (presenting data that indicated a “weak, yet significant, finding that the longer the contract length... the higher the level of distrust, contrary to the prediction.”).

¹⁹² Ram Mudambi & Susan Helper, *The ‘Close but Adversarial’ Model of Supplier Relations in the U.S. Auto Industry*, 19 STRAT. MGMT. J. 775, 776 (1998).

¹⁹³ Whitford, supra note __, at 102.

¹⁹⁴ Gary Herrigel & Volker Wittke, *Varieties of Vertical Disintegration: The Global Trend towards Heterogeneous Supply Relations and the Reproduction of Difference in US and German Manufacturing*, in CHANGING CAPITALISMS? INTERNATIONALIZATION, INSTITUTIONAL CHANGE, AND SYSTEMS OF ECONOMIC ORGANIZATION, Morgan, Glenn, Richard Whitley, and Eli Moen, eds. (2005) (en12).

¹⁹⁵ Klein [1996], supra note __, (“If the violation of the contractual commitment is taken account of by other transactors... the transactor engaging in the hold-up will face increased costs of doing business in the future.”).

¹⁹⁶ See e.g. Whitford, supra note __, at 65 (quoting an interviewee who described the major automakers’ leverage within collaborative relationships as “the big economic hammer.”).

¹⁹⁷ See e.g. George Baker, Robert Gibbons & Kevin Murphy, *Strategic Alliances: Bridges Between ‘Islands of Conscious Power*, 4 (Massachusetts Institute of Technology, working paper, 2004), available at [http:// web.mit.edu/rgibbons/www/Strategic%20Alliances.pdf](http://web.mit.edu/rgibbons/www/Strategic%20Alliances.pdf) (showing a hub-and-spoke network in the biotechnology industry centered upon 32 core firms).

¹⁹⁸ Macleod, supra note __, at 35.

hamstrings information transfer about particular companies' behavior¹⁹⁹ but also introduces new (and diminishes existing) norms against which reputation is measured. In other words, the behavior against which social norms are supposed to act might displace those very norms if enough members of the community adopt the activity. It is noteworthy in this regard that the most illuminating work on private ordering has focused primarily upon relatively static and insular industries: Southern cotton growers,²⁰⁰ ultra-orthodox Jewish diamond merchants,²⁰¹ Maghribi traders,²⁰² etc. Undoubtedly, social norms are a ready currency in the confines of Shasta County.²⁰³ Relational governance's efficacy is more doubtful, however, in volatile global markets.²⁰⁴ Thus, there is reason to doubt the efficacy of reputation's constraining effect for the vast majority of firms all but the most concentrated industries.

My point here is not that ideas of trust and reputation are analytical dead-ends or that collaborators operate in an appalling world bereft of trust. Rather, my argument is that the role of informal constraints are more nuanced than self-enforcement theory assumes. Formalists' reliance upon informal norms overlooks a well-established argument, which can be traced at least to Karl Polanyi, that capitalism *disembeds* exchange from its wider social context.²⁰⁵ While this argument also is incorrect if taken to the extreme, it leads one to conclude, when balanced against the work of Ellickson, Bernstein, and others, that the interconnection between formal legal governance and informal rules is best understood as contingent, asymmetric, and dynamic.²⁰⁶ Thus, I do not reject out of hand attempts to apply self-enforcement theories to the governance of collaborations; however, I find theories that simply assume the efficacy of self-enforcement mechanisms to be problematic.²⁰⁷

¹⁹⁹ One is reminded of Alfred Marshall's quip that "money is more portable than a good reputation." Ronald Coase, *The Nature of the Firm: Meaning*, in *THE NATURE OF THE FIRM: ORIGINS, EVOLUTION, AND DEVELOPMENT* 58 (Williamson, Oliver and Sidney G. Winter, eds., 1991).

²⁰⁰ Bernstein, *supra* note __.

²⁰¹ Richman, *supra* note __.

²⁰² Greif, Avner, *Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders' Coalition*, 83 *AMER. ECON. REV.* 525 (1993).

²⁰³ Ellickson, *supra* note __.

²⁰⁴ Bernstein seems to reference this in a footnote: "Over the past ten years, however, technological advancements and other market changes have occurred that may, over the long run, undermine the ability of [cotton] industry institutions to promote cooperation." Bernstein, *supra* note __, n.233. *See also* Scott, *Self-Enforcing Indefinite Agreements* at 1644 ("Reputations work best in markets for homogeneous goods or in ethnically homogeneous communities.").

²⁰⁵ Karl Polanyi, *THE GREAT TRANSFORMATION: THE POLITICAL AND ECONOMIC ORIGINS OF OUR TIME* 71 (1944) ("A self-regulating market demands nothing less than the institutional separation of society into an economic and political sphere."). For an historical perspective, see Bruce Mann, *NEIGHBORS AND STRANGERS: LAW AND COMMUNITY IN EARLY CONNECTICUT* 101 (1987) ("Unlike litigation, arbitration was inexpensive, expeditious, and private. Above all, it was... "neighbourly"—uniquely tied to and shaped by the communities in which it existed. The community ties were an essential part of arbitration. Without them, arbitration would not have been the popular and effective alternative to formal legal process that it was. As the bonds of community weakened, the legal system appropriated arbitration to itself and turned it into a formal process that differed little from legal adjudication.").

²⁰⁶ [Discuss Granovetter 1985 at 12.]

²⁰⁷ There is one noteworthy formalist argument that I do not discuss fully here although it may be understood to rebut my argument regarding the limits of self-enforcement. Robert Scott has argued that the strength of informal norms may be greater than originally thought if such norms are based upon generally-

3.3 Generative Contracts as Self-Enforcing Agreements

Despite the shortcomings of the standard reputation-effects argument for informal governance, an amended version of the self-enforcement theory may still apply. Such an amendment would recast pragmatic governance, escalation, and arbitration mechanisms as a new system for self-enforcement: one can think of pragmatic governance as the formal codification of contractual relations, as an institution that allows arms-length bargainers to build mutual trust. In other words, pragmatic governance is an institutionalized process for creating a relationship *ex nihilo*—where trust and reputation effects are too weak, collaborators use formal contract mechanisms in an attempt to approximate informal governance.²⁰⁸ From this perspective, generative contracting appears as another version of the traditional private-ordering story: private economic organization supported through private adjudication.

While there may be merit to this argument, it is important to notice the stress it places on self-enforcement theory. The lynchpin to self-enforcement theory is that the tension between parties' need for planning and their need for flexibility creates a realm for unwritten and unarticulated constraints on parties' behavior: where parties foresee a need for flexibility, they leave gaps in the written contract that are to be governed informally. To say that the written contract is now the device for not only planning but also for achieving flexibility is to either question parties' need for flexibility or to imply that there is no longer (or never was) a place for informal governance mechanisms. This may, in turn, lead one to question the idea that contracts are necessarily embedded in wider social relations in the first place, but at the very least it casts the planning/flexibility dichotomy into doubt.

The problem with conceiving of generative contracting as the formalization of informal governance is not trivial because pragmatic governance is both *extensive* and *permanent*. By “extensive,” I mean that, by conceiving of pragmatic coordination mechanisms as the formalization of informal governance, we must confess that pragmatic governance occupies the majority of the field conceived for informal norms—i.e. information sharing requirements and joint decisionmaking formally control adjustment behavior that should fall within reputation's remit. This problem becomes more difficult

held psychological motivation for reciprocity rather than social conventions. Scott, *Self-enforcing Indefinite Agreements* at 1644 (“Recent work in experimental economics suggests, however, that the domain of self-enforcing contracts may be considerably larger than has been conventionally understood. A robust result of these experiments is that a significant fraction of individuals behave as if reciprocity were an important motivation (even in isolated interactions with strangers), while a comparable fraction react as if motivated entirely by self-interest. The evidence that in any population roughly half behave fairly and half behave selfishly provides the foundation for a theory of fairness grounded in the human motivation to reciprocate.”). I do not engage directly with Scott's argument because it is doubtful that the results of psychological studies on individuals reflect the motivations of aggregated organizational actors.

²⁰⁸ This is one of the overarching goals of a consortium of major multi-nationals—such as IBM, SAP, and Microsoft—and European research universities that has developed the “TrustCoM” framework for supporting inter-firm collaborations. See ALVARO ARENAS ET AL., THE TRUSTCoM FRAMEWORK v5.0 5-8 (2006) (on file with the author) (outlining an approach for formally managing collaborators' emerging reputations).

when one considers that pragmatic governance is also “permanent,” i.e. it is required throughout the duration of the collaboration. These disciplines do not fade into the background over time as trust and reputation take the reins, as it were. Rather, it appears that collaborators do not believe informal governance will ever be sufficient to govern the self-enforcing range. In summary, the difficult questions generative contracts pose to self-enforcement theory’s fundamental assumptions leads to the uncomfortable conclusion that self-enforcement theory must go back to the drawing board.

These challenges to self-enforcement theory’s fundamental assumptions cast doubt, in turn, upon those formalist arguments that rely on the theory. The basic question: if informal norms no longer control relational flexibility, then what value does formalism add to this new system of self-enforcement?

To illustrate existing formalist theory’s difficulty in answering this challenge, it is useful to examine Eric Posner’s careful argument for formalist contract interpretation. Borrowing Benjamin Klein’s model of self-enforcement,²⁰⁹ probably the most articulate statement of the general theory, Posner casts the planning/flexibility tension in terms the classic hold-up problem. I.e. he argues that parties leave portions of their relationship outside the written contract in order to avoid litigation hold-ups—situations where a party opportunistically uses a contract provision as a basis for a suit designed to hold-up the other party for concessions; and where the formal contract does not govern, reputational considerations control.²¹⁰ This conception mirrors Klein’s theory, which posits that relational governance is a complement to explicit contract terms: i.e. parties use explicit contract terms to create a “self-enforcing range” within which informal constraints such as trust and reputation control opportunism.²¹¹ Upon this foundation Posner builds a two-step argument. First, Posner argues that, in a world where informal constraints are found, court enforcement of contracts is reserved for deterring “high-value opportunism”—i.e. situations where the temptation to renege on the agreement is so great so as to overwhelm reputation effects.²¹² Even a “radically incompetent” judiciary²¹³ can deter high-value opportunism because radically incompetent enforcement is inevitably costly to both parties—Posner likens it to a parent punishing both children for fighting when it is impossible to ascertain who started the tussle.²¹⁴ The idea of costs falling on both parties is crucial to Posner’s theory, because such creates a disincentive for either party to use litigation to hold-up the other party for concessions. Of course, if the only role the judiciary plays in contract enforcement is to perform so badly so as to deter parties from engaging in behavior that will result in a lawsuit, then contextualism would be equally effective. Thus, Posner’s second step is to argue that formalism is superior because the standard forms of meaning that emerge through formalist enforcement more clearly signal parties’ intent to the court.²¹⁵ Clear signals of intent minimize the possibility that a

²⁰⁹ Klein, *supra* note __. Note that Posner does not cite Klein anywhere in his piece; the parallels, nonetheless, are obvious.

²¹⁰ Posner, *Radical Judicial Error* at 14-15.

²¹¹ Klein, *supra* note __, at 444.

²¹² Posner, *Radical Judicial Error* at 16.

²¹³ *Id.* at 7.

²¹⁴ *Id.* at 25.

²¹⁵ *Id.* at 27-28.

party will bring fraudulent claims by which to threaten the other party.²¹⁶ Contextualism exacerbates this problem by providing doctrinal tools for a party to argue that extrinsic evidence proves there was a particular deal when, in fact, that claim is fraudulent.²¹⁷

The second step of Posner's argument is vulnerable to the argument, presented above in Part 4.2.1, that standardized meanings of terms are unlikely to coalesce in a collaborative economy. However, there is a more serious issue: conceiving of generative contracts as formal attempts to approximate informal governance mechanisms questions the role of opportunism in contract design. Rendering informal constraints into formal contract terms suggests that parties are not that concerned about the potential for litigation hold-up. I.e. contract terms are used in more situations than simply those prone to "high-value opportunism." To downplay opportunism is to expose Posner's theories to collapse: if parties are not primarily concerned about the potential for litigation hold-up, then formalism's under-enforcement may be a net loss to parties. Indeed, contextualism may more efficiently enforce parties' expectations.



In summary, the argument that formalism is appropriate if one conceives of generative contracting as a variety of self-enforcement is problematic. Because generative contracting internalizes flexibility mechanisms into the contract itself, it undermines the dichotomy between planning and flexibility that defines the contours of the traditional executory agreement. With self-enforcement theory's basic assumptions confounded, the derivative arguments for formalism are also called into question. It is not certain that collaborators would prefer formalist enforcement. In the end, it may be possible to refashion self-enforcement theory to accommodate the complexities of collaborative production; however, the burden is on formalism's proponents to show how such can be accomplished.

Similar to my argument above, I want to emphasize that my point here is not that self-enforcement theory is bankrupt. Rather, my argument is that current understanding of the complementarities between formal and informal control mechanisms are too coarse to adequately accommodate contracts between collaborators. Additional theoretical work is necessary, and it may be that such research will find a way to rehabilitate the self-enforcement approach.

4. The Experimentalist Alternative

If neither contextualism nor formalism provide entirely convincing means for enforcing generative contracts, whence an alternative? In this section, I explore the possibility that an alternative approach to enforcement might be found in an "experimentalist" theory of adjudication. An experimentalist model of dispute resolution would require the court to co-opt the very pragmatic governance mechanisms that parties have included in their generative contracts to direct the dispute resolution process: i.e.

²¹⁶ *Id.*

²¹⁷ Klein, *supra* note __, at 444.

the court would simultaneously engineer a resolution by setting performance benchmarks with the parties and detecting and correcting errors in real-time. By casting the court's task as collaborating with the parties in discovering a workable solution to the dispute, the experimentalist approach incorporates contextualism and formalism's best insights: it embraces contextualism's ambition to promote flexibility while also reflecting the formalist conviction that a court's single-handed ability to accurately fill gaps is circumscribed.

4.1 A Tentative Theory of Experimentalist Contract Adjudication

Dorf and Sabel's theory of experimentalist adjudication, cast as a re-interpretation of Ian Macneil's relational theory of contract, provides a model capable of both explaining collaborators' preferences and prescribing appropriate judicial reaction. Experimentalism appears capable of achieving the ambitions of the discussion above because it does not require the court to search for party intent nor to reference general social norms in order to interpret the parties' respective commitments. Indeed, interpretation, in the traditional sense, is not involved at all. Rather, acknowledging that the parties' intentions are impressionistic, the court reinvigorates the pragmatic coordination disciplines outlined above. From this perspective, contract enforcement is not about vindicating rights—instead enforcement is about repairing and redirecting the dysfunctional joint learning process. In this respect, experimentalism provides recourse where contemporary contract adjudication cannot.

This section proceeds as follows. First, I argue that ambiguities in Macneil's writings suggest an opportunity for re-interpreting his work as a foundation for an experimentalist theory of contract adjudication. Second, I discuss experimentalism's characteristics and provide a stylized description of how experimentalism would be applied to enforce a generative contract. Third, and finally, I analyze how closely reality reflects the experimentalist model.

4.1.1 Macneil's theory as precursor

As discussed in Part 3 above, Macneil and self-enforcement theorists both argue that explicit contractual relationships were unavoidably embedded in a wider social milieu. However, while formalism counsels courts to minimize their intervention, Macneil argues for the expansion of the court's review to include a searching analysis of all of a given exchange's norms: Macneil's prescription is that the enforcement court should reference these "nonpromissory projectors" when interpreting the meaning of the contract.²¹⁸ The question arises, however, of what referencing these "nonpromissory projectors" really means—Macneil does not fully explain how these norms more precisely reflect parties' choices. This ambiguity leads to the typical interpretation of Macneil's view as simply a robust form of contextualism. As Eric Posner has described Macneil's position: "Macneil's theory places great confidence in the courts. He assumes not only that they will be able to understand the nature of the dispute, but also that they

²¹⁸ Campbell, *supra* note __.

will be able to do a kind of sociological analysis of the parties' relationship."²¹⁹ From this interpretation, which I find entirely plausible if unfortunate, Macneil's theory appears flaccid: it simply calls for more contextualism. Adopting Macneil's charge to search for meaning in the wider norms of the relationship will only increase the unpredictability of court intervention, which will only undermine innovation that much more.

However, Macneil's invocation of Chayes' theory of public rights litigation as the form which norms-based adjudication should take suggests an alternative interpretation.²²⁰ Whereas traditional contract adjudication is characterized by bipolar, retrospective, party-controlled disputes over defined rights and duties,²²¹ Macneil's proposed model has the following characteristics:

1. The scope of the dispute is not exogenously given by contract terms but is shaped by both the parties and the resolver of the dispute—e.g. the arbitrator—and by the entire relation as it has developed and is developing.
2. The party structure is not rigidly bilateral but sprawling and amorphous.
3. The fact inquiry is not only historical and adjudicative but also predictive and legislative.
4. Relief is not conceived primarily (or sometimes at all) as compensation for past wrong in a form logically derived from the substantive liability and confined in its impact to the immediate parties; instead, it is in great (or even entire) measure forward-looking, fashioned ad hoc on flexible and broadly remedial lines, often having important consequences for many persons, including absentees.
5. The remedy is not imposed but negotiated and mediated.
6. The award does not terminate the dispute-resolver's role in the relation; instead, the award will require continuing administration by this or other similarly situated dispute-resolvers.
7. The dispute resolver is not passive, that is, his function is not limited to analysis and statement of governing rules; he is active, with responsibility not only for credible fact evaluation but also for organizing and shaping the dispute processes to ensure a just and viable outcome.
8. The subject matter of the dispute is not between private individuals about private rights but is a grievance about the operation of policies of the overall contractual relation.²²²

Thus, Macneil's vision of contract enforcement bears more similarities to public law litigation than to the classical understanding of a private dispute between parties to an agreement. Stated as such, Macneil's insight is that interpreting and enforcing an incomplete contract requires a change in the underlying adjudicatory apparatus, not

²¹⁹ Posner, *Radical Judicial Error* at 6.

²²⁰ Abram Chayes, *The Role of the Judge in Public Law Litigation*, 89 HARV. L. REV. 1281 (1976).

²²¹ Macneil, *Classical, Neoclassical, and Relational* at 891.

²²² *Id.* at 892.

simply an expansion of doctrine. The discussion that follows builds upon this initial insight to sketch an outline of an alternative model of contract adjudication.

4.1.2 Experimentalist public rights adjudication

Perhaps the institution to enforce generative contracts is pragmatic itself: the problem-solving court. Arising in areas where social problems have appeared particularly intractable,²²³ these courts are broadly described as “courts of first impression that take their objective to be solving the social problems that underlie the tip of the various icebergs that appear for adjudication.”²²⁴ “Always a work in progress,”²²⁵ the problem-solving trial court is theorized to roughly follow the pragmatic governance principles outlined above: first, they set achievement milestones with the client; second, they actively participate in the execution of the remediation plan; and third, they closely monitor the client’s progress and troubleshoot emerging problems.²²⁶ In other words, they benchmark, simultaneously engineer, and error detect and correct. The hallmark of this “experimentalist” adjudication is that it is participatory: these courts do not simply vindicate pre-existing rights—they collaboratively craft solutions with the disputants.²²⁷ This does not mean that the problem-solving judge abandons all the traditional vestiges of her office and simply assumes the role of a mediator: rather, the problem-solving judge, through the disciplines of pragmatic governance, directs the resolution process by focusing the parties on the growing crisis and by judging their efforts to craft a solution.²²⁸ Note that the judge is not relegated to the role of a passive neutral: if the parties prove uncooperative, the court can apply a penalty default.²²⁹ In this sense, the court is both a participant in and a guardian of the problem-solving process.²³⁰

The drug treatment court provides the classic example of experimentalist adjudication. Designed to remediate chronic substance abuse, the problem-solving

²²³ See, e.g., Michael Dorf & Charles Sabel, *Drug Treatment Courts and Emergent Experimentalist Government*, 53 VAND. L. REV. 831 (2000) (discussing the application of experimentalism to problems of drug addiction); Bradley Karkkainen, *Environmental Lawyering in the Age of Collaboration*, 2002 WIS. L. REV. 555 (2002) (discussing the application of experimentalism to environmental regulation); Stacy Laird Lozner, *Diffusion of Local Regulatory Innovations: The San Francisco CEDAW Ordinance and the New York City Human Rights Initiative*, 104 COLUM. L. REV. 768 (2004) (discussing the application of experimentalism to human rights problems); James Liebman & Charles Sabel, *A Public Laboratory Dewey Barely Imagined: The Emerging Model of School Governance and Legal Reform*, 23 NYU J. OF L. & SOCIAL CHANGE (2003) (discussing the application of experimentalism to public school reform).

²²⁴ Michael Dorf, *Legal Indeterminacy and Institutional Design*, 78 N.Y.U. L. REV. 875, 936 (2003).

²²⁵ *Id.* at 940.

²²⁶ Dorf & Sabel, *supra* note __ [A Constitution of Democratic Experimentalism] at [get pin cite].

²²⁷ *Id.* at 287-88.

²²⁸ *Id.* at [get pin cite]

²²⁹ Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 YALE L. J. 87 (1989). Dorf defines a penalty default in general terms as “a state of affairs so unpalatable to all parties that they have no choice but to hammer out some solution that is, from the perspective of the default, a Pareto improvement.” Dorf, *supra* note __, at 946. In the case of contract enforcement, the penalty default could be either an onerous court order or, even simpler, a decision to revert back to traditional contextualist contract adjudication. The latter avoids any concerns that this form of adjudication forces unwilling parties to remain in relationships.

²³⁰ Dorf & Sabel, *supra* note __, [Constitution of Democratic Experimentalism] at [get pin cite].

court's first step is to set the treatment regimen that the addict will follow: "[i]n consultation with the client, her attorney, the prosecutor, and the judge, treatment court personnel make an initial assessment and each client is placed in one of seven 'treatment bands' that determine the frequency of urine testing, program attendance, court appearances, and case management meetings."²³¹ Because the client is accompanied by his/her treatment professional when making court appearances, the collaborative effort that establishes the initial regimen continues throughout the treatment process.²³² The court's second step is to monitor the client's progress towards sobriety and to determine consequences if the client relapses.²³³ Such consequences might include more urine tests, additional jail time, more court appearances, etc. Note also, however, that the court has the ability to reward the client for making progress through the treatment program—thus, the judge enjoys a significant level of discretion.²³⁴ Thus, the drug court actively monitors and facilitates the client through a process of continuous improvement. Depending upon the client's performance, the court will either adjust the treatment regimen until the client has successfully "graduated" or has been terminated (and returned to the traditional criminal justice system) for recidivism.

4.1.3 A stylized portrait of experimentalism applied to contract enforcement

Experimentalist adjudication applied to contract disputes between collaborators would unfold as follows: where pragmatic disciplines have become dysfunctional, the court will intervene, not to determine a winner, but to organize a solution with the parties. To do so, the court in conjunction with the parties would set benchmarks for the collaborators to achieve in regards to progressing their dispute. Benchmark setting would occur by reference to the parties' aspirations, competitors' behavior, and general legal norms. These benchmarks, first, would not only be processual (e.g. resolve the dispute by a certain date) but also substantive (e.g. achieve a particular level of performance) and, second, would change, or "roll," as new discoveries were made. Throughout the process, the court would actively monitor the parties' progress through situation-specific metrics and assist the parties in troubleshooting errors. This monitoring is achieved by the consistent sharing of information, through regular meetings and reporting mechanisms, between the parties and the court. If the error detection and correction process begins to malfunction, the court can correct missteps through the threat of an information-forcing penalty default. Note, however, that the court is not "activist"—it does not fill gaps in the contract. Rather, the court simply focuses the parties on the problems to which they must find solutions in order to meet their collaboration's potential. This iterative adjudicatory process will end when the relationship has successfully achieved a consistent succession of benchmarked milestones, not in a conclusive judgment.

²³¹ Dorf & Sabel, *supra* note __, [Drug Treatment Courts] at 847.

²³² *Id.*

²³³ *Id.*

²³⁴ *Id.* at 848-49.

The key point for our purposes is that experimentalist adjudication is capable of “enforcing”—i.e. providing a source of institutional support that allows parties to rely on contract as a form of economic organization—generative contracts because it is not rigidly tied to the traditional idea of protecting the parties’ original intent. In this sense, it differs fundamentally from contextualism. Rather than embarking on contextualism’s Quixotic search for parties’ intentions, experimentalism accepts that contractual intentions are indeterminate.²³⁵ Rather than coping with indeterminacy by attempting to shoe-horn the diversity of parties’ motivations into the fiction of original intent, experimentalism creates an institutional structure that allows the parties, with the assistance of the neutral court, to further develop their unfolding intentions.²³⁶ By doing so, experimentalism provides an actual support to the collaborative process, unlike formalism, which simply places the burden either on parties to clarify their intentions before coming into the courthouse or on informal norms to police what the law cannot. Note also that experimentalism is not simply a fancy word for mediation: the court’s role is not simply to referee the process of renegotiation. Rather, experimentalism fights fire with fire: the contract “enforcement” process itself becomes innovative and collaborative, as parties and the court use the conflict as an opportunity to craft new potentialities for the partnership.

4.2 Whether the evidence reflects experimentalist theory

While additional research is necessary, my preliminary conclusion is that collaborators’ mixture of escalation procedures and arbitration clauses may be understood to roughly approximate the experimentalist model outlined above. First, the escalation procedure approximates an adjudicatory apparatus that institutes a collaborative problem-solving process between the immediate disputants. Each layer of the escalation process forces parties to release additional information: because disputes are costly, senior executives naturally demand that subordinates prove that they are not simply being uncooperative or unduly sharp partners. This leads subordinates to reveal additional information in order to exhibit their sincerity. Thus, the escalation process serves both an adjudicatory function (forcing information) and a collaborative role (senior management both referees and participates in resolution). Furthermore, the logic of problem-solving, rather than the logic of appeal, animates the procedure: because many collaborations are based on unanimous decision-making,²³⁷ disputes are escalated so long as a collective solution remains elusive.

Second, arbitration at the summit of the escalation process performs two experimentalist functions. First, and foremost, it serves as a powerful penalty default. The fact that arbitration awards are generally very difficult to appeal—under the FAA

²³⁵ For a definition of indeterminacy, see Dorf, *supra* note __, at 883 (“by legal indeterminacy I mean simply that in more than a trivial number of cases that come before the courts, ‘legal norms may not sufficiently warrant any outcome.’”).

²³⁶ *See id.* at 960 (“lawmakers increasingly address social problems by creating open-ended problem-solving institutions, rather than by directing solutions through authoritative but ultimately indeterminate instructions, the domain of the indeterminacy problem will correspondingly shrink.”).

²³⁷ Jennejohn, *Contract Design* at 45.

and corresponding state laws, arbitration awards are universally recognized,²³⁸ and awards are vacated only in rare circumstances²³⁹—creates the penalty default. I.e. because parties cannot readily seek recourse beyond the arbitration itself, they have an incentive to disclose information and cooperate in fashioning a mutually acceptable solution. Second, the arbitrator can participate directly in the creation of a solution. Although arbitration is typically seen as the most adversarial form of ADR,²⁴⁰ it does have a certain amount of flexibility, since the arbitrator is not bound by precedent.²⁴¹ Furthermore, arbitration’s procedure is more participatory than what we find in conventional courts. By retaining control of the process, parties can shape the scope, speed, and scale of the arbitration.²⁴² Finally, arbitration is participatory in that, especially in tripartite arbitration, each side gets to choose unilaterally one arbitrator of a three-member panel. Thus, arbitration, which displays characteristics of flexibility itself, primarily provides the penalty default that makes the experimentalist escalation procedure efficacious.

A thin but intriguing line of recent research supports this preliminary analysis. Although identifying general trends in the richly varied ADR landscape is perilous, practitioners and commentators have begun to identify a new variety of resolution mechanisms focused upon “dispute avoidance” or “dispute management.” These mechanisms approach dispute resolution in holistic fashion, as Craig McEwen describes:

management of disputing [is] a systematic assessment of the ways that a corporation produces, prevents, and processes disputes; coordinated efforts to achieve clear goals related to dispute prevention and processing; and careful monitoring of the achievement of those goals. Such management means that disputes are not viewed as exceptional events to be handled on a case-by-case basis, but rather are seen as regular occurrences that can and should be managed to achieve wider organizational objectives.²⁴³

This systematization embraces the collaborative ideal to the point that conflict resolution now explicitly resembles the pragmatic disciplines outlined above.²⁴⁴ For instance, the

²³⁸ [Cite to the caselaw.]

²³⁹ [Cite to the situations where awards are vacated.]

²⁴⁰ Frank Sander & Lukasz Rozdeiczer, *Matching Cases and Dispute Resolution Procedures: Detailed Analysis Leading to a Mediation-Centered Approach*, 11 HARV. NEGOTIATION L. REV. 1, 21 (2006).

²⁴¹ See e.g. Susan Franck, *The Legitimacy Crisis in Investment Treaty Arbitration: Privatizing Public International Law Through Inconsistent Decisions*, 73 FORDHAM L. REV. 1521 (2005) (discussing lack of precedential constraint in arbitration).

²⁴² *Id.*

²⁴³ Craig McEwen, *Managing Corporate Disputing: Overcoming Barriers to the Effective Use of Mediation for Reducing the Cost and Time of Litigation*, 14 OH. ST. J. ON DISP. RESOL. 1, 5 (1998).

²⁴⁴ The connection between this new form of dispute resolution and pragmatic disciplines of benchmarking, simultaneous engineering, and error detection/correction is not simply incidental—in some cases at least, the new approach to resolving disputes is part of a larger company-wide effort to reform its operations. See e.g. *id.* at 16 (“In a company that was reorganizing itself around notions of Total Quality Management and increased efficiency and quality in production, the legal division was challenged to see how it could define in measurable ways its own efficiency and quality management.”).

following description of one Dispute Avoidance program sounds strikingly similar to the simultaneous engineering, benchmarking, and error detection/correction steps described above:

Competent [dispute system design] involves each of these four strategic organizational design steps....:

1. Investigation of the existing (or "as-is") condition
2. Design of recommended improvement, a change implementation plan, and methods for monitoring and measuring results on an ongoing basis;
3. Execution of the planned change, often through an initial pilot project; and
4. Assessment over time, and continual improvement.²⁴⁵

Thus, early error detection was encouraged, as was the use of benchmarked performance standards and collaborative forms of resolution. As such, the mechanisms were designed to not only resolve disputes but to allow the parties the chance to create new opportunities for the partnership.²⁴⁶

4.3 Summary

In summary, dispute avoidance mechanisms, such as the escalation clauses that are frequently included in generative contracts, mirror the principles of experimentalist adjudication outlined above. Assessing the parties' performance is a matter of peer review: hierarchical judging is replaced with problem-solving between equals.²⁴⁷ This is especially exemplified in the non-adversarial approach counsel recommend for resolving disputes between collaborators.²⁴⁸ The logic of appeal in this system is not to remedy an arguably erroneous judgment; rather, the matter is "appealed" simply on the grounds that consensus has not been reached. The entire idea behind the system, often referred to as "marriage counseling" by practitioners,²⁴⁹ is to keep the collaboration progressing towards its potential, not to vindicate personal rights.

5. Conclusion

5.1 Summary: A New Theory of Contract Adjudication?

²⁴⁵ Ann MacNaughton & Gary A. Munneke, *Practicing Law Across Geographic and Professional Borders: What Does the Future Hold?* 47 LOY. L. REV. 665, 703 (2001); see also Thomas Stipanowich, *ADR and the "Vanishing Trial": The Growth and Impact of Alternative Dispute Resolution*, 1 J. OF EMPIRICAL LEG. STUDIES 843, 884 (2004).

²⁴⁶ See *id.* at 884 (discussing the use of conflict management as a tool for achieving broader corporate goals).

²⁴⁷ Dobbins, *supra* note __, at 161 ("The philosophical foundation behind the Layered Clause is to preserve business relationships while pursuing appropriate conflict resolution.").

²⁴⁸ Glasspiegel, *supra* note __, at 418.

²⁴⁹ George Kimball, *Governance and Dispute Resolution: Making it Work* in OUTSOURCING REVOLUTION 2005 491 (John F. Delaney & William A. Tanenbaum, eds., 2005).

The evolution of productive organization over the last quarter century raises the possibility that the debate between contextualism and formalism is anachronistic. Rather than litigating their disputes, collaborators are establishing complex dispute resolution mechanisms that correspond with the novel governance mechanisms they include in their contracts. Litigation is avoided because contemporary contract enforcement poorly interprets the meaning of collaborative activity. With formalist arguments found wanting, the emerging solution to this lack of institutional support is perhaps best explained by an experimentalist model of adjudication. Experimentalism may best complement generative contracting since its problem-solving approach mirrors the new contractual mechanisms parties use to govern their collaborations. The model of contract enforcement emerging from this alternative approach views the court not simply as a mechanism by which future commitments are made credible but also as a crucible for economic innovation.²⁵⁰

5.2 Policy Prescriptions: Should the State Become Involved?

Despite its accomplishments, generative contracting still requires support from external institutions. Whatever its strengths, pragmatic governance is not automatically a self-sustaining virtuous cycle.²⁵¹ As *Lockheed* shows, innovative collaborations are still susceptible to instability. The economic pressures that have led firms to compete along the dimension of product innovation do not stop once the generative contract has been signed: escaping commodity pricing is a constant struggle. Rather, the dwindling margins characteristic of the current global economy create a powerful centripetal force on any collaborative production arrangement.²⁵² Of course, well-drafted pragmatic governance mechanisms contain elaborate exit terms in order to anticipate a failed joint endeavor.²⁵³ Governance failures, however, create considerable externalities: a collaboration's unraveling can impact communities as workers are laid off, plants move, etc. Such a collapse also ripples through the local networks that often arise around

²⁵⁰ This argument is reminiscent of the recent work by Katharina Pistor and colleagues regarding the relationship between a legal system's ability to innovate new laws and economic development. See e.g. Katharina Pistor, Yoram Keinan, Jan Kleinheisterkamp & Mark D. West, *Innovation in Corporate Law*, 31 J. OF COMPARATIVE ECON., 676 (2003); Katharina Pistor, Yoram Keinan, Jan Kleinheisterkamp & Mark D. West, *The Evolution of Corporate Law: A Cross-Country Comparison*, 23 U. OF PENN. J. OF INT'L ECONOMIC L. 791 (2003); Katharina Pistor & Chenggang Xu, *Incomplete Law - A Conceptual and Analytical Framework and its Application to the Evolution of Financial Market Regulation*, 35 J. OF INT'L L. AND POL. 931 (2003). The difference between my theory and Pistor's work is that I envision the court as an innovator not simply in the creation of new general legal standards but also in actual market processes.

²⁵¹ Whitford, *supra* note __, at 100-16.

²⁵² See e.g. *id.* at 95 ("In spite of very real effort by OEMs to reformulate organizational structures and to build collaborative relationships with suppliers, these relationships are nevertheless frequently characterized by 'bad waltzing' that differs fundamentally from the simple use of hard bargaining tactics backed up with the threat of exit power. Simple hard bargaining is widely understood by suppliers to be well within the norms of everyday business and predictable enough that it need not undermine collaboration. But interviews with OEMs and suppliers... show that relationships are also systematically plagued by ambiguous signaling and rife with no-hold-barred tactics used by OEMs exploiting vulnerabilities opened up by the new relationships for short term gain.").

²⁵³ See e.g. Neil S. Hirshman, *Control Provisions* in *THE OUTSOURCING REVOLUTION 2003: PROTECTING CRITICAL BUSINESS FUNCTIONS* 345 (John F. Delaney & William A. Tanenbaum, eds., 2003).

collaborative producers and that facilitate intra-industry learning.²⁵⁴ Thus, there are compelling public policy arguments for institutional support for pragmatic governance.

Whitford’s cataloging of collaborative dysfunction has led him to argue for public intervention in the new economy.²⁵⁵ While reform at the policy level is necessary,²⁵⁶ proper contract enforcement is a fundamental ingredient in stabilizing inter-firm collaboration. Appropriate contract enforcement can play a prophylactic role—parties will be more willing to draft pragmatic governance mechanisms knowing there is a responsive enforcement system—and a corrective role—sensitive enforcement can resolve disputes and, thus, repair broken relationships.

To make adjudication entirely the responsibility of the private sector may be unduly burdensome. First, since disputes between collaborators usually encompass myriad claims arising from antitrust, intellectual property, and tort laws in addition to contract claims, the state will inevitably be involved in the dispute. As it will be adjudicating these related claims, a government court is in a position, unlike a private tribunal, to oversee the entire resolution of the dispute. Such oversight would not only rationalize the process but also provide the court additional information. Second, courts have what has been termed “convening power,” which is “a polite way of saying that judicial decrees are backed by the threat of force.”²⁵⁷ This means they have the ability, unparalleled by a private arbitrator, to compel all parties necessary to come together to work out a resolution. And third, courts have a “disentrenching capacity”—i.e. “the ability to declare some course of conduct unlawful, even where a court does not have a solution ready at hand, which enables courts to force other actors to address their problems immediately.”²⁵⁸ While arbitration of itself can serve as a general penalty default creating an incentive for parties to innovate a resolution through the escalation process, it may be difficult for arbitrators attempting to adopt the experimentalist model to employ penalty defaults within a collaborative dispute resolution process: if private tribunals proactively penalize un-cooperative parties for not pursuing an experimentalist resolution to the dispute, the parties may well go elsewhere for their next dispute (an easy option considering that there is an open market for arbitrators). Courts, however, are forums of last resort, a status that gives them leverage vis-à-vis disputants. This, then, may be a job not only for the private sector but also for the state.

Recent developments in Delaware’s Court of Chancery suggest that the need for public intervention is already being recognized. Proposing a “new dimension of the American judicial role,”²⁵⁹ Vice Chancellor Strine’s recent call for “mediation-only” filings—i.e. matters where the parties do not file a formal complaint but seek a

²⁵⁴ See e.g. Michael Porter, *Clusters and the New Economics of Competition*, HARVARD BUSINESS REVIEW (Nov. 1998); [cite also to Anno Saxenien’s work]

²⁵⁵ Whitford, *supra* note __, at 129-53.

²⁵⁶ See Josh Whitford & Jonathan Zeitlin, *Governing Decentralized Production: Institutions, Public Policy, and the Prospects for Inter-Firm Cooperation in the United States*, 11 INDUSTRY AND INNOVATION (2004).

²⁵⁷ Dorf, *supra* note __, at 945.

²⁵⁸ *Id.* at 946.

²⁵⁹ Leo Strine, “Mediation-Only” Filings in the Delaware Court of Chancery: Can New Value Be Added by One of America’s Business Courts?, 53 DUKE L. J. 585 (2003).

Chancellor only for the purpose of mediating a dispute—is the most articulate example of a governmental response to the need for public sector intervention in the problem of supporting collaborations.²⁶⁰ The type of hybrid adjudication that Strine describes roughly fits into the experimentalist definition: first, the dispute resolution process is creative—“by providing parties with the opportunity to shape their own solutions to litigable controversies with the input of an experienced business judge, this mechanism should result in more efficient outcomes at less risk and expense than awaiting an up-or-down judgment on the merits”;²⁶¹ and second, the inclusion of a judicial officer provides a penalty default—the court can provide the parties with an immediate appraisal of the risks should their case go to litigation,²⁶² and “the demands on the judge’s time result in a process that impels the negotiating parties to get down to business themselves.”²⁶³ Although Vice Chancellor Strine does not explicitly tie the need for judicial mediation services to the rise of the network economy, it is noteworthy that he foresees such services being especially useful in situations of incomplete contracting: “...the active involvement of a judge in the process of helping parties to business disputes resolve their conflicts consensually (particularly ones that arose from incomplete contracting in the first instance) seems likely to be of economic value and to have social utility.”²⁶⁴ Thus, Delaware’s initial steps suggest how the alternative approach broached in this article might be put into practice.

²⁶⁰ Id.

²⁶¹ Id. at 593.

²⁶² Id. at 592.

²⁶³ Id. at 592-93.

²⁶⁴ Id. at 593.