

Governing Innovative Collaboration: A New Theory of Contract

Matthew C. Jennejohn¹

Available on SSRN, author #484873

Rough draft: please do not cite without author's permission.

22 October 2006

Abstract:

Herein I outline a new theory of contract and contract enforcement. This theory is based upon two claims, one positive and one normative. The first claim is that incomplete contracting theory fails to explain how economic actors govern production in the new economy. Theories of “pragmatic governance” do, however, capture how modern firms order their relationships. To support this first claim, evidence from collaborative contracts is presented. The second claim is that, because both the traditional contextualist and the ascendant neoformalist approaches to contract enforcement undermine this new form of contract, a new philosophy is needed. A hybrid approach, integrating both formalism and problem-solving judicial intervention, provides such an alternative.

¹ JD, Columbia University School of Law, 2007; MSc, London School of Economics, 2004; BA with Honors, Brigham Young University, 2002. The author, who welcomes comments, can be contacted via email at [matthew.jennejohn “at” columbia.edu](mailto:matthew.jennejohn@at.columbia.edu).

I. Introduction

How is production governed in a capitalist economy?² For over 100 years, the answer to that question has been “the firm.”³ That argument, however, has become problematic as firms have de-integrated over the last quarter century.⁴ Whereas the production process was formally governed through ownership—i.e. integration of production within a single firm⁵—production is governed increasingly through contract. Outsourcing exemplifies this recent phenomenon. When spinning-off ancillary production units, companies do not, however, enter into arms-length contracts with their former subsidiary, now supplier. This is not a return to pre-industrial economic organization. Rather, they enmesh themselves in webs of collaboration—joint ventures, strategic alliances, just-in-time (JIT) production arrangements, etc.—usually in hope of cost-cutting but also with an eye to securing competitive advantage through innovation. These complex relationships stretch traditional conceptions of both contract and corporation. Thus, this paper’s research question: how do parties govern these innovative collaborations?⁶

² Ronald Coase was the first to ask the question, at least theoretically, in his seminal 1937 article. Coase, Ronald, “The Nature of the Firm,” 16 *Economica* 386 (1937).

³ Defining “firm” theoretically has always been problematic—indeed that was the puzzle at the heart of Coase’s article. *Id.* at 387 (“searching for a definition of the firm” being the article’s question). Chandler takes a descriptive approach to the problem: “Modern business enterprise is easily identified.... [I]t has two specific characteristics: it contains many distinct operating units and it is managed by a hierarchy of salaried executives.” Chandler, Alfred, *THE VISIBLE HAND: THE MANAGERIAL REVOLUTION IN AMERICAN BUSINESS I* (1977). In the United States, the “firm” become more or less synonymous with the “corporation.” Berle, Adolph A. and Gardiner Means, *THE MODERN CORPORATION AND PRIVATE PROPERTY*, 1st edition 13-17 (1932).

⁴ These developments are discussed more fully in Part II below.

⁵ Or conglomerate—the distance between the ultimate owner and production is immaterial. The point is the control mechanism: property. The sole proprietor controls his cornerstore and the far-flung multi-national controls its subsidiaries through the same mechanism: the prerogatives of ownership (not contract).

⁶ It is important to note that the question asked here is different from the question asked by Coase and his progeny. Coase’s original question can be summarized as “why firms?” Because collaboration, which he rightly assumed to amount to contracting, is costly, Coase argued that the firm was a mechanism for reducing transaction costs. Coase, *supra* note 1. His students have mostly focused on the boundaries of the firm: i.e. they look to understand that threshold where contracting becomes so costly that individuals will

Parties govern their collaborations by building pragmatic governance mechanisms into their contracts. I.e. when the uncertainties inherent in innovation render traditional incentive-based contract terms hopelessly incomplete, parties use a new type of commitment device, based upon pragmatic principles, to reign in opportunism. Peer review of joint experimentation governs where control rights prove too clumsy. Collaborators' use of pragmatic governance has been identified before, by Charles Sabel and colleagues, through scrutiny of production processes and firm strategy;⁷ however, no research has yet analyzed the actual contracts involved.⁸ This article fills that gap. Using agreements made public through collaborators' SEC filings, this paper finds evidence that parties are including pragmatic governance mechanisms in their contracts. This empirical conclusion, supported by a theoretical discussion that challenges alternative explanations, comprises this article's first claim.

A second claim concerns enforcement of the new agreements by courts. Third party adjudication—through arbitration, mediation, and/or litigation—plays a significant role in enforcing these contracts (though self-enforcement does occur). However, judicial adjudication also plays an important role in resolving disputes between

use ownership to govern the relationship. The question here is different: rather than asking why the boundary of the firm is where it is, this paper asks how economic actors govern as that boundary blurs. In other words, how do firms govern collaboration where owning a production unit is not a strategic option?

⁷ See Helper, Susan, John Paul MacDuffie, and Charles Sabel, "Pragmatic Collaborations: Advancing Knowledge while Controlling Opportunism," *9 Industrial and Corporate Change* 443 (2000).

⁸ Baker, Gibbons, and Murphy, economists at Harvard Business School, MIT, and Univ. of Southern California respectively, have looked at the control rights used in strategic alliances between biotechnology firms. Baker, George, Robert Gibbons, and Kevin Murphy, "Strategic Alliances: Bridges between 'Islands of Conscious Power,'" unpublished manuscript—MIT working paper (2004) *available at* <http://web.mit.edu/rgibbons/www/Strategic%20Alliances.pdf>; Baker, George, Robert Gibbons, and Kevin Murphy, "Contracting for Control," unpublished manuscript presented at The Law and Economics of Contracts Conference, Center for Law and Economic Studies, Columbia Law School, April 7-8 (2006), *available at* http://www.law.columbia.edu/center_program/law_economics/Confrences#96639 (scroll down until you find the "Gibbons" paper). However, this research, discussed more fully below, has assumed that the relationships are governed through incentives—i.e. it has pursued a research question one step beyond the more fundamental question investigated here.

collaborators. In such cases, the dominant mode of contract interpretation—the UCC’s contextualist approach—proves ill-suited to resolving conflicts that arise under pragmatic governance. It is also unlikely, moreover, that any of current alternatives to contextualism—the default rules project or neoformalism—would appropriately support innovative collaboration. A new theory of contract enforcement is necessary. The foundation for this new theory, outlined below, is found in the problem-solving judicial intervention elaborated below.

From a disciplinary perspective the article’s ambition is thus two-fold. First, by providing empirical support for theories of pragmatic governance, it exposes limits in the traditional understanding of how modern production is governed. From this perspective the article has broad ramifications for current debates on how to fine-tune and/or temper a global economy of breathtaking complexity. Second, in analyzing how disputes between collaborators are adjudicated, the article suggests that current debates in contract law between contextualists and neo-formalists overlook an important, innovative institution of co-ordination that systematically blurs the distinction between the standard ones. Thus, in theorizing the private bar’s obvious—if unarticulated—creativity in ordering commercial cooperation, this article has immediate and practical ramifications for how judges and arbitrators adjudicate modern contract disputes.

Though the developments discussed here plainly have important implications for corporate law, intellectual property, antitrust,⁹ and other aspects of contract theory beyond the theories of contract interpretation under discussion, all these are deferred to future work.

⁹ For the first discussion of innovative collaboration’s implications for antitrust law *see* Svetiev, Yane, “Antitrust Governance,” ExpressO Preprint Series, paper 1224 (2006).

The paper is organized along the four conceptual categories Ian Macneil has identified as necessary for any valid contract theory to address.¹⁰ Part II discusses firms' transactional behavior—i.e. the actual strategies behind firms' cooperation in the current market. Part III details the various theories available to explain this behavior and argues that a particular theory—pragmatic governance—is the most accurate. Part IV describes how the contracts observed in Part II are enforced and illustrates how the present system of contract enforcement is not appropriate for the new type of contracting. Thus, Parts II through IV lay out this paper's positive claim. Finally, Part V, after surveying the alternative arguments, provides the paper's normative claim: an eclectic institution comprising formalist and problem-solving elements is best suited to enforce these new contracts.

II. Current Behavior: De-integration, Innovation, and Collaboration

A. Three Hallmarks of the New Economy

The “new economy” has passed in the last decade from over-hyped miracle to vulnerable but persisting and widely acknowledged reality. Here “new economy” refers to a production system, found in both “new” and “old” industries alike,¹¹ 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

¹⁰ Macneil, Ian, “Relational Contract Theory: Challenges and Queries,” 95 *Nw. U.L. Rev* 877, 877 (2000) (contract theory ought to “mak[e] careful distinctions between (1) descriptions of contract behavior and norms, (2) theories concerning such behavior, (3) descriptions of the law governing such behavior, and (4) prescriptions about the law that should govern.”)

¹¹ 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, Josh, *THE NEW OLD ECONOMY: NETWORKS, INSTITUTIONS, AND THE ORGANIZATIONAL TRANSFORMATION OF AMERICAN MANUFACTURING* 2 (2005).

replacement for vertical integration and a means for accelerating innovation processes.

Globalization, another hallmark 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 found under the same roof.¹² Beginning around the late 1970s, however, firms began de-integrating: shedding processes not located within the firms' core competencies.¹³ Resulting from de-integration are not only leaner but also interconnected firms.¹⁴ 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.¹⁵

¹² Chandler, *supra* note 1, at 285-6 (“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.”); *see also* Zingales, Luigi, “In Search of Foundations” *J. of Finance*, 2000, v55(4, Aug), 1623, 1626.

¹³ Feenstra, Robert C., “Integration of Trade and Disintegration of Production in the Global Economy,” 12 *J. of Econ. Perspectives* 31, 31 (1998) (“The rising integration of world markets has brought with it a disintegration of the production process, in which manufacturing or services activities done abroad are combined with those performed at home. Companies are now finding it profitable to outsource increasing amounts of the production process, a process which can happen either domestically or abroad. This represents a breakdown in the vertically-integrated mode of production—the so-called “Fordist” production, exemplified by the automobile industry—on which American manufacturing was built.”). *See also* Whitford, *supra* note __, at 17 (describing the shift of “once-vertically-integrated manufacturers” from using *capacity* to *specialized* subcontracting)(original italics).

¹⁴ Zingales, Luigi, *supra* note __, at 1626. (“Large conglomerates have been broken up, and their units have been spun off as stand-alone companies. Vertically integrated manufacturers have relinquished direct control of their suppliers and moved towards looser forms of collaboration.”). Florida describes the interconnection in Midwestern manufacturing as follows: “Indeed, larger manufacturing establishments typically act as hubs in broader production networks. In doing so, they function to accelerate the diffusion of new forms of production organization through their supplier networks. Close, interactive, and co-dependent relationships between these hubs and their suppliers play an important role in the transfer and diffusion of new manufacturing technologies and organizational practices.” Florida, Richard [networks in Midwest] at 327 (original italics).

¹⁵ 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.”).

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,¹⁶ firms must “build and maintain an increasing number of ‘knowledge nodes’ with lead users, universities, technical-service institutes, [and] user communities.”¹⁷ Within these networks, firms engage in disciplined experimentation to realize innovative product development.¹⁸ Thus, collaborative networks arise 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.”¹⁹

B. Case Study: Apple Computer and SCI Systems²⁰

Following its largest quarterly loss in company history, Apple announced, in 1996, that it was selling its primary manufacturing facility in Fountain, CO. What made this sale different from a typical attempt to generate cash flow through the sale of assets was that the plant was being sold to SCI Systems, an electronics contract manufacturing firm. The move puzzled those following the industry since the consensus at the time was that Apple struggled not from lack of demand but rather from an inability to meet demand.²¹ In such a situation, one would expect Apple to invest in improving its

¹⁶ Whitford, *supra* note __, at 18 (citing DiMaggio *The Twenty-First Century Firm* 2001 at 222).

¹⁷ Foss, *supra* note __,

¹⁸ *See e.g.* Eisenhardt, Kathleen M. and Behnam N. Tabrizi, “Accelerating Adaptive Processes: Product Innovation in the Global Computer Industry,” 40 *Administrative Science Quarterly* 84 (1995).

¹⁹ Sturgeon, Timothy, “Modular Production Networks: A New American Model of Industrial Organization,” 11 *Industrial and Corporate Change* 451, 452 (2002).

²⁰ The information for this case study is taken from an article by Timothy Sturgeon on the network properties of modern production. *Id.* at 456-8.

²¹ Sturgeon explains Apple’s problem as follows:

“Apple’s gambit to protect its market share against those companies offering PCs based on Microsoft’s Windows operating system and Intel’s x86 microprocessor architecture (known in the

manufacturing capability, not to sell it off. The sale of the Fountain plant can be understood, however, as a paradigmatic example of strategic de-integration and collaboration.

The key fact of the deal was that the Fountain plant would still manufacture Apple computers. Rather than losing the manufacturing capacity entirely, Apple secured a three year deal with SCI for the production of Apple systems. In other words, Apple was outsourcing manufacturing. SCI could, of course, use the facilities to produce systems for Apple's competitors. This, however, was a small price to pay for what Apple gained from the deal: first, a reduction in manufacturing overhead and inventory-carrying costs; and, second, the benefit of access to SCI's economies of scale. Furthermore, Apple benefited also from the incremental innovation process included in the deal.²² Finally, and perhaps most importantly,

[t]he sale provided Apple with the ability to alter the volume of its production upward or downward at very short notice without installing or idling any of its own plant or equipment. Of particular interest to Apple's management was the improved 'upside flexibility'—the ability to quickly ramp production volumes upward to meet unexpected surges in demand—that the deal with SCI provided.²³

SCI's responsiveness was made possible through close inter-firm collaboration. As we will see in Part III below, when the Apple-SCI contract is examined in detail, the parties

industry as 'WINTEL') by offering cheaper, lower-performance machines backfired when customers flocked to Apple's higher-performance products instead. Apple's manufacturing operation were not nimble enough to make up for this poor forecasting by quickly increasing production of higher-end machines. The PC industry as a whole had grown 25% during 1995 and many key components, particularly memory chips, were in short supply. Order for high-end machines went unfilled and low-end machines began piling up as unsold inventory. The result was that Apple lost its already tenuous hold on some of its customers, who, unable to buy Apple machines with the capability of utilizing the industry's new 'killer application,' the World Wide Web, migrated to readily available, powerful and relatively inexpensive WINTEL machines. By April 1996, Apple's share of the worldwide PC market had fallen to an all-time low of 5.8%, down from 7.7% from the first quarter of 1995."

Id. at 457, fn5.

²² See the analysis of the Apple-SCI contract in Part III below.

²³ Id. at 458.

agreed to co-produce Apple's computer equipment using a JIT format. Thus, the Apple-SCI deal illustrates all three pillars of the new economy: Apple de-integrated by outsourcing production to SCI, an innovation process was part of the strategy, and the firms intertwined themselves in a close collaboration.

III. Theorizing transactional behavior

This section proceeds as follows: first, incomplete contracting theory's attempt to explain the behavior just described is presented. We will see that the explanation is insufficient, primarily because it fails to grapple with what this paper terms "endogenous uncertainty:" the situation where innovators, whose joint-strivings towards novelty decontextualize their decision-making to the point that relevant heuristics for risk calculation are unavailable, are uncertain as to how to define their own self-interest. In the second part we will see that the theory of "pragmatic coordination mechanisms" developed by Sabel and colleagues provides a better explanation for how innovative collaborations are governed and, furthermore, that it is corroborated by qualitative and quantitative analysis of current contractual coordination mechanisms.

A. Theory

The Apple-SCI collaboration seems to invite hold-ups. 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 vulnerability party can always threaten to withhold its contribution unless the terms

of exchange are changed in its favor.²⁴ Vertical integration is traditionally viewed as the common mechanism for overcoming hold-ups: i.e. where relationship-specific investments stymie parties' efforts to collaborate, one of the parties will acquire the other (assuming the collaboration is that worthwhile), thus governing the relationship through ownership rather than contract.²⁵ As Part II illustrates, however, contemporary firms have been substituting property rights governance with contract mechanisms. This is puzzling because information asymmetries, transaction costs, and uncertainty²⁶ preclude parties from being able to draft all of the terms necessary to preclude all forms of potential opportunism. In other words, contracts are incomplete. But if contracts are incomplete, what is doing the work?

1. Governance Through Incentives

²⁴ The logic of the hold-up problem is that where a firm, such as SCI, 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 Williamson, Oliver, *THE ECONOMIC INSTITUTIONS OF CAPITALISM: FIRMS, MARKETS, RELATIONAL CONTRACTING* (1985).

²⁵ See Klein, Benjamin, R. Crawford, and A.A. Alchian, "Vertical Integration, Appropriable Rents, and the Competitive Contracting Process," 21 *J. of Law and Economics*, 297 (1978); see also Klein, Benjamin, "Vertical Integration as Organizational Ownership: The Fisher Body-General Motors Relationship Revisited," in O. Williamson and S. Winter, eds., *The Nature of the Firm: Origins, Evolution and Development*, 213 (1991); Klein, Benjamin, "Hold-up Problem," in P.K. Newman, ed., *The New Palgrave Dictionary of Economics and Law*, 241-244 (1998); Klein, Benjamin, "Fisher-General Motors and the Nature of the Firm," 43 *Journal of Law and Economics* 105 (2000). The factual interpretation upon which this theory of vertical integration is based has been roundly criticized of late. See Coase, Ronald "The Acquisition of Fisher Body by General Motors," 43 *Journal of Law and Economics* 15 (2000); Freeland, R. "Creating Holdup Through Vertical Integration: Fisher Body Revisited," 43 *Journal of Law and Economics* 33 (2000); Casadesus-Masanell, R. and D. Spulber, "The Fable of Fisher Body," 43 *Journal of Law and Economics* 67 (2000); Helper et al., supra note __. By theorizing an alternative method for preventing hold-ups, this paper can be considered another argument against Klein's explanation for vertical integration. See generally Coase, Ronald, "The Conduct of Economics: The Example of Fisher Body and General Motors," 15 *J. of Economics and Management Strategy* 255 (2006).

²⁶"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." Hart, Oliver, *FIRMS, CONTRACTS, AND FINANCIAL STRUCTURE* 23 (1995)(original italics).

Incomplete Contracting Theory: The Grossman-Hart-Moore (GHM) Approach and Control Rights.

Microeconomics suggests how incomplete contracts govern uncertain collaborations.²⁷ First, parties set rules for performance under foreseeable contingencies. Ex ante rule setting allocates risks between parties according to their expected utilities, risk-sensitivities, and respective bargaining powers. Second, because some decisions are non-contractible ex ante because certain contingencies are unforeseeable, parties to all but spot transactions renegotiate terms ex post.²⁸ Such renegotiation places great strategic importance upon contractually determining the ex post control over key issues in the ex ante stage, since allocation of this control determines each party's later bargaining leverage.²⁹ Hart differentiates between contractually specified control ("specific rights") and the unspecified control that the contracting parties retain to themselves ("residual rights").³⁰ The latter, characteristic of property rights, are "generic rights to make production decisions in circumstances not spelled out in the contract."³¹ Since parties are not relying on ownership (property rights) for governance—using contract mechanisms

²⁷ It is important to note, before beginning, that they typically have a slightly different focus than ours here: rather than looking at how the relationships are governed, economists have been asking how or when they will be *efficiently* governed. See e.g. Gulati, Ranjay, "Does Familiarity Breed Trust? The Implications of Repeated Ties for Contractual Choice in Alliances," 38 *Academy of Management J.* 85, 87 (1995) ("Transaction cost economics is not only concerned with the emergence of organizations per se to manage transaction costs, but also with how the choice of organizational form may vary according to the specific types of exchange activities encompassed. Thus, a second-order question examined is, how can existing exchange relations be structured to economize on transaction costs?"). Thus, the governance mechanism— incentives—is assumed in their models. This paper, on the other hand, takes a step further back in the causal chain, focusing instead upon first principles.

²⁸ See, e.g., Baird, Douglas, "Self-interest and Cooperation in Long-term Contracts" 19 *J. of Legal Studies* 583, 586 ("renegotiations [are used] to realign the obligations of the parties when conditions change unexpectedly").

²⁹ Hart, supra note __, at 3 ("the ex post allocation of power (or control) matters. Here power refers roughly to the position of each party if the other party does not perform (e.g. if the other party behaves opportunistically).").

³⁰ See Id. at 5-6.

³¹ Foss, supra note __, at 28.

instead—our attention turns to specific rights. Specific control rights rein in the possibility of uncertainty-caused opportunism by defining each party’s rights as to who gets to make particular decisions in certain domains, regardless of contingencies. This defines not only decision-making but also contract renegotiation. I.e. the party with the control right in a particular area will have the upper hand if its collaborator wants to renegotiate in that domain later.³² Establishing the power balances for later renegotiations determines the incentives that then constrain parties’ behavior.³³ Thus, parties govern their collaborations by bargaining over control rights and renegotiating when contractual gaps emerge.

There are three problems with this explanation. First, it is not entirely clear why parties would contract at all where control rights are the sole form of governance. If ex post renegotiation is inevitable, then why should parties bother to negotiate ex ante?—not only is writing the contract costly, but explicitly allocating risks often makes adjusting those risks later more difficult.³⁴ As change becomes more frequent and substantial—as is likely when partners are innovating—the control rights mechanism becomes more implausible: the renegotiations will have to occur more often, the adjustments more dramatic. Furthermore, there is a perverse incentive at work here: the more hazardous issues are those most likely to be renegotiated. Thus, parties have an incentive to postpone contracting on these points at the ex ante stage. This is not to say that it would never make sense to contract ex ante. Rather, the critique here is that there are

³²Baker et al, supra note __, [2006] at 8.

³³ Id.

³⁴ Baird at 592 (“the assertion that parties leave gaps rests on the premise that it is easier to renegotiate around silence than around a clearly allocated risk.”); *see also* Kimball, George, “Governance and Dispute Resolution: Making it Work—the Heavy Lifting,” in *OUTSOURCING REVOLUTION 2005*, Delaney and Tanenbaum, eds. 490 (2005). (practitioner describing renegotiation as “difficult *because* the parties already know one another well, the honeymoon is over, and each has some disproportionate importance in the minds of participants. Often little has been forgiven or forgotten.”)(original italics).

reasonably imaginable scenarios where the governance mechanism will discourage parties from bargaining where collaboration would otherwise be efficient. The second problem, with an outcome similar to the first, is practical: the rapidly changing environment part and parcel to an economy driven by high technology makes frequent formal renegotiation prohibitively costly. Parties would have to constantly renegotiate as new contingencies arose. Another way of saying this is that the division between ex ante and ex post negotiation begins to blur as the rate of change increases and that, as the ex ante/ex post division blurs, so does the plausibility of the mechanism. And third, governance through control rights assumes you know ex ante what you want to control—in situations where this assumption is false, control rights are at best blunt instruments.

Indeed, recent empirical work suggests that the GHM control rights model of incomplete contracting, described above, does not explain the governance of inter-firm collaboration. In their 2006 paper, Baker et al. compared the results of three studies with the predictions of the GHM governance model. All three showed the allocation of rights over ex post decisions to have minimal or no impact on ex ante choices.³⁵

The Relational Contracting Explanation

Having called the standard approach into question, Baker et al. put forward their own explanation: control rights could govern collaborations, not implicitly as the GHM model argued, but explicitly through ex ante allocation of rights to make particular ex post decisions.³⁶ I.e. parties would adapt as uncertainty resolved, per Simon's original

³⁵ Baker et al., supra note __, [2006] at 11-14.

³⁶ Id. at 2 (“[T]he role of decision rights in the property-rights model is indirect: decision rights are akin to bargaining chips that determine the parties’ incentives to invest in their transaction; if the parties’ investments were determined by other forces, then who holds which decision rights would be irrelevant. In this paper, we develop and analyze a theoretical framework in which decision rights matter directly: control matters because it will be used, not just because it acts as a bargaining chip.”).

formulation, by assigning the control over a particular realm of adaptation decisions to one of the parties.³⁷ Although this mode of governance could not govern spot transactions between collaborators efficiently, Baker et al. claim that it can govern relational contracting situations.

Relational theories of contract stress the role informal incentives have in relationship governance. Parties may be constrained not to act opportunistically in a situation where there is a gap in the contract (where there is no formal rule addressing the contingency) due to an informal social rule. This is possible as the personal ties that develop over an extended relationship “exert pressure for conformity to expectations.”³⁸ There are two mutually-reinforcing considerations exerting pressure here: 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;³⁹ and second, properly conforming to these social norms builds trust between parties⁴⁰—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.”⁴¹ Thus, the key premise to relational contracting is time: long-term interaction is necessary for informal norms to substitute for formal rules. Without long-term interactions, firms are concerned about neither their reputation in the marketplace nor the benefits of building trust with their collaborators.

³⁷ Id.; see Simon, Herbert, “A Formal Theory of the Employment Relationship,” 19 *Econometrica* 293 (1951).

³⁸ Macaulay, Stewart, “Non-Contractual Relations and Business: A Preliminary Study,” 28 *American Sociological Rev.* 55, 63 (1963).

³⁹ Gulati, supra note __, at 93 (“reputational considerations... play an important role in each firm’s potential for future alliances.”).

⁴⁰ “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.” Gulati at 92, citing Sabel 1991.

⁴¹ Gulati, supra note __, at 93.

Building off of Klein's claim that control rights create a "self-enforcement range" where reputational considerations govern,⁴² Baker et al. argue that decision rights can efficiently govern inter-firm collaborations where those collaborations are repeated games. In repeated game situations, a party can choose a decision, despite immediate loss, that produces a higher social surplus than what is available in a spot transaction because of the likelihood that the other party will return the favor in the future. Whether or not a party actually does so depends upon whether the payoff from the optimal relational decisions is greater than the party's temptation to renege. The authors formally model the temptation to renege as

$$R_i(s) \equiv \pi_i(d_i^*(s), s) - \pi_i(d^{RC}(s), s)^{43}$$

and claim that the optional relational decision (d^{RC}) can be implemented if and only if

$$R_i \equiv \text{MAX} R_i(s) \leq 1/r (V(d^{RC}(\cdot)) - V^{SP})$$

—i.e. if and only if, first, the party's relational payoff exceeds the spot market payoff and, second, the resulting difference is greater than or equal to that party's maximum renegeing temptation.⁴⁴ This then leads to their governance prescription: by assigning the

⁴² Klein, Benjamin, "Why Hold-Ups Occur: The Self-Enforcing Range of Contractual Relationships," 34 *Economic Inquiry* 444, 444 (1996) ("[A]lthough... many business relationships are enforced, transactors are not indifferent regarding the contract terms they choose to govern their self-reinforcing relationships.... [T]he fundamental economic motivation for the use of self-enforceable contract terms is to supplement self-enforcement. Court-enforced explicit contract terms are a necessary evil that is used by transactors solely because the transactors possess limited reputational capital.... It makes no sense to analyze the malincentive effects of contract terms in isolation from self-enforcement.... Incomplete contract terms cannot be understood without recognizing that their role is to control [the renegeing temptation] so that it remains below [the surplus created by the relationship].").

⁴³ Where R_i is the temptation to renege, s is a given state of the world, $\pi_i(d_i^*(s), s)$ is the party's payoff from renegeing, and $\pi_i(d^{RC}(s), s)$ is the party's payoff from implementing the relational decision. Baker et al. [2006], *supra* note __, at 16.

⁴⁴ Where R_i is, again, the renegeing temptation, $\text{MAX} R_i(s)$ is the maximum temptation during a given state of the world, r is interest rate per period during the time of the repeated game, $V(d^{RC}(\cdot))$ is the optimal payoff from the relationally implemented decision rule, and V^{SP} is the optimal payoff from a spot transaction. *Id.* at 17.

right to make a particular decision to the party with the lowest incentive to renege, formal contracts can complement the informal reputational constraints at work.⁴⁵

This model's assumptions are vulnerable in two respects. First, Baker et al.'s inability to explain how one-off transactions can be efficiently governed is fatal because few collaborations exhibit relational contracting characteristics. It is doubtful that parties have enough time and exposure (i.e. game iterations) in innovative collaborations to forge relational governance mechanisms. This is for two reasons: first, 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 JIT supplying, etc. At these opening stages, relational ties are weak.⁴⁶ Second, because firms collaborate for relatively short periods of time (3-5 years), there is also a significant amount of relational turnover.⁴⁷ In other words, firms are constantly starting anew; games do not repeat. Indeed, in a previous paper, Baker et al. note that of the 12,500 strategic alliance agreements between biotech companies they analyzed, 9462 pairs of firms never consummated more than one deal and only 57 pairs did more than

⁴⁵ Baker et al. [2006], supra note __, at 15-17, 19-20 ("a relational contract could achieve first-best adaptation, if either party agreed to do what the other party preferred in certain states. The question now becomes to which party should the decision right be allocated in order to facilitate a self-enforcing relational contract? The relational contracts would differ depending on which party held the decision right.... In this example there is a clear answer to which relational contract yields lower maximum reneging temptation, and thus is more likely to be a self-enforcing equilibrium. If the decision right is allocated to the biotech firm, then it's maximum reneging temptation occurs at state s+, where it would like to be involved in marketing and it would cost it NB(d1,s+) to acquiesce to not being involved. However, if the pharma company held the decision right, it would face a lower (in absolute value) maximum reneging temptation.... Since the absolute value of its maximum reneging temptation is less than NB(d1,s+), the relational contract that has the pharma company controlling the decision right is feasible for higher discount rates than a relational contract that has the biotech firm controlling the decision right.").

⁴⁶ Beckman, Christine, 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").

⁴⁷ In their 2004 study, Baker et al. found the average duration for a collaboration to be 33 months. Baker et al. [2004], supra note __, at 21. Furthermore, a literature on "modularity" has emerged to explain how firms consistently transition between these relationships. See e.g. Richard N. Langlois, "Modularity in Technology and Organization", 49 *Journal of Economic Behavior & Organization* 34 (2002);

five together.⁴⁸ Relational contracting may be in the eye of the beholder; however, it seems just as reasonable to infer a dearth of reputational constraints from such statistics as the possibility of such.

Some might retort that the parties can rely upon each other's wider reputations within the market. However, with the rapid introduction of new technologies opening entirely new markets and globalization destabilizing markets old and new alike, it is questionable whether reputational norms exist for large swaths of the economy. It is noteworthy in this regard that the work on private ordering has focused solely upon insular, even peculiarly unique, industries: Southern cotton growers, ultra-orthodox Jewish diamond merchants, Maghribi traders, etc.⁴⁹ Undoubtedly, reputation is a ready currency in the confines of Shasta County.⁵⁰ Relational governance's efficacy is more doubtful, however, in volatile global markets.⁵¹

Endogenous Uncertainty

There is a second critique of the Baker et al. approach—one which questions some of contemporary microeconomics' core assumptions. It is that governance by decision rights is extremely difficult both because parties are unable to anticipate their optimal payoffs and because parties cannot calculate their own renegeing temptations. I.e. in the terms of the Baker et al. model, d^{RC} and R_i are not only unverifiable but also

⁴⁸ Baker et al. [2004], supra note __, at 21 (reasoning that the *possibility* of a long-term relationship is the source of reputational constraint)(italics added).

⁴⁹ Respectively, Bernstein, Lisa, "Private Commercial Law in the Cotton Industry: Creating Cooperation through Rules, Norms, and Institutions," 99 *Mich. L. Rev.* 1724 (2001); Barak, Richman, "Community Enforcement of Informal Contracts: Jewish Diamond Merchants in New York," 31 *Law & Social Inquiry* 383 (2006); Greif, Avner, "Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders' Coalition," 83 *American Economic Rev.* 525 (1993).

⁵⁰ Ellickson, Robert C., *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* (1991).

⁵¹ Bernstein acknowledges 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.

unobservable. The nature of innovative collaboration is the cause of this profound uncertainty. Without parties' ability to calculate the optimal payoff or their own renegeing temptations, the decision rights model of collaborative governance becomes highly problematic.

Innovation is awash in uncertainty.⁵² This is a problem: uncertainty, the fount of opportunism, gives parties, ever guileful, opportunity to take advantage of another party's ignorance.⁵³ Incentive-based theories of governance claim, of course, to address this. Both formal contract terms and informal relational constraints are theorized as attempts to limit uncertainty. Explicit terms limit uncertainty by committing parties to perform certain actions in the future, regardless of how events unfold. These explicit commitments are made credible through external and legitimate adjudication. Relational constraints work in the same way except informally: social norms commit parties to perform certain actions in the future. In either respects, parties rely upon credible commitments to order relations in an uncertain world.

What incentive-based governance overlooks, however, is innovation's decontextualizing effect on transactions. When collaborators innovate, two things happen: first, the parties' positions within their social networks become obscured. It becomes more difficult to gauge parties' behavior against other industry players when they are purposefully doing something different. Furthermore, as noted above, innovation unsettles markets and, thus, firm networks—as communities disintegrate, so

⁵² Teece, *supra* note __, at 194 (““Innovation is a quest into the unknown. It involves searching and the probing and reprobng of technological as well as market opportunities. With hindsight, much effort is spent traveling down blind alleys. Serendipity and luck play an important role.”).

⁵³ Williamson, Oliver, “Calculativeness, Trust, and Economic Organization,” 36 *J. of Law and Economics* 453, 458 (1993) (“Opportunism is a self-interest-seeking assumption. By contrast with simple self-interest seeking, according to which economic agents will continuously consult their own preferences but will candidly disclose all pertinent information on inquiry and will reliable discharge all covenants, opportunistic agents are given to self-interest seeking with guile.”).

do their norms, thus un-constraining firms. In short, the relational decontextualization experienced with innovation undermines reputational constraints.

Second, innovation introduces a qualitatively different type of uncertainty into the collaboration by distancing the parties from traditional heuristics for anticipating market behavior. Frank Knight described the method actors employ to make business decisions in the face of uncertainty as follows:

There are two fundamentally different ways of arriving at the probability judgment [needed to make a decision]. The first method is by a priori calculation, and is applicable to and used in games of chance. This is also the type of case usually assumed in logical and mathematical games of chance. It must be strongly contrasted with the very different type of problem in which calculation is impossible and the result is reached by the empirical method of applying statistics to actual instances.... [T]he first, mathematical or a priori, type of probability is practically never met with in business, while the second is extremely common.⁵⁴

The difference in calculation Knight describes above provides the foundation for his classic differentiation between risk and uncertainty: risk being measurable, uncertainty being immeasurable.⁵⁵ Knight pins our hopes of making a reliable estimation—i.e. transforming an uncertainty into a risk—on our chances of “securing the same degree of homogeneity in the instances classed together.”⁵⁶ In other words, we can make more reliable estimations, and thus approach probabilistic calculation, where we can find larger sample sizes of similar occurrences. Where there is “no valid basis of any kind for classifying instances,” however, one can only rely upon guesswork.⁵⁷ Innovation is one such instance, since the creative process, by definition, introduces heterogeneity into a

⁵⁴ Knight, Frank, RISK, UNCERTAINTY AND PROFIT 214-5 (1921).

⁵⁵ Id. at 229 (“The practical difference between the two categories, risk and uncertainty, is that in the former the distribution of the outcome in a group of instances is known (either through calculation a priori or from statistics of past experience), while in the case of uncertainty this is not true, the reason being in general that it is impossible to form a group of instances, because the situation dealt with is in a high degree unique.”).

⁵⁶ Id. at 216.

⁵⁷ Id. at 225.

class of heretofore similar experiences. Engaging in this creative process with another party only further impedes probability calculation by introducing information asymmetries. In other words, by decontextualizing decision-making, innovation makes calculating d^{RC} extremely difficult. Prediction only becomes possible as actors stop innovating and routinize their transactions; however, this undermines the collaboration's very purpose.

Standard economic theory tries to get around the problem of uncertainty by reinterpreting situations of uncertainty as situations of risk.⁵⁸ Even theories of information asymmetry and bounded rationality—ostensibly theories that address uncertainty—presume actor rationality.⁵⁹ One might argue that this approach can apply here because a basis for classifying instances will emerge as a party gains more and more collaborative experience. I.e. Party A can fashion a heuristic with which to judge a new collaboration with Party B by comparing its former collaborations with Parties X, Y, and Z. As Party A generalizes the collaboration process, probabilistic calculation becomes possible. If this argument is accurate, then economic theory's approach, to transform uncertainty into risk, might be valid.

Such a processual heuristic is unlikely to provide guidance, however, due to the dual nature of uncertainty under collaborative innovation. For an actor engaged in collaborative innovation, future events of two types are uncertain.⁶⁰ As mentioned above,

⁵⁸ Beckert, Jens, "What is Sociological about Economic Sociology? Uncertainty and the Embeddedness of Economic Action," 25 *Theory and Society* 803, 813 (1996) ("[to preserve] the rational-actor model... situations of uncertainty are reinterpreted as situations of risk—in the sense of Knight's distinction—in that the individual has information on which to base probability calculations.").

⁵⁹ Id. At 804-5; see e.g. Williamson, Oliver, "Calculativeness, Trust, and Economic Organization," 36 *J. of Law and Economics* 453 (1993).

⁶⁰ A faint echo of this argument—that uncertainty is both exogenous and endogenous to the economic actor—can perhaps be found in Koopmann's conception of uncertainty. Koopmans, Tjalling, THREE

it is difficult, arguably impossible, for an actor to predict her collaborator's future innovation decisions with any certainty. I.e. events exogenous to the actor are uncertain. There is however, another type of uncertainty which economic theory has entirely overlooked: that endogenous to the actor. As the innovators jointly abandon convention, they enter a fundamental state of uncertainty in reference to their own respective future interests.⁶¹ Innovation causes such endogenous uncertainty, even assuming that variables exogenous to the partnership are static, by removing the innovators from the existing institutional framework—the routines, conventional wisdom, and common heuristics—they formerly used to construct their incentives. In other words, a party to an innovative collaboration finds it difficult to say with any certainty what course of action it should take because, without pre-determined self interest, they cannot judge the possible outcomes resulting from a decision option. The following excerpt from a manager's trial testimony, given in a commercial dispute between two collaborating firms, describes endogenous uncertainty in practical terms:

ESSAYS IN THE STATE OF ECONOMIC SCIENCE 163 (1957) (“Primary uncertainty arises from random acts of nature *and unpredictable changes in concurrent preferences.*”) (italics added).

⁶¹ For a discussion of the indeterminacy of “our forward looking interest in the unexperienced and the unpredictable” see Stuart, Henry Waldgrave, “The Phases of the Economic Interest” in CREATIVE INTELLIGENCE: ESSAYS IN THE PRAGMATIC ATTITUDE 282, 299 (1917)(arguing that our “constructive or progressive or creative interest”—determined through “constructive comparison,” which is a “transitive or inductive operation whereby the agent... embark[s] upon a new interest... [with a motive that] is neither more nor less than a supposition, on the agent's part, that there may be forthcoming for him in the given case in hand just such an ‘epigenetic’ development of new significance and value as we have found actual history to disclose as a normal result of economic innovation”—is a better explanation of self-interest than “‘dormant’ or implicit desire.”). This idea of endogenous uncertainty also resembles what has been called “firm-specific uncertainty”—i.e. “uncertainty that is unique and often internal to the firm.” Beckman et al., supra note __, at 260. Beckman et al.'s conception seems to differ, however, from the endogenous uncertainty idea here in that they argue that firm-specific uncertainty can be resolved through recourse to new partners with unique information that can effectively address the firm's outstanding internal problems. Id at 261 (“Thus, firms are likely to seek out such ties when experiencing uncertainty because this unique, novel information may be useful in addressing issues that the firm has been unable to address effectively with their existing sources of information.”). The argument here is that such partnering also introduces additional uncertainty in turn or, in other words, that a significant portion of internal uncertainty arises from sources other than information asymmetries.

[P]art of the initial work that's done is to actually define and establish what it is you're going to do and what the parameters are, which you really don't know until you start to do some of the initial work.⁶²

In such a situation, where innovators find it problematic to compare possible outcomes, calculating their respective incentives to renege is rather inconceivable.⁶³ Gauging R_i itself is guesswork. If collaborators cannot anticipate their own incentives to renege with any accuracy, then it is hard to understand how the relational governance theorized by Baker et al. would ever materialize in a robust form: only the most risk-insensitive parties would consider such vaguely conceived ventures.



It is controversial to argue that interests are constructed, as opposed to taking them as given.⁶⁴ This paper has found constructivist arguments persuasive only because the standard economic theory has become so attenuated. Furthermore, perhaps constructed self-interest is not as radical as we think. While the market often indicates that there may be an opportunity to solve a particular problem, it rarely dictates what form the solution should take or what steps are necessary to create that solution. One need not believe that demand is manufactured⁶⁵ to accept that exchange, often poorly communicated,⁶⁶ is supply. There is a realm of give-and-take at the intersection of the

⁶² *Technology Solutions v. Northrop Grumman*, 356 Ill.App.3d 380,436 (Ill. App. 1st Dist, 2d Div. 2005) (contract dispute between collaborators involved in the design and production of the B-2 stealth bomber).

⁶³ This inability to calculate future probability is exemplified in the alliance agreement between Cisco and KPMG, where the two parties can identify only “potential future benefits” in the vaguest of terms. Cisco & KPMG contract of 29 Dec 1999, §2.3 available at <http://contracts.onecle.com/bearingpoint/cisco.collab.1999.12.29.shtml>

⁶⁴ For a discussion of the constructivist/rationalist debate, see Blyth, Mark, *GREAT TRANSFORMATIONS: ECONOMIC IDEAS AND INSTITUTIONAL CHANGE IN THE TWENTIETH CENTURY* (2002) (transcending the debate by marrying the two approaches through an ideational theory of institutional change). Blyth’s explication of uncertainty directed this author’s early thinking on the subject.

⁶⁵ See Veblen, Thorsteinn, *THEORY OF THE LEISURE CLASS: AN ECONOMIC STUDY OF INSTITUTIONS* (1904).

⁶⁶ See Akerlof, George, “The Market for Lemons: Quality Uncertainty and the Market Mechanism,” 84 *Quarterly J. of Economics* 488 (1970).

supply and demand curves.⁶⁷ While this means that the supplier can influence, to some extent, customers' demand, this vagueness, exacerbated where firms are trying to create new products/processes, also means that producers have less input upon which to construct their own interests. Innovators have much to learn—not only about the market but also about themselves. Therefore, they experiment.

2. Pragmatic Governance

There is another mechanism, besides explicit decision rules and reputational constraints, at work in these collaborations. Firms include pragmatic governance mechanisms within their contracts. While this new governance mechanism can be seen as a complement to the conventional mechanisms already discussed, it also displaces them to some extent in a theoretical sense. I.e. it allows parties a measure of control in situations where incentive-based governance is unresponsive.

Pragmatic coordination mechanisms

Pragmatic coordination mechanisms are the means by which firms jointly explore the design, production, and organizational ambiguities endemic to innovative economic activity.⁶⁸ 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.⁶⁹ I.e., in an environment of open information, collaborators are able to monitor one another's current behavior.⁷⁰ Transparency governs. Maintained “visibility” between

⁶⁷ Leff, Arthur, SWINDLING AND SELLING: THE STORY OF LEGAL AND ILLEGAL CON-GAMES (1976).

⁶⁸ Helper et al., supra note __, at 445.

⁶⁹ Id.

⁷⁰ Sabel has referred to this as “learning by monitoring.” Sabel, Charles, “A Real-Time Revolution in Routines” forthcoming in *Organizational Studies*.

parties allows them to adjust to change and to meet the potential of the collaboration.⁷¹

Thus, these pragmatic mechanisms provide not only the superstructure for coordinating economic activity but also a governance mechanism with which to police potential defectors.

Helper et al. identify three integrated pragmatic mechanisms: benchmarking, simultaneous engineering, and error detection/correction institutions.⁷²

Benchmarking. 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, either through prototypes or searches, and then building the results of this probing into flexible development plans. Benchmarking is a direct response to the fundamental uncertainty described above: because firms cannot clearly identify their interests at the start of the innovation process, they begin by referencing ideas from peers, customers, and past experience.⁷³ It is an experimental, benign form of cribbing.

Benchmarking involves two closely related processes: prototyping and searching. In benchmarking by prototype, firms purposefully depart from proven models, develop a range of potential products, and test these potentials, often with consumers.⁷⁴ This iterative dialogue, between collaborating firms and between collaborators and possible customers, sets the course for production. When firms benchmark through search, they

⁷¹ Glasspiegel, *supra* note ___, at 434.

⁷² Helper et al., *supra* note ___, at 445.

⁷³ For a discussion of how performance rules are set through recourse to experience outside the immediate collaborative relationship in an IT setting, see Halvey, John K. and Barbara Murphy Melby, *Information Technology Outsourcing Transactions: Process, Strategies, and Contracts*, 2d ed. 421-422 (2005).

⁷⁴ For an interesting example in a developing economy, see Alvares, Antonio Carlos Teixeira and Jose Carlose Barbieri, "Innovation in Mature Industries: The Case of Brasilata S.A. Metallic Packaging" manuscript *available at* <http://in3.dem.ist.utl.pt/downloads/cur2000/papers/S32P05.PDF> (describing how a "participatory engineering" process, where line workers, engineers, and management collaborated at the prototype stage to create the first major innovation in paint can lids in over 90 years).

look to industry experience for comparable approaches.⁷⁵ This search process may be formal: for example, benchmarking firms can be hired in the IT industry to compare service metrics and pricing structures with industry averages.⁷⁶ An informal variant exists: often, and especially at the very outset of the innovation process, benchmarking searches are conducted by mining team members' relationships with their peers. I.e. information on industry standards is communicated via publications, conferences, and informal networks. Once the initial probing has produced results, the innovators then build the results into a general production outline. Production is subdivided, or "chunked," into its constituencies, and teams are assigned to work out designs, still using benchmarking techniques, for their respective subunits.⁷⁷

⁷⁵ Sabel, Charles and Jonathan Zeitlin, "Neither Modularity nor Relational: Inter-Firm Collaboration in the New Economy," 5 *Enterprise and Society* 12-13 (2004) ("These methods establish a first idea of what to produce (and how) through benchmarking: an exacting survey of current products and processes, supplemented by assessments of what new and unproved techniques that might become available for use.") Benchmarking can also include searching the partners' past performance for insight. For instance, Glasspiegel identifies four possible methods of benchmarking: one, comparing performance to current cost (this only works where in-house operations are being outsourced); two, comparing performance with other received bids (this only works in the initial stages of the collaboration); three, comparing performance to the market (classic benchmarking); and four, comparing performance to advisor's experience (this is simply a version of classic benchmarking). Glasspiegel, Harry, *Pricing the Outsourcing Deal: Financial Drivers for Outsourcing Contracts*, in Delaney, John F. and William A. Tanenbaum, eds., *THE OUTSOURCING REVOLUTION 2005: PROTECTING CRITICAL BUSINESS FUNCTIONS* 431 (2005). The basic point remains nonetheless: the fashioning of rules takes place outside of the parties' immediate deliberation.

⁷⁶ Collier, Sam, "PLI-The Outsourcing Revolution: Some Trends, Issues and Solutions," in *THE OUTSOURCING REVOLUTION: PROTECTING CRITICAL BUSINESS FUNCTIONS USING OUTSOURCING, ASP & WEB SERVICE AGREEMENTS*, Delaney, John F. and William A. Tanenbaum eds., 681-2 (2002) ("Benchmarking engages an independent firm to measure charges and performance against prevailing market standards").

⁷⁷ Sabel, supra note __, [Theory of a Real-time Revolution] at 25 ("To benchmark the potential of developmental work the team may ask for engineering simulations of possible outcomes, 'flash market' a product embodying a potentially valuable feature, or otherwise try to test the actual reaction of buyers to some approximation of the design they are exploring. Assessing the results of these probes, and again guided by reference to leading examples and comparison of possibilities, the team next provisionally subdivides or, to take a term from cognitive science, 'chunks' its general goals into subtasks—the design of an engine, or heating, ventilation and air conditioning system—and chooses a specialist team from inside or outside the parent company to realize the initial specifications.") (internal citations omitted).

As a method of “iterated goal setting,”⁷⁸ benchmarking means that collaborators work in a system without clearly defined rules. Furthermore, as it takes place at regular intervals, benchmarking disrupts established expectations.⁷⁹ Fluid goals replace static rules. Because the new goals are established outside of the immediate agreement but without further bargaining, these rules are open to change without the parties’ deliberation.⁸⁰

Simultaneous Engineering. “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.”⁸¹ Just-in-time production, which requires interpenetration between collaborators to achieve the quick adjustment capabilities necessary for minimal inventory,⁸² is a classic example of simultaneous engineering.

The close proximity necessary for simultaneous engineering to work creates an environment of rich information sharing, a key ingredient for governing inter-firm relationships.⁸³ For instance, as collaborating teams begin working on their assigned projects, they encourage their partner teams to alter designs and processes in order to realize greater efficiency.⁸⁴ Just-in-time production also facilitates error detection and

⁷⁸ Helper et al., *supra* note __, at 466.

⁷⁹ *Id.*

⁸⁰ For discussion of the practicalities of using benchmarking as an alternative to deliberation as a change mechanism *see* Delaney, John F. and Ruth Ann Keene, *Outsourcing Transactions: Strategies for Success*, in *Outsourcing Revolution 2004* at 44-46 (2004).

⁸¹ Sabel, *supra* note __, [Theory of a Real-Time Revolution] at 45.

⁸² Halvey and Melby, *supra* note __, at 138-9.

⁸³ *See, e.g.*, Glasspiegel, *supra* note ____, at 434 for the importance of “maintain[ing] visibility” in collaborative relationships.

⁸⁴ Sabel, *supra* note __, Theory of a Real-time Revolution at 26 (“[T]he initial overall goals are modified by the methods of simultaneous or concurrent engineering, e.g. the engine-design group may find a way to

correction (discussed below).⁸⁵ The greater symmetry of information in these collaborations, though not perfect, allows the parties to better self-enforce their agreements.

Error Detection and Correction. Error detection and correction is the process for changing rules, though we have seen both benchmarking and simultaneous engineering have a role in such also.⁸⁶ As noted before, because of the new economy's rapid pace of change, frequent rule adjustment is required.⁸⁷ While explicit renegotiation of contract terms is an option here as in any other type of contract, pragmatic governance also allows for rules to change through their very implementation. I.e. as collaborators continually detect and correct errors in design and production as they perform, they adjust the rules that they are to follow.⁸⁸

This process of changing rules through implementation is best exemplified by the "Five Why's" of the Toyoda production process.⁸⁹ When confronted with a malfunction in the production system, producers following Toyoda principles perform "root cause analysis" rather than simply focusing on the error's immediately proximate cause. This root cause analysis, in simplified form, consists of asking the following five questions:

better its target specifications or to cut its manufacturing costs if it can persuade other component groups that design characteristics should be modified accordingly.”)

⁸⁵ Id. at 26 (“In just-in-time production, parts are supplied to each work station only as needed: ideally, one at a time. Hence disruptions are immediately visible. A breakdown at one station halts production by stopping the flow of parts to downstream operations.”).

⁸⁶ The differentiation between these three categories is somewhat strained or, to wit, stylized. For example, parties can use error detection and correction techniques in the benchmarking process: e.g. one collaboration “reverse engineered the cost structure to identify inefficiencies in the existing operation and billing structure as a tool to lower costs during negotiation.” Nathanson Rick, “Transformational Outsourcing” in *OUTSOURCING REVOLUTION* 2005 385 (2005).

⁸⁷ See also Ray, Ellen G., *Scope of Services and Service Levels* in *Outsourcing Revolution* 2004 539 (2004)(“The definitive agreement must include a process for proactively addressing changes to [rules].”).

⁸⁸ For example, IT service levels are changed not only through “mutual agreement” but also through “automatic changes... based on continuous improvement.” Id. at 552.

⁸⁹ For background on the Toyoda production process, see Ward, Allen, Jeffrey K. Liker, John J. Cristiano, Durward K. Sobek II, “The Second Toyota Paradox: How Delaying Decisions Can Make Better Cars Faster,” 36 *Sloan Management Review* 43 (1995).

Q: Why is machine A broken?
A: No preventive maintenance was performed.

Q: Why was the maintenance crew derelict?
A: It is always repairing machine B.

Q: Why is machine B always broken?
A: The part it machines always jams.

Q: Why does the jam recur?
A: The part warps from heat stress.

Q: Why does the part overheat?
A: A design flaw.⁹⁰

As the firm corrects the error identified using the Five Why's method, it alters corollary rules of performance without renegotiation—e.g. the firm in the example above redesigns not only the production process (by reallocating maintenance personnel) but also the product itself (by correcting the overheating problem). Thus, rules are fluid both because they are established through the dynamic benchmarking process and because they change through unilateral implementation.

Summary. The combined effect of these learning by monitoring institutions is a robust governance system. When used together, these three mechanisms allow collaborative partners the flexibility⁹¹ necessary to adapt to the twin volatilities of innovation and market. As the parties learn together, they provide the information necessary for effective monitoring of the collaboration; this monitoring allows further

⁹⁰ MacDuffie, *supra* note __, [get pin cite] [1997]; *see also* Sabel, *supra* note __, [Theory of a Real-Time Revolution]. *See also* Finkel, Robert M., Crafting Statements of Work and Service Levels, in Delaney, John F. and William A. Tanenbaum, eds., THE OUTSOURCING REVOLUTION 2003: PROTECTING CRITICAL BUSINESS FUNCTIONS 177 (2003) (“Supplier should be responsible for performing a root cause analysis of failures, including: identifying the cause of the failure, recommending procedures for correcting the failure, correcting the failure, and providing assurance that the failure will not recur.”).

⁹¹ For the importance of flexibility and the methods by which firms seek it, *see* Delaney, John F. and Ruth Ann Keene, Outsourcing Transactions: Strategies for Success, in Delaney, John F., William A. Tanenbaum, James E. Meadows, and William G. Roche, eds., THE OUTSOURCING REVOLUTION 2004: PROTECTING CRITICAL BUSINESS FUNCTIONS 18 (2004).

learning, thus leading to collaborative growth. The change endemic to such creative relationships is harnessed through a mix of dynamic rules and flexible enforcement.

New Rules: Pragmatic Governance Mechanisms as Practical Imperatives

Pragmatic governance re-conceives “rules.” Since behavior in these collaborations is, first, defined with reference to possibilities defined without direct reference to parties’ utilities and, second, changed through unilateral error-correction mechanisms rather than formal negotiation, these rules are different from our traditional conception of a “rule” as a static, definite command (e.g. repair the mill shaft, deliver the cotton shipment, give me the deed to your farm). Rather, these rules are indeterministic, temporal, and set with the expectation that they will change. One might reasonably wonder how such rules, so conceived, bind anyone to do anything. After all, even though the pragmatic mechanisms discussed above create an information-rich environment, they do not, by nature, provide hard measures against which to compare that information.

Thinking of pragmatic governance mechanisms as outlines for creating a joint *praxis* suggests a source for these mechanisms’ authority. Rules’ compelling force emerges as parties’ joint exploration becomes a structure of shared knowledge.⁹² From this structure, a logic internal to the collaboration emerges.⁹³ As the discipline develops, collaborators adhere to its steps (“carry out” the practice) according to the emerging internal logic: i.e. this logic becomes the measure for performance. The practice’s logic is not only a processual measure (i.e. whether one is going through the motions of the

⁹² Reckwitz, Andreas, “Toward a Theory of Social Practices: A Development in Culturalist Theorizing,” 5 *European Journal of Social Theory* 243, 246 (2002)(“Social order then does not appear as a product of compliance of mutual normative expectations, but embedded in collective cognitive and symbolic structures, in a ‘shared knowledge’ which enables a socially shared way of ascribing meaning to the world.”).

⁹³ Id. at 254 (“Every practice implies a particular routinized mode of intentionality, i.e., of wanting or desiring certain things and avoiding others.”).

practice) but also a substantive one: participants within the practical social structure are measured by whether they achieve the practice's maturing objectives. Here we come full circle: although parties in an innovative collaboration cannot define concrete performance rules *ex ante*, they create practical routines that crystallize parties' emerging interests. In this way, experimentation becomes order.

Praxis as governance mechanism is of particular conceptual importance in regards to the issue of transactional decontextualization. As argued above, innovation divorces a transaction from the context of parties' prior production experience. Pragmatic governance mechanisms recontextualize the transaction by enveloping it within the parties' newly-created, shared practical discipline. That this recontextualization occurs within the bounds of the contract will have important consequences for our normative theories of contract enforcement, to be explicated in Part V below.

Also, conceptualizing pragmatic governance's rules as constituting a practice indicates the relationship of this governance mechanism to the other two forms discussed above: economists' explicit control rights and relationalists' social norms. First, pragmatic mechanisms provide contractible terms where traditional, static contract terms are inoperable. In other words, a pragmatic governance mechanism is something you can put in a contract and expect the other party to perform (according to the praxis' unfolding logic) when decision rights are too clumsy. Second, these practices eventually create the norms that relationally constrain opportunism between parties when there are no external sources of such norms.⁹⁴ As such, pragmatic mechanisms fill a theoretical blind-spot between thinking of agents either as perfectly autonomous agents or as norm-confined

⁹⁴ Helper et al., *supra* note __, [get pin cite].

conformists.⁹⁵ Thus, the theory of pragmatic control presented here is complementary to standard theories of incomplete contracting.

B. Evidence

1. The stylized characteristics of pragmatic governance mechanisms

The first step in pragmatic governance is to define the benchmarking process.⁹⁶ I.e. pragmatic governance mechanisms identify any metrics and timeframe upon which the benchmarking analysis will focus.⁹⁷ Then, these contracts prescribe the scope of the benchmarking processes: e.g. whether the parties' search should focus on particular peers or a more general examination of the entire market.⁹⁸ Finally, they locate the benchmarking metrics within a loose development plan⁹⁹ and incentivize production through targets, or "milestones."¹⁰⁰ These plans and targets are usually transformational in design—i.e. their goal is to realize a rapid introduction of new technologies or processes and/or enter a new market.¹⁰¹ In short, benchmarking is the process by which performance rules are discovered.

⁹⁵ Reckwitz, *supra* note __, at 256.

⁹⁶ A model search benchmarking clause: "Customer and Vendor shall jointly implement the objective benchmarking measurement and comparison process described in Exhibit __ in order to ensure that Vendor provides Customer with [unit pricing], [technology], [and service levels] equal to or greater than other organizations receiving similar services." Halvey and Melby, *supra* note __, at 426 (bracketed text in the original).

⁹⁷ Finkel, *supra* note __, at 162; *see also* Ray, Ellen G., *Scope of Services and Service Levels in Outsourcing Revolution* 2004 543 (2004) (indicating that industry benchmarks are used for setting "specific performance metrics").

⁹⁸ *Id.* at 687-688.

⁹⁹ Halvey and Melby, *supra* note __, at 449; Gullikson, Rosemary, *Scope of Services and Service Levels: Anatomy of a Statement of Work in Outsourcing Revolution* 2004 595 (2004). This largely depends upon whether the metrics are quantifiable or not, as quantification lends itself to broader comparison.

¹⁰⁰ *Id.* at 695. *See also* Ray, Ellen G., *Scope of Services and Service Levels in Outsourcing Revolution* 2004 547 (2004) ("Service Levels should be designed to incent desired behavior").

¹⁰¹ Ray, Ellen G., *Scope of Services and Service Levels in Outsourcing Revolution* 2004 533 (2004). For a more thorough discussion of transformation, *see also* Halvey John K. and Barbara Murphy Melby, *Information Technology Outsourcing Transactions: Process, Strategies, and Contracts* 441-461 (2005).

Second, pragmatic governance mechanisms provide the necessary conditions for simultaneous engineering to occur. They provide for the integration of the collaborative efforts of both teams into each other's current operations. Also, they create the necessary proximity, often through directly teaming collaborators' employees together¹⁰² but also through establishing advanced IT networks between collaborators.¹⁰³ All this allows the collaboration to progress in lock-step fashion.

Third, pragmatic governance mechanisms define the institutions for error detection and correction. They establish an oversight body, often a committee, that oversees rule adjustments.¹⁰⁴ This committee is staffed by an equal number of representatives from each collaborator¹⁰⁵ and is tasked with creating a production plan, setting benchmarks and incentives, and problem-solving.¹⁰⁶ Also, these contracts create a reporting regimen between the collaborators and the oversight committee.¹⁰⁷ Finally, they oblige collaborators to follow particular error detection and correction techniques, such as root cause analysis,¹⁰⁸ "continuous improvement,"¹⁰⁹ quality "ratchets,"¹¹⁰ etc.¹¹¹

¹⁰² See e.g., the Cisco – KPMG Contract:

Cisco shall provide a single point of contact in the field for KPMG representatives to enable real-time field interaction. KPMG shall provide personnel to match up with Cisco's existing Offer Integration Team ("OIT") to prepare joint responses to customer [requests].
Cisco, Inc. & KPMG contract of 29 Dec 1999, §4.3 available at <http://contracts.onecle.com/bearingpoint/cisco.collab.1999.12.29.shtml>.

¹⁰³ See, e.g., deCODE and Massachusetts General Hospital contract of 11 May 2000, §4, available at <http://contracts.onecle.com/decode/partners.saa.2000.05.11.shtml> (creating an IT "bridge," called the "Crosswalk Project," to facilitate real-time collaboration between partners located on two continents).

¹⁰⁴ Kimball, George, *Governance and Dispute Resolution: Making it Work* in *Outsourcing Revolution 2005* 473-475 (2005). In contracts where a committee is not formed, a regular meeting structure between identified officers is set forth.

¹⁰⁵ "[B]oth vendor and customer have an interest in being sure the vendor delivers the services in accordance with the definitive agreement... [thus] performance [should] be monitored by both parties." Ray, supra note ___, at 540.

¹⁰⁶ See Finkel, supra note ___, at 170. See also Nathanson, supra note ___, at 398.

¹⁰⁷ Kimball, supra note ___, at 686; Finkel, supra note ___, at 178.

¹⁰⁸ Halvey and Melby, supra note ___, at 424; Ray, supra note ___, at 556.

¹⁰⁹ Nathanson, supra note ___, at 392; Finkel, supra note ___, at 170; Ray, supra note ___, at 557.

¹¹⁰ Kimball, supra note ___, at 694.

Thus, since change is impossible to determine ex ante, these contracts create institutions that, at least, harness it.

2. New Wine in Old Bottles: The Relationship Between Explicit and Pragmatic Terms

As mentioned above, the contracts incorporating pragmatic governance are a mixture of both new and old. They blend traditional control rights with pragmatic mechanisms. This paper conceives this hybridization in terms similar to Klein's¹¹²—i.e. the traditional explicit terms complement the pragmatic governance mechanisms. For instance, a Cisco-KPMG agreement contains a section on non-solicitation: the parties are, first, prohibited from raiding entire groups from one another¹¹³ and, second, required to notify one another if they are going to make an offer of employment to the other's employee.¹¹⁴ These explicit rules—or control rights—complement the simultaneous engineering provisions within the contract.¹¹⁵ Another example is transition and unwind terms, which provide a stable process by which the collaborators can initially engage with each other and, if necessary, decouple. These explicit transition and unwind terms allow unrelated partners to consummate quickly a close cooperative relationship.¹¹⁶ In summary, we see that traditional terms in these contracts complement the pragmatic governance systems. First, they define the scope and arc of the collaboration through

¹¹¹ There are many other terms for this improvement process. The basic idea is that pragmatic governance mechanism will require the “[v]endor [to] perform on-going performance measurement during the term to identify opportunities for improvement.” Hall, Thomas L. and Wanji Walcott, *Outsourcing in the Financial Services Industry: A Mock Negotiation* in *Outsourcing Revolution* 2004 847 (2004).

¹¹² Klein, supra note ____.

¹¹³ Cisco-KPMG contract, supra note ____, §7.2.

¹¹⁴ Id. §7.1.

¹¹⁵ For terms outlining the collaboration's simultaneous engineering aspects, see §4.2 of the contract. Id.

¹¹⁶ Delaney and Keene, supra note ____, 56 (2004) (“two of the most crucial periods in an outsourcing relationship are start of services (“Transition”) and migration away from the vendor at the end of the outsourcing arrangement (“Unwind”).”).

transition and unwind terms. Second, they apportion control rights in a way that supports pragmatic governance. These contracts are hybrids: one foot in the old, one in the new.

3. Four Industry Case Studies

To illustrate the varieties of pragmatic governance in detail, case studies from four new economy industries are presented below. Contracts publicly available on the www.onecle.com website, a free online continuing legal education database, provided the data for the case studies.¹¹⁷ The industries examined are electronics manufacturing, informational technology outsourcing, biopharmaceutical research & development, and disposable container manufacturing. While these four sectors share characteristics indicative of the new economy (pressure to innovate, high speed of technological development, volatile markets, outsourced production, extensive collaboration, etc.), they are different enough to show that pragmatic governance contracting is not an isolated phenomenon in a peculiar sub-economy. Rather, this new approach to contracting appears commonplace among 21st century firms.

The Apple Computer, Inc. and SCI Systems, Inc. Contract.

As discussed in Part II, Apple Computer and SCI Systems,¹¹⁸ a “turnkey” or contract manufacturing firm, entered into an agreement that outsourced Apple’s computer manufacturing to SCI. Apple agreed to turn its Fountain, CO manufacturing facility over to SCI in return for collaborative production.¹¹⁹ To launch this collaborative relationship,

¹¹⁷ All of these contracts are also available through the SEC’s EDGAR portal; however, the Lexis EDGARPlus database provides easier search capabilities. Similar to www.onecle.com, the University of Missouri-Columbia also has a portal with over 89,000 searchable contracts *available at* <http://cori.missouri.edu/>.

¹¹⁸ SCI Systems is now Sanmina-SCI Corporation. *See* Sanmina-SCI, Annual Report 2005, *available at* http://www.shareholder.com/sanm/downloads/Sanmina-Sci_Prospectus2005.pdf, at 19.

¹¹⁹ Apple Computer, Inc. & SCI-Systems, Inc., Manufacturing Agreement of May 31, 1996, *available at* <http://contracts.onecle.com/apple/scis.mfg.1996.05.31.shtml>. (“SCI will purchase Apple’s manufacturing facility located at 702 Bandle Drive, Fountain, Colorado (“Fountain”) and certain related assets. The

the firms drafted a contract with a pragmatic governance mechanism. This contract was chosen as the lead-off case study since it provides a complete example of an agreement integrating all three elements of pragmatic governance. The contract is especially noteworthy, however, for its robust error detection and correction regime.

First, the parties set out the benchmarking process. The general benchmarking metrics were defined: production would be benchmarked against measures of quality, price, time, and flexibility.¹²⁰ These benchmarks were then integrated into jointly developed Product Plans.¹²¹ Where innovations in either product or process were necessary, new plans were to be drawn up.¹²² SCI was also required to develop a plan for meeting the particular shipping requirements of Apple's just-in-time inventory system.¹²³ This benchmarking system was incentivized through a milestone structure where SCI was rewarded for innovating solutions to production problems.¹²⁴

parties desire that Apple engage SCI to assemble, test and package certain Products, Service Units and Spare Parts, as defined below, on a turnkey basis at Fountain on the terms and conditions of this Agreement.”).

¹²⁰ Id. at §3.2 (“Apple’s Percentage Volume Commitment is conditioned upon and subject to: (i) SCI offering and delivering Products with comparable quality, and with competitive pricing, Lead Time and flexibility terms, when compared with other suppliers located in the United States who provide a comparable range of contract manufacturing and engineering services similar to those SCI provides in connection with Products.”).

¹²¹ Id. at §4.1 (“Apple and SCI will establish a Product plan, in the format and containing the information set forth in Exhibit A, for each Product to be manufactured under the Agreement.”).

¹²² Id. at §4.1 (“The parties may add new Products to this Agreement after the Closing Date by adding Product Plans for such Products, executed by both parties and in the format and containing the information set forth in Exhibit A, as addenda to Exhibit A.”).

¹²³ Id. at §9.3 (“Ship to Stock/Ship to Distribution. This Agreement and the Pricing Schedules are based on the assumption that SCI can produce the Products at quality levels suitable for shipment directly to Apple's distribution system. SCI's inability to achieve certification status as defined in Exhibit E, will create a significant increase in costs to Apple. SCI will develop a plan to meet such requirements and understands that failure to achieve certification status within a reasonable time frame may result in disqualification as an approved Apple supplier.”).

¹²⁴ Id. at §5.3, *especially* (a)-(c) (“5.3 Progress Reports. At Apple's request, SCI will provide Apple with regular written progress reports, such reports to include the following:

- (a) status of progress toward next scheduled milestone;
- (b) short description of problems, if any, in meeting such milestone;
- (c) recovery method proposed in order to meet the next milestone, if needed;

Second, the requirements for efficient simultaneous engineering were established. The parties were required to innovate production processes jointly in order to facilitate the turnkey production relationship.¹²⁵ SCI was required to designate an engineer (or engineers) who would interface directly with Apple in designing testing processes.¹²⁶ These engineers were to be located on Apple's premises in order to facilitate the testing collaboration.¹²⁷ As noted before, the production was to use just-in-time inventory techniques, which necessarily require close and simultaneous cooperation.¹²⁸ Apple was required to furnish forecasts so as to allow SCI to anticipate just-in-time production demand.¹²⁹ Finally, the contract also outlined the simultaneous co-design process.¹³⁰

-
- (d) any changes in the estimated Price of the Product;
 - (e) any other information related to the pre-production services reasonably requested by Apple.”)

¹²⁵ Id. at §4.3 (“The parties will be jointly responsible for the identification of Pre-Production Services, the Pre-Production Delivery and Payment Schedule, Lead Time, Service Related Terms, Manufacturing Technology, Equipment, Labor, Materials and Facilities, Test Equipment and Fixtures, Tooling and other Product Specific Terms and Conditions.”) and §6 (“SCI will . . . purchase materials for, assemble, test and package such Products, Service Units and/or Spare Parts on a *turnkey basis* in accordance with Apple's Specifications and Quality Requirements, and Deliver them to Apple in accordance with the terms of this Agreement.”) (italics added).

¹²⁶ Id. at §5.2 (“SCI will name a test engineer, or more than one if Apple deems necessary and as mutually agreed, who will interface with Apple's test engineering group as needed to timely develop and/or support, as specified in the relevant Product Plan, Test Programs and Test Fixtures for use in manufacturing such Product for Apple.”).

¹²⁷ Id. (“Upon Apple's request, SCI will locate such test engineer(s) at Apple's engineering facilities. Test engineers on Apple's premises will be subject to the provisions of Section 22.3 (Personnel), below.”).

¹²⁸ Id. at §7.1(a) (“Provided space is available at Fountain, any additional inventory owned by Apple and on-hand at Fountain on the Closing Date ("Additional Apple Inventory") will be kept in a separate cage at Fountain without charge to Apple, or at Apple's option at an offsite location, and purchased by SCI as required on a *just-in-time basis* until such inventory is either consumed in Products or redeployed by Apple.”) (italics added). Furthermore, SCI was required to manage its inventory so that just-in-time production would flow smoothly, *see* Id. at §7.3(ii) (“that will ensure that SCI can fill Apple Purchase Orders on a turnkey basis according to the agreed upon Lead Times and flexibility terms and obtain competitive prices for such materials and components.”).

¹²⁹ Id. at §11.1 (“Forecasts. Apple will provide SCI, every calendar month during the Term, a forecast covering the period of six (6) calendar months beginning with the month in which such forecast is provided. Such forecast will specify the number of units of the Products which Apple anticipates purchasing during such six (6) month period. Such forecasts will be non-binding and will not be regarded as a commitment to purchase by either party.”).

¹³⁰ Id. at §8, *see* discussion *supra* note ____.

Third, an error detection and correction regime was established. Each firm was required to appoint a project manager to oversee the collaboration.¹³¹ A robust reporting regime was then outlined: first, SCI was required to issue regular reports on production progress;¹³² second, SCI was required to report progress on inventory management;¹³³ and third, SCI had to report on the status of its half of the error detection and correction process.¹³⁴ In turn, Apple was required to notify SCI immediately whenever an “Epidemic Failure” was discovered.¹³⁵ Augmenting this reporting process was a two-step error detection regime, split between pre-production and post-production testing. In pre-production error detection, Apple personnel would, first, visit the facility regularly to discuss hiccups in the pre-production test process,¹³⁶ and, second, collaborate with SCI in testing pre-production deliverables.¹³⁷ When problems in pre-production were discovered, the parties would co-design reconfigurations to the process.¹³⁸ A similar

¹³¹ Id. at §7.9 (“Each company will name a person to be a single point of contact to handle operational matters related to the day to day administration of this Agreement.”).

¹³² Id. at §5.3 (“Progress Reports. At Apple's request, SCI will provide Apple with regular written progress reports, such reports to include the following: (a) status of progress toward next scheduled milestone; (b) short description of problems, if any, in meeting such milestone; (c) recovery method proposed in order to meet the next milestone, if needed; (d) any changes in the estimated Price of the Product; (e) any other information related to the pre-production services reasonably requested by Apple.”).

¹³³ Id. at §7.7 (“Reports. Upon request, SCI agrees to provide Apple written reports on Procured Materials, current inventory and scheduling in the format specified by Apple. SCI will also authorize its suppliers to provide Apple information regarding the Procured Materials.”).

¹³⁴ Id. at §9.1 (“SCI will provide Apple regular reports and analysis of its yields, DPM and PPM. SCI will also provide Apple, for Apple's review and approval, its corrective action procedures, defect containment plan, recall risks, repair capabilities and costs, business risk insurance, and known liabilities.”).

¹³⁵ Id. at §15.2 (“Apple will notify SCI whenever an Epidemic Failure is identified or suspected and work with SCI to develop a recovery plan, which may include a preventative action plan if appropriate under the circumstances.”).

¹³⁶ Id. at §5.4 (“Pre-Production Review. Apple may conduct periodic reviews to ensure its satisfaction with SCI's pre-production services under each Product Plan. Upon reasonable notice, SCI will allow Apple, during SCI's normal business hours, to visit its facility to discuss and inspect the status of pre-production. Apple personnel on SCI's premises will be subject to the provisions of Section 22.3 (Personnel), below.”).

¹³⁷ Id. at §5.5(a) (“Apple, with such assistance from SCI, as specified in the Product Plan, will examine and test each Pre-Production Deliverable to determine whether it conforms to the Specifications for such Deliverable set forth in the Product Plan within ten (10) working days after delivery to Apple.”).

¹³⁸ Id. at §5.6 (“Notice of Qualification. After completing its Pre-Production Review and accepting all Pre-Production Deliverables with respect to a Product, Apple will give SCI a written notice of qualification, attaching to the notice any modifications to the Specifications or any additions thereto, as agreed between

system was created for the actual manufacturing process: first, inspections, of both delivered and on-site product, were regularized;¹³⁹ and second, the parties were to collaborate in the adjustment of any error-producing processes.¹⁴⁰ Continuous improvement mechanisms were also included in the contract: first, product pricing was subject to a “stair step” process where the collaborators were required to innovate ways to decrease costs;¹⁴¹ and second, the parties agreed to meet regularly to create new methods for decreasing the lead time between order and delivery.¹⁴²

The Allstate Insurance Company and Acxiom Corporation Contract

The IT outsourcing contract between Allstate Insurance Company (“Allstate”) and Acxiom Corporation (“Acxiom”) provides another clear example of pragmatic governance. Allstate is one of the largest insurance companies in the United States, with

Apple and SCI. Such modifications and/or additions will be made part of the final Specification for such Product. SCI will not implement any change to the final Specification without Apple's prior written consent. Upon receipt of Apple's notice of qualification, SCI will be authorized to begin producing such Product for sale to Apple pursuant to the terms of this Agreement.”).

¹³⁹ For inspection of delivered product, see *Id.* at §9.2 (“Incoming Inspection”); for inspection of on-site product, see *Id.* at §9.4 (“On-site Inspections”).

¹⁴⁰ *Id.* at §8 (DESIGN, MATERIAL AND PROCESS CHANGES).

8.1 At SCI's Request. SCI will not change any Product, including any component, material or process used in manufacturing such Product, without obtaining Apple's prior written consent SCI's request will include any cost, schedule or other impact of such change. If Apple requests, SCI will also provide sample units of the modified Product for Apple's evaluation. Apple will approve or disapprove SCI's request within thirty (30) days after receipt.

8.2 At Apple's Request. Should Apple desire modifications in the design of a Product, Apple will submit a written Engineering Change Order (“ECO”) to SCI. Within one (1) week after SCI's receipt of the ECO, SCI will advise Apple of any cost, schedule or other impact of such change, and will not implement any such change unless and until Apple has approved such impact writing.

8.3 Emergency Changes. If Apple submits an emergency ECO clearly identified as such, SCI will implement such ECO as soon as possible; provided that SCI has advised Apple of and Apple has approved in writing any cost or other impact of such change.

¹⁴¹ *Id.* at §10.6 (a) (“Apple and SCI will agree upon cost reduction goals with stair step costs reductions to be implemented over an agreed upon period of time. These goals will be set forth in the Product Plan.”) and (b) (“SCI will meet with Apple every three (3) months during the Term to review the existing Product cost and establish a plan to pursue all reasonable cost reduction opportunities.”).

¹⁴² *Id.* at §11.7 (“Lead Time Reduction Program. SCI and Apple will meet periodically to discuss options to effect reductions in Lead Times to allow improved flexibility in ordering and delivery. The agenda for each meeting will include identification of such options, schedules for determination of associated cost and schedules for implementation.”).

2004 total revenues of \$33.4 billion.¹⁴³ Acxiom is a 37 year-old company that specializes in IT and business process outsourcing.¹⁴⁴ This contract, a renegotiation of the original 1992 agreement, continued Allstate and Acxiom's collaboration in managing information between Allstate and its clients.¹⁴⁵ To effectively manage the data, the parties constructed a pragmatic governance mechanism. This contract was selected as a case study for two reasons: first, it provides an excellent example of formal search benchmarking being used to set performance imperatives; and, second, its error detection and correction mechanism includes a robust ratchet clause.

First, Allstate and Acxiom established the benchmarking process. Initial metrics for benchmarking, called "minimum acceptable service levels," were described.¹⁴⁶ These metrics fit into a broader "continuing benchmarking program" that Acxiom was required to draft.¹⁴⁷ "Benchmark prices" were also used: historical data from the parties'

¹⁴³ Allstate Annual Report 2004, at 51, available at http://www.allstate.com/investor/annual_report/2004/pdf/2005_ALL_anl_mtg_mtl.pdf.

¹⁴⁴ <http://www.acxiom.com/default.aspx?ID=1640&DisplayID=18> ("Founded in 1969, Acxiom is headquartered in Little Rock, Arkansas, with locations throughout the United States, and in the United Kingdom, France, Australia, and Japan.").

¹⁴⁵ Allstate Insurance Company & Acxiom Corporation contract of March 1999, §1, available at [hereinafter the "Allstate Contract"]. Since the agreement is for data management and not the maintenance of the actual IT network, this contract can be considered an instance of business process outsourcing also. Still, the IT service of the IT network is implicit in the contract, thus the differentiation between the two categories of outsourcing agreements is meaningless here.

¹⁴⁶ Id. at §4.1 ("Schedule 4.1 specifies certain MASLs. The initial MASLs for those Services previously provided under the PSA and not specified in Schedule 4.1 shall be the higher (i.e., the more beneficial to Allstate) of (i) the actual service levels provided immediately prior to the Effective Date or (ii) the MASLs, if any, previously specified for such services under the Prior Agreements. All MASLs shall be subject to adjustment pursuant to this Section 4.").

¹⁴⁷ Id. at §8.7 ("With Allstate's direction and cooperation, and as part of the Services, Acxiom shall propose and effect a continuing benchmarking program and methodology acceptable to Allstate that takes into consideration adjustments, if any, for reasonably comparable elements of the Services and that will enable Allstate to compare the fees and MASLs set forth in this Agreement with an annually updated database of peer companies and ensure that said fees and MASLs are aligned with the industry's best rates and practices and appropriate adjustments to meet such industry best rates and practices shall be made annually as a Contract Change. At Allstate's direction, Acxiom shall work with any benchmarking firm Allstate selects.").

collaboration was the first source of pricing;¹⁴⁸ however, where there was no data available (e.g. with innovated projects), the parties were to benchmark against industry practices through a quote mechanism.¹⁴⁹ The scope of future projects was set forth along with the process for introducing them into the overarching plan.¹⁵⁰

Second, the necessary conditions for simultaneous engineering were contracted. The parties were required to collaborate in innovating projects that would achieve Allstate's objectives.¹⁵¹ Acxiom was given the access to Allstate's processes and personnel necessary for effective collaboration.¹⁵² Specific terms for Acxiom's access to Allstate's network were set out.¹⁵³ Furthermore, the specific databases upon which the parties would collaborate were set out in an exhibit (which was subject to change)¹⁵⁴ and

¹⁴⁸ Id. at §8.2.2.1 (“For types of data previously obtained directly by Allstate, the *Benchmark Price* shall be the average price paid by Allstate for such data during the twelve (12) month period prior to Acxiom's taking responsibility for the acquisition of such data.”) (italics added).

¹⁴⁹ Id. at §8.2.2.2 (“For types of data for which no historical pricing information is available (e.g., new types of data), the parties shall endeavor, in good faith, to agree upon a Benchmark Price. In the event that the parties are unable to mutually agree upon a Benchmark Price, a request for quote will be sent out with volume estimates supplied and the response to such request will be used as the benchmark.”).

¹⁵⁰ Id. at §3.4 (“From the Effective Date, Acxiom shall perform such additional projects, relating to the Services (“Projects”) in the *area of data acquisition, data processing, information management, professional consulting, system design and development, software maintenance, programming, and software acquisition*, as Allstate may request and Acxiom may agree from time to time. *Projects may be requested orally unless required to be specified in Work Orders pursuant to the procedures set forth in Section 9.5, below; provided, however, that once any oral request has been agreed upon, written documentation evidencing such agreement shall be executed by the Parties as promptly as possible prior to the inception of any work on such Project.*”) (italics added).

¹⁵¹ Id. at §7.1 (“Acxiom shall cooperate with Allstate and provide Allstate with advice, information, and assistance in identifying and defining data management requirements to meet Allstate's business objectives.”).

¹⁵² Id. at §7.2 (“Allstate shall reasonably cooperate with Acxiom in all matters relating to Acxiom's performance of the services. Such cooperation shall include (but not be limited to) reasonable access to Allstate's administrative, technical, and other similar personnel as reasonably by Acxiom to provide the Services.”).

¹⁵³ Id. at §9.2.1 (“[Allstate's] computer data and software shall be used by Acxiom Personnel only in connection with Acxiom's obligations hereunder. Failure of Acxiom to comply with these rules may result in Allstate restricting offending personnel from access to Allstate computer systems or data. . . .”).

¹⁵⁴ Id. at §5.1 (“Schedule 5.1 is a listing of such resources to be provided by Allstate in connection with the provisions of data interactively.”).

the network through which the parties would cooperate was determined.¹⁵⁵ Thus, the basic proximity necessary for simultaneous engineering was established.

Third, the parties outlined the error detection and correction mechanism. Although a joint committee was not established, both parties dedicated contract managers with decision-making authority to the collaboration.¹⁵⁶ A system of reporting, to be repeated monthly if not more frequently, was established: “Acxiom shall promptly inform Allstate of any deficiencies, omissions, or irregularities in Allstate's requirements or in Acxiom's performance of the Services that may come to Acxiom's attention.”¹⁵⁷ The Acxiom and Allstate contract managers were to meet at least quarterly to review Acxiom’s performance against the minimum acceptable service levels.¹⁵⁸ A ratcheting mechanism was implemented to secure better performance in light of changing benchmark indicators:

MASLs shall be adjusted by written agreement of the Parties from time to time, but not less frequently than at the end of each anniversary of the Effective Date, to be made higher or more stringent so as to reflect changes in technology, changes in Allstate's business and environment, and other changes in circumstances. Acxiom shall use commercially reasonable efforts to improve its performance in relation to the MASLs over the Term, through the implementation of efficiency-enhancing hardware and software technologies.¹⁵⁹

¹⁵⁵ The “IBM Global Network.” *Id.* at §5.3

¹⁵⁶ *Id.* at §9.1.2. (“Allstate’s Contract Manager shall act as the primary liaison between Allstate and Acxiom’s Contract Manager and shall have overall responsibility for directing all of Allstate’s activities hereunder and shall be vested with all necessary authority to fulfill that responsibility.”).

¹⁵⁷ *Id.* at §15.1.

¹⁵⁸ *Id.* at §4.2 (“Acxiom shall meet with Allstate's Contract Manager at least quarterly to review Acxiom's actual performance against the MASLs and shall recommend remedial actions to resolve performance deficiencies.”).

¹⁵⁹ *Id.* at §4.3 (*italics added*).

At the same time, if an Allstate error caused Acxiom to miss a benchmark, then that particular service level would be temporarily suspended.¹⁶⁰ Thus, a flexible system of error detection and correction was established.

The Coca-Cola Company and Senomyx, Inc. Contract

The Coca-Cola Company (“Coke”), the food and beverage giant, entered into a collaboration and licensing agreement with Senomyx, a biotech R&D firm, for the purpose of producing new compounds that enhanced the taste of Coke’s products.¹⁶¹ To achieve this objective, the firms negotiated a contract with a pragmatic governance mechanism. This contract was selected as a case study to illustrate simultaneous engineering: Coke and Synomyx established the conditions for intimate collaboration.

First, the contract established the benchmarking process. A set of targets were established according to a mutually agreed upon “Annual Research Plan.”¹⁶² Due to uncertainty, the parties were only able to approximate compounds that might possibly be relevant according to general product criteria Coke thought “may be important.”¹⁶³ Collaborative experimentation was required to “design and discover” new approaches.¹⁶⁴ As experimentation progressed, further benchmarks were set through the Research Steering Committee¹⁶⁵ following a series of progressive milestones.¹⁶⁶

¹⁶⁰ Id. at §4.4 (“In the event, and to the extent, that Acxiom fails to meet a specific MASL as a consequence of material errors or omissions of Allstate or its employees, contractors, or agents, such MASL will be *temporarily suspended* for such reasonable amount of time as is necessary for Acxiom to return to compliance, provided that Acxiom shall use its best efforts to return to compliance. Acxiom shall take such reasonable precautions as it deems necessary to prevent the recurrence of any such event.”) (italics added).

¹⁶¹ Coca-Cola Company & Senomyx, Inc. Contract of 22 April 2002, §2, *available at* <http://contracts.onecle.com/senomyx/coca-cola.collab.2002.04.22.shtml>.

¹⁶² Id. at §4.2(v), §5.

¹⁶³ Id. at Appendix B.

¹⁶⁴ Id.

¹⁶⁵ Id. at §4.2.

¹⁶⁶ Id. at §9.3.

Second, the conditions for simultaneous engineering were enumerated. Coke's research on beverage bases and Senomyx's research on enhanced compounds was to progress lock-step.¹⁶⁷ Furthermore, each party was required to discuss the research with the other party at regular intervals, through both face-to-face meetings and telecommunication.¹⁶⁸ The following selection, which illustrates one segment of the parties' initial Research Plan, illustrates the close simultaneous cooperation:¹⁶⁹

[Coke]	[Research Steering Committee]	[Senomyx]
1. Provide SENOMYX with [***]. 2. Collaborate with SENOMYX to prepare and evaluate [***].	1. Coordinate [***].	1. Prepare [***]. 2. Perform [***] according to agreed [***]. 3. Perform [***] and other relevant tests [***]. 4. Conduct [***] for certain compounds.

Third, error detection and correction mechanisms were organized. The aforementioned Research Steering Committee, which was to oversee the research and to monitor progress, was the heart of the problem-solving regime.¹⁷⁰ Furthermore, the Steering Committee was tasked with designing the "protocol" by which progress was measured.¹⁷¹ To facilitate error detection and correction, both parties were required to report on research progress regularly.¹⁷² And finally, the parties included a ratchet

¹⁶⁷ Id. at §4.2(iv) ("[The Steering Committee will] communicate [with the parties] during the Commercialization Period regarding the development of Selected Compound(s) and the commercialization of Beverages and Beverage Bases incorporating Selected Compounds.").

¹⁶⁸ Id. at §4.6, Appendix B.

¹⁶⁹ Id. at Appendix B.

¹⁷⁰ Id. at §4.2(i) ("[Steering Committee will] provide strategic direction and performance criteria for the Collaborative R&D Program"),(ii) ("[Steering Committee will] monitor progress and communicate status of the Collaborative R&D Program"), and (v) ("[Steering Committee will] review and amend if necessary the Research Plan and the Development Plan").

¹⁷¹ Id. at §4.2(vii) ("[The Steering Committee will] establish the protocol for determining the enhancement level of Enhancing Compounds, and Selected Compounds, and agree on the level of enhancement of Enhancing Compounds.").

¹⁷² Id. at Appendix B.

mechanism with the milestone scheme in order to cost-save and, by implication, reload the error detection/correction process.¹⁷³ Progression through the milestones was subject to the Research Steering Committee's review and approval.¹⁷⁴

The Sweetheart Cup Company and Earthshell Container Corporation Contract

The "Operating Agreement for the Production of Hinged Sandwich Containers for McDonald's Corporation"¹⁷⁵ between the large disposable container producer Sweetheart Cup Company, Inc. and Earthshell Container Corporation, a niche producer of environmentally-friendly packaging, sets the parameters for the co-production of 600 million Big Mac boxes. The primary reason the parties used pragmatic governance: to innovate cost reduction processes. Because making cardboard boxes for the fast-food industry is a classic "old economy" business, this is perhaps the most interesting case study of all.

An overarching "Economic Model" served as the key benchmarking tool in the contract. The Model set flexible performance goals along with measurement standards.¹⁷⁶ Interestingly, things were so uncertain at the time the contract was finalized that the parties benchmarked the type and quantity of manufacturing equipment to be

¹⁷³ Id. at §9.4.2.

¹⁷⁴ Id. at §9.3.

¹⁷⁵ Sweetheart – Earthshell Contract, *available at* <http://contracts.onecle.com/earthshell/sweetheart.op.1997.10.16.shtml> (last visited 30 May 2006).

¹⁷⁶ Unfortunately, the appendices to the contract were not included in the filing. The contract itself only described the Economic Model in general terms:

2.2. ECONOMIC MODEL. The Parties have attached hereto as Exhibit A, a redacted version of the economic model, dated October __, 1997 (the "Economic Model"), that illustrates, on a hypothetical basis, the expected revenue and cost components for the annual production and sale of approximately 600 million units of Big Mac sandwich containers. The Economic Model assumes that each Line of Equipment will be tooled for and dedicated to produce that container. The price set forth in Economic Model is subject to adjustment to reflect changes in Product specifications or processing conditions from those set forth in the original Contract.

Sweetheart – Earthshell Contract, s2.2, *supra* note ____.

used.¹⁷⁷ The contract set benchmarks for both production (e.g. “Model Efficiency Levels”)¹⁷⁸ personnel expertise.¹⁷⁹ Finally, the contract created a management committee to oversee the adjustment of benchmarks and outlined those “fundamental business strategies” that would be determined through joint agreement.¹⁸⁰ Thus, the parties operated within a system of flexible rules.

Second, the parties created the conditions necessary for simultaneous engineering. Foremost in this regard, the contract provided for the co-location of personnel.¹⁸¹ Also facilitating simultaneous engineering were regular meetings between the parties’ managers.¹⁸² Thus, the parties were working side by side on the manufacture of the containers.

Third, the contract set forth a host of error detection and correction mechanisms. The general error detection and correction procedure allowed for a party to replace inefficient equipment as long as the substitution did not disrupt production and as long as greater efficiency levels were met.¹⁸³ Because the production equipment was being leased to Sweetheart, the contract provided that any modifications performed on the equipment would revert to Earthshell upon termination.¹⁸⁴ Finally, the contract tasked the joint management committee to oversee error correction.¹⁸⁵

¹⁷⁷ Id. at 4.1(a) (“The items of Equipment expected to comprise the Initial Lines are described generally in the Economic Model....”).

¹⁷⁸ Id. at 4.1(b).

¹⁷⁹ Id. at 5.1(b).

¹⁸⁰ Id. at 8.2-3.

¹⁸¹ Id. at §3.1(c) (“ECC personnel or consultants will be permitted access to the Facility and shall be provided office space during the Pre Start Date Period as is reasonably necessary in order for them to fulfill ECC's obligations or protect its rights under this Agreement or the Ancillary Agreements.”).

¹⁸² Id. at 8.2.

¹⁸³ Id. at 4.1(e) and 4.2(c).

¹⁸⁴ Id. at 4.7.

¹⁸⁵ Id. at 8.2(a).

While the pragmatic governance elements to this contract may not be as extreme as those found in, say, life sciences research collaborations, the Sweetheart–Earthshell agreement illustrates the reach of this organizational innovation. Even firms in traditional industries are innovating collaboratively. This leads us to wonder just how far this governance trend has spread throughout the greater economy.

4. Aggregate Data

To complement the detailed case studies, samples from three industries above¹⁸⁶ and a control group were coded for evidence of pragmatic governance. The coding process involved searching individual contracts for keywords indicative of each of the three pragmatic governance elements.¹⁸⁷ To form the samples for the coding, contracts from the www.onecle.com database were slotted into one of four industry categories: biopharmaceutical collaborations, software development, electronics manufacturing, or traditional supply contracts (the control group). Then, about 25 contracts (depending upon availability) were randomly chosen within each category to form a sample for analysis (the randomly chosen contracts were filtered to make sure no single firm was a

¹⁸⁶ Information Technology Outsourcing was not included simply because a sufficient number of contracts were not to be found. In its place, contracts from the Software Development industry were analyzed. Disposable Container Packaging was lumped together with other traditional businesses to form a control group.

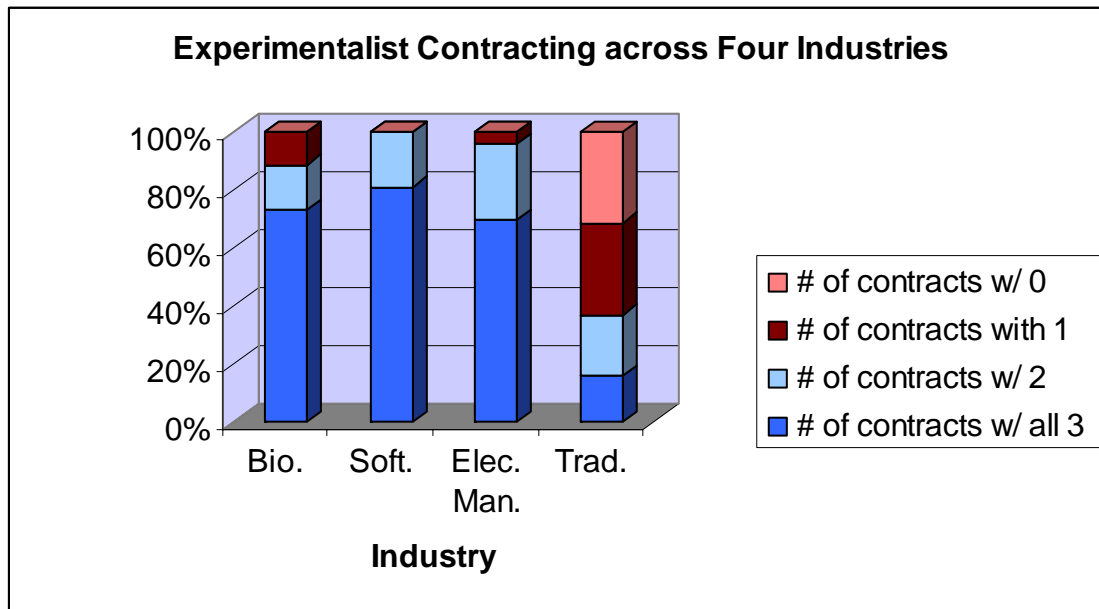
¹⁸⁷ Nine keywords were chosen for each category. For benchmarking, the following words were selected: “milestone,” “plan,” “proposal,” “service level,” “benchmark,” “target,” “deliverable,” “deadline,” “timetable.” For error detection and correction: “committee,” “program manager,” “contract manager,” “continuous improvement,” “root cause,” “problem,” “oversee,” “progress,” “analysis.” Finally, for simultaneous engineering: “interface,” “premises,” “just-in-time,” “forecast,” “pair,” “lead time.” Three word combinations were also chosen for simultaneous engineering: “joint + [activity]” (e.g. “joint development,” “joint production,” “joint marketing,” etc., but not “joint ownership,” “joint venture,” etc.), “co-[activity]” (e.g. “co-design,” “co-production,” “co-authorship,” etc.), and “grant w/s access” (e.g. “party A grants party B access to its databases . . .”). Furthermore, keywords—such as “plan,” “proposal,” “interface,” “committee,” “problem,” “progress,” “analysis,” “premises,” and “pair”—with other common meanings were subjected to a second round of contextual analysis to make sure they were actually being used within the learning by monitoring logic. This is admittedly a subjective process; however, it was conducted conservatively (i.e. if there was doubt as to the use of the word, it was considered not evidence of learning by monitoring) to avoid false positives. All of the coding was conducted using the content search (aka “Find”) function on the Firefox web browser.

party to more than one contract in the sample). The following descriptive statistics, the results of this admittedly elementary analysis,¹⁸⁸ reveal a strong trend towards pragmatic governance in the three new economy industries:

Industry	Sample size	# of contracts w/ all 3 categories	# of contracts w/ 2 categories	# of contracts with 1 category	# of contracts w/ 0 category
Biopharmaceutical R&D	27	19 (70.00%)	5 (18.52%)	3 (11.11%)	0
Software Develop.	21	17 (80.95%)	4 (19.05%)	0	0
Electronic Manufacturing Services	25	16 (64.00%)	6 (24.00%)	1 (4.00%)	0
Traditional (control group)	20	3 (15.00%)	4 (20.00%)	6 (30.00%)	6 (30.00%)

The stark difference between the three new economy industries and the control group are easily seen in the graphical illustration of the table above:

¹⁸⁸ A more rigorous content analysis is pending; thus, these results are preliminary.



A clear majority of firms in the new economy samples employ pragmatic governance: 70% of biopharmaceutical research and development agreements included all three major elements of pragmatic governance, nearly 81% of software development contracts, and 64% of agreements for electronics manufacturing services. No contract in any of the three new economy samples failed to evidence one of the categories. Indeed, every software development contract coded included at least two categories. The control group's results suggest that the coding methodology is reliable.¹⁸⁹ What is especially interesting about the control group—a collection of traditional supply contracts, ranging from crude oil to beer bottles—is that three of these contracts incorporated pragmatic governance. Thus, we see further evidence of this type of contracting venturing beyond its home territory as pressures to innovate expand to “old” economy industries.

IV. The law governing this transactional behavior

¹⁸⁹ Admittedly, more robust examination, with larger samples and more sophisticated content analysis, is necessary; the data here is to be taken simply as strongly suggestive.

Having theorized firms' behavior, we must now examine the institutions that support this activity. In this section it is argued that conventional court adjudication, which follows contextualist doctrines of contract interpretation, is inappropriate for innovative collaboration. Contextualism's reliance on generalized legal rules contradicts the innovative practices pursued in these collaborations. Because contextualism misconceives collaboration's nature, it becomes a hindrance to innovative activity. In response, parties are crafting self-enforcement mechanisms in their contracts that are consistent with the pragmatic governance system described above. Thus, the private bar is providing an example for potential reform, discussed in Part V, to follow.

A. External enforcement

Whereas parties' internal dispute mechanisms are sensitive to innovation's uncertainties, court enforcement of contracts ignores them. Where the dispute concerns an alleged breach of a flexible rule, the traditional court is not an appropriate forum. This is primarily because the courts' approach to contract interpretation,¹⁹⁰ as found in the UCC,¹⁹¹ is blind to these new mechanisms for governing innovation. From the perspective of contemporary contract doctrine, pragmatic governance mechanisms appear ambiguous: vague language that imprecisely addresses contingencies and, thus, must be amended by the court. Because the collaborators are innovating, however, the court will inevitably misconstrue the contract: it will rely on generalized rules based upon the very routines the collaborators are attempting to abandon. Court interpretation is then a

¹⁹⁰ This paper, following Farnsworth's lead, does not differentiate between "interpretation" and "construction" though it acknowledges the difference. Farnsworth, E. Allen, *FARNSWORTH ON CONTRACTS*, 2nd Ed. 256 (1998) ("This distinction between interpretation and construction is a difficult one to maintain in practice and will not be stressed here."). For present purposes, the differentiation between the two concepts is an unnecessary degree of nuance.

¹⁹¹ This paper limits its analysis to the UCC for the sake of conceptual simplicity and due to its wide application. The arguments here should still be highly suggestive when applied in the context of common law, Vienna Convention, or UNIDROIT enforcement.

constraint on innovation. Furthermore, these contracts are gapless: the gaps between the explicit terms are filled through the pragmatic governance mechanisms. Court gap-filling is then redundant, interfering where it should rather be enabling pragmatic governance mechanisms' efforts to fill the gaps themselves. The following section explicates these deficiencies and then gives a theory for why the UCC's logic of enforcement cannot comport with innovative collaboration.

2. Contextual Interpretation

Diagnosing the Problem

Enforcement by traditional court litigation is inappropriate for pragmatic governance mechanisms because it is nearly impossible for courts to accurately ascertain the parties' intent behind the contract. Where the meaning of contract terms is contested or when the terms want for supplement,¹⁹² courts, per Llewellyn's original prescription,¹⁹³ have looked to the broader context of the agreement. The logic is that using these additional sources of evidence will provide to courts a "foundation for determining the parties' actual expectations and the bargain in fact."¹⁹⁴ Thus, courts refer to either the contracting parties' past experience—via the doctrines of course of

¹⁹² Uniform Commercial Code, 2004 ed., §1-303(d) ("A course of performance or course of dealing between the parties or usage of trade... is relevant in ascertaining the meaning of the parties' agreement, may give particular meaning to specific terms of the agreement, and may supplement or qualify the terms of the agreement."). Note, however, that the UCC does not require in commercial contracts that the court determine whether the disputed contract term is excessively vague before referencing extrinsic evidence. Uniform Commercial Code, 2004 ed., §2-202(2) ("Terms in a record may be explained by evidence of course of performance, course of dealing, or usage of trade *without a preliminary determination by the court that the language used is ambiguous*") (italics added).

¹⁹³ See, e.g., Karl N. Llewellyn, "The First Struggle to Unhorse Sales," 52 Harv. L. Rev. 873, 903-04 (1939); Karl N. Llewellyn, "On Warranty of Quality, and Society: II," 37 Colum. L. Rev. 341, 389 n124 (1937).

¹⁹⁴ Kirst, Roger, "Usage of Trade and Course of Dealing: Subversion of the UCC Theory," 1977 *U. Ill. L. F.* 811, 812 (1977).

dealing¹⁹⁵ and course of performance¹⁹⁶—or the industry’s past experience—via the doctrine of usage of trade.¹⁹⁷ In either approach, contextualist enforcement yields false positives.

Course of Performance/Dealing. The 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.¹⁹⁸ Although collaboration makes much information observable between the parties, it does not necessarily lead to verifiability. When parties are constantly altering their behavior in order to solve emerging problems, consistent patterns remain elusive regardless of how detailed the information is. Put another way: the abundance of information only means that 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 or probing.

One might counterargue that reliance on expert testimony can compensate for the courts’ analytical handicaps. This leads us to the second problem with contextualism’s

¹⁹⁵ Uniform Commercial Code, 2004 ed., §1-303(b); *see also* UCC §2-202; Farnsworth, *supra* note __, at 308-9.

¹⁹⁶ UCC §1-303(a); *see also* UCC §2-202; Farnsworth, *supra* note __, at 318-321.

¹⁹⁷ UCC §1-303(c). *See also* UCC §2-202; Farnsworth, *supra* note __, at 309-18. The UCC uses the following hierarchy when interpreting contract terms: first, the explicit terms of agreement; second, course of performance; and, third, course of dealing and usage of trade. UCC §1-303(e).

¹⁹⁸ Goetz and 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.”).

allowance of course of dealing/performance interpretation: 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 common and, after *Kumho*,¹⁹⁹ entirely proper for courts to rely upon expert testimony to interpret facts. Indeed, expert witnesses were used frequently in the litigated contract disputes between collaborators this author found. Usually, they are used to opine on manufacturing processes or lost profits damages. When doing so, experts use their wider experiences to make authoritative descriptions of the parties' activities.²⁰⁰ Though expert testimony is 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.²⁰¹ In terms of promoting innovation, these doctrines that courts consider tools are really stumbling-blocks.

Trade Usage. Using industry norms or "trade usage" is also problematic where parties are engaging in unique behavior in order to innovate and investing in highly relationship-specific activities. There simply are no broad norms for the court to

¹⁹⁹ *Kumho Tire Company, et al. v. Patrick Carmichael etc., et al.*, 119 S.Ct. 1167 (1999) (Breyer).

²⁰⁰ Hand, Learned, "Historical and Practical Considerations Regarding Expert Testimony," 15 Harv. L. Rev. 40, 54 ("The whole object of the expert is to tell the jury... general truths derived from his specialized experience.").

²⁰¹ Goetz and Scott, *supra* note ___, at 276.

reference.²⁰² If relatively insular and established communities such as hay, grain and feed, textiles, and silk producers cannot agree on industry-wide norms,²⁰³ it is highly unlikely that volatile new economy industries are going to have identifiable “trade 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.”²⁰⁴ Thus, it is unlikely that courts will find commonly held trade usages that apply to a dispute between collaborative innovators,²⁰⁵ a likelihood that either puts more pressure on course of dealing/performance analysis or exposes collaborations to formalist contract interpretation.²⁰⁶ 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.

Examples. The following cases, both disputes arising out of collaborative design and manufacturing agreements, illustrate the difficulties courts have in using contextualist principles to interpret contract terms.

Motorola v. DBTel,²⁰⁷ a case still pending trial, is noteworthy in that it shows both contextualism’s failure and the court’s attempt to counteract that failure. In 1998, Motorola and DBTel, which would become the largest contract manufacturer of mobile

²⁰² Bernstein, Lisa, “The Questionable Empirical Basis of Article 2’s Incorporation Strategy: A Preliminary Study,” 66 *U. Chi. L. Rev.* 710, 715 (1999) (arguing that industry norms “may not consistently exist, even in relatively close-knit merchant communities.”).

²⁰³ Bernstein failed to find coalesced norms in these four industries. Bernstein, Lisa “The Questionable Empirical Basis of Article 2’s Incorporation Strategy: A Preliminary Study,” 66 *U. Chi. L. Rev.* 76 (1999).

²⁰⁴ Kurtyka, Ruthanne, “The Way Out: Exiting the Strategic Alliance” in *Structuring, Negotiating & Implementing Strategic Alliances 2000*, James Ashe-Taylor and Kenneth A. Clarke, eds., Practising Law Institute 285 (2000).

²⁰⁵ Whether or not an industry norm applicable to a given contract exists is an issue of fact. UCC §1-303(c) (“The existence and scope of such usage must be proved as facts.”).

²⁰⁶ The perils of formalist enforcement are discussed in Part V below.

²⁰⁷ *Motorola, Inc. v. DBTel, Inc. and D&B Holding Co. Ltd.*, No. 02 C 3336 (NDIL).

phones in Taiwan, agreed to collaborate in the design and manufacture of handsets.²⁰⁸ DBTel made significant relationship-specific investments in order to collaborate with Motorola, including building an isolated annex to its Shanghai factory solely for Motorola production.²⁰⁹ Over a period of three years, the parties co-designed and manufactured several different handset models.²¹⁰ Production proceeded along pragmatist principles, with the parties simultaneously engineering,²¹¹ setting benchmarks,²¹² and error detecting/correcting.²¹³

Problems arose around the production of two models, the DB2009 and the “Taishan.”²¹⁴ When Motorola cancelled orders for both models in late 2000 and early 2001, DBTel requested permission to sell the handsets on the market. Motorola refused, citing contractual exclusivity and trade secret provisions.²¹⁵ DBTel argued that these two later handset models, for which separate contracts were signed, did not fall under the original agreement’s control and, thus, that it should be allowed to mitigate its losses. Motorola disagreed and filed to enjoin DBTel from selling either handset to Motorola’s competitors.

²⁰⁸ This was apparently part of Motorola’s plan to outsource 60% of its production capacity in order to cut costs and reach strategic Asian markets. Defendant’s Answer and Counterclaims, paragraph 47.

²⁰⁹ DBTel invested over \$115 million to bring its Shanghai facility into line with Motorola’s requirements. *Id.*, paragraph 54.

²¹⁰ *Motorola v. DBTel* [prelim injunction ruling] at 8 (“DBTEL did eventually assemble additional phone models for Motorola, and the parties agree (as do we) that the following models were covered [in addition to the original model, the “Sparky”] by the terms of the Agreement: Shark, Sporty, Sterling, Amio, Mod II and Angel.”).

²¹¹ Complaint for Injunctive Relief and Damages, paragraph 3.

²¹² For description of the design process, *see* Defendant’s Answer and Counterclaim, paragraph 53.

²¹³ For example, throughout the collaboration, DBTel strived to continually “shrink” components to make each subsequent handset model smaller than the first. *Motorola v. DBTel* [prelim injunction ruling] at 38.

²¹⁴ The DB2009 was designed, using both Motorola and Phillips proprietary information, at Motorola’s request: the handset was to be sold under DBTel’s name in China so as to provide Motorola a way of selling phones above its quota. DBTel radically altered the design for the “Shark” handset due to its poor performance in the Chinese market (it was, frankly, too sophisticated for the mainland networks) and renamed the model the “Taishan.” Defendant’s Answer and Counterclaim, paragraph 53.

²¹⁵ *Motorola v. DBTel* [prelim injunction ruling] at 51.

Therefore, the primary issue on Motorola's request for a preliminary injunction was whether production of the DB2009 and the Taishan could be interpreted as falling under the original contract.²¹⁶ If they did fall within the contract's terms, then DBTel would be in breach, justifying a preliminary injunction. Motorola's petition failed, in large part because the magistrate court was unable to interpret the evidence. In the court's own words:

Motorola's first problem is that the evidence it adduced regarding what its trade secrets and confidential information are and how they were used by DBTEL is *confusing, inconsistent, and lacks specificity*. In reading and re-reading Ishu's deposition and Hanwright's testimony, we find that the parties throw around technical terms and phrases without ever explaining what many of them mean or how they fit into a Motorola phone. Further, it appears that many aspects of Motorola's process for creating a cellular phone involve publicly available equipment and standards. We cannot issue an injunction generically banning DBTEL from using any of Motorola's secrets *if DBTEL does not know what those secrets are*.²¹⁷

This is a classic example of a court being unable to discern patterns from the parties' behavior. Note that the difficulty is not that the court is unable to parse the industry's jargon—rather the rub is that the court cannot determine how information traveled across firm boundaries because the firms themselves are unclear as to such. Considering the fact that Motorola waited a year after DBTel's alleged breach to file its petition,²¹⁸ it is unlikely that the evidence was hard to analyze because it was presented poorly or hastily. Rather, the source of the court's struggle is the fluid process of collaborative innovation, where information and initiative flows fluidly between parties. Because the court was unable to interpret the evidence of such interaction, it denied the request for the injunction, perhaps refusing relief Motorola should have had.

²¹⁶ Motorola v. DBTel [prelim injunction ruling] at 3 (“Most of the facts in this case are not in dispute; the major areas of disagreement concern the correct interpretation of those facts.”)

²¹⁷ Motorola v. DBTel [prelim injunction ruling] at 54-55 (italics added).

²¹⁸ Motorola v. DBTel [prelim injunction ruling] at 64.

Motorola is also noteworthy in that it illustrates courts' difficulty with an issue antecedent to contextual interpretation: the admissibility of evidence. Parties fight over the admissibility of evidence in order to limit the scope of the court's search beyond the four-corners of the contract to identify the parties' agreement. *Motorola* filed a motion in limine to exclude documents that included reference to settlement negotiations under Fed. R. Evid. 408. The issue was difficult because settlement negotiations over the dispute at hand occurred simultaneously while the parties negotiated a separate, but related, contract.²¹⁹ The court's solution to the problem is telling: where interpreting the evidence was especially delicate, the court turned the task over to the parties, asking them to agree on what evidence was admissible and what was not.²²⁰ Thus, the magistrate, acknowledging that information was observable but unverifiable, turned interpretation over to those most able to do it: the collaborators themselves. This instinct will be corroborated when we consider self-enforcement in Part IV(B) below.

General Motors Corp. v. Northrop Corp. also illustrates the perils of contextual interpretation.²²¹ In 1986, the U.S. Air Force ("USAF") selected Northrop and Lockheed to compete in the production of the USAF's next generation "advanced tactical fighter." The better of the two prototype jets would receive a 20-year contract worth \$50 billion.²²² While Northrop and Lockheed were competing for the overall design and production of

²¹⁹ *Motorola v. DBTel* [memorandum order] at 10-11 ("Because the parties continued parts of their business relationship even after their current dispute began, there is no bright line between settlement discussions and other, merits-related issues.").

²²⁰ *Id.* at 9-10 ("Defendant has offered to meet with plaintiff in an attempt to agree to redactions in the documents plaintiff identified as containing settlement discussions. We agree that the parties should undertake such a process in lieu of the Court making its own redactions.").

²²¹ *General Motors Corp. and Allison Engine Company, Inc. v. Northrop Corp., Northrop Aircraft Division*, 807 N.E.2d 70 (Ind. App. Ct. 2004). All of the facts were found in the opinion. *Northrop* at 76-87.

²²² Appellant's Brief at 3 (2002 WL 32814003 (Ind.App.)).

the aircraft,²²³ General Electric (“GE”) and Pratt & Whitney (“P&W”) were chosen to compete for the engine design.²²⁴ Northrop contracted with Allison Engine (“Allison”), a subsidiary of General Motors, to design and manufacture a liner that would protect the jet’s body from the high-temperature exhaust.²²⁵

Information gleaned from the parties’ briefs indicates that the parties incorporated pragmatic governance mechanisms into their contract. The parties began by benchmarking design and production,²²⁶ set up an error detection and correction regime,²²⁷ and made simultaneous engineering possible through greater proximity.²²⁸ Pragmatic governance was used because of the high level of uncertainty. When the deal between the two parties was finalized, the specifications of the product to

²²³ An in flight picture of the Northrop prototype, designated the YF-23, can be found at <http://www.dfrc.nasa.gov/Gallery/photo/YF-23/Medium/EC94-42454-3.jpg> (last visited 29 July 2006); a picture of the Lockheed YF-22, which eventually won the USAF’s contract, can be found at <http://www.boeing.com/history/boeing/f22.html> (last visited 29 July 2006) (note: Boeing later acquired Lockheed).

²²⁴ Appellant’s Brief, *supra* note ___, at 3.

²²⁵ *Id.*

²²⁶ *Id.* at 4-5, (“Northrop issued a Request for Proposal (“RFP”) for the Liner’s design and development and a Statement of Work (“SOW”) setting forth design and manufacturing parameters.... Subsequently, Northrop gave Rohr and Allison a Product Function Specification (“PFS”), which generally described the Liner’s functional environment.”)(internal citations omitted).

²²⁷ The agreement required problems to be identified and solutions to be openly communicated. *Id.* (“Northrop’s RFP (incorporating the SOW) instructed each bidder to: (i) propose a firm fixed price for designing and building the Liner; (ii) notify Northrop immediately of any errors, ambiguities, or inconsistencies in the RFP; and (iii) identify in writing any “reasons” for Allison’s design choices [which] are not obvious or are subject to misinterpretation.”)(internal citations omitted); *see also* Northrop v GM [Apr 2004 judgment on appeal] fn 9 and 10 (describing sections of the contract that deal with correcting design errors). Also, a committee was established to oversee joint design and production. Appellant’s Brief at 7, (“The Agreement also contained several provisions requiring Allison to notify Northrop of any changes in the scope of work... including one addressing Northrop directed changes to ‘drawings, designs or specifications.’ To ensure compliance with the notification requirements, Allison established a formal reporting system. Allison’s EEL Program Manager... assigned Allison’s Contracts Manager... the task of submitting to Northrop the ‘subcontract change proposals.’”) (internal citations omitted) (names removed to protect privacy).

²²⁸ *Id.* at 92 (indicating that the parties had personnel stationed at each other’s facilities). Furthermore, Allison was required to simultaneously engineer not only with Northrop but also with General Electric and Pratt & Whitney, the engine manufacturers. *See e.g.* *id.* at 8 (“A month into the contract on October 29, 1987, Allison and Northrop personnel met with GE to discuss GE’s prior Liner design effort.”).

be manufactured were uncertain.²²⁹ As time passed, the parties had difficulty refining these specifications because uncertainty was endogenous: e.g. they could not agree on what the engine environment, which the liner was supposed to control, was going to be like.²³⁰ Thus, Allison went forward experimentally,²³¹ its actions governed through pragmatic mechanisms.

Problems arose as Allison began to go over-budget. Because Northrop had changed the aircraft's design multiple times, Allison had to start over more than once. Compounding this cost was Northrop's insistence that Allison stick to its production schedule: in order to meet the deadline Allison put its personnel on "war-time" status, requiring its workforce to work around-the-clock.²³² When Northrop denied Allison's claim accounting for these increased costs, Allison filed a complaint in Indiana state court with claims of breach of contract and of common law causes of action sounding in contract.²³³

The primary interpretive issue in play was whether Allison had conformed to the notice provisions requiring written notice of design changes where Allison repeatedly provided only oral notification without protest from Northrop. Throughout the adjudication of the dispute, the courts employed contextualist interpretation. The trial court, implicitly supporting a contextualist approach, initially denied Northrop's motion

²²⁹ Id. at 6-7, ("On September 3-4, 1987, Northrop and Allison negotiated the Master Agreement ('Agreement'), reviewing, initialing and dating each contract document page-by-page. Consistent with the SOW and Allison's proposal, the Agreement did not specify or contemplate any specific liner design.")(internal citations omitted).

²³⁰ Northrop v. GM, supra ___, at 82 [Apr 2004 opinion] ("Northrop and Allison could not agree as to what the environment would be for the shoulders of the EEL.").

²³¹ Id. ("Allison informed Northrop that it would proceed according to its understanding of the environment.").

²³² Northrop v. GM [Apr 2004 decision] at 82.

²³³ General Motors, Corp. v. Northrop Corp., 685 N.E.2d 127, 134-5 (1997).

for summary judgment.²³⁴ However, on a motion to reconsider, where Northrop brought more specific notice provisions to the court's attention, the trial court reversed itself and granted Northrop's motion for summary judgment.²³⁵ The appellate court, finding that the federal common law²³⁶ rule required that determinations of notice should not be "technical or illiberal" and that notice provisions are subject to estoppel, reversed the trial court and remanded for trial.²³⁷ After a 30-day trial, the jury found that Allison had provided notice. The verdict was overwhelming: total damages, including interest, of over \$50 million.²³⁸ Northrop appealed, of course, and the interpretation issue was still at the heart of the controversy. Affirming the trial court's decision, the appellate court referred to course of performance when determining both whether Allison provided adequate notice and whether Northrop's behavior constituted a waiver of the contract's notice requirement.²³⁹

The case's circuitous, ten-year journey through the Indiana court system illustrates contextualist interpretation's difficulties in resolving interpretive issues. Of course, parties in high-stakes litigation will appeal inclement decisions even if their chances of success are rather marginal. However, it is telling that the same issue of factual interpretation was at the heart of every appeal. [the trial court decisions, for which the author is still waiting, should shed some more light on this]. This suggests that

²³⁴ Id. at 135 ("The trial court denied Northrop's motion noting that one of the changes provisions did not seem to apply to the change at hand and that the evidence showed that Northrop may well have been aware of the changes made and that was a question of fact inappropriate for a summary judgment determination.").

²³⁵ Id. at 135-6.

²³⁶ The court held that federal common law governed disputes over particular purchase orders which included the notice of changes provision provided in Federal Acquisition Regulation 52.243-7; California law governed the other issues. Id. at 134-5.

²³⁷ Id. at 136-7.

²³⁸ Northrop v. GM [Apr 2004 decision] [get pin cite].

²³⁹ Id. at 90-1.

the inability to definitively interpret and, thus, enforce contracts between collaborators is symptomatic of contextualist interpretation.

Contextualism's Harm

Contract enforcement relying on the context of the agreement undermines innovative collaboration in that it discourages flexibility and experimentation. “[P]arties who develop innovative [contracts] bear significant, exogenous, legal risks”²⁴⁰ because they do not know whether their unique forms of obligation will be recognized by a contextualist court.²⁴¹ A simple example illustrates the problem: Where parties are simultaneously engineering, creative leeway is necessary to accommodate what is a highly uncertain process. At first glance, contextualist enforcement appears to support such leeway: it allows parties to alter the terms of their agreement as contingencies arise—without such adjustments, collaborations would implode. This enforcement philosophy has a paradoxical effect, however: a party who knows its obligations will be interpreted contextually has a greater incentive to shirk because there is a reasonably probability that shirking will be construed as a valid modification of the contract. Since this party’s collaborators, savvy to such behavior because they are sophisticated market participants, cannot afford such shirking, they will naturally circumscribe *ex ante* the scope of the potential deviant party’s activity. In other words, they will rely more heavily upon control rights. As was shown in Part III above, reliance on control rights dampens the creativity necessary for effective competition in the new economy.

²⁴⁰ Goetz and Scott, *supra* note ___, at 278.

²⁴¹ *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.”).

On the other hand, the UCC's flexibility provisions may also discourage efficient departures from the original agreement. Bernstein has argued that such is possible for a range of departures that are temporally or contingently efficient—i.e. “[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.”²⁴² Because the UCC construes such flexibility to indicate adjustments to the contract, parties will be less likely to choose such beneficial adjustments.²⁴³ There is reason to believe that Bernstein's argument is especially compelling in an innovative situation. This is because, in situations of endogenous uncertainty, parties cannot readily identify “bad” departures from “good” ones. 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 interpret that as tacit acceptance of a modification.²⁴⁴ 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”²⁴⁵ 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. In short, contextualist interpretation is a costly anachronism.

Contextualist enforcement's inimical effect on collaborations is apparent in *Lockheed v. galaxis USA*, a dispute between two collaborators trying to design and

²⁴² Bernstein [merchant law], supra note ___, at 1808.

²⁴³ For a refinement of Bernstein's original argument see Ben-Shahar, Omri, “Formalism in Contract Law: The Tentative Case Against Flexibility in Commercial Law,” 66 U. Chi. L. Rev. 781, 792-6 (1999).

²⁴⁴ UCC § 2-208(1) says that course of performance is inferred only where it is “acquiesced in without objection.”

²⁴⁵ “Rigidity effect” is Ben-Shahar's term for Bernstein's original insight. Ben-Shahar, supra note ___, at 795.

manufacture a marketable satellite TV receiver for recreational watercraft.²⁴⁶ 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, went into 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.”²⁴⁷ Thus, a rigid formal division between design and manufacturing functions was included in the contract. Such a division was unnatural, however, considering that Lockheed participated directly and extensively in the collaborative design process: first, Lockheed reversed engineered a competitor’s model to begin the design process;²⁴⁸ second, Lockheed initiated all of the design changes, simply asking for galaxis’ approval;²⁴⁹ third, Lockheed discussed software design issues outside the remit of the immediate contract with a German subsidiary involved in the collaboration;²⁵⁰ and, fourth, the galaxis representative in charge of authorizing all of the Lockheed’s proposed design changes was, in fact, a former Lockheed engineer that had been hired from the Lockheed team working on the project.²⁵¹ To maintain the strict division between design and manufacturing responsibility, galaxis was forced to undermine the very dynamics that make collaboration productive: first, galaxis management frequently had to “stop all the changes unless they are officially approved and set out in drawings which are handed

²⁴⁶ 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].

²⁴⁷ Lockheed v. galaxis USA, supra note ___, [memorandum opinion and order] at 40 (quoting defendant’s testimony).

²⁴⁸ Id.

²⁴⁹ See id. at 41 (discussing how galaxis reviewed and accepted Lockheed’s suggested design alterations).

²⁵⁰ Id. at 42.

²⁵¹ Id. at 37, 42.

over to Lockheed;”²⁵² and, second, galaxis management frequently admonished its employees to cease unofficial “cross-talk” between themselves and Lockheed and to rather direct their feedback through the centralized approval process.²⁵³ 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 inappropriate contract enforcement. These attempts were in vain, however, as a dispute arose when galaxis attempted to amend the contract ex post to make Lockheed responsible for design changes.²⁵⁴

B. Parties’ Attempts to Cope: Self-enforcement and ADR

Arguably in response to contextualism’s limitations, parties have begun fashioning alternatives.

Broad Trends

A content analysis of 8705 collaboration agreements, when compared to Eisenberg and Miller’s recent survey of general commercial use of arbitration clauses,²⁵⁵ indicates that collaborators rely more heavily upon arbitration than their non-collaborative counterparts. Further analysis shows that the same holds true for use of mediation. Contextualism’s inability to effectively govern collaborations helps explain these parties’ preference for enforcement through ADR processes.²⁵⁶

²⁵² Id. at 43.

²⁵³ Id. at [get the pin cite].

²⁵⁴ Id. at 52 (discussing galaxis trying to force Lockheed to accept design responsibility).

²⁵⁵ Eisenberg, Theodore and Geoffrey Miller, “The Flight from Arbitration: An Empirical Study of Ex Ante Arbitration Clauses in Publicly-Held Companies’ Contracts,” *available on SSRN at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=927423.

²⁵⁶ This echoes Richman’s argument that parties will rely on private ordering when court enforcement becomes unreliable. Richman, Barak, “Firms, Courts, and Reputational Mechanisms: Towards a Positive

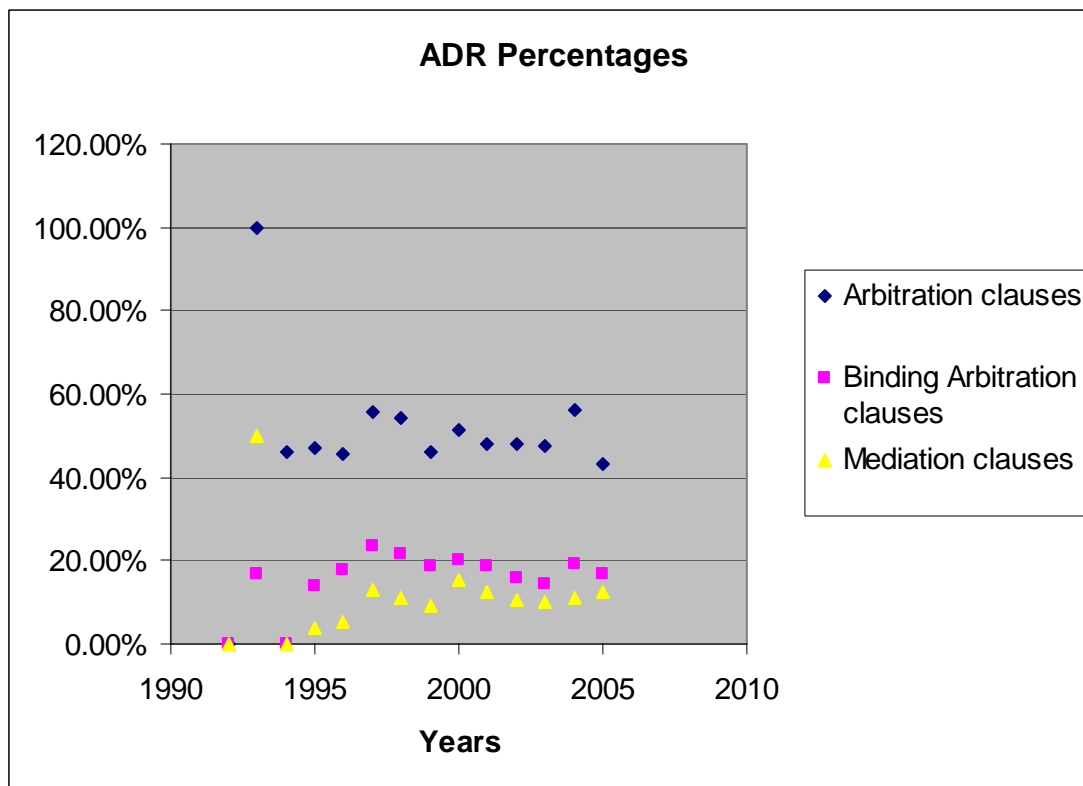
The content analysis involved coding material contracts filed with the SEC as exhibits to Form 8-K. From 1993 through 2005, 8705 of the contracts filed were collaboration agreements. These contracts were searched for arbitration (both binding and non-binding) and mediation clauses.²⁵⁷ The results are as follows:

	total results	Arbitration clauses	Binding arbitration clauses	Mediation clauses
1/1/2005- 12/31/2005	1452 100%	627 43.18%	247 17.00%	184 12.67%
1/1/2004- 12/31/2004	1189 100%	668 56.18%	230 19.34%	134 11.27%
1/1/2003- 12/31/2003	813 100%	385 47.36%	117 14.39%	81 9.96%
1/1/2002- 12/31/2002	619 100%	298 48.14%	97 15.67%	64 10.34%
1/1/2001- 12/31/2001	476 100%	229 48.11%	88 18.49%	59 12.39%
1/1/2000- 12/31/2000	1348 100%	694 51.48%	272 20.17%	204 15.13%
1/1/1999- 12/31/1999	708 100%	326 46.05%	133 18.79%	66 9.32%
1/1/1998- 12/31/1998	746 100%	406 54.42%	160 21.44%	84 11.26%
1/1/1997- 12/31/1997	737 100%	411 55.77%	172 23.34%	96 13.03%
1/1/1996- 12/31/1996	506 100%	230 45.45%	91 17.98%	26 5.14%
1/1/1995- 12/31/1995	79 100%	37 46.84%	11 13.92%	3 3.80%
1/1/1994- 12/31/1994	26 100%	12 46.15%	0 0.00%	0 0.00%
1/1/1993-	6	6	1	3

Theory of Private Ordering” 104 *Colum. L. Rev.* 2328, 2330 (2004)(“private law is not merely a convenient or necessary replacement for public courts but rather arises systematically and predictably.”).

²⁵⁷ This initial analysis used a rather simple coding scheme; the results should be considered preliminary until more robust analysis is undertaken.

12/31/1993	100%	100%	16.66%	50.00%
1/1/1992- 12/31/1992	0 0.00%	0 0.00%	0 0.00%	0 0.00%
1/1/1991- 12/31/1991	0 0.00%	0 0.00%	0 0.00%	0 0.00%



Reliance on ADR is significantly higher in these contracts than those analyzed by Eisenberg and Miller. 49.36% of the collaboration agreements filed from 1995 through 2005 had arbitration clauses,²⁵⁸ compared to Eisenberg and Miller's overall average of 10.64% of contracts including arbitration clauses.²⁵⁹ In 2004, the arbitration clause average for collaboration agreements was as high as 56.18%. In any event, these results are appreciably higher than the contract type with the most incidences of arbitration

²⁵⁸ This average omits the early years with extremely small sample sizes.

²⁵⁹ Eisenberg and Miller, *supra* note __, at 22.

clauses in Eisenberg and Miller's study: employment contracts with about 37%.²⁶⁰ Also, this trend repeats with mediation clauses. Since Eisenberg and Miller do not analyze mediation, it was necessary to construct a mediation clause baseline. A sample, totaling 19,317 agreements, of all material contracts filed as exhibits to Form 8-K from 1 January 2002 through 31 March 2002 was taken. Of this broad sample, 449 contracts, or 2.32%, included mediation clauses. Again, collaboration agreements included mediation clauses more frequently, with 10.39% being the average from 1995-2005. In 2001, 15.13% of collaboration agreements included mediation clauses. Although further analysis is necessary to tease out answers to many remaining questions, it is apparent that something different is happening with collaborations. While many commercial actors are fleeing ADR, collaborators are embracing it.

The Trends in Perspective

Taking a closer look at contracts between collaborators illustrates why parties are turning to ADR for contract enforcement. The dispute resolution clauses analyzed above are often integrated into an overarching escalation procedure. First, disputes are 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.²⁶¹

²⁶⁰ Id. at 21.

²⁶¹ See e.g. the Cisco-KPMG contract, supra note ___, §5.3.

Second, 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.²⁶²

Third, 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 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.”²⁶³

The process is designed to create as many opportunities for crafting a collaborative solution as possible.²⁶⁴

This dispute resolution mechanism appears in the contracts examined in Part III above. For instance, the Allstate contract established the following resolution procedure: first, both parties’ contract managers were to resolve the dispute;²⁶⁵ second, if the contract managers could not reach a consensus, an escalation procedure, which brought in

²⁶² Id.

²⁶³ Id.

²⁶⁴ For a general discussion of ADR, which places mediation in a preliminary place to arbitration and/or litigation, *see* Kimball, *supra* note ___, at 490-491. For a general discussion of arbitration’s role in IT outsourcing dispute resolution, *see* Gross, Bradley J., *International Arbitration as a Method for Dispute Resolution in International Outsourcing Agreements* in *OUTSOURCING REVOLUTION 2004* 873-885 (2004).

²⁶⁵ Id. at §21.2 (“The parties will initially attempt to resolve disputes arising in the ordinary course of the parties performance under this Agreement, at the Contract Manager level by those directly involved.”).

senior management into the process, was to handle the problem,²⁶⁶ and third, if the escalation procedure was not producing a swift result and either party believed that swifter closure was necessary, then the parties were allowed to pursue remedies in either law or equity.²⁶⁷ The Coke contract required, first, the parties to involve increasingly senior levels of management in dispute resolution negotiations; second, if self-enforcement failed, for adjudication to be limited to binding arbitration; and, third, those arbitrators the full range of remedies available at law and equity.²⁶⁸ The Apple contract's dispute resolution mechanism was a bit thinner than the two aforementioned; however, the general contours are still there: first, each side was required to designate operations managers who provided the first step in the dispute resolution process,²⁶⁹ second, although the parties did not explicitly outline any additional escalation process, they acknowledged the validity of alternative forms of dispute resolution.²⁷⁰

As these contracts show, the dispute resolution mechanisms constructed in pragmatic governance contracts are premised upon the idea of peer review, especially in the early stages of escalation. Hierarchical “judging” is replaced with problem-solving between equals. This is exemplified in the non-adversarial approach many counsel take to resolving collaboration disputes.²⁷¹ The logic of “appeal” in this system is not to remedy an arguably erroneous “judgment;” rather, the matter is “appealed” simply on the

²⁶⁶ Id. at §21.3. An expedited process for “critical problems” where immediate resolution was necessary was also established. Id. at §21.4.

²⁶⁷ Id. at §21.5. (“If either Party believes in good faith that the time frames described in this Section 21 will have a material adverse impact on such party, then this Section 21 shall be deemed to apply no longer to such dispute and the Parties may take any legal action in a court of law or equity to assert or enforce a claim it has against the other Party under this Agreement.”).

²⁶⁸ Coke-Senomyx contract, supra note __, at §17.4.

²⁶⁹ Id. at §7.9, see discussion supra note __.

²⁷⁰ Id. at §22.12 (“Any litigation *or other dispute resolution* between the parties relating to this Agreement will take place in the Northern District of California.”) (italics added).

²⁷¹ Glasspiegel, supra note __, at 418.

grounds that consensus has not been reached. The entire idea behind the system, often referred to as “marriage counseling” by practitioners,²⁷² is to keep the collaboration alive, not to vindicate personal rights. This is no better seen than in these contracts’ unwinding provisions, which require a grace period where the parties maintain the collaboration even after it has soured.²⁷³ In short, the dispute resolution mechanisms here mirror pragmatic governance, especially its error detection/correction aspects.

V. Prescriptions about the law that should govern this behavior

Are the shortcomings of contextualist contract enforcement a cause of public concern if parties can self-enforce? Why not leave collaborators alone to sort out these private disputes?

Indeed, to an extent, pragmatic governance mechanisms have effectively compensated for contextualism’s deficiencies. As the external adjudicator is no longer able to accurately interpret context; context is now internalized within the contract itself. Pragmatic governance mechanisms internalize context through the referential rule-making mechanism that is benchmarking and error detection/correction: parties refer to their own ongoing experimentation to set performance milestones, they then adjust these “rules” in real-time fashion in light of their on-going experience. In a way, these two mechanisms correspond to traditional contextualist doctrines: benchmarking is similar to trade usage and course of dealing; error detection and correction similar to course of performance. For disputes, parties have institutionalized self-enforcement and have

²⁷² Kimball, George, *Governance and Dispute Resolution: Making it Work* in Outsourcing Revolution 2005 491 (2005).

²⁷³ Flesh out using the Halvey material (see chapter 15).

ensured flexible third-party enforcement through prevalent use of ADR. Private ordering is accomplishing what the Code never could.

However, despite its accomplishments, pragmatic governance still requires support from external institutions. As *Motorola*, *Northrop*, and *Lockheed* have shown, innovative collaborations are still susceptible to instability. The economic pressures that have led firms to compete along product innovation do not stop once the strategic alliance agreement has been signed. Rather, the dwindling margins characteristic of the current global economy create a powerful centripetal force on any collaborative production arrangement.²⁷⁴ Of course, well-drafted pragmatic governance mechanisms contain elaborate exit terms in order to anticipate a failed joint endeavor.²⁷⁵ 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 collaborative producers and that facilitate intra-industry learning.²⁷⁶ Thus, there are compelling public policy arguments for institutional support for pragmatic governance.

Whatever its virtues, pragmatic governance is not automatically a self-sustaining virtuous cycle.²⁷⁷ Whitford's cataloging of collaborative dysfunction has led him to

²⁷⁴ See e.g. Whitford, supra note __, 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.").

²⁷⁵ See e.g. Hirshman, Neil S., "Control Provisions" in *THE OUTSOURCING REVOLUTION 2003: PROTECTING CRITICAL BUSINESS FUNCTIONS*, Delaney, John F. and William A. Tanenbaum, eds. 345 (2003).

²⁷⁶ See e.g. Porter, Michael, "Clusters and the new economics of competition," *Harvard Business Review* (Nov. 1998).

²⁷⁷ Whitford, supra note __, at 100-16.

argue for public intervention in the new economy.²⁷⁸ While reform at the policy level is perhaps necessary,²⁷⁹ proper contract enforcement is a crucial, arguably more 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.

A. The Outstanding Prescriptions

Before outlining this paper’s vision of what courts’ role should be in supporting innovative collaborations, it is necessary to address the dominant contextualist critiques: the default-rules project and neoformalism.²⁸⁰ Default rules are a non-starter in regards to enforcing pragmatic governance mechanisms. Neoformalism holds promise; however, because it only addresses half of the problem, neoformalism is no more than a fragment of a solution.

1. The Default Rule Project

Some have argued for replacing contextualist enforcement with a system of default rules. The argument is that, rather than trying to fill contractual gaps by

²⁷⁸ *Id.* at 129-53.

²⁷⁹ For recommendations, *see* Svetiev, Yane, “Antitrust Governance” and Whitford, Josh and Jonathan Zeitlin, “Governing Decentralized Production: Institutions, Public Policy, and the Prospects for Inter-Firm Cooperation in the United States,” 11 *Industry and Innovation* (2004).

²⁸⁰ It may be tempting to argue that a rule of efficient breach would effectively govern innovative collaboration. The theory of efficient breach holds that “breach of contract is efficient and therefore desirable if the promisor’s gain from breach (after payment of expectation damages) will exceed the promisee’s loss from breach.” Eisenberg, Melvin, “The Theory of Efficient Breach and the Theory of Efficient Termination,” University of California-Berkeley Law & Economics Workshop working paper #14, 8-9 (2004). In other words, rather than overhauling the contextualist regime, courts should simply allow parties to split when it is efficient to do so. The problem with this argument, however, is that determining whether one party’s gain will exceed the loss of the other is as error-prone as a court trying to fill contract gaps by referencing innovators’ course of performance or industry norms.

interpreting parties' subjective intent, the courts should supply objective gap-fillers.²⁸¹ By "objective" gap-fillers, it is meant that the court should consider "the risks that parties similarly situated would plausibly have agreed to bear at the time the contract was made."²⁸² This is normatively attractive because a general rule that captures low transaction costs for most parties approximates what any two parties would have chosen had they been able to bargain.²⁸³ Supplying default rules is essentially the same thing as contextualism except that the gaps in the contract are filled ex ante (through predictable defaults) rather than ex post (through course of performance, trade usage, etc.).²⁸⁴ Clear and predictable defaults, it is hypothesized, reduce transaction costs for parties because, first, the parties can rely on the defaults and forego costly negotiations over a term and, second, the defaults reduce uncertainty for the bargainers.

This approach suffers from a number of deficiencies. First, there is an inherent paradox within the argument: in order for courts to discover default rules, they must look beyond the agreement and interpret a contract's context; this, however, undermines the ex ante predictability which is the default rules paradigm's goal.²⁸⁵ Thus, while default rules

²⁸¹ Scott, supra note ___, [case for formalism] at 849.

²⁸² Id.

²⁸³ Id. at 850 ("[I]n a world of transactions costs anything can happen, and, absent substantial data on these costs, one cannot predict that any given rule is better than any other for any particular set of contracting parties. Surely, though, some rule for allocating common contracting risks is preferable to no rule. If so, the law ought to adopt the rule that the broadest number of parties would adopt were transactions costs low enough for negotiators to tailor-make their own rules.... Where transactions costs are too high for parties to fashion their own rule, it is nonetheless normatively correct to provide them with the rule that they probably would have chosen for themselves at the time of contracting had they been able to bargain.").

²⁸⁴ Id. at 860 ("Both of these two familiar strategies – seeking ex ante efficiency or ex post efficiency – presuppose a role for courts in filling gaps in incomplete contracts.").

²⁸⁵ Id. at 854-5 ("To the extent that the efficiency norm purports to embrace both predictable interpretations of incomplete contracts as well as the standardization of contract terms, it is subject to a fundamental dilemma: the process of incorporating useful defaults undercuts the process of standardization.... On the one hand, official "recognition" of these default understandings may assist future parties in better designing their contractual relationship. But, on the other hand, the act of incorporating these defaults as an aid to interpretation of the litigated contract will also have the effect of conditioning the explicit price and quantity terms in the contract, terms that otherwise appeared fixed and determinate on their face.").

may reduce the transaction costs associated with contracting, they also destabilize the interpretation process (since a focus on identifying and applying default rules will “necessarily threaten the integrity of the express terms in disputed contract because the interpreter will be reluctant to give the explicit terms meanings that conflict with the apparent factual and legal context.”).²⁸⁶ Second, the problem with this approach when applied to new economy industries is that it is nigh impossible to determine generally efficient rules in heterogeneous, innovative, volatile markets.²⁸⁷ The rules would be so general as to approach meaninglessness. Furthermore, it is doubtful, because of information asymmetries, whether a judge can identify some default rules in the first place—i.e. the state does not have access to all of the information necessary to determine a default rule.²⁸⁸ And third, default rules congeal slowly as the common law process transforms disparate phenomena into conventional wisdom.²⁸⁹ In a quick-moving economy, this gap between market expediency and judicial oversight can yawn to alarming extent. In short, filling contractual gaps with context is insufficient, whether it’s performed *ex ante* or *ex post*.

2. Neoformalism

The neoformalist argument—“neo” in that it evokes the 19th Century’s classical formalism—is elegant: the courts should “decline to fill gaps at all.”²⁹⁰ I.e. “courts would

²⁸⁶ *Id.* at 857.

²⁸⁷ See also *Id.* at 863 (“the more heterogeneous the contracting parties are, the less the economies of scale for any default and the greater the likelihood that the state is less capable than the parties themselves in solving their contracting problems.”).

²⁸⁸ *Id.* (“The state is incapable of completing contracts with useful default terms whenever contracts are incomplete owing to the problems of coping with hidden information.”).

²⁸⁹ Goetz and Scott, *supra* note __, at 876 (“Because they evolve slowly, official rules necessarily lag behind the emergence of new conditions, resulting in increasingly ill-fitting formulations.”).

²⁹⁰ Scott [case for formalism], *supra* note __, at 860.

enforce verifiable terms as written and decline the invitation to complete the contract.”²⁹¹

This approach’s primary virtue is predictability: when drafting their contract, parties will know how the courts will respond since court interpretation is unambiguous.²⁹²

The neoformalist project suffers from an obvious deficiency: formalist interpretation “will increase the number of disputed contracts in which enforcement is denied because the contract is found to be fatally incomplete and/or ambiguous.”²⁹³ Considering that the flexible terms of pragmatic governance mechanisms are ambiguous by nature, this deficiency creates a considerable risk that pragmatic governance mechanisms would go unenforced. This would create an incentive for parties to abandon flexible rules in favor of hard-and-fast contract terms whenever possible and/or for parties to engage in self-help where verifiable terms are impractical. In the former case, pragmatic governance mechanisms disappear; in the latter, they become severely unstable. Neoformalists might be tempted to counterargue that relational constraints will compensate for underenforcement; however, as discussed in Part III, one cannot rely heavily upon reputation and trust in new, volatile, global markets. In short, even if traditional contextualism’s methods are obsolete, Llewellyn’s original intuition is still true: context matters.

There is a more nuanced problem with formalist enforcement, however. Neoformalism assumes that contract terms’ function is to serve as signals for partitioning risk between the parties²⁹⁴—i.e. terms are the agreed-upon signals indicating to the court

²⁹¹ Id.

²⁹² Id.

²⁹³ Id. at 860.

²⁹⁴ See e.g. Id. at 866 (“Both the heterogeneity of contracting behavior and heterogeneity of contracting parties argue for a single-minded insistence on preserving the quality of the signals used by contracting parties to allocate risk.”)

which party assumed which risks. This assumption is sound, of course, where parties are able to calculate uncertainties and know their preferences under possible contingencies. However, where parties are innovating, this assumption breaks down. As discussed in Part III above, where uncertainty is endogenous—as is the case where parties are innovating—the very definition of one’s preferences are problematic. If preferences are, at worst, undefined or, at best, rough estimates, then it does not make much sense to think of contract terms as signals for risk allocation. Parties cannot allocate risk when they do not know their risk tolerances.

Formalism’s limited ability to police collaborative production is suggested in a recent study by Robert Scott on the application of the common law indefiniteness doctrine. The indefiniteness doctrine holds that contract terms that are too vague will not be enforced by the law.²⁹⁵ Due to their flexible nature, we might expect pragmatic governance mechanisms to fall into this category. Of Scott’s sample of cases where indefiniteness was a major issue, 34 decisions enforced (i.e. contextually interpreted vague terms) and 55 denied enforcement.²⁹⁶ Scott argued that, regardless of whether the court was located in a state that followed the UCC or not, courts made their determination upon whether to enforce the indefinite contract by analyzing whether parties fully exploited the information available when drafting.²⁹⁷ In other words, where parties deliberately left the contract vague, the courts typically chose not to enforce the agreement.²⁹⁸ If, however, the contract “is incomplete owing to uncertain future states

²⁹⁵ Scott, Robert, “A Theory of Self-Enforcing Indefinite Agreements,” 103 *Colum. L. Rev.* 1641, 1647 (2003)(“ One of the core principles of the common law of contracts is that the promises of parties to a legally enforceable contract must be certain and definite such that their intention may be ascertained with a reasonable degree of certainty”).

²⁹⁶ *Id.* at 1652-3.

²⁹⁷ *Id.* at 1653.

²⁹⁸ *Id.* at 1655.

that are not observable or not verifiable,” then the courts would, *ceteris paribus*, enforce the agreement.²⁹⁹ This latter situation is the case in pragmatic governance contracts: parties create indefinite terms because of radical and endemic uncertainty. Thus, inasmuch as Scott’s study shows that courts instinctively recognize the limits of formalist enforcement in complex contracting, we find support for our doubts towards neoformalism.

Despite its deficiencies, however, formalist interpretation has a role to play in enforcing pragmatic governance. Not only does it solve half of the problem by enforcing unambiguous terms (which are found side-by-side to flexible terms in pragmatic governance mechanisms),³⁰⁰ neoformalism also provides a necessary condition for the problem-solving adjudication required to complete the enforcement equation. Before we can see how this is so, however, we must first explicate the recently-theorized “problem-solving court.”

B. Enforcing Pragmatic Governance: Reinterpreting Alternative Dispute Resolution

Llewellyn was right: the law should reference commercial reality when determining how to enforce an agreement. Context matters—because contracts are incomplete—especially in the highly contingent new economy. As we have seen, though, traditional contextualism can no longer rise to the occasion, while formalism refuses to pick up the gauntlet altogether. Whither enforcement?

1. Problem-Solving Courts

Theorizing Reform

²⁹⁹ *Id.* at 1654-5.

³⁰⁰ See discussion in Part III above.

The institution to support pragmatic governance is pragmatic itself: the problem-solving court. Arising in areas where social problems have appeared particularly intractable (e.g. drug addiction,³⁰¹ environmental protection,³⁰² human rights,³⁰³ public school reform,³⁰⁴ etc.), 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.”³⁰⁵ “Always a work in progress,”³⁰⁶ the problem-solving court is theorized to roughly follow the Toyoda production paradigm outlined above: first, they set achievement milestones for the client; second, they actively participate in the client’s treatment; and third, they closely monitor the client’s progress and troubleshoot emerging problems.³⁰⁷ In other words, they benchmark, simultaneously engineer, and error detect and correct. Thus, these courts do not only vindicate rights—they also collaboratively craft solutions.

While the application of problem-solving adjudication to conflicts over public rights has been a topic of controversy, it readily fits contract enforcement: the logic of problem-solving courts and “experimentalism” came from economic organization in the first place. In the context of a dispute between collaborators, the logic of problem-solving adjudication mirrors the internal dispute resolution mechanisms parties build into

³⁰¹ Dorf, Michael and Charles Sabel, “Drug Treatment Courts and Emergent Experimentalist Government,” 53 *Vand. L. Rev.* 831 (2000).

³⁰² *See e.g.* Karkkainen, Bradley, “Environmental Lawyering the Age of Collaboration,” 2002 *Wisc. L. Rev.* 555 (2002).

³⁰³ *See e.g.* Lozner, Stacy Laira, “Diffusion of Local Regulatory Innovations: The San Francisco CEDAW Ordinance and the New York City Human Rights Initiative,” 104 *Colum. L. Rev.* 768 (2004).

³⁰⁴ *See e.g.* Liebman, James and Charles Sabel, “The Federal No Child Left Behind Act and the Post-Desegregation Civil Rights Agenda,” 81 *N. Carolina L. Rev.* (2003); Liebman, James and Charles Sabel, “A Public Laboratory Dewey Barely Imagined: The Emerging Model of School Governance and Legal Reform,” 23 *NYU J. of L. and Social Change* (2003).

³⁰⁵ Dorf, Michael, “Legal Indeterminacy and Institutional Design,” 78 *N.Y.U. L. Rev.* 875, 936 (2003).

³⁰⁶ *Id.* at 940.

³⁰⁷ Dorf, Michael and Charles Sabel, “A Constitution of Democratic Experimentalism” *Colum. L. Rev.* 267 (1998).

their contracts. I.e. where collaborators are in a dispute as to whether a particular flexible rule in their agreement is being fulfilled, 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. These benchmarks 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). Throughout the process, the court would actively monitor the parties' progress through situation-specific metrics and assist the parties in troubleshooting errors. Such monitoring, an impossibility where information is asymmetric, would be feasible through the use of penalty defaults: default rules that the courts can employ to penalize parties when they refuse to share relevant information with the court.³⁰⁸ A penalty default would not necessarily require an affirmative penalty, such as a fine; rather, the court could simply hold out the following: if the parties do not provide the information necessary to solve this dispute collaboratively, the court will enforce the contract formalistically. In other words, the penalty default is that the court will refuse to enforce the pragmatic governance provisions of the contract. Such would create an incentive for parties to cooperate with the experimentalist enforcement (while also giving them the freedom to exit the contract if they wish). Thus, we see neoformalism's role: it is the penalty default making experimentalist enforcement's monitoring function possible.

Available Resources for Reform

³⁰⁸ Ayres, Ian and Gertner, Robert, "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 [legal indeterminacy], supra note __, at 946.

Many of problem-solving adjudication's characteristics are already found in alternative dispute resolution (ADR) methodologies. The flexibility often touted as one of ADR's advantages³⁰⁹ mirrors the wide scope of possible solutions available to the problem-solving court. In this similarity, this paper finds support for its normative argument; however, simply directing collaborators to use ADR processes more frequently is insufficient.

While the use of ADR is only to be encouraged, courts' traditional view of ADR is misguided in the context of innovative collaborations.³¹⁰ The most common reason that courts suggest or require parties to use ADR is to protect judicial economy.³¹¹ This logic has a perverse effect on resolving disputes between collaborators. Since efficiency is the goal, ADR is frequently required for routine suits of relatively low complexity: e.g. most states have rules requiring ADR for tort and contract claims under a particular threshold.³¹² Following this logic, courts will rarely send collaborators to ADR: a dispute

³⁰⁹ Otis, Louise and Eric Reiter, "Mediation by Judges: A New Phenomenon in the Transformation of Justice," 6 *Pepp. Disp. Resol. L. J.* 351, 362 (2006) (referencing mediation's "flexibility and adaptability.").

³¹⁰ Note, however, that some exceptions appear to be emerging: e.g. Delaware has recently adopted procedural rules for the judicial mediation of high tech disputes. Order Adding Rules 79.1, 91, 92, 93, 94 and 95 of the Court of Chancery of the State of Delaware (2003) [get full citation]. *See also* Gresser, Julian, "Turning Conflict into Opportunity through Alliance Mediation," in *STRUCTURING, NEGOTIATING & IMPLEMENTING STRATEGIC ALLIANCES* 579 (1998) (advocating the use of mediation since "established judicial processes, even the new methodologies of alternative dispute resolution (ADR), are not completely suited to the special needs of business parties involved in these [collaborative] transactions."); Kimball, *supra* note __, at 490-2 (advocating the use of "marriage counseling" to repair broken collaborations).

³¹¹ *See e.g.* Edwards, Harry T., "Alternative Dispute Resolution: Panacea or Anathema?" 99 *Harv. L. Rev.* 668, 669-70 (1986) ("If alternative dispute resolution mechanisms are most significant as substitutes for traditional litigation, then it is important to assess the specific problems facing our judicial system that ADR seeks to address. Fortunately, the literature on this subject is so extensive that it is unnecessary here to rehash the issues or to resolve the ongoing debate as to whether we are truly an overly litigious society. It is enough to note that, in recent years, the cost of litigation has substantially increased and the number of cases filed in state and federal courts has mushroomed. For example, between 1960 and 1980 the number of filings per capita in federal district courts nearly doubled. Although our judicial systems recently have been adjusted to meet this massive increase in caseload, it is somewhat pollyanish to view the addition of still more judges as an acceptable solution to our society's ever increasing demand for judicial resources.") (internal citations omitted).

³¹² *Id.* at 673-4 ("Many jurisdictions have compulsory arbitration for particular classes of cases -- primarily tort and contract disputes with potential damage awards below an established dollar ceiling. Critically,

between collaborators has complexity too great and stakes too sizeable to be delegated by a court. Thus, when the innovation process breaks down, the collaborators are inevitably trapped in traditional (contextualist) adjudication—precisely where they do not want to be.

Injecting this system with a different logic, however, would bring providential results. Rather than sending the simple cases away to ADR, the courts should follow a default rule that involves complex cases in ADR. Such a default requirement would supply the disputants with external adjudication tailored to their internal dispute resolution mechanisms while also maintaining the integrity of those mechanisms (i.e. parties, still able to contract around the general default, would not have an incentive to undermine the system). Furthermore, ADR would then have the muscle to dis-entrench parties' crystallized bargaining equilibria since these efforts are backed by a serious penalty default: formalistic enforcement.

Problem-solving contract enforcement is readily available through the federal magistrate judges, who are already regularly involved in these cases. As we saw in *Motorola* and *Lockheed*, magistrate judges are frequently involved in disputes' early stages, typically in regards to case management, evidentiary issues, and requests for injunctive relief. Thus, the magistrate judges are well placed to conduct the problem-solving dispute resolution that would be required by the default rule discussed above.³¹³ For instance, rather than, say, simply deciding on the injunction and then sheparding the case through discovery towards a trial years away, the magistrate judge would take an

therefore, court-annexed arbitration is most often used to resolve private disputes rather than difficult public law issues.”).

³¹³ Indeed, judicial mediation has become the norm, often mandatory, in Canada. See Otis and Reiter, *supra* note __.

active and immediate role in resolving the substantive issues in the parties' dispute. Indeed, magistrate judges are already playing a similar role in that they are regularly tasked with overseeing settlement negotiations.³¹⁴ In short, the logic of pragmatic governance collaborators use to govern product innovation should be used to govern their disputes.

A Job for the State?

Without proactive intervention, this method of collaborative dispute resolution will simply be abdicated to the private sector. Continuing to shift the burden of adjudication onto the private sector is poor policy. First, since disputes between collaborators usually encompass myriad claims arising from antitrust, intellectual property, and common law fraud laws in addition to contract claims, the state will inevitably be involved in the dispute. As it will be adjudicating these claims, the court is in a position to oversee the entire resolution of the dispute. This oversight will 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.”³¹⁵ This means they have the ability, unparalleled by a private mediator, 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

³¹⁴ Lantka, Peter, “The Use of Alternative Dispute Resolution in the Federal Magistrate Judge’s office: A Glimmering Light Amidst the Haze of Federal Legislation,” 36 UWLA L. Rev. 71, 88-92 (2005); *see also* Smith, Christopher E., UNITED STATES MAGISTRATES AND THE FEDERAL COURTS: SUBORDINATE JUDGES 61-5 (1990).

³¹⁵ Dorf [Legal Indeterminacy], *supra* note __, at 945.

problems immediately.”³¹⁶ This is the power that makes the penalty default possible. If private mediators attempted penalty defaults, the parties would simply go elsewhere (an easy option considering there is an open market for mediators). Courts, however, are forums of last resort, a status that gives them leverage vis-à-vis disputants. This, then, is a job not only for the private sector but also for the state.

2. Institutional Eclecticism: Theorizing New Governance

The governance system emerging from the prescriptions above is an eclectic mix of adjudicatory philosophies. Llewellyn’s contextualism, repackaged internally and enforced through experimentalist mechanisms, sits side-by-side with formalism. While this is simply a reflection of reality—note the practitioner’s counsel that different problems require different resolution mechanisms³¹⁷—it is nonetheless discomfiting, especially for the orthodox. This issue of theoretical messiness has been addressed before, if indirectly and in another contest, by the Legal Process school. Hart and Sachs theorized legal indeterminacy to be harnessed through “institutional settlements” which partitioned decisions on particular issues to those branches of government most competent.³¹⁸ This is echoed in Scott’s characterization of formalist contract enforcement as “anti-imperialistic”³¹⁹—i.e. courts have their place, but only in a larger constellation of enforcement institutions. In the model advocated for in this paper, the settlement is not between institutions but, rather, between theories. Thus, the most

³¹⁶ Id. at 946.

³¹⁷ See Dorf [Legal Indeterminacy], supra note __, at 960 (“no complete legal system can be thoroughly experimentalist.”)

³¹⁸ Dorf [legal indeterminacy], supra note __, at 920 (“For Hart and Sacks, the purpose of judges, indeed of law itself, is to allocate decision-making authority among competing institutions. In those cases that fall within the courts’ own circumscribed domain of ultimate decision-making, the Legal Process view treats the distinctive comparative advantage of the judiciary as its ability - using the defining tools of legal craft - to render decisions according to principle rather than discretion or subjective policy judgment.”)

³¹⁹ Scott [case for formalism], supra note __, at 861.

competent theory under a given scenario should direct contract enforcement. Just as Scott's characterization suggests a humbler position for the judiciary, this eclectic approach belies its own theoretical modesty: there is no silver bullet here. The best that can be done is to cobble together a menu of philosophies and muddle through as best as possible.

One might reasonably ask whether such an approach can have a coherent purpose and, if not, whether the entire edifice then crumbles without a *raison d'être*. It is not without the realm of possibility. It may not be possible to determine whether this approach serves either of contract law's two standard values, efficiency or fairness. Perhaps it is both efficient and fair to follow pragmatist principles when enforcing contracts. Perhaps not. This pragmatic approach to collaboration does clearly serve one value, however, which has gone unnoticed until recently: solidarity. I.e. this method of resolving disputes valorizes, if nothing else, the very community the contract created. It has been argued that such a community is a valid purpose of contract law: "promises generally, and contracts in particular, establish a relation of recognition and respect—and indeed a kind of community—among those who participate in them, and... the reasons that exist for making and for keeping promises and contracts [can be understood] in terms of the value of this relation."³²⁰ In other words, relationships are ends, not just means to individuated satisfaction.³²¹ This idea of "respectful community"³²²—or, in other words, *solidarity*—provides an ethical justification for the pragmatist approach.

³²⁰ Markovits, "Contract and Collaboration," 113 *Yale L. J.* 1417, 1418 (2004) ("the value of community [is found] directly in the form of the contract relation rather than in any substantive ends that the parties to contracts pursue.")

³²¹ Markovits makes this point relying upon Kantian reasoning. *Id.* at 1420.

³²² *Id.*

VI. Summary and Ramifications

This paper has outlined a new theory of contract law. After observing the new forms of economic organization that have emerged in the last quarter of the 20th Century, the paper, in response to the inability of scholars of both economics and law to theorize the new economy, sketched an alternative theory of incomplete contracting. Central to this alternative theory is the idea of endogenous uncertainty, a condition where parties are unable to ascertain their preferences because of their own innovations. To explain how parties collaborate while awash in such fundamental uncertainty, Sabel's theory of pragmatic governance was employed. Evidence in the form of contemporary contracts between new economy collaborators justified the invocation of learning by monitoring. Finally, enforcement in the form of self-enforcement and external adjudication was explored, and the paper argued that traditional contextualist enforcement (a la the UCC and 2nd Restatement) was inappropriate for these new pragmatic governance mechanisms. That concluded the paper's positive section.

The paper's normative argument is that pragmatic governance mechanisms demand pragmatic enforcement. Thus, the learning by monitoring principles of benchmarking, simultaneous engineering, and error detection and correction provide a means for courts to enforce these contracts' flexible terms. However, these contracts' concrete terms, such as entry and exit rules, should be interpreted formalistically. Formalistic interpretation, useful within its domain, also gives the courts a penalty default: if the collaborators do not cooperate with the court's experimentalist approach, the contract's core, flexible terms will go unenforced. Parties facing such a prospect will play the experimentalist game with the court. Thus, the court should require by default

that collaborators participate in court-annexed ADR and then monitor the parties progress by following experimentalist principles. This eclectic theoretical mix creates a governance mechanism capable of redirecting those innovative collaborations threatening to founder on the rocks of short-term opportunism. Self-conscious on account of its pragmatist foundation, this theory nevertheless finds ambition in its modesty: it argues for a wide-ranging (though, arguably, already underway) reform in judicial enforcement of commercial contracts.

Realizing this institutional change is possible due to the pace and scope of the reform agenda. First, the pace will be natural because implementation of this agenda would be governed by judicial discretion and tempered by parties' continuing ability to determine the rules governing their disputes. Second, the scope of the reform is achievable: although this is arguably a "new" theory of contract, it is one that does not entirely displace the old theory. I.e. contextualist contract enforcement will still be good law—it will simply be law limited in application to the world's non-collaborative deals. As the number of these deals dwindles, a likelihood the aggregate results in Section III above suggest, a smooth transition should occur. It will be institutional change a la denouement rather than upheaval.