Innovation and the Institutional Design of Merger Control

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Making enforcement decisions under conditions of uncertainty is a central problem in antitrust policy, as it is in other domains. Particularly in high technology markets characterized by rapid rates of innovation, traditional analytical approaches struggle to identify potentially anticompetitive behavior with fidelity. A growing body of antitrust scholarship addresses this issue from the perspective of decision theory, but sustained attention has yet to be paid to the equally critical question of institutional design—i.e., how antitrust institutions should be structured to reduce or at least manage uncertainty.

This Article leverages research undertaken in other substantive areas to provide a preliminary analysis exploring how antitrust institutions are transforming to respond to the volatile markets characteristic of the 21st century economy. With the antitrust law of mergers as its focus, this Article suggests that high-innovation markets immerse competition agencies in uncertainty to such an extent that the agencies themselves must employ an entrepreneurial approach in order to assess competitive effects. That approach, implemented through a number of novel policies, mirrors an "experimentalist" institutional form that has been identified in other areas, ranging from privately-ordered corporate alliances to public regulatory regimes, such as environmental protection. Experimentalist institutions create a decision-making framework that allows agencies to construct case-specific analytical models that capture the dynamics of high-innovation markets while avoiding the problem of being overwhelmed by the enormous amount of information produced through the course of a merger investigation. Given the widespread consensus on the general substantive ends, if not the details, of antitrust law, this overlooked institutional transformation is one of the most important topics in contemporary competition policy.

This institutional transformation is more emergent than complete, however. Progress towards a more experimentalist approach to merger review is partial, and in that respect the institutional infrastructure of merger review is out of balance. My analysis introduces a number of new policy issues to consider for completing the institutional evolution of merger review, including rebalancing the exchange of information between merging parties and the agency, introducing real-time judicial oversight of disputes between merging parties and an agency during an investigation, and further expanding the scope of contingent remedies.

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I. INTRODUCTION

Since Frank Easterbrook's seminal essay, *The Limits of Antitrust*,[1] viewing competition policy through what is known as the error cost framework has become common, although not universal,[2] among those engaged in the antitrust enterprise. From the error cost perspective, the central question of antitrust enforcement is whether intervention in a market will promote competition to an extent sufficient to offset its costs, which include not only the expenditure of limited agency resources but also the harm to market participants when ill-conceived enforcement decisions have anticompetitive effects of their own.[3] Recent scholarship has built upon that foundation, arguing that a decision theoretic approach should be adopted in order to rationalize the agencies' analyses of a variety of conduct.[4] Decision theory posits that enforcement choices can be improved by following an elegant algorithm: the benefits and costs of a decision under consideration are valued; the probabilities of those benefits and costs occurring are calculated; the valuations of the benefits and costs are then weighted by those probabilities; and finally the probability-weighted benefits and costs are then combined to determine whether the decision will result in a likely net benefit or detriment.[5]

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1. Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 1 (1984). For a brief summary of the intellectual history, see Jonathan B. Baker, *Taking the Error Out of "Error Cost" Analysis: What's Wrong With Antitrust's Right*, 80 ANTITRUST L.J. 1, 4 (2015) (noting that foundational work by Richard Posner, Paul Joskow and Alvin Klevorick preceded Easterbrook's contribution).

2. J. Thomas Rosch, Commissioner, Fed. Trade Comm'n, Remarks before the IBA/ABA Conference on Antitrust in a Global Economy: Thoughts on the Withdrawal of the Section 2 Report (June 25, 2009), https://www.ftc.gov/sites/default/files/documents/public_statements/thoughts-withdrawal-doj-section-2-report/090625roschibareport.pdf.

3. HERBERT HOVENKAMP, THE ANTITRUST ENTERPRISE: PRINCIPLES AND EXECUTION 7 (2005) ("[A]ntitrust is a form of regulation—a type of market intervention in an economy whose nucleus is private markets. . . . Market intervention must be justified and the justifications by and large are not moral ones. Punishing unfair behavior is not antitrust's role. Its purpose is to make markets perform more competitively, and intervention is justified only when it moves us toward that goal.").

4. A number of scholars have called for the application of decision theory to antitrust, particularly in the context of mergers. *See generally* Steven C. Salop, *The Evolution and Vitality of Merger Presumptions: A Decision-Theoretic Approach* (Georgetown University Law Center, Working Paper No. 1304, 2015), http://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=2313&context=facpub (applying decision theory to merger analysis); Steven C. Salop, *Merger Settlement and Enforcement Policy for Optimal Deterrence and Maximum Welfare*, 81 FORDHAM L. REV. 2647 (2013) [hereinafter Salop, *Merger Settlement*] (including deterrence effects in a decision theoretic approach to enforcement); Ken Heyer, *A World of Uncertainty: Economics and the Globalization of Antitrust*, 72 ANTITRUST L.J. 375 (2005) (discussing implications of uncertainty in antitrust analysis); C. Frederick Beckner III & Steven C. Salop, *Decision Theory and Antitrust Rules*, 67 ANTITRUST L.J. 41 (1999) (applying decision theory to antitrust rules).

Current and former enforcement officials have also called for the use of decision theory. *See, e.g.*, Joshua D. Wright, Commissioner, Fed. Trade Comm'n, Remarks at the Competition Law Center, Beijing, China: Evidence-Based Antitrust Enforcement in the Technology Sector (Feb. 23, 2013), https://www.ftc.gov/sites/default/files/documents/public_statements/evidence-based-antitrust-enforcement-technology-sector/130223chinaevidence.pdf (calling for the application of decision theory to minimize costs of enforcement; Michael L. Katz & Howard A. Shelanski, *Merger Analysis and the Treatment of Uncertainty: Should We Expect Better?*, 74 ANTITRUST L.J. 537, 538 (2007) [hereinafter Katz & Shelanski, *Merger Analysis*] (explaining how the application of decision theory can improve merger analysis); Michael L. Katz & Howard A. Shelanski, *Mergers and Innovation*, 74 ANTITRUST L.J. 1, 5 (2007) (arguing for a decision theoretic approach particularly in "cases involving complex predictions about the future path and effect of technological innovation").

5. *See infra* notes 31–50 and accompanying text (discussing decision theory and its application to antitrust enforcement policy).

The decision theoretic approach introduces the question of how antitrust institutions should be designed to minimize costly decision making errors. Here, the focus tends to be upon substantive legal rules. For example, in response to uncertainty and its effects,[6] Easterbrook and others offer crafting simple filtering or safe harbor rules as a solution: they argue that presumptively removing certain classes of conduct—which either theory or experience teaches are not anticompetitive—from scrutiny reduces the scope for erroneous enforcement decisions.[7] A per se liability rule, employed in price fixing and other situations, is the classic example of such an ex ante filtering rule. That rule economizes on agency resources and reduces the likelihood of error by automatically categorizing conduct, rather than subjecting it to Rule of Reason analysis.[8]

The utility of those filters decreases as uncertainty increases and business practices grow more heterogeneous.[9] Accurately applying decision theory is at times easier said than done. Particularly in markets characterized by high rates of technological innovation, determining whether intervention is justified presents a dilemma. Rapid technological change unsettles standard models of economic behavior, ambiguating the conceptual roadmaps agencies use in substantive antitrust analysis. That ambiguity increases the risk that targeted interventions miss their mark, causing more harm than good. Furthermore, the complexity of those markets counsels for discrete, surgical interventions, by which an enforcement agency can minimize the risk of ongoing entanglement. In the merger context, for example, the federal antitrust agencies[10] prefer definitive enforcement actions that reset the structure of a market, rather than directly regulating market participants' behavior over time.[11] In short, the federal agencies are caught between a rock and a hard place: they desire crisp, definitive solutions but crafting them under conditions of significant uncertainty is difficult.

The focus on substantive filtering rules also overlooks more process-focused institutional design questions. Decision theory is a way of understanding the problem of deploying resources to interpret data, an issue that, in part, invokes procedural questions of how information flows should be structured between the parties involved in the enforcement process. Addressing such processual issues may require particular attention in some enforcement areas, such as merger review, where a more idiosyncratic regulatory regime has supplanted traditional litigation institutions in certain respects.

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6. Uncertainty is not overlooked in the error cost framework; indeed, the inevitable uncertainty of decision making is one of its fundamental assumptions. *See* Easterbrook, *supra* note 1, at 4 ("[J]udges act with imperfect information about the effects of the practices at stake.").

7. *Id.* at 14–17; Geoffrey A. Manne & Joshua D. Wright, *Innovation and the Limits of Antitrust*, 6 J. COMPETITION L. & ECON. 153, 161–62 (2010).

8. *See* Easterbrook, *supra* note 1, at 14–17 (discussing the value of presumptions).

9. In situations where uncertainty is profound, or where conduct is diverse and therefore difficult to slot into neat categories, precise filtering rules will fail to coalesce. In that case, a Rule of Reason type analysis must be employed, and the filtering approach provides no insight as to what the content of that analysis should actually be.

10. The United States has a dual-agency enforcement structure at the federal level: both the Antitrust Division of the DOJ and the FTC enforce certain federal antitrust laws.

11. *See* U.S. DEP'T OF JUST., ANTITRUST DIVISION POLICY GUIDE TO MERGER REMEDIES 9–10 (June 2011), http://www.justice.gov/atr/public/guidelines/272350.pdf (discussing the agency's preference for divestiture remedies); FED. TRADE COMM'N, NEGOTIATING MERGER REMEDIES: STATEMENT OF BUREAU OF COMPETITION OF THE FEDERAL TRADE COMMISSION 4 (Jan. 2012), https://www.ftc.gov/system/files/attachments/negotiating-merger-remedies/merger-remediesstmt.pdf (discussing the agency's preference for divestiture remedies).

In response, this Article focuses on another tool, complementary to filtering rules and safe harbors, for reducing error costs under conditions of uncertainty: structuring a learning process so as to better manage, or perhaps even resolve, uncertainty over a compressed period of time.[12] I explore the applicability of such a process to the antitrust law of mergers, a highly active area of antitrust enforcement that has undergone extensive institutional change over the past generation. I consider the possibility that a novel institutional response to the problem of harnessing uncertainty in merger control is in the process of unfolding.[13] This new institutional arrangement does not promise to clarify ex ante ambiguity, a difficult prospect given the current state of the art in industrial organization research. Rather, contemporary merger review follows a pattern found in other domains characterized by high uncertainty, such as inter-firm technology collaborations in private industry or environmental regulation in the public sector. Aspects of current merger review practice can be understood as an attempt to create a disciplined framework for agencies and merging parties to jointly explore uncertain decision landscapes, coupling that learning process with adaptive remedies that create greater ex post decision flexibility. In short, the approach introduces novel back-end mechanisms, which structure the investigative process and expand the room for remedial maneuver, in situations where ex ante accuracy is elusive. The result is a more reliable, deliberative process with respect to both merger analysis and remedy design that has the promise of providing some of the stability necessary for both more accurate agency decision making and business planning.

I undertake this analysis because the uncertainty problem in enforcement decision making is one of the most pressing issues in contemporary antitrust policy.[14] As an

12. My argument shares a common perspective with an interesting article by Yane Svetiev. *See generally* Yane Svetiev, *Antitrust Governance: The New Wave of Antitrust*, 38 LOY. U. CHI. L.J. 593 (2007) (arguing that antitrust policy can play a role in governing new collaborative forms of economic organization). The pieces can be considered complementary with respect to the aspects of the antitrust enterprise examined, with this piece exploring institutional design questions, and Svetiev analyzing over-arching schools of antitrust thought.

13. I use merger control as my preliminary case study for three reasons. First, compared to other parts of U.S. antitrust infrastructure, it has fewer dimensions complicating the analysis. Over the past generation, merger control has evolved into a largely technocratic institution, where litigation is a relative rarity. *See infra* note 95 and accompanying text (discussing the high frequency of settlement in merger cases). Although the vestiges of the litigation centric system in place prior to the enactment of the Hart–Scott–Rodino Act in 1976 remain active in important respects, there is relatively little jury and judicial involvement compared to other areas of the antitrust laws. Daniel Crane, *Rethinking Merger Efficiencies*, 110 MICH. L. REV. 347, 366 (2011). Enforcement is furthermore concentrated in the federal agencies, with state level actors typically taking a minimal role. *Id.* at 366. Second, merger control is the most active domain in antitrust law, where incremental improvements in substantive, processual, and remedial institutions occur with regularity. *See* COMPETITION COMMITTEE, DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS, ANNUAL REPORT ON COMPETITION POLICY DEVELOPMENTS IN THE UNITED STATES: 2014 4 (2015), https://www.ftc.gov/system/files/documents/reports/2015-annual-report-competition-policy-developments-united-states/1507annual_report_us.pdf (providing enforcement statistics for both U.S. federal agencies). Third, the frequent use of negotiated consent decrees as the agencies' preferred enforcement tool presents a unique regulatory design environment, which calls for a combination of public law scholarship focused on agency decision-making and private law research on the optimal design of contracts. In summary, merger control acts as an evolutionary frontier in antitrust and the broader literature on regulatory design, a crucible where some of the administrative state's most difficult problems are found and a proving ground for new policy prescriptions.

14. Geoffrey A. Manne & Joshua D. Wright, *Introduction* to COMPETITION POLICY AND PATENT LAW UNDER UNCERTAINTY: REGULATING INNOVATION 1 (Geoffrey A. Manne & Joshua D. Wright eds., Cambridge Univ. Press 2011) ("[T]he ratio of what is known to what is unknown with respect to the relationship between innovation, competition, and regulatory policy is staggeringly low. In addition to this uncertainty concerning the relationships between regulation, innovation, and economic growth, the process of innovation itself is not well

example, consider what is at stake in the context of mergers & acquisitions (M&A). Antitrust investigations of proposed transactions often come at a significant price to merging parties. Lawyers' and economists' fees for defending a transaction are substantial, but they are dwarfed by the cost of delay in swift-moving M&A markets, where, per the old adage, time is the enemy of the deal.[15] Those delay costs are compounded when the antitrust process interferes with other parts of the institutional constellation regulating the market for corporate control. For example, lengthy, indeterminate antitrust investigations can give merging parties opportunities for strategic behavior, as in noteworthy recent M&A cases such as *Hexion v. Huntsman* and *In re Dollar Thrifty Shareholder Litigation*.[16] Furthermore, it is not clear that antitrust intervention consistently produces offsetting benefits. Each year, the federal agencies require merging parties to undertake billions of dollars' worth of divestitures to remedy alleged anticompetitive effects.[17] But studies of whether those divestiture requirements are effective in preventing harm to competition are inconclusive.[18]

In a subtler but equally significant respect, the problem extends beyond the small number of transactions that undergo a full antitrust investigation. The uncertainty inherent in the modern antitrust analysis of mergers undermines the M&A market by hamstringing merging parties' ability to assess antitrust risk ex ante. As Daniel Crane has noted, "[merger] analysis has become far more nuanced and technical—and therefore less predictable. Lawyers can no longer offer their clients clean predictions in many potentially close cases."[19] As a result, many potentially pro-competitive deals die on the drawing board.[20]

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understood. The regulation of innovation and the optimal design of legal institutions in this environment of uncertainty are two of the most important policy challenges of the twenty-first century.").

15. *See* Mark Suster, *Time Is the Enemy of All Deals*, BOTH SIDES OF THE TABLE (Feb. 25, 2010), http://www.bothsidesofthetable.com/2010/02/25/time-is-the-enemy-of-all-deals/ (discussing a market participant's view of how delay undermines transactions).

16. Hexion Specialty Chemicals v. Huntsman Corp., 965 A.2d 715, 715 (Del. Ch. 2008); *In re* Dollar Thrifty S'holder Litig., 14 A.3d 573, 573 (Del. Ch. 2010).

17. *See, e.g.*, U.S. DEP'T OF JUST. ANTITRUST DIVISION & FED. TRADE COMM'N BUREAU OF COMPETITION, HART–SCOTT–RODINO ANNUAL REPORT: FISCAL YEAR 2013 9–23 (2013), https://www.ftc.gov/system/files/documents /reports/36th-report-fy2013/140521hsrreport.pdf (discussing merger enforcement activity in 2013).

18. *See generally* John E. Kwoka Jr, *Does Merger Control Work? A Retrospective on U.S. Enforcement Actions and Merger Outcomes*, 78 ANTITRUST L.J. 619 (2013) (summarizing a number of studies that find higher prices even though remedies are imposed, but noting several methodological limits to merger retrospectives).

19. Crane, *supra* note 13, at 390.

20. An aborted deal from Google, Inc.'s recent acquisition history provides a timely example. In the autumn of 2010, Google was reported to be interested in acquiring Groupon, Inc., which at the time was experiencing phenomenal growth. Frank Sennett, *Behind Groupon's $6 Billion Brushoff*, WALL STREET J. (June 5, 2012 1:52 PM), http://www.wsj.com/articles/SB10001424052702303640104577440580610986086. At that time, Google had not yet developed an in-house daily deals product, such as Groupon's. *See* Shira Ovide, *Google Offers: Taking Out Revenge Against Groupon?*, WALL STREET J. (Jan. 21, 2011 10:14 AM), http://blogs.wsj.com/deals/2011/01/21/google-offers-taking-out-revenge-against-groupon/ (discussing Google's plan to launch Google Offers in 2011). Antitrust concerns were not immediately obvious, but with the agencies investigating Google's contemporaneous ITA acquisition, Google's prominence in a number of adjacent markets threatened to attract regulatory scrutiny. *See* Press Release, Dep't of Just. Antitrust Div., Justice Department Requires Google Inc. to Develop and License Travel Software in Order to Proceed with Its Acquisition of ITA Software Inc. (Apr. 8, 2011), http://www.justice.gov/opa/pr/justice-department-requires-google-inc-develop-and-license-travel-software-order-proceed-its (providing summary of the remedy required following the DOJ's investigation of the Google/ITA transaction). In traditional markets, assessing that risk and allocating it to either party in the merger agreement would be a straightforward, if contentious, task. In Google and Groupon's situation, however,

My analysis begins in Part II by reviewing, first, the error cost framework and subsequent research applying decision theory to antitrust enforcement. I then turn to recent scholarship on both public regulation and private ordering, which recasts decision making as a provisional or "experimental" process, whereby participants explore and test possibilities collaboratively in an effort to construct a solution to an uncertain problem.[21] That process is supported through information sharing routines, by which participants regularly disclose their learning to one another, and through a disciplining institution, which "ratchets up" the participants' investment in the joint learning process as disputes arise.[22] In both the public and private sector, these institutions for collaborative learning are used to innovate new solutions. Examples range from adaptive management in environmental regulation and drug treatment courts in the public law context to collaborative approaches to developing new technology in private sector industries, such as life sciences, semiconductors, and aerospace.[23]

In Part III, I explore whether merger review in the United States approximates aspects of an experimentalist approach. I begin by enriching our understanding of the problem an agency faces when deciding whether to intervene in a proposed merger. In short, the agencies face a one-two punch. Mergers implicating innovation concerns immerse enforcement officials in an environment of fundamental uncertainty as to the basic analytical structure they are to apply. The unsettled state of our substantive models of competition in innovative environments is symptomatic of this deep uncertainty. Compounding that "model uncertainty" is the daunting analytical burden placed upon agencies by the enormous document and data productions now commonplace during merger investigations.[24] When undertaken on the tight timeline of an M&A transaction, the scale of these productions threatens agency staff and the merging parties themselves with "filter failure"—which occurs when the scale of disclosure overwhelms an actor's ability to process the information.[25] As a result of model uncertainty and filter failure, an actor can find itself unmoored: fundamental uncertainty about how to approach the problem pushes staff or the parties to focus more closely on the evidence, but the evidence is so vast as to befuddle an actor operating without a clear analytical framework. In other words, the agency itself faces an innovation problem—it has to figure out how to navigate

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accurately pricing the risk of an investigation was unachievable. Groupon reportedly demanded a sizeable reverse termination fee in the merger agreement, which would have required Google to pay Groupon a large sum of money if the deal foundered on antitrust approval before closing. *See* Gina Chon & Anupreeta Das, *Debunking Google-Groupon: Here's Why the Deal Fell Apart*, WALL STREET J. (Dec. 16, 2010 4:56 AM), http://blogs.wsj.com/deals/2010/12/16/debunking-google-groupon-heres-why-the-deal-fell-apart/ (discussing the failure of the Google and Groupon deal); Nadia Damouni, *Google Buy of Groupon Could See Antitrust Review*, REUTERS (Dec. 1, 2010, 8:22 PM), http://www.reuters.com/article/2010/12/02/us-groupon-idUSTRE6B06ME 20101202. But Google and Groupon could not reach an agreement on the amount of the reverse termination fee, suggesting that the antitrust risk was too uncertain for Google to become comfortable with the large fee or for Groupon to lower the amount demanded. *See* Chon & Das, *supra* (noting the potential for Groupon's marketplace growth in Asia); Damouni, *supra*. As a result, negotiations fell apart, and a deal that may have been positive for both shareholders and consumers alike never launched. Chon & Das, *supra*; Damouni, *supra*.

21. *See infra* notes 56–85 and accompanying text (discussing collaborative learning systems in both public and private sector contexts).

22. *See infra* notes 60–67 and accompanying text (discussing Charles Sabel's theory of pragmatic coordination).

23. *See infra* notes 76–85 and accompanying text (discussing public and private sector examples).

24. *See infra* note 106 and accompanying text (describing conventional merger analysis in analyzing static markets).

25. *Id.*

a complex environment where past practice is not a reliable guide and, in turn, conceptual models are provisional at best. The agency must proceed more like an entrepreneur than an actuary.

I then connect that two-part theory of uncertainty to the emergent institutional response. Collecting a number of related trends, I argue the U.S. merger review regime may be in the process of transforming into a unique blend of both the publicly and privately ordered forms of experimentalism. Contemporary merger review reflects elements of regulatory experimentalism in certain respects. Over the past two decades, the enforcement agencies have been shifting away from a rigid structural approach to merger analysis centered on calculations of market concentration to more flexible assessments of competitive effects, an evolution which culminated after years of informal practice in the 2010 revisions to the agencies' Horizontal Merger Guidelines. This more flexible analytical framework creates an environment where case-specific learning and, in turn, regulatory creativity can be pursued. The enforcement agencies are not limited within a strict conceptual straightjacket but have room to maneuver with respect to framing and studying the effects of a merger on competition. Relatedly, the agencies have also introduced a number of procedural innovations, such as iterated exchanges of information between merging parties and agency staff, which are designed to regularize information flows during the course of an investigation. In parallel, merging parties have adopted a similarly collaborative approach in how they organize their defense of a merger vis-à-vis the enforcement agency, as illustrated by current trends in the structuring of antitrust provisions in merger agreements.

Contemporary merger review also exhibits aspects of privately ordered experimentalism. Recent innovations in the design of merger remedies, which are structured through contract-like consent decrees, show the enforcement agencies are attempting to reduce the pressure for ex ante accuracy by increasing flexibility ex post. A number of novel consent decrees do so by establishing information exchange frameworks and dispute resolution systems similar in some ways to the experimentalist contracts private parties use to govern technology collaborations.

In short, agencies and merging parties alike are developing institutions that allow them to proceed through the merger review process on a tentative basis, revising their substantive analytical frameworks as they scour an unfolding factual record. This mitigates enforcement's central dilemma by blurring the division between ex ante regulatory decisions and ex post effects—in essence, an experimentalist approach extends the decision making process later into time through flexible governance arrangements. And so, the transformation in the U.S. merger review regime parallels in some respects an institutional evolution underway in numerous adjacent domains in both the administrative state and economic organization.

Because this Article is exploratory in nature, presenting detailed policy prescriptions would be premature. Nonetheless, Part IV introduces a number of normative issues to consider if the emergent institutional transformation is to be carried towards completion. The primary aspect in which the transformation remains incomplete is back-end enforcement. Whereas a fully articulated experimentalist regime has a dispute resolution system that creates powerful incentives for participants to invest in joint learning, the current merger control regime includes only intermittent judicial oversight. As a result, the information revelation mechanisms at the heart of experimentalist merger review are vulnerable to dysfunction or abuse.

Addressing that problem raises an opportunity to revisit a number of ongoing policy debates in merger control. In particular, an experimentalist approach raises new questions

in two areas. First, can the "Second Request" investigation process be restructured to optimize the collaborative learning process in which agencies and merging parties engage?[26] I explore the possibility that the agencies' Second Request investigation policies be revised so information sharing is symmetric between merging parties and the enforcement agencies during the course of an investigation—information exchange must be a two-way street, unlike current practice, whereby merging parties disclose much information to agencies but not vice-versa. Relatedly, judicial intervention in the merger review process should be reformed so that it is available in real-time, rather than the distant and infrequent check as currently constituted. Second, how might remedies be designed to foster an experimentalist approach to merger review? I explore the argument that the agencies should expand the scope of contingent remedies, which are currently used in the merger context primarily to incentivize compliance with the terms of a divestiture order. Such contingent remedies might be designed to provide an enforcement agency with preset ex post remedial options, which can be "structural" and not necessarily "behavioral,"[27] in the event post-acquisition anticompetitive effects are realized.

Each of those discrete issues warrants individual analysis beyond what I can provide within the limits of a single Article, and so my purpose is to provide a high-level treatment, deferring more extended discussion to later work. I note here that completing the institutional evolution that appears to be underway may foster a regulatory environment where agency decision making is improved and merging parties' business planning is stabilized. Those results will be achieved not by magically creating ex ante certainty for agencies and merging parties but rather by establishing a process that consistently supports cooperative learning, and that allows for more finely-tailored remedial outcomes. This is, admittedly, a theory of the second best, which involves trade-offs for agencies and merging parties alike.[28] The question, raised here and to be more fully answered in later work, is whether those are trade-offs worth making.

II. MAKING ENFORCEMENT DECISIONS UNDER CONDITIONS OF UNCERTAINTY

Antitrust enforcement decisions must often be made under conditions of uncertainty.[29] The information an agency or court has at its disposal is incomplete. And in many situations, such as mergers, the analysis requires making a prediction of how certain behavior will affect competition in the future.

In this Part, I outline two approaches for coping with uncertainty—one familiar and one less so. The first is the error cost framework Easterbrook introduced, with which many in the antitrust community are familiar. The second is the expanding literature on experimentalist governance, which has yet to receive significant attention in the antitrust

26. Note that referring to a "collaborative" process does not suggest the interactions between agencies and merging parties are non-contentious. Private sector collaborations are often characterized by significant, persistent conflict between partners. *See* JOSH WHITFORD, THE NEW OLD ECONOMY: NETWORKS, INSTITUTIONS, AND THE ORGANIZATIONAL TRANSFORMATION OF AMERICAN MANUFACTURING 80–94 (2006) (discussing frequent and intense conflict within many private sector collaborations).

27. *See* DEP'T OF JUST. ANTITRUST DIV., POLICY GUIDE TO MERGER REMEDIES 6–11 (2011) (discussing the difference between structural and behavioral remedies); *infra* note 121 and accompanying text.

28. *See generally* R. G. Lipsey & Kelvin Lancaster, *The General Theory of Second Best*, 24 REV. ECON. STUD. 11 (1956) (formalizing a general theory of the second best).

29. *See* Manne & Wright, *supra* note 14, at 1 (noting "uncertainty concerning the relationships between regulation, innovation, and economic growth").

literature.[30] Both approaches provide a theory of how decision making under conditions of uncertainty can be improved, but they do so in different ways. The error cost framework prescribes simple rules that remove obvious cases from the analytical process—for example, by deeming them either per se legal or illegal—and leaving more complicated cases to Rule of Reason analysis. Experimentalism focuses on just the opposite: it provides a logic by which uncertainty is harnessed through institutional structures that establish a joint discovery process.

A. The Error Cost Framework and Ex Ante Decision Rules

Judge Easterbrook's primary contribution in *The Limits of Antitrust* was to illuminate the full range of potential effects resulting from an enforcement decision.[31] Attention naturally gravitates to the risk that an agency's decision not to intervene in a market will allow anticompetitive conduct to continue unabated—a Type I or false positive error.[32] Easterbrook also highlights the converse: situations where an agency mistakenly identifies anticompetitive conduct and interferes with conduct that is, on balance, pro-competitive—a Type II or false negative error.[33] The two types of errors and their effects are summarized in the following simple table:[34]

Table 1: Possible Errors in the Antitrust Analysis of Business Practices

Competitive Impact	**Agency Liability Determination**	
	Illegal	**Legal**
Harmful to Competition	*Cases correctly condemning anticompetitive practices*	*Cases falsely absolving anticompetitive practices (false negatives)*
Not Harmful to Competition	*Cases falsely condemning legitimate practices (false positives)*	*Cases correctly absolving legitimate practices*

Based upon that framework, Easterbrook takes two steps. First, he argues that the cost of false positives, or interfering with beneficial behavior, often outweigh the cost of false negatives because market forces often have at least a muted ability to counteract the latter.[35] On that basis, he argues that enforcement decision making should err on the side of avoiding false positives at the expense of making false negative errors.[36] Second, Easterbrook argues that reducing errors requires "simple rules that will filter the category of probably-beneficial practices out of the legal system, leaving to assessment under the

30. Initial forays include Svetiev, *supra* note 12, and Tim Wu, *Intellectual Property Experimentalism by Way of Competition Law*, 9 COMPETITION POL'Y INT'L 30 (2013).

31. *See* Easterbrook, *supra* note 1 (discussing the often overlooked costs of inaccurate antitrust regulation and enforcement).

32. *Id.* at 2–3.

33. *Id.*

34. This table includes minor modifications to a summary table originally presented in David S. Evans & A. Jorge Padilla, *Designing Antitrust Rules for Assessing Unilateral Practices: A Neo-Chicago Approach*, 72 U. CHI. L. REV. 73, 84 (2005).

35. Easterbrook, *supra* note 1, at 3, 15–16.

36. *Id.* at 15–16.

Rule of Reason only those with significant risks of competitive injury."[37] He suggests five potential filters, which he organizes into a sequence.[38] If challenged conduct raises concerns as it passes through all five filters, then a full Rule of Reason analysis should be applied.[39]

Subsequent scholars have built upon Easterbrook's contribution by employing the tools of decision theory to enforcement policy. The basic elements of decision theory are straightforward.[40] Where outcomes are uncertain, decision theory approaches posit that optimization is possible by first calculating (1) the benefits of correct decisions, (2) the costs of incorrect decisions, and (3) the probabilities of those benefits and costs being realized.[41] One then combines those cost and benefit calculations, weighted by the probabilities of their occurrence, to calculate net expected values for each available choice. The decision with the greatest expected value—i.e., the choice whose likely outcomes result in the greatest net benefit—is then the option that should be pursued. Of course, calculating benefits, costs, and their probabilities ex ante is not always easy due to incomplete information. Here, decision theory can be applied to determine both the quantity and quality of information to be gathered in order to improve the accuracy of the calculation. With respect to quantity, the decision maker should gauge the costs of potential errors with the costs of gathering further information, collecting that additional data where the potential error costs outweigh the costs of collection.[42] Not all information is equal, either in content or with respect to the cost of collecting it, however. With respect to these quality concerns, decision theory recommends sequencing issues, beginning with the information that is easiest to obtain and then proceeding to data that is more difficult to gather.[43]

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37. *Id.* at 17.

38. First, a plaintiff must show that the firm or firms they accuse of anticompetitive behavior actually have market power. *Id.* at 17–18. Second, the plaintiff has to show that the defendant has an incentive to harm the consumers because it derives personal benefit from the challenged practice. *Id.* at 18. If the conclusion after those two filters is that the defendant has both the ability and incentive to harm competition, then the court should ask whether the challenged conduct is a "naked" restraint on competition without countervailing pro-competitive benefits. Easterbrook, *supra* note 1, at 18. If a pro-competitive rationale is identified, then the third filter is applied, which is that the court must look at practice within the market, and determine whether there is a broad array of production methods among competitors. If there is a variety, then competition between those various methods should be sufficient to secure the pro-competitive benefits of the business practice. *Id.* If business practices are homogenous, however, the fourth filter is applied, which is that the plaintiff must show a reduction in output resulting from the alleged anticompetitive behavior; this includes looking at output levels immediately after the practice was implemented. *Id.* If the four previous filters are satisfied, then finally the court looks at the characteristics of the plaintiff. *Id.* If the plaintiff is a business rival then it is often safe to infer that the practice or arrangement benefits the consumer. *Id.*

39. Easterbrook, *supra* note 1, at 18.

40. *See, e.g.*, Evans & Padilla, *supra* note 34 (outlining decision theory's essential elements); Beckner & Salop, *supra* note 4; Manne & Wright, *supra* note 9 (arguing simple filters would help produce better rules that minimize error costs); Keith N. Hylton & Michael Salinger, *Tying Law and Policy: A Decision-Theoretic Approach*, 69 ANTITRUST L.J. 469 (2001) (applying the decision theory framework to tying).

41. For classic introductions, see generally JAMES O. BERGER, STATISTICAL DECISION THEORY AND BAYESIAN ANALYSIS (1985); HOWARD RAIFFA & ROBERT SCHLAIFER, APPLIED STATISTICAL DECISION THEORY (1961).

42. Beckner & Salop, *supra* note 4, at 45–47.

43. *Id.* at 47–49.

A number of commentators argue that the enforcement agency should intervene in a merger only if the deal has a negative net expected value.[44] Their approach differs from current agency practice, which typically disregards low probability outcomes entirely and does not balance probabilities with potential payoffs.[45] Recent research has taken the decision theoretic approach a step further by incorporating deterrence effects into the enforcement calculus.[46] Instead of simply calculating the expected value of a proposed transaction in isolation, this research includes long-term considerations deterring anticompetitive deals into the agency's decision-making process.[47] Interestingly, this scholarship suggests that optimization decisions made in isolation change when long-term deterrence incentives are considered.[48]

In summary, the error cost framework attempts to improve decision making under uncertainty by picking low hanging fruit first. Simple ex ante filtering rules are designed to identify predominantly pro-competitive business practices, which can then be removed entirely from the agency's scrutiny. What remains then are the more complicated situations, which can then be tackled through a rigorous Rule of Reason analysis. As a result, agency attention is focused on cases more likely to be problematic, which should reduce the incidence of false positives.

The utility of the decision theoretic approach depends upon the extent to which two criteria are satisfied. The first criterion is the extent to which the likely effects of a given business practice are ascertainable to the enforcement agency. The decision theoretic approach is most useful in situations where the enforcement agencies can accurately parse information to calculate the expected value of intervening in a proposed transaction. But many risks are not susceptible to probabilistic calculation,[49] particularly in dynamic markets. In environments that do not readily map onto established models of competition, anticipating ex ante what information is most relevant to the analysis is difficult. In such situations of high uncertainty, conventional decision theoretic approaches are largely silent.[50]

The second criterion—related to the first—is the extent to which the enforcement agencies and courts can distill rules over time from a diversity of business conduct. Isolating presumptively pro-competitive or anticompetitive behavior through the error cost approach presumes that consistent patterns are discernible. However, if such patterns are difficult to identify—say, because business activity is highly diverse in dynamic, global markets—then the error cost approach will struggle to form the presumptions necessary to

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44. *See id*. at 45–47 (discussing decision theory).

45. Heyer, *supra* note 4, at 383–86; Katz & Shelanksi, *Merger Analysis*, *supra* note 4, at 548–49; *see also* FTC v. H.J. Heinz Co., 246 F.3d 708, 721 (D.C. Cir. 2001) (requiring that efficiencies be "extraordinary," and stating that, if the merging parties could not prove that merger-specific efficiencies were "substantial," then the efficiencies could not rebut the presumption of harm resulting from high market concentration).

46. *See* Salop, *Merger Settlement*, *supra* note 4, at 2667–76 (including deterrence effects in a decision theory approach to merger settlement); Jo Seldeslachts et al., *Settle for Now but Block for Tomorrow: The Deterrence Effect of Merger Policy Tools*, 52 J.L. & ECON. 607, 607 (2009).

47. Salop, *Merger Settlement*, supra note 4.

48. *Id.* at 2667–76.

49. *See* Daniel A. Farber, *Uncertainty*, 99 GEO. L.J. 901, 909 (2011) ("Not all risks can be readily quantified, and a focus on conventional risk analysis can lead to disregard of nonquantifiable risks. This can bias decision making. . . .").

50. *See* Salop, *Merger Settlement*, *supra* note 4, at 2667–76 (noting that questions of how information can be more efficiently managed to improve decision theory's ability to assess risk have not yet been addressed in the literature on decision theoretic merger review).

reduce false enforcement decisions. In other words, as markets become more heterogeneous, the utility of the decision theoretic approach decreases.

B. Innovation and Experimentalist Institutional Design

Ex ante filters and decision making sequences are not the only tool available to a regulator for improving decision making under uncertainty. Here, I briefly review recent scholarship on how private and public actors fashion learning routines to cope with the problem of making decisions under conditions of profound uncertainty. In the context of public law and regulation, this new form goes by titles such as "experimentalism" or "new governance."[51] In the private law context, the new form has been dubbed "pragmatic coordination" or "contracting for innovation."[52] In either domain, the basic logic is that in response to the inherent limitations of means-ends reasoning in high uncertainty environments, parties implement frameworks for disciplined exploration. Disciplined information sharing allows participants to collaboratively explore solutions as they assess unfolding information and revise goals.[53] Institutions operate in a provisional, corrigible fashion. Thus, progress is possible even though clear goals and performance criteria cannot be foreseen ex ante.

1. Origins—American Pragmatism and Japanese Co-Design

Experimentalist theory has a rich, varied history, originating in Charles Sabel's initial efforts to understand 20th century economic organization and, specifically, the design of decentralized production systems, which originated largely in mid-century Japan. During much of the 20th century, the development and production of a given product was often organized within the boundaries of a single company. For example, many of the storied research and development centers of the mid-20th century—such as Bell Labs, Lockheed's Skunk Works, and Xerox's PARC—were found within the borders of a vertically integrated Chandlerian firm.[54] While vertical integration continues to enjoy vitality today, deverticalized approaches to innovation have become a regular fixture in the contemporary economic order.[55] Under pressure from dynamic, global markets, firms increasingly

51. *See infra* notes 74–81 and accompanying text (discussing the literature on experimentalist public law).

52. *See infra* notes 64–71 and accompanying text (discussing collaborative forms of economic organization).

53. This theory has been developed in a wide range of contexts and across jurisdictions. *See generally* Charles F. Sabel & Jonathan Zeitlin, *Learning from Difference: The New Architecture of Experimentalist Governance in the EU*, 14 EUR. L.J. 271 (2008) (interpreting European Union governance through an experimentalist lens); Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342 (2004) (developing governance theory within the context of U.S. institutions); Robert F. Weber, *New Governance, Financial Regulation, and Challenges to Legitimacy: The Example of the Internal Models Approach to Capital Adequacy Regulation*, 62 ADMIN. L. REV. 783 (2010) (discussing the application of new governance theory to financial regulatory schemes); David M. Trubeck & Louise G. Trubek, *New Governance & Legal Regulation: Complementarity, Rivalry, and Transformation*, 13 COLUM. J. EUR. L. 539 (2007) (mapping the relationships between new governance theories and conventional legal regulation); Michael C. Dorf, *Legal Indeterminacy and Institutional Design*, 78 N.Y.U. L. REV. 875 (2003) (developing a theory of experimentalist courts and agencies); James S. Liebman & Charles F. Sabel, *A Public Laboratory Dewey Barely Imagined: The Emerging Model of School Governance and Legal Reform*, 28 N.Y.U. REV. L. & SOC. CHANGE 183 (2003) (applying experimentalist theory to public school reform).

54. *See generally* ALFRED D. CHANDLER, JR., THE VISIBLE HAND: THE MANAGERIAL REVOLUTION IN AMERICAN BUSINESS (1977) (discussing the historical evolution of the American corporation).

55. *See* Timothy J. Sturgeon, *Modular Production Networks: A New American Model of Industrial*

collaborate with one another to access, and thereby leverage, expertise they could not readily develop in-house.[56]

That collaborative approach to production places innovation at the core of organizational design. The central question in the late-20th, early-21st century firm is not simply how to wring more efficiencies from greater economies of scale, as was frequently the focus in the early-20th century. Rather, the key issue is finding ways of improving and speeding up product and process innovation, which is precisely what the Japanese model of incremental improvement—which later spread around the globe—accomplished consistently.[57]

In a theory developed over a number of books and papers, Sabel argues that firms govern such collaborations through the use of what he calls "pragmatic organization."[58] This mode of governance follows a revisable version of rationality consistent with the pragmatist models of action developed by Dewey and Pierce.[59] Sabel's theory can be summarized as follows: pragmatic coordination is the method by which firms jointly explore the design, production, and organizational ambiguities endemic to innovative economic activity.[60] As firms jointly inquire into what to produce and how to produce it, they publicize to each other information as the collaboration unfolds. This in turn whittles away at information asymmetries that might arise and render parties vulnerable to exchange.[61] In an open information environment, collaborators are able to monitor one

Organization, 11 INDUS. & CORP. CHANGE 451, 455 (2002) (characterizing contemporary supply chains as modular networks). Recent examples include Google's collaboration with Novartis for the development of smart contact lenses or Apple's partnership with IBM to develop mobility solutions for the corporate market. Mark Scott, *Novartis Joins with Google to Develop Contact Lens that Monitors Blood Sugar*, N.Y. TIMES (July 15, 2014), http://www.nytimes.com/2014/07/16/business/international/novartis-joins-with-google-to-develop-contact-lens-to-monitor-blood-sugar.html?_r=0; Tim Bradshaw & Richard Waters, *Apple and IBM Take on Corporate Market Together*, FINANCIAL TIMES (July 15, 2014, 10:21 PM), http://www.ft.com/cms/s/0/b3b59c60-0c61-11e4-943b-00144feabdc0.html#axzz3kdya1tXS.

56. *See, e.g.*, Kathleen M. Eisenhardt & Claudia B. Schoonhoven, *Resource-Based View of Strategic Alliance Formation: Strategic and Social Effects in Entrepreneurial Firms*, 7 ORG. SCI. 136, 136 (1996) (discussing how firms collaborate and form strategic alliances); John Hagedoorn & Jos Schakenraad, *Inter-firm Partnerships and Co-operative Strategies in Core Technologies*, *in* NEW EXPLORATIONS IN THE ECONOMICS OF TECHNICAL CHANGE 429 (Freemand & Soete eds., 1990); Kathryn R. Harrigan, *Joint Ventures and Competitive Strategy*, 9 STRAT. MGMT. J. 141, 141 (1988).

57. Charles F. Sabel, Ungoverned Production: An American View of the Novel Universalism of Japanese Production Methods and Their Awkward Fit with Current Forms of Corporate Governance, Presented at the Conference on Socio-Economic Systems of the Twenty-First Century (Feb. 16, 1996), http://www2.law.columbia.edu/sabel/papers/Ungoverned%20Production.pdf.

58. *See* Charles Sabel, *A Real-Time Revolution in Routines*, *in* THE CORPORATION AS A COLLABORATIVE COMMUNITY 106, 119–23 (Charles Heckscher & Paul Adler eds., 2006) [hereinafter Sabel, *A Real-Time Revolution in Routines*] (describing pragmatist institutions); Charles Sabel & Jonathan Zeitlin, *Neither Modularity nor Relational Contracting: Inter-Firm Collaboration in the New Economy*, 5 ENTERPRISE & SOC'Y 388, 394 (2004) (differentiating "pragmatic coordination" from relational contracting and modular theories of de-verticalized production).

59. Sabel, *A Real-Time Revolution in Routines*, *supra* note 58, at 121.

60. Susan Helper et al., *Pragmatic Collaborations: Advancing Knowledge While Controlling Opportunism*, 9 INDUS. & CORP. CHANGE 443, 445 (2000).

61. *Id.*

another's current behavior[62] and transparency governs. Maintained "visibility" between parties allows them to adjust to change and meet the potential of the collaboration.[63]

From its roots in the theory of economic organization, that pragmatic conceptualization of governance colonized adjacent subject areas. First, Sabel and others applied the experimentalist logic to public law domains, such as constitutional law and the regulatory state. Here, a wide variety of pragmatic coordination mechanisms were identified, from the fundamental principles of American federalism to environmental, child welfare, and food safety regulation.[64] Later, focus returned to economic organization, and pragmatic coordination mechanisms were identified in the contracts used to govern innovation networks. This scholarship revisited the territory of the original experimentalist research but at a much finer level of detail—the discrete contracts underpinning innovation networks were analyzed with novel implications for both theories of contract design and contract law.[65] From this disparate array of settings, experimentalist governance can be distilled to the following two stylized elements, which combine iteratively to fashion a regime for cross-organizational learning: (1) an obligation, or set of obligations, requiring participants to routinely share relevant information, rather than providing a pre-defined set of performance standards; and (2) an error correction or dispute resolution process that facilitates participants' learning, rather than vindicating rights, by "ratcheting" the information sharing process to more accurate understandings of the problem space.

The following discussion illustrates those two elements in greater detail. I begin with Sabel's original analysis of the Japanese model of collaborative production. I then summarize research extending experimentalist theory to public and private examples.

2. Collaborative Innovation and Generative Contracting

The original research on Japanese production systems identified two basic institutions that, when combined, supported pragmatic coordination. The first type established routines of information sharing, namely through "simultaneous engineering" and "benchmarking" practices. "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 . . . ."[66] Just-in-time production, which requires interpenetration between collaborators to achieve the quick adjustment capabilities necessary for minimal inventory,[67] is a classic example of simultaneous

62. Sabel has referred to this as "learning by monitoring." Sabel, *A Real-Time Revolution in Routines*, *supra* note 58, at 133.

63. Helper et al., *supra* note 60, at 471 (arguing that "information pooling" allows parties to explore possibilities while simultaneously limiting potential for opportunistic behavior).

64. *See* Michael C. Dorf & Charles F. Sabel, *A Constitution of Democratic Experimentalism*, 98 COLUM. L. REV. 267, 267 (1998) (re-conceptualizing central debates in constitutional law through an experimentalist framework); Joshua Cohen & Charles Sabel, *Directly-Deliberative Polyarchy*, 3 EURO. L.J. 313, 313 (1997).

65. *See generally* Ronald J. Gilson et al., *Contracting for Innovation: Vertical Disintegration and Interfirm Collaboration*, 109 COLUM. L. REV. 431 (2009) [hereinafter Gilson et al., *Contracting for Innovation*] (developing a theory explaining how collaborators control the threat of opportunism where profound and continuous uncertainty makes contracts highly incomplete); Ronald J. Gilson et al., *Braiding: The Interaction of Formal and Informal Contracting in Theory, Practice, and Doctrine*, 110 COLUM. L. REV. 1377 (2010) (arguing that a new type of governance mechanism combines informal and formal contracts to police opportunism in a wide range of exchange environments).

66. Sabel, *A Real-Time Revolution in Routines*, *supra* note 58, at 45.

67. *See* JOHN K. HALVEY & BARBARA MURPHY MELBY, INFORMATION TECHNOLOGY OUTSOURCING

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.[68]

Benchmarking is the method by which the innovation process is initiated. Without explicit instructions on how to innovate a solution for a particular problem, firms find an idea of how to proceed by probing possibilities and then building the results of probing into flexible development plans. Benchmarking is an experimental, benign form of cribbing, which typically 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.[69] This iterative dialogue, between collaborating firms or between collaborators and possible customers, sets the course for production. When firms benchmark through search, they look to industry experience for comparable approaches.[70] Once the initial probing has produced results, the innovators then build the results into a general production outline.

The second element requires information sharing by "ratcheting" up participants' obligations to invest in cooperative learning. Frequent rule adjustment is required because of the new economy's rapid pace of change.[71] While explicit renegotiation of contract terms is an option here as in any other type of contract, pragmatic coordination allows for rules to change through their very implementation. For example, collaborators may employ "root cause analysis" to identify sources of problems and adjust preliminary rules based upon the results.[72] They may also establish deliberative bodies, such as joint committees, which are tasked with overseeing problem solving and resolving disputes.

Recent scholarship examining the complex contracts underpinning innovation networks finds that these contracts often include dispute resolution systems that adopt a problem-solving approach to adjudication. Alliance contracts often establish committees with unanimous decision making requirements and dispute escalation processes, which force information revelation to be symmetrical between the collaborating parties.[73] The escalation procedure institutes a collaborative problem-solving process between the immediate disputants. Each layer of the escalation process forces parties to release additional information because disputes are costly and senior executives naturally demand that subordinates prove that they are not simply being uncooperative or unduly sharp

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TRANSACTIONS: PROCESS, STRATEGIES, AND CONTRACTS 138–39 (2d ed. 2005) (describing the process used to structure outsourcing agreements).

68. *See, e.g.*, Helper et al., *supra* note 60, at 466 (discussing the information sharing fostered through simultaneous engineering).

69. *See* Andreas Sennheiser & Matthias Schnetzler, *Lean Benchmarking with Clustered Company Prototypes*, *in* BUILDING THE KNOWLEDGE ECONOMY: ISSUES, APPLICATIONS, AND CASE STUDIES 1349 (Paul Cunningham et al. eds., 2003) (discussing benchmarking by prototype).

70. Sabel & Zeitlin, *supra* note 58, at 12–13; Helper et al., *supra* note 60, at 466.

71. *See* Ellen G. Ray, *Scope of Services and Service Levels*, *in* OUTSOURCING REVOLUTION 2004: PROTECTING CRITICAL BUSINESS FUNCTIONS 531, 539 (John F. Delaney et al. eds., 2004) ("The definitive agreement must include a process for proactively addressing changes to [rules].").

72. John Paul MacDuffie, *The Road to "Root Cause": Shop-Floor Problem-Solving at Three Auto Assembly Plants*, 43 MGMT. SCI. 479, 494 (1997); *see also* Robert M. Finkel, *Crafting Statements of Work and Service Levels*, *in* THE OUTSOURCING REVOLUTION 2003: PROTECTING CRITICAL BUSINESS FUNCTIONS 143, 177 (John F. Delaney & William A. Tanenbaum eds., 2003) ("Supplier should be responsible for performing a root cause analysis of failures, including: [i]dentifying the cause of the failure, [r]ecommending procedures for [c]orrecting the failure, correcting the failure, [and] [p]roviding assurance that the failure will not recur.").

73. Gilson et al., *Contracting for Innovation*, *supra* note 65, at 478–81.

partners. This leads subordinates to reveal additional information to exhibit their sincerity. Thus, the escalation process serves both an adjudicatory function (forcing information) and a collaborative role (senior management both referees and participates in resolution). Furthermore, the logic of problem-solving, rather than the logic of appeal, animates the procedure because many collaborations are based on unanimous decision making and disputes are escalated so long as a collective solution remains elusive.

3. Regulatory Experimentalism

High levels of uncertainty are not unique to inter-firm collaboration. In a number of domains, from environmental regulation to public school reform, agencies face novel, persistent problems that unsettle traditional forms of intervention, such as classic command-and-control regulatory regimes. The response not only in the United States but in a number of jurisdictions around the world has been to embrace contingency through a flexible regulatory framework that fosters collaborative learning among participants in the system—including the agencies, actors subject to regulation, and affected third parties—to uncover threats and, in turn, tailor solutions.[74]

As in the private contracting context discussed above, the first hallmark of regulatory experimentalism is a formal routine of information revelation between agencies and affected constituencies. Adaptive management programs in environmental law provide an example. Described as an "iterative, incremental decision-making process built upon a continuous process of monitoring the effects of decisions and adjusting decisions accordingly,"[75] adaptive management relies on a regular flow of information between the regulator and affected constituencies.[76]

Second, judicial intervention in dysfunctional information sharing routines is accomplished through a pragmatic or "problem-solving" approach to adjudication.[77] This approach, arising in areas where social problems have appeared particularly intractable, is broadly described as comprising "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

74. The literature on experimentalism and new governance is extensive, and I do not review it in its entirety here. For examples of the literature's breadth, consider the application of experimentalism to the following subject areas: Lisa Larrimore Ouellette, *Patent Experimentalism*, 101 VA. L. REV. 65 (2015) (exploring experimentalist theory in the context of patent policy); Zachary J. Gubler, *Experimental Rules*, 55 B.C. L. REV. 129 (2014) (arguing for a deferential approach to experimental rules in administrative law with a focus on implications for securities law); Miriam Hechler Baer, *Governing Corporate Compliance*, 50 B.C. L. REV. 949 (2009) (applying experimentalist theory to corporate compliance); Wendy Netter Epstein, *Bottoms Up: A Toast to the Success of Health Care Collaboratives . . . What Can We Learn*, 56 ADMIN. L. REV. 757 (2004) (applying new governance theory to health care policy); Jeffrey M. Hirsch, *Revolution in Pragmatist Clothing: Nationalizing Workplace Law*, 61 ALA. L. REV. 1025 (2009) (taking a pragmatic approach to workplace regulation).

75. J.B. Ruhl, *Regulation by Adaptive Management—Is It Possible?*, 7 MINN. J. L. SCI. & TECH. 21, 28 (2006).

76. Holly Doremus, *Adaptive Management as an Information Problem*, 89 N.C. L. REV. 1455, 1460 (2011).

77. *See generally* Michael Dorf & Charles Sabel, *Drug Treatment Courts and Emergent Experimentalist Government*, 53 VAND. L. REV. 831 (2000) (discussing the application of experimentalism to problems of drug addiction); Bradley Karkkainen, *Environmental Lawyering in the Age of Collaboration*, 2002 WIS. L. REV. 555 (2002) (discussing the application of experimentalism to environmental regulation); Stacy Laira Lozner, *Diffusion of Local Regulatory Innovations: The San Francisco CEDAW Ordinance and the New York City Human Rights Initiative*, 104 COLUM. L. REV. 768 (2004) (discussing the application of experimentalism to human rights problems); James Liebman & Charles Sabel, *A Public Laboratory Dewey Barely Imagined: The Emerging Model of School Governance and Legal Reform*, 23 N.Y.U. REV. L. & SOC. CHANGE 183 (2003) (discussing the application of experimentalism to public school reform).

adjudication."[78] "Always a work in progress,"[79] the problem-solving trial court is theorized to roughly follow the pragmatic governance principles outlined above: first, they set achievement milestones with the client; second, they actively participate in the execution of the remediation plan; and third, they closely monitor the client's progress and troubleshoot emerging problems.[80] In other words, they benchmark, simultaneously engineer, and detect and correct errors. The key difference of this approach to adjudication is that it is participatory: these courts do not simply vindicate pre-existing rights—they collaboratively craft solutions with the disputants.[81] This does not mean that the problem-solving judge abandons all the traditional vestiges of her office and simply assumes the role of a mediator. Rather, the problem-solving judge, through the disciplines of pragmatic governance, directs the resolution process by focusing the parties on the growing crisis, and by judging their efforts to craft a solution. The judge is not relegated to the role of a passive neutral—if the parties prove uncooperative, the court applies a penalty default.[82] In this sense, the court is both a participant in and a guardian of the problem-solving process.[83]

III. EXPERIMENTALIST MERGER REVIEW

Part III outlines the aspects in which contemporary merger review approximates the experimentalist approach introduced in Part II. I first provide a brief primer on the legal infrastructure of U.S. merger review. Following that, I provide evidence of deep, continuous uncertainty in merger review. Such uncertainty is a necessary predicate for an experimentalist regime, which has little role to play in stable environments where probabilities are relatively easy to calculate. Profound uncertainty can arise in merger review due to the unsettled nature of the analytical models employed in markets characterized by high rates of innovation, and, because of the large amount of information, both agencies and merging parties must process during the course of a merger investigation.

I then discuss how recent developments in merger review may reflect an experimentalist response to that innovation problem. Three key elements are identified: first, the shift from a rigid, static approach focused upon market concentration to a more fluid framework as found in the 2010 Horizontal Merger Guidelines creates the necessary conditions for experimentalist regulation by giving the enforcement agencies a broader menu of analytical options; second, the agencies have revised their investigation policies to establish a smoother and more iterative exchange of information between merging parties and agency staff; and third, the agencies have introduced new mechanisms in consent decrees that mirror the type of contract provisions collaborators use to govern the

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

79. *Id.* at 940.

80. Dorf & Sabel, *supra* note 77, at 841–52.

81. Dorf & Sabel, *supra* note 64, at 287–88.

82. Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 YALE L.J. 87, 97 (1989). Dorf defines a penalty default in general terms as "a state of affairs so unpalatable to all parties that they have no choice but to hammer out some solution that is, from the perspective of the default, a Pareto improvement." Dorf, *supra* note 53, at 946. In the case of contract enforcement, the penalty default could be either an onerous court order or, even simpler, a decision to revert back to traditional contextualist contract adjudication. The latter avoids any concerns that this form of adjudication forces unwilling parties to remain in relationships.

83. Dorf & Sabel, *supra* note 77, at 852.

joint development of new technology. In total, these developments suggest a shift towards experimentalism in some aspects of the U.S. merger review regime. That transformation is incomplete, however, which raises a number of normative implications discussed in detail in Part IV.

A. Fundamentals of the Antitrust Law Relating to Mergers

The substantive foundation for merger review in the United States is section 7 of the Clayton Act, which prohibits mergers whose effects "may be substantially to lessen competition, or to tend to create a monopoly."[84] Animating section 7 is the basic principle—which underlies antitrust policy in general—that increased competition improves economic performance.[85] A complex analytical apparatus has been erected to determine a transaction's likelihood of lessening competition, but the essential touchstone is how a proposed deal will affect consumer welfare.[86]

Merger control is designed to be prophylactic, with the burden on agencies to predict anticompetitive effects before they occur. In 1976, Congress enacted the Hart–Scott–Rodino Antitrust Improvements Act (HSR Act), which transformed the substantive analysis of a merger's potential effects on competition outlined above from a retrospective exercise into a predictive one.[87] Before the HSR Act's enactment, merging parties could close their deals regardless of an agency investigation, resulting in post-consummation interventions. Preemptive merger review was introduced largely with remedial efficacy in mind: post-consummation challenges to anticompetitive transactions suffered from what is known as an "unscrambling the eggs" problem—i.e., transactions found to be anticompetitive would have to be unwound after the fact, requiring a re-separation of merged businesses that were often already well advanced in the integration process.[88] The HSR Act's solution was a regime providing the antitrust agencies with a mandatory waiting period during which they could review a proposed merger for anticompetitive effects before it closed. Every deal meeting certain notification thresholds are required to report details of the transaction to the federal antitrust agencies, which then have a mandatory 30-day waiting period to conduct a preliminary investigation.[89] Parties who fail to notify—or who close their deal before the 30-day period has expired—face stiff civil penalties.[90] If, by the end of that initial waiting period, the agencies find reason to suspect potential anticompetitive effects, they can then open a full-scale investigation, known as a "Second Request," which stops the waiting period from expiring until the investigation is concluded (usually several months later).[91] If the Second Request investigation leads the enforcement agency to conclude that the transaction will materially harm competition in violation of

84. 15 U.S.C. § 18 (1996).

85. *See, e.g.*, U.S. DEPT. OF JUSTICE, ANTITRUST ENFORCEMENT AND THE CONSUMER §§ 1–2, 4 (2001) (discussing the relationship between competition and consumer welfare).

86. *See generally* Joseph Farrell & Michael L. Katz, *The Economics of Welfare Standards in Antitrust*, 2 COMPETITION POL'Y INT'L 3 (2006) (discussing the appropriate welfare standard for antitrust policy).

87. 15 U.S.C. § 18a.

88. H.R. REP. NO. 94-1373, at 8 (1976); FTC PREMERGER NOTIFICATION OFFICE, WHAT IS THE PREMERGER NOTIFICATION PROGRAM? AN OVERVIEW 12–14 (Mar. 2009), http://www.ftc.gov/sites/default/files/attachments/premerger-introductory-guides/guide1.pdf.

89. *See supra* note 88 (each providing overview of pre-merger notification and waiting period).

90. *See id.* (identifying possible civil penalties for failing to notify of closing the deal too early).

91. FTC PREMERGER NOTIFICATION OFFICE, *supra* note 88.

section 7, the agency can seek an injunction in court preventing the deal from closing.[92] Thus, unlike some other aspects of antitrust law, which largely police behavior retrospectively, the antitrust law of mergers operates preemptively.[93] Anticompetitive effects are prevented, not remediated.

The practical effect of the HSR Act's preemptive regime is to elevate the role of negotiated remedies. In order to mitigate the risk that a transaction will not close because of an agency challenge, many parties engage the agencies in settlement discussions, whereby the aspects of the deal that the agency finds troubling are addressed through a voluntary consent decree.[94] Thus, deals where the agencies initiate litigation and directly involve the courts are infrequent.

Isolating the elements of substantive merger analysis is complicated by the fact that, for the reasons discussed above, court decisions are not the sole source of guidance. With settlement the most common result in transactions with anticompetitive effects, the key elements of substantive merger analysis are to a significant extent developed through the agencies' exercise of their prosecutorial discretion. Beginning in 1968 and with periodic updates, including most recently in 2010, the Antitrust Division and the Federal Trade Commission (FTC) have jointly promulgated Horizontal Merger Guidelines, which purport to provide a non-binding roadmap of the agencies' approach to analyzing mergers.[95] The Guidelines have no precedential effect on courts called upon to enjoin allegedly anticompetitive mergers, but the Guidelines' reasoning has largely been adopted by the courts.[96] Thus, the Guidelines provide the analytical infrastructure for most deals now that the majority of investigations result in settlement via consent decree rather than court litigation.[97]

B. Merger Review as an Innovation Problem

My purpose in this Section is to show how incorporating innovation considerations into merger control transforms the analysis of a proposed transaction into an innovation problem itself. I do so by unpacking the notion of uncertainty in merger review. To a measure with little precedent in the antitrust enterprise or the broader administrative state in general, merger control is uniquely inter-temporal. The enforcement goal is to head off market failure before it happens, with the tools for doing so being selected along the cramped timeline of an M&A transaction.[98] While this preemptive approach is a clear improvement upon the previous policy of challenging anticompetitive deals ex post, it also lacks one of the great benefits of the ex post regime—the benefit of hindsight. Enforcement decisions under the HSR Act have to be made on predictions of competitive effects, which introduces a significant amount of uncertainty into the decision making process.[99]

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92. FTC v. Univ. Health, Inc., 938 F.2d 1206, 1211 n.12 (11th Cir. 1991); FTC v. PPG Indus., Inc., 798 F.2d 1500, 1503 (D.C. Cir. 1986); FTC v. Staples, Inc., 970 F. Supp. 1066, 1081–82 (D.D.C. 1997).

93. The agencies are not precluded from pursuing post-consummation challenges and still do with some regularity. *See generally* Franco Castelli, *Key Lessons from the* Bazaarvoice *Decision*, CPI ANTITRUST CHRONICLE (Mar. 2014), http://www.wlrk.com/webdocs/wlrknew/AttorneyPubs/WLRK.23170.14.pdf (describing the DOJ's recent challenge to a consummated high-tech merger).

94. A.B.A., ANTITRUST SECTION, THE MERGER PROCESS 300–04 (2008).

95. At times, agency practice has deviated materially from the Guidelines.

96. Beau W. Buffier et al., *Mergers*, *in* WEST'S ANTITRUST ADVISOR § 4.5 (forthcoming 2015).

97. *Id.* §§ 4.51, 4.55.

98. *See supra* note 27 and accompanying text (discussing ex post remedies).

99. Section 7 of the Clayton Act has always required an element of prediction. United States v. Phila. Nat'l

Arguing that merger review requires enforcement decisions to be made under conditions of uncertainty is not novel.[100] But surprisingly little attention is given to the details of that uncertainty—its origins, characteristics, and implications—despite a significant amount of scholarship on the topic in other domains.[101] I undertake a deeper analysis because it is critical for accurately framing the institutional design problem.

Decision making in contemporary merger control is uncertain in two interrelated respects. First, the models used to understand the effects of proposed mergers on competition are in a state of transition, creating uncertainty about how to accurately frame the analytical problem. The static models of competition, which place market definition, concentration statistics, and price effects at the core of the enforcement agency's analysis have served well in the past but struggle to grapple with many aspects of the modern high-technology economy. Conventional analytical models were built largely around commodity products where competition was focused upon price, and they struggle to capture competitive dynamics, for example, where products are platform goods or when non-price competition is critical to survival.[102] But the development of dynamic models is neither smooth nor complete, and further work is required before we reach a consensus on how dynamic merger analysis is best conducted. As a result, current merger review operates in an environment rich with analytical options but short on clear guideposts. In that sense, decision making in merger control must proceed where there is uncertainty as to how to frame the very problem at hand. Actors must proceed provisionally, revising both means and ends as they discover the contours of the decision landscape.[103] Making decisions as such is best described as undertaking an innovation process, suggesting an element of creativity absent in the conventional model of risk assessment sketched above.

Second, processing the information unearthed in a merger investigation imposes significant costs on the agencies. The digitization of information over the past 25 years has led to a situation where the enforcement agencies must now process an enormous amount of data and documents as they analyze proposed transactions. Simply interpreting that massive amount of information, where conflicts within the evidence abound, introduces a significant measure of uncertainty in the review process. As a result, agencies can experience "filter failure," even assuming that their analytical guideposts are reliable.[104]

I differentiate between model uncertainty and filter failure for two reasons. First, bifurcating the problem allows for targeted solutions at either source, as will be discussed in Part IV. Second, and more importantly, in a non-trivial class of transactions, those two types of uncertainty can combine in a perfect storm of sorts. Agencies are unmoored from

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Bank, 374 U.S. 321, 362 (1963). But the HSR Act raised the stakes by eliminating post-consummation direct evidence of a merger's effects on competition.

100. *See* Manne & Wright, *supra* note 14, at 1 (discussing uncertainty in enforcement decisions).

101. *See generally* Farber, *supra* note 49 (discussing ambiguity and environmental risks); Justin Pidot, *Governance and Uncertainty*, CARDOZO L. REV. (forthcoming 2015) (discussing uncertainty in a variety of regulatory domains); Alejandro E. Camacho, *Adapting Governance to Climate Change: Managing Uncertainty Through a Learning Infrastructure*, 59 EMORY L.J. 1 (2009); Eric Biber, *Adaptive Management and the Future of Environmental Law*, 46 AKRON L. REV. 933 (2013) (discussing uncertainty in environmental law); Gubler, *supra* note 74; J.B. Ruhl & James Salzman, *In Defense of Regulatory Peer Review*, 84 WASH. U. L. REV. 1 (2006) (examining uncertainty's implications in environmental regulation).

102. Michael D. Whinston, *Antitrust Policy toward Horizontal Mergers*, *in* HANDBOOK OF INDUSTRIAL ORGANIZATION 2369, 2389 (M. Armstrong & R. Porter eds., 2007).

103. Josh Whitford, *Pragmatism and the Untenable Dualism of Means and Ends: Why Rational Choice Theory Does Not Deserve Paradigmatic Privilege*, 31 THEORY & SOC'Y 325, 339 (2002).

104. *See infra* Section III.B.2.b. (discussing the risk of filter failure in merger investigations).

conceptual foundations and also out to sea in an ocean of complex, often conflicting data. That profound uncertainty renders the arguments for a decision theoretic solution to merger analysis untenable. In many high technology mergers, calculating the probability of potential events ex ante is highly problematic, which undermines the predicate upon which decision theory proceeds. In those situations, what we lack is a theory of how an agency can make progress on a provisional basis and how institutions should be fashioned to facilitate that progress.

This Section is organized as follows. It begins by outlining the traditional static approach to merger analysis. Following that brief orientation, it then discusses the different varieties of uncertainty in merger control and how they combine in what might best be described as an innovation problem. It shows how current decision theoretical approaches misread the uncertainty problem in merger control, resulting in either misguided or incomplete normative prescriptions. Finally, this Section concludes by describing what current antitrust scholarship is missing: a theory of regulatory creativity.

1. The Static Approach to Predicting Effects on Competition

In many traditional markets, accurately predicting a transaction's effects on competition is not conceptually difficult. Where industry structure is stable—i.e., where multiple firms in the industry offer a relatively unchanging menu of products at low prices because they all have roughly the same technology endowments and business models—a well-worn static model of competition captures the likely effects of a proposed transaction on competition.[105] That static model of competition takes a short-term view of the relevant markets as they exist at the time of the proposed transaction.

Conventional merger analysis is purposely built for the examination of such static markets.[106] The static analytical model is comprised of four steps, which are distinct in concept if not always in practice. First, the relevant product and geographic markets in which the merging parties and their competitors operate must be defined.[107] Because both agencies and courts traditionally use market concentration measures—i.e., the percent share of a market the merging parties would control once combined—to establish presumptions of anticompetitive effects, market definition is a critical step in static merger analysis. Based on the market definition, a measure of concentration, the Herfindahl–Hirshman Index (HHI), which provides both a picture of total market concentration and the distribution of market shares across all companies operating in the market, can be calculated to approximate likely anticompetitive effects.[108] How one defines the products

105. *See* J. Gregory Sidak & David J. Teece, *Dynamic Competition in Antitrust Law*, 5 J. COMPETITION L. & ECON. 581, 585 (2009) (discussing traditional antitrust analysis's focus on static efficiency).

106. *See* Jay Ezrielev & Janusz A. Ordover, *The 2010 Horizontal Merger Guidelines: A Static Compass in a Dynamic World?*, ANTITRUST SOURCE 1, 2 (Oct. 2010), http://www.americanbar.org/content/dam/aba/publishing/antitrust_source/Oct10_Ezrielev10_21.authcheckdam.pdf (discussing the 2010 Guidelines' reliance on static "work horses"); Buffier et al., *supra* note 96, § 4.21–4.25 (outlining the fundamental principles of merger analysis, which originated in the examination of relatively static markets).

107. Brown Shoe Co. v. United States, 370 U.S. 294, 324 (1962). As originally elaborated in the Supreme Court's *Brown Shoe* decision, relevant product market definition typically turns on whether the use of certain products is interchangeable. *Id.* at 325.

108. *See* John Kwoka, Professor, Northeastern University, Some Thoughts on Concentration, Market Shares, and Merger Enforcement Policy, Presentation at the FTC/DOJ Workshop on Merger Enforcement 8 (Feb. 17, 2004), http://www.justice.gov/sites/default/files/atr/legacy/2007/08/30/202602.pdf (analyzing concentration statistics for proposed transactions challenged by the agencies).

feeding into the HHI calculation largely determines the concentration measures, with broader market definitions typically leading to decreased concentration statistics and narrower market definitions to greater concentration measures.

Second, moving beyond rough presumptions, the next step is to determine with more specificity the competitive effects of the merger. Theories of harm typically fall within two categories.[109] In the first, proposed mergers are posited to enhance the combined entity's ability to unilaterally increase prices or reduce output.[110] In the second, mergers are characterized as enhancing the ability for a group of firms in the relevant market to act in concert to increase price or reduce output.[111] These two theories find their foundation in standard models of industrial organization.[112]

Third, in situations where anticompetitive effects are likely, then the merger's countervailing pro-competitive effects must be examined in order to determine whether the net effect of the proposed transaction is positive or negative. A merger that will lead to price increases may not be anticompetitive on net if it also leads to greater cost savings, or "efficiencies," to consumers.[113] Just how anticompetitive effects and efficiencies should be balanced is a subject of debate.[114] In practice, evidence of significant anticompetitive effects is rarely offset by proof of efficiencies, and so pro-competitive effects are typically relevant in situations where competitive harm is rather muted and the balance is close.[115]

Finally, if the prior three steps conclude that a proposed transaction is anticompetitive, then the agency must fashion a response.[116] Here, the enforcement agencies have two key tools at their disposal. The first and most absolute policy lever is to seek an injunction in federal court that prevents the parties from closing the transaction in its entirety.[117] The second option, which unfolds in the shadow of that potential injunctive relief, is to negotiate a remedy that restructures the transaction in a way that eliminates the threat to competition but otherwise allows the deal to close. Accomplished through a consent decree, a device similar to but not identical with a private contract, negotiated remedies come in two major varieties. "Structural" remedies comprise the first category: this type of remedy addresses anticompetitive effects by requiring the merging parties to divest the business units or assets causing the problem.[118] "Behavioral" remedies are the second:

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109. Buffier et al., *supra* note 96, § 4.25; Katz & Shelanski, *Mergers and Innovation*, *supra* note 4, at 10 (noting that the conceptual distinction between unilateral and coordinated effects theories of harm often blurs in practice).

110. U.S. DEP'T OF JUSTICE AND FED. TRADE COMM'N, 2010 HORIZONTAL MERGER GUIDELINES § 2.2.1 (2010), http://www.justice.gov/sites/default/files/atr/legacy/2010/08/19/hmg-2010.pdf.

111. Buffier et al., *supra* note 96, § 4.25.

112. *Id.*

113. *See* Crane, *supra* note 13.

114. *Id.*; *In re* Ardagh Grp. S.A., No. 131-0087, 2014 WL 1493617, at *4 (FTC Apr. 11, 2014) (Wright, Commissioner, dissenting).

115. Katz & Shelanski, *Mergers and Innovation*, *supra* note 4, at 11.

116. If the proposed transaction does not pose a threat to competition, then the agencies can decide to do nothing, which allows the parties to close the transaction. This choice technically does not "clear" the transaction: the decision to allow a deal to close does not estop the agencies from bringing a post-consummation enforcement action if new evidence arises suggesting anticompetitive effects. Buffier et al., *supra* note 96, § 4.51. Such intervention occurs rarely, however.

117. Due to its unique statutory framework, the FTC also pursues parallel litigation before an internal administrative law judge. *See id.* § 4.56.

118. *Id.* § 4.03. Consider a simple example: imagine a merger between two mining companies, one of which produces copper, zinc, and iron ore concentrates and another which produces copper, gold, and platinum-group

instead of intervening in the structure of a transaction and, by extension, a market, a behavioral remedy regulates the conduct of the combined entity post-consummation.[119] The most extreme example is a consent decree that directly determines the price the merged entity can charge its customers. In practice, less drastic measures, such as requiring the combined entity to license technology or otherwise deal with certain parties, are usually used. Primarily for administrability reasons, the U.S. enforcement agencies prefer structural remedies and have traditionally resorted to behavioral remedies infrequently.[120]

2. Dynamic Merger Analysis and Its Implications

Fundamental changes in the organization of production over the past generation have called many aspects of the static approach to merger analysis into question. Competition is no longer isolated to prices for commodity goods, as was implicitly presumed in the static models developed in the mid-20th century.[121] Rather, competition in many markets now occurs along non-price components, such as the rate of technological development.[122] Many markets are also not comprised of commodities but involve competition between platforms for an ecosystem of related products.[123] In such situations, competition is *for* the market, as much as it is *within* the market.

Innovation concerns are seen as creating two basic problems for traditional merger analysis. First, innovation can interfere with the static approach's assumption that pre-merger market structure correlates with post-merger events.[124] For example, in highly innovative markets, where competitors can displace one another rapidly, pre-merger market shares may have little resemblance to the structure of the market in a few months' time.[125] Second, innovation can be a dimension of market competition, which means that merger enforcement decisions can shape the incentives for post-merger innovation.[126]

As a result, calls to introduce a more dynamic approach to merger analysis have entered the mainstream of antitrust scholarship.[127] Important progress on dynamic models

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concentrates. If we assume that individual metal concentrates are relevant product markets and that the merging companies sell in the same geographic markets, then the companies are competitors in the market for copper concentrate. Further assume that the combined entity will be able to harm competition either through a unilateral or coordinated effects theory. In this hypothetical merger, an obvious structural remedy is available: the agency may demand that one of the parties' copper concentrate businesses be divested. This leaves a combined entity with zinc, iron ore, gold, and platinum-group assets but only a portion of the copper production capacity it would have had if the transaction had closed without a divestiture requirement.

119. *Id.*

120. *See* U.S. DEP'T OF JUST. ANTITRUST DIVISION, POLICY GUIDE TO MERGER REMEDIES 12–20 (2011) (discussing conduct remedies typically available).

121. Ilya Segal & Michael Whinston, *Antitrust in Innovative Industries*, 97 AM. ECON. REV. 1703, 1703 (2007).

122. *Id.*

123. *See generally* ANNABELLE GOWER & MICHAEL CUSUMANO, PLATFORM LEADERSHIP: HOW INTEL, MICROSOFT, AND CISCO DRIVE INDUSTRY INNOVATION (2004) (examining how platform competition in markets characterized by network effects differs from more traditional industries).

124. Katz & Shelanski, *Mergers and Innovation*, *supra* note 4, at 12.

125. *Id.*

126. *Id.*

127. Douglas H. Ginsburg & Joshua D. Wright, Former FTC Commissioner, Antitrust Settlements: The Culture of Consent, Speech for the FTC 2–6 (Feb. 28, 2013), https://www.ftc.gov/sites/default/files/documents /public_statements/antitrust-settlements-culture-consent/130228antitruststlmt.pdf; *see also* Spencer Weber Waller & Matthew Sag, *Promoting Innovation*, 100 IOWA L. REV. 2223, 2235 (2014) (arguing for a dynamic

of competition has been made in recent years, but consensus on which models most accurately reflect industry behavior remains elusive. As a result, we have multiple competing theories, a menu of sorts from which an enforcement agency might choose. Furthermore, many dynamic models have "multiple equilibria," which makes them somewhat indeterminate guides for policymaking.[128] I refer to this conceptual ambiguity as "model uncertainty"[129] to suggest the struggle agencies face in the basic task of choosing a framework to understand competition in a market.

In response, the temptation is to push on the facts. A number of proposals for dynamic merger analysis call for greater scrutiny of factual detail on a case-by-case basis in transactions where innovation is an important factor.[130] That argument, however, relies on the critical assumption that the facts are susceptible to ready interpretation. But scrutinizing the evidence in a merger investigation is harder than ever due to sheer quantity: the digitization of information over the past 20 years leads to mountains of documents and data through which an investigating agency must sift, raising the prospect of agency "filter failure."[131] Thus, even if one makes the (strong) assumption that the agency has a reliable analytical framework, and therefore epistemic uncertainty is minimized, a resource-limited agency can still struggle with simply crunching the information.

In a non-trivial class of transactions, these two types of uncertainty can combine in a perfect storm of sorts. Agencies are unmoored from conceptual foundations and out to sea in an ocean of complex, often conflicting data. This is not to say that decision making is irretrievably dysfunctional. Rather, the point is more subtle: making effective decisions in such an uncertain environment requires a pragmatic, iterative analytical process, whereby initial information is gathered, prototypical models are tested, more information is examined, models are revised, etc., until a vision of a competitive landscape is painted with some fidelity. In other words, merger analysis is an innovation problem.

a. The Model Uncertainty Problem

The first type of ambiguity inherent in merger analysis—"model uncertainty"—arises from the characteristics of the dynamic models of competition being developed in the industrial organization literature. Both static and dynamic analyses of merger effects ask the simple question of how market participants' pre-merger behavior changes post-merger.[132] Firm behavior in dynamic models is difficult to pin down because dynamic models frequently result in multiple post-merger outcomes, or what is technically known as "multiple equilibria."[133] In other words, dynamic models result in more than one

approach rooted in a Schumpeterian perspective to be applied in merger review).

128. *See* Ezrielev & Ordover, *supra* note 106, at 5.

129. *See* Farber, *supra* note 49 (describing model uncertainty).

130. *See, e.g.*, Carl Shapiro, *The 2010 Horizontal Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 ANTITRUST L.J. 701, 704 (2010), http://www.researchgate.net/publication/228261772_The_2010_Horizontal_Merger_Guidelines_From_Hedgehog_to_Fox_in_Forty_Years (supporting the more factually sensitive analysis embraced by the 2010 revisions to the Merger Guidelines); *see also* Katz & Shelanski, *Mergers and Innovation*, *supra* note 4, at 6 (calling for case-by-case analysis in markets characterized by high rates of technological change).

131. *See supra* note 106 and accompanying text (discussing static market analysis).

132. Ezrielev & Ordover, *supra* note 106, at 5.

133. *Id.*; *see also* Victor Aguirregabiria & Pedro Mira, *Sequential Estimation of Dynamic Discrete Games*, 75 ECONOMETRICA 1, 2 (2007) ("Two econometric issues have limited the scope of [discrete game] applications to relatively simple static games: the computational burden in the solution of dynamic discrete games and the

plausible estimate of market participants' behavior. In that respect, theoretical models are indeterminate.[134] In turn, empirical research on the relationship between innovation and competition is inconclusive.[135] For a telling example, note scholars have yet to reach a consensus with respect to the fundamental debate between Schumpeter's and Arrow's conceptions of market structure's relationship to innovation.[136]

The result is a deep uncertainty as to how the analytical problem should be framed. Knight's classic differentiation between "uncertainty" on one hand and "risk" on the other provides a useful framework for understanding the implications of model ambiguity.[137] From Knight's perspective, model uncertainty precludes the development of meaningful heuristics that might be used to compare the characteristics of future outcomes.[138] Without those guideposts, it becomes impossible to calculate probabilities for those future outcomes. A brief examination of Knight's theory of uncertainty will reveal what this means.

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.[139]

The difference in calculation Knight describes above provides the foundation for what has been understood to be his classic differentiation between risk and uncertainty; risk

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indeterminacy problem associated with the existence of multiple equilibria . . . . Models with multiple equilibria do not have a reduced form, and this incompleteness may pose practical and theoretical problems in the estimation of structural parameters."); Patrick Bajari et al., *Estimating Dynamic Models of Imperfect Competition*, 75 ECONOMETRICA 1331, 1331 (2007) ("[D]ynamic games often admit of vast multiplicity of equilibria. The multiplicity greatly complicates the application of estimators that require computing equilibria and then matching these equilibria to observed data.").

134. *See* Ezrielev & Ordover, *supra* note 106, at 5 (speculating that this indeterminacy is a "major reason why the [Antitrust] Agencies have not fully embraced dynamic models in merger review"); *see also* Bajari et al., *supra* note 133 (describing recent progress toward overcoming limitations of dynamic models primarily using Markov strategies); Aguirregabiria & Mira, *supra* note 133 (introducing a model of dynamic discrete games that addresses the indeterminacy problem in games with multiple equilibria).

135. *See* Liran Einav & Jonathan Levin, *Empirical Industrial Organization: A Progress Report*, 24 J. ECON. PERSP. 145, 156–57 (2010) (discussing recent progress in dynamic studies and noting that due to data limitations, empirical work may best be described as "a quantitative theory exercise").

136. *See* Richard J. Gilbert, *Competition and Innovation*, *in* A.B.A. HANDBOOK ON ANTITRUST AND COMPETITION 21–24 (W. Dale Collins ed. 2010) (noting that the empirical evidence on the relationship between market concentration and incentives to innovate is mixed); Sidak & Teece, *supra* note 105, at 587–93; Ginsburg & Wright, *supra* note 127, at 4–5.

137. *See* FRANK KNIGHT, RISK, UNCERTAINTY AND PROFIT 214 (1921) (differentiating between risk and uncertainty).

138. *Id.*

139. *Id.* at 214–15.

being measurable, uncertainty being immeasurable.[140] It is the latter in which an antitrust agency analyzing a high technology transaction often finds itself.

Knight pins the hope of making a reliable estimation in circumstances of uncertainty on the chance to "secur[e] the same degree of homogeneity in the instances classed together."[141] That is, aggregating more and more similar situations will eventually allow a decision maker to transform uncertainty into risk. As will be discussed in the next sub-section, however, accomplishing that aggregation in contemporary merger control can be a daunting task.

b. The Filter Failure Problem

Commentators have argued the solution to model uncertainty when analyzing innovation-intensive markets is to conduct more factually-intensive, case-by-case investigations.[142] From this perspective, analytical models are considered rough guideposts at best, and accurate decisions are only possible through a holistic, contextual analysis of a transaction. This may make intuitive sense, but it is not at all clear how an agency is to pursue such an approach in practice.

The call for more fact-intensive analysis is ironic because it coincides with an increasingly complex evidentiary landscape. At the moment, substantive analysis turns to a closer reading of the facts, the facts get harder to understand. The combination of the broad remit of the enforcement agencies' investigative tool, the Second Request, and the digitization of information over the past 25 years, which results in exponentially larger amounts of data in discovery, creates a complicated interpretation problem.

A Second Request takes a blunderbuss approach to relevant fact gathering.[143] An exceptionally broad subpoena in effect, a Second Request suspends the mandatory waiting period until the merging parties substantially comply with all of the request's demands for documents, data, witness testimony, and interrogatory responses.[144] Ultimately, the purpose of the Second Request investigation is to allow the agency to gather evidence to be used in the event the agency decides to pursue an injunction against the proposed transaction. Data and documents produced in response to a Second Request typically amount to productions measured in terabytes.

Massive amounts of information must be processed along the tight timeline of an M&A transaction. The default rule under the HSR Act requires the enforcement agency to conclude its investigation within 30 days of the merging parties' substantial compliance with the terms of the Second Request.[145] Given the imperative of expediting the closing of the transaction, the parties then have a significant incentive to produce the information requested in the Second Request. Unless the agency and the merger parties contract around the default rule, the result can be a highly compacted timetable in which the agency must

140. *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.").

141. *Id.* at 216.

142. Shapiro, *supra* note 130.

143. *See* FED. TRADE COMM'N, MODEL REQUEST FOR ADDITIONAL DOCUMENTATION AND MATERIAL (SECOND REQUEST) (2010), http://www.ftc.gov/sites/default/files/attachments/merger-review/guide3.pdf (describing the Second Request process).

144. *Id.*; 16 C.F.R. § 803.20(c) (2015).

145. 15 U.S.C. § 18a(c)(8) (2015).

make its enforcement decision.[146] And, even when the agency and the merging parties do agree to a different timing arrangement than the default, the time for digesting such a large amount of information often remains circumscribed.[147]

The breadth of information sources, the scale on which information is produced through the Second Request process, and a merger investigation's rapid timetable all present the potential for agency "filter failure."[148] Borrowing a concept from Clay Shirky, Wendy Wagner defines "filter failure" in the administrative law context as agencies' inability to process the vast amount of information provided by interested parties.[149] In that context, Wagner identifies two causes of filter failure: (1) interested parties' tendency to submit an overabundance of information, especially in rulemakings dealing with technical issues[150] and (2) agencies' inability to adequately process the large amount of data submitted by interested parties due to the APA's requirement that they consider all comments and the lack of appropriate filters.[151] While Wagner focuses on the role "filter failure" plays in agency capture,[152] it is the predicate condition for that capture—the barrage of information that overwhelms agency information processing capacity—which is relevant here.

It is important to note that the evidentiary uncertainty experienced in merger review is not simply a problem of information asymmetry. Although merging parties unquestionably have information regarding the market that the enforcement agency does not (immediately) have, they must contend with information deficits of their own. First, even though they operate within the markets in question and thus have a great deal of familiarity with the industry, their market-related information is not complete. Relatedly, often there will be differences between the two merging parties' information with respect to the market, as their positions within networks of supply and demand relationships will inevitably differ to some extent. Second, the agency has information to which the parties do not have access. For instance, the investigative staff will typically interview customers with respect to the proposed transaction, and the substance of those discussions is not disclosed to the merging parties. More generally, the parties have only imperfect information regarding how the agency is interpreting the information it is receiving from the merging parties and from third parties. Third, the reality of multi-jurisdictional merger review compounds these uncertainties. Merging parties must anticipate the reactions of not one but a number of competition authorities and coordinate a holistic defense in an environment where cooperation among enforcement agencies is increasingly prevalent.[153]

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146. *See* Buffier et al., *supra* note 96, § 4.42 (describing common modifications to Second Requests, including timing agreements).

147. *Id.*

148. Wendy E. Wagner, *Administrative Law, Filter Failure, and Information Capture*, 59 DUKE L.J. 1321, 1325 (2010).

149. *See id.* (defining filter failure).

150. *Id.* at 1326.

151. *Id.* at 1325, 1328.

152. *Id.* at 1325. Wagner argues that filter failure causes "information capture," a specific type of agency capture. The main distinction between information capture and other forms of agency capture is that it affects agencies across the board, including those that diligently try not to be overly responsive to regulated industries. Wagner, *supra* note 148, at 1326.

153. *See* Ilene Knable Gotts, *Navigating Multijurisdictional Merger Reviews: Suggestions from a Practitioner*, 9 COMPETITION L. INT'L 149, 149–50 (2013) (describing the use of cooperation agreements among competition authorities).

c. When Model Ambiguity and "Filter Failure" Combine: Merger Review as an Innovation Problem

Model uncertainty and "filter failure" are more like continual than absolute states. Deals can vary in the ambiguity of relevant analytical models and in the intensity of the information-filtering burden. For example, a deal might pose a fairly simple analytical problem for the agencies, and the traditional static approach to merger analysis might suffice. Yet the merging parties may be large organizations resulting in massive information productions, which raise the prospect of filter failure. Another deal, such as in the start-up context, might be just the opposite: a highly innovative market environment might create substantial model uncertainty; yet the small size of the merging parties makes for a relatively manageable information processing task. But in a number of deals, model uncertainty and filter failure will both be significant, combining to entrap an agency in a situation where it has few firm guideposts by which to navigate a large and internally inconsistent body of information. In other words, agencies face an innovation problem—they must make decisions in situations where past practice is an unreliable guide, which requires them to create a framework by which to make sense of the environment even as they make tentative decisions on how to intervene in it.

C. The HSR Act as Infrastructure for Collaborative Innovation

My argument in this Section is that certain aspects of merger control practice reflect an unconscious attempt to approximate experimentalist institutions. In particular, three related trends are identified: first, recent revisions to the Horizontal Merger Guidelines introduce significant substantive flexibility in merger analysis, which expands the landscape of available options an enforcement agency can select; second, the FTC and Department of Justice (DOJ) have adjusted their merger investigation practices to smooth information flows and create a more iterative exchange of information between the merging parties and the agency; and third, the agencies have introduced novel remedies, which approximate aspects of generative contracting by building information exchange mechanisms into consent decrees. Thus, indicia of both public and private forms of experimentalism are observed. On the public side, merger analysis is being refashioned in ways that allow for joint, iterative learning about potential competitive effects to take place. On the private side, merger remedies are being designed to mirror aspects of the generative contracts outlined above.

This transition is not complete, however. As will become apparent by the conclusion of this Section, the second element of the experimentalist system, a mechanism that drives participants to engage in the iterated information sharing process, is still underdeveloped. In this respect, the experimentalist approach to the antitrust law of mergers is nascent and awaits targeted policy revisions to be fully realized, which I discuss in Part IV below.

1. Substantive Flexibility

The first trend, the agencies' increasingly flexible approach to substantive analysis,[154] is a direct response to the model uncertainty discussed in Part II above. The ongoing evolution of the Horizontal Merger Guidelines from a rigid structural analysis to a more flexible framework for the analysis of competitive effects releases the enforcement agencies from the straight jacket of market concentration centered analysis and allows them

154. *See* Buffier, *supra* note 96, § 4.23.

to construct case-by-case models. As a result, the decision landscape is broadened, and a variety of options are available akin to the benchmarking process outlined above. In this respect, the necessary conditions for experimentalist merger review are established.

Initial attempts were halting,[155] but progress towards erecting a supplementary analytical infrastructure for dynamic merger analysis, complementary to the static approach which is still appropriate in certain types of markets, is being realized. The most significant systematic inclusion of innovation concerns in merger analysis is found in the recent revisions to the agencies' Horizontal Merger Guidelines. The alterations made to the Guidelines in 2010, which consolidated and rendered transparent what the agencies had been practicing for years, created a more flexible analytical framework that took yet another step away from the rigid market concentration orientation adopted in the original 1968 version.[156]

The rigid structural approach of the 1968 Guidelines, which focused analysis primarily on market concentration and little else, has the virtue of allowing parties to predict agency decisions with a high level of accuracy.[157] To oversimplify a bit, one calculated the combined entity's market shares in the relevant markets, and one could determine how the agencies would view the transaction. The downside is obvious: such a structural approach may mischaracterize deals in markets whose structures do not fit easily into the rigid framework, with the effect that anticompetitive deals may be allowed to proceed or pro-competitive deals may be stopped in their tracks.

Recent developments move the needle in the opposite direction. Although underway before the most recent revision to the Merger Guidelines, the 2010 Merger Guidelines epitomize this trend. The revised Guidelines themselves are frank about the transition to a more flexible approach:

> These Guidelines should be read with the awareness that *merger analysis does not consist of uniform application of a single methodology*. Rather, it is a fact-specific process through which the Agencies, guided by their extensive experience, apply *a range of analytical tools* to the reasonably available and reliable evidence to evaluate competitive concerns in a limited period of time.[158]

Consistent with that approach, the 2010 Guidelines downplay market definition as a necessary predicate to merger analysis.[159] Where clear market segments are not obvious, the agencies may focus on the core question of whether competition is harmed, and "[e]vidence of competitive effects can inform market definition, just as market definition can be informative regarding competitive effects."[160] The 2010 Guidelines also expressly incorporate innovation considerations in merger analysis. First, the 2010 Guidelines place

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155. *See* Richard J. Gilbert & Steven C. Sunshine, *Incorporating Dynamic Efficiency Concerns in Merger Analysis: The Use of Innovation Markets*, 63 ANTITRUST L.J. 569, 601 (1995) (introducing the now relatively disused "innovation markets" concept).

156. *See* Shapiro, *supra* note 130, at 702 (recounting the evolution of the Horizontal Merger Guidelines from a rigid adherence to market concentration indicia to a more fluid analysis focused on competitive effects).

157. U.S. DEP'T OF JUST. ANTITRUST DIVISION, 1968 HORIZONTAL MERGER GUIDELINES § 1 (1968), http://www.justice.gov/sites/default/files/atr/legacy/2007/07/11/11247.pdf.

158. U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES 1 (2010) (emphasis added), http://www.justice.gov/atr/horizontal-merger-guidelines-08192010.

159. *See, e.g.*, *id.* § 4 (noting that "[t]he Agencies' analysis need not start with market definition. Some of the analytical tools used by the Agencies to assess competitive effects do not rely on market definition. . . ").

160. *Id.* at 7.

greater emphasis on non-price competition.[161] Second, the 2010 Guidelines create a high-level framework for understanding how a merger might diminish "innovation competition" by reducing either the incentive "to continue with an existing product-development effort or to initiate development of new products."[162] In turn, the 2010 Guidelines set forth the agencies' approach to assessing a proposed merger's effects on innovation.[163] The 2010 Guidelines also incorporate innovation considerations into the analysis of efficiencies.[164] A number of recent cases have incorporated innovation into the substantive analysis of competitive effects.[165]

These incremental moves to a more flexible analytical approach require the agencies to proceed in a manner similar to the benchmarking process described above.[166] The analysis is not formulaic but involves developing prototype theories of harm, which are then tested against available evidence and revised. In that respect, the 2010 Merger Guidelines set the stage for an experimentalist approach.

2. Iterative Information Exchange

The second trend—a move towards more iterative exchanges of information between merging parties and the enforcement agency in a merger investigation—is a direct response to the filter failure problem. Information exchange mechanisms also have implications for substantive modeling, however. Because dynamic models, including the more flexible approach of the 2010 Guidelines discussed above, place greater emphasis on case-by-case analysis of the facts, the improvements in information exchange also affect the agencies' ability to resolve model uncertainty.

a. Learning Routines in Second Requests

Complementing the introduction of greater substantive flexibility, the agencies have implemented policies and practices that regulate information sharing between merging parties and agency staff. These new developments are similar to the simultaneous engineering routines discussed above.[167] Information flows are regularized and contact points between the parties and the agency are increased to facilitate information exchange.

Under the formal terms of the HSR Act and agency policy, the provision of information to the reviewing agency in a merger investigation begins as a trickle and ends

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161. The Guidelines state:

> Enhancement of market power by sellers often elevates the prices charged to customers. . . . Enhanced market power can also be manifested in non-price terms and conditions that adversely affect customers, including reduced product quality, reduced product variety, reduced service, and *diminished innovation*. Such non-price effects may coexist with price effects, or can arise in their absence. When the Agencies investigate whether a merger may lead to a substantial lessening of non-price competition, they employ an approach analogous to that used to evaluate price competition.

Id. at 2 (emphasis added).

162. *Id.* at 23.

163. U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 158, at 23.

164. *Id.* at 31.

165. *See, e.g.*, United States v. H & R Block, 833 F. Supp. 2d 36, 79 (D.D.C. 2011) (analyzing whether the acquisition target was a "maverick" competitor in the market).

166. Helper et al., *supra* note 60, at 466.

167. *See supra* note 68 and accompanying text (discussing information exchange routines in private and public sector collaborations).

as a torrent. The information provided in the HSR Act notification form is minimal, and often the deal related documents disclosed with the initial filing number are in the double digits.[168] On the other hand, the documents produced pursuant to a Second Request can easily number in the millions, and parties are often required to produce substantial portions of operational data.[169]

Informally, however, additional contact points are added, and in that respect, the merger review process more closely mirrors experimentalism's logic. In recent years, a largely informal process has emerged to enhance information exchange in the early stages of an antitrust investigation. Deputy Assistant Attorney General Leslie Overton's recent remarks are illustrative:

> [I]f a deal does raise potential antitrust concerns, I encourage parties to consider approaching the division [voluntarily] . . . . [O]nce a transaction does come to the division's attention, constructive engagement is crucial. . . . We can work with parties to design a mutually agreeable investigative plan that gives the division reasonable time to investigate, but also provides the parties with predictability and the opportunity to provide evidence of any pro-competitive benefits.[170]

The agencies and merging parties are following through with this call for greater cooperation in multiple respects. Although the information required in the HSR form is minimal compared to the more extensive submissions required in other jurisdictions, some parties voluntarily provide the reviewing agency with information—such as strategic documents, key customer lists, and relevant data—before a Second Request investigation is opened.[171] It is also not uncommon, in deals appearing to present competitive issues and deals involving complex products, for parties to proactively engage with staff to present the merging parties' views of the relevant markets and likely effects.[172] Relatedly, parties may also "pull & refile" their initial HSR form, which has the effect of restarting the agency's 30-day waiting period, in the hope that giving the agency a bit more time—during which the merging parties will continue their advocacy—will get the agency comfortable with closing the preliminary investigation.[173]

Further contact points may be introduced if a Second Request is issued. First, upon issuance of the Request, merging parties may negotiate with staff regarding the scope of the Request.[174] Without modification, a typical Second Request asks for nearly all of a company's documents and data within a set time period, and merging parties will often seek to limit the number of custodians and shared network drives to be searched to comply

168. There are of course exceptions in either direction: either a particularly large collection of 4(c)/4(d) documents that must be disclosed or, more awkwardly for the merging parties, hardly any at all.

169. Peter Boerg & Andrew Dick, *Findings from the Second Request Compliance Survey*, 14 THRESHOLD 26, 30–36 (Summer 2014) (providing survey data on discovery burden in merger investigations).

170. Leslie C. Overton, Deputy Assistant Att'y Gen. for Civil Enf't Antitrust Div., Dep't of Just., Remarks as Prepared for the 14th Annual Loyola Antitrust Colloquium, Institute for Consumer Antitrust Studies, 17 (Apr. 25, 2014).

171. *See* James T. Halverson & Ronald C. Wheeler, *Negotiating Merger Consent Decrees*, 2 ANTITRUST 23, 24 (1988) (discussing how informal information exchanges prior to the opening of a formal investigation).

172. *See* Deborah L. Feinstein, *Process Divergence as an Obstacle to Substance Convergence?*, 26 ANTITRUST 5, 5 (2012) (suggesting that merging parties can help each other during antitrust investigations by cooperating and sharing information).

173. *Id.*; Buffier et al., *supra* note 96, § 4.12.

174. *Id.*

with the Request.[175] This discussion regarding the scope of the Request can be an opportunity to discuss the substance of the agency's investigation. The enforcement agency will often agree to limit the Request's scope, which requires some discussion of potential theories of harm, so long as the parties enter into a timing agreement locking the parties into a set timeline for compliance with the Second Request. The purpose of the agreement being to buy the enforcement agency additional time to investigate. Second, parties will often advocate their position in the form of presentations to staff and the front office and "white papers," and not simply sit back and comply with the Second Request. By opening additional contact points with the agencies in this fashion, the parties may in some sense be seen as attempting to approximate the information exchange we observe in generative contracting.

b. Further Evidence from Antitrust Provisions in Merger Agreements

Another lens through which to observe this transformation in information sharing, which is unfolding largely outside of the public record, is the antitrust provisions merging parties include in their merger agreements. These provisions structure the merging parties' cooperation while undergoing an antitrust investigation and allocate the risk of a remedy or challenge. Current practice in combining those two provision types suggests that parties are approaching merger defense in a collaborative fashion that mirrors the experimentalist logic of the agencies' approach.

Typically, when practitioners discuss antitrust provisions in merger agreements, the focus is on how risk is allocated between the parties. For example, if an agency demands remedial concessions or moves to challenge the transaction, can the buyer walk away from the deal? Risk allocation mechanisms, such as "hell or high water" clauses, often do not operate in isolation. Rather, allocations of risk are accompanied by other mechanisms, such as cooperation provisions, that are designed to shape the merging parties' joint approach to the antitrust defense of the proposed transaction. Taken as a whole, it is possible to view these antitrust provisions as approximations of the learning systems outlined above.

Antitrust provisions commonly included in merger agreements are as follows:[176]

> *(A) Timing of Necessary Notifications*: This provision typically references the merger notifications that will or may need to be made and requires the parties to make those filings within a certain amount of time.
> *(B) Efforts provisions*: This provision sets the standard for the efforts the parties must use to obtain the applicable antitrust clearances, usually in terms of "best efforts," "reasonable best efforts," or "commercially reasonable efforts."
> *(C) Divestiture obligations, including "Hell or High Water" (HOHW) clauses*: In addition to the efforts provisions, which tend to be vague standards, parties often attempt to define their respective obligations for achieving antitrust clearance with greater specificity. Thus, they may adopt an aggressive "hell or high water" obligation, which in its strong form obliges the buyer to offer whatever remedy is necessary—

175. *Id.*

176. *See* W. Dale Collins, *Sample Antitrust-Related Provisions in M&A Agreements—2014 Edition*, ANTITRUST UNPACKED, http://antitrustunpacked.com/?itemid=32 (last visited Oct. 29, 2015) (describing a general overview of antitrust provisions in merger agreements); *see generally* John D. Harkrider, *Risk-Shifting Provisions and Antitrust Risk: An Empirical Examination*, 2005 ANTITRUST 52 (2005), http://www.axinn.com /media/article/58_Risk-Shifting%20Provisions.pdf (providing an empirical analysis of when these provisions are used in merger agreements).

including not only divestitures but also behavioral undertakings, licenses, and hold separate agreements—in order to obtain an antitrust clearance.

(D) Information Sharing and Cooperation: This provision specifies the level of cooperation each party must provide, typically requiring that (1) advance notice and the opportunity for review be provided for any submissions to an enforcement agency; (2) each party have the opportunity to participate in any meeting or telephone call with an enforcement agency; and (3) review documents and data to be submitted to an enforcement agency in the course of an investigation. These provisions can grow detailed with parties establishing a roadmap for how and when to make certain decisions with respect to the ongoing defense of the deal.

(E) Litigation: This provision requires the parties to litigate in the event of an antitrust challenge perhaps until a final, un-appealable judgment has been reached.

(F) Term and Termination, including Antitrust Reverse Break Fees: This provision will establish a final drop dead date by which the deal must be consummated, subject perhaps to either automatic or agreed upon extensions. This provision will also allow the deal to be terminated if certain conditions are not met, including the obtaining of required antitrust clearances. Finally, this provision may require the buyer to pay the seller a reverse break fee triggered by the failure to obtain antitrust clearance before the drop-dead date. An antitrust reverse break fee may be used in lieu of a HOHW obligation.

(G) Joint Defense Agreement. Separate from the merger agreement proper, but as a corollary to these provisions, merging parties typically agree to a separate joint defense agreement, which is a side agreement designed to ensure that the attorney-client privilege protects the parties' information sharing related to the antitrust defense of the transaction.

Taken together, those provisions exhibit the characteristics of generative contracting in three respects. First, and most obviously, they establish routines of information sharing, the heart of an inter-firm learning system. The cooperation covenant establishes a process for developing and adjusting the antitrust defense and continually bringing unfolding information to the surface throughout that process. This process is not a simple disclosure obligation; rather, the cooperation covenants force the parties to act collaboratively, sharing information as they work together to craft an effective defense strategy. Cooperation covenants are typically the result of each merging party's clear strategic interests: the buyer commonly wants control over the process in order to minimize remedial exposure; the seller wants involvement in the process in order to monitor the buyer's efforts in achieving the requisite antitrust approvals; both parties want information from the other party in pursuit of those separate interests. In practice, joint defense is fraught, and it is not uncommon for it to grow contentious.

Second, antitrust provisions often employ both low- and high-powered measures to incentivize the cooperation regime outlined above. The form of the efforts obligation—best efforts, reasonable best efforts, or commercially reasonable efforts—plays a low-powered, gap-filling role with respect to the obligations undertaken.[177] Complementing the parties' efforts, obligations are high-powered incentives, such as a HOHW provision or a reverse termination fee. Although the mechanics of the HOHW provision and the

177. *See* Robert E. Scott & George Triantis, *Anticipating Litigation in Contract Design*, 115 YALE L.J. 814, 820–21 (2006) ("[F]ram[ing] the choice between precise terms (rules) and vague terms (standards) as the decision to give content to legal obligations either on the front end or back end of the contracting process . . . . By efficiently choosing between vague and precise terms, the parties can lower the cost of writing a more complete contract.").

reverse termination fee work differently, they both serve as a default penalizing the buyer—heavily, if there is not a capped divestiture obligation on the HOHW provision or if the reverse break fee is high—in the event the required antitrust clearances are not obtained.[178]

Third, antitrust provisions also often include an important, if somewhat subtle, ratcheting effect, which keeps the merging parties invested in the information exchange outlined above. The litigation obligation, which typically requires the parties to fight an agency's challenge to the transaction—often until there is a final, non-appealable judgment—keeps the parties locked into the defense of the deal until, if necessary, the bitter end. It does so by providing a buyer a counterweight against a HOHW provision or reverse break fee—the litigation obligation means that the buyer has time to fully fight the agency before either accepting an aggressive remedy package or paying a hefty reverse break fee. In other words, a party cannot expect their cooperation obligations to be fulfilled through the initial provision of a single round of half-hearted disclosures. Rather, the litigation obligation's effect is to add increasing urgency to the information exchange requirements outlined above as the defense progresses.

One conspicuous absence from the antitrust provisions discussed above is the establishment of a different form of ratcheting mechanism, the governance committee, which is a hallmark of the literature analyzing the design of contracts governing collaborative innovation. That absence is not surprising, however, because a de facto governance committee already exists. The antitrust laws circumscribe the scope of information that can be shared between two merging entities prior to consummation: disseminating a counterparty's information into your ranks may violate the HSR Act's prohibition against gun-jumping or section 1 of the Sherman Act.[179] Merging parties typically address this problem by limiting the executives that have access to counterparty information. This joint defense team, comprising top executives and their advisors, serves as a de facto analog for a governance committee.[180]

In summary, parties are treating merger clearance as an innovation problem and are using antitrust provisions in their merger agreements to create a disciplined process for joint discovery. It is important to emphasize the discipline this learning imposes: the effect of the provisions is not simply to facilitate information revelation. Having information is a necessary but not a sufficient condition for crafting an effective defense. As noted above, with most information stored electronically, it is quite possible for too much information to overwhelm a decision making procedure. Rather, the key to the system is that it simultaneously forces information to light and, through the ratchet effect and high-powered incentives, focuses the parties on learning what information is most important. In other words it is a learning process, not just an information forcing one. This process allows the parties to make decisions under uncertainty, eventually reducing uncertainty to risk as parties identify the key parameters of the antitrust defense.

178. *See generally* Ayres & Gertner, *supra* note 82 (introducing the concept of a penalty default).

179. Buffier et al., *supra* note 96, § 4.80.

180. The joint defense's organizational complexity is also minimal, and the occasional elaborate escalation procedures and decision making rules common in thick collaborations between two firms that may span a number of years may be unnecessary in this context.

3. Generative Merger Remedies

The experimentalist framework outlined above can also illuminate the design of contemporary consent decrees. Current remedy policy exhibits characteristics of experimentalism in three respects. First, at their most dramatic, consent decrees can require the merging entity to collaborate with a divestiture buyer in order to ensure that the buyer grows into a successful competitor. For instance, relief in the Google/ITA transaction was designed to address the DOJ's concern that the deal could potentially allow Google to use the acquisition of ITA to raise costs by foreclosing its rivals and to reduce the pace of innovation.[181] The consent decree included a number of unique remedies, which were designed to foster the growth of a competitor beyond simply providing a competitor with critical assets. For example, the combined Google/ITA entity was obligated to license and improve the search engine QPX, to honor and negotiate extensions to all QPX agreements,[182] to allow airfare search websites not owned or operated by an airline to use alternative products to QPX sold by other companies,[183] and to allow course upgrades to QPX at the same price as other available upgrades.[184] The consent decree also required information sharing within the market by precluding the merged entity from entering into agreements that restrict a customer's right to share information with Google and ITA's competitors.[185] Furthermore, if Google and ITA obtain such sensitive information, they must generally make it available to their competitors.[186] That information sharing was augmented by additional transparency measures, including a requirement that the combined entity must allow the DOJ access to its records, answer further interrogatories, prepare reports, have employees available for interviews or depositions,[187] and create a website for customers to access a copy of the Final Judgment and submit complaints about Google violating the Final Judgment.[188] Finally, in a measure that mirrors the real time adjudication often found in experimentalist regimes, the consent decree includes arbitration provisions that Google and ITA must comply with if agreement over fees cannot be reached between Google and its customers.[189]

The consent decree the FTC entered into with CoStar Group, whose proposed acquisition of LoopNet in 2012 was under investigation for antitrust concerns, is another unique example. The CoStar/LoopNet transaction presented a novel analytical problem for the FTC. CoStar, the nation's largest provider of commercial real estate data, and LoopNet, the United States' most trafficked commercial real estate listings database, competed only indirectly, making the identification of discrete anticompetitive effects difficult.[190] But

181. Competitive Impact Statement at 1–2, United States v. Google Inc. & ITA Software, Inc., (D.D.C. 2011) (No. 1:11-cv-00688).

182. Final Judgment at 13–15, United States v. Google Inc. & ITA Software, Inc., (D.D.C. 2011) (No. 1:11-cv-00688 (RLW)).

183. *Id.* at 15.

184. *Id.*

185. *Id.* at 27.

186. *Id.*

187. Final Judgment at 31–32, United States v. Google Inc. & ITA Software Inc., (D.D.C. 2011) (No. 1:11-cv-00688 (RLW)).

188. *Id.* at 26.

189. *Id.* at 21–26.

190. *See* FED. TRADE COMM'N, NO. 111-0172, ANALYSIS OF AGREEMENT CONTAINING CONSENT ORDER TO AID PUBLIC COMMENT 2–3 (2012), https://www.ftc.gov/sites/default/files/documents/cases/2012/04/120426costaranal.pdf (listing the respondents to the consent agreement).

CoStar did compete directly with Xceligent, a privately held commercial real estate data company in which LoopNet held a substantial ownership stake.[191] Thus, the clear solution of requiring LoopNet to divest its stake in Xceligent but allowing the deal to otherwise proceed raised a thorny question: how could Xceligent successfully compete alone against CoStar once CoStar was combined with the LoopNet platform?[192] The answer, which the FTC described as an "unusual" move, was to design a consent decree that included a number of behavioral remedies targeted at growing Xceligent into a viable competitor.[193] For example, the combined CoStar/LoopNet entity was prohibited from restricting Xceligent's access to critical data, was required to allow its customers to terminate their long term contracts in order to enter into agreements with Xceligent and was prohibited from interfering with customers' ability to use both the CoStar/LoopNet service and the Xceligent service.[194] Like the Google/ITA and Comcast/NBCU consent decrees, an arbitration process was established to handle disputes between the merged entity and customers.[195] The consent decree also established a monitor, who would oversee on behalf of the FTC the combined entity's compliance with the terms of the decree.[196] The monitor was given audit and inspection power and had the ability to hire its own experts.[197] In addition, if the combined entity failed to perform its obligations, the consent decree provided that a divestiture trustee would be appointed to sell certain assets.[198]

Second, even in consent decrees with rather standard divestiture obligations information sharing regimes are routinely established through compliance reporting and monitoring arrangements.[199] For example, the ABI/Modelo consent decree illustrates how generative mechanisms can be used even when a divestiture is the primary remedy.[200] The DOJ's concern with the ABI/Modelo deal is that it would lessen competition for beer in the United States and in local markets, therefore resulting in less innovation and higher beer prices.[201] The core of the ABI/Modelo remedy is a number of required divestitures. First, ABI is required to divest to Constellation, a key competitor, certain breweries and other assets and give Constellation a license to ten of Modelo's most popular beers.[202] Interestingly, the consent decree then requires Constellation to expand the production capabilities of the divested brewery. ABI/Modelo gives another example, like CoStar/LoopNet, of a consent decree trying to more proactively foster growth by its own

191. *Id.* at 2. The exact proportion of LoopNet's stake was not publicly disclosed.

192. *See id.* at 3 (noting the significant network effects the combined CoStar/LoopNet entity would enjoy).

193. *Id.* at 4–5; *see also* Press Release, Fed. Trade Comm'n, FTC Places Conditions on CoStar's $860 Million Acquisition of LoopNet (Apr. 26, 2012) (noting that the "FTC will require conduct relief that is unusual in a merger settlement").

194. CoStar Group Inc. at 14–18, Docket No. C-4368 (Aug. 29. 2012), https://www.ftc.gov/sites/default/files/documents/cases/2012/08/120830costardo.pdf.

195. *Id.* at 17–18.

196. *Id.* at 24.

197. *Id.*

198. *Id.* at 31.

199. *See* Buffier et al., *supra* note 96, § 4.69.

200. *See* Overton, *supra* note 170, at 15 (noting that conduct remedies can be used to complement structural relief).

201. Competitive Impact Statement at 1–2, United States v. Anheuser-Busch InBev. (D.D.C. 2013) (No. 13-127 (RWR)).

202. Final Judgment at 10, United States v. Anheuser-Busch InBev SA/NV et al., (D.D.C. 2013) (No. 13-127 (RWR)).

terms.[203] Third, the consent decree requires Constellation to employ the personnel that currently operate the brewery as its owner,[204] and have ABI, Modelo, and Constellation enter into transition services and interim supply agreements for the brewery.[205] To oversee compliance with those obligations, the consent decree established an information exchange system. A Monitoring Trustee was appointed to oversee ABI and Modelo's compliance with the consent decree,[206] and the Trustee was required to file regular reports on ABI and Modelo's compliance efforts.[207] Separately, the combined entity was required to comply with notification provisions, which required ABI to notify the DOJ in advance of transactions that would otherwise not be reported under the HSR Act.[208] Finally, to incentivize compliance with the divestiture obligations, a Divestiture Trustee could be appointed if the divestiture to Constellation or an alternative buyer was not accomplished,[209] with the Trustee filing monthly reports with the DOJ and federal district court that describe the efforts taken to accomplish the divestiture.[210]

In addition to those information sharing protocols, some consent decrees build in real time dispute resolution systems, which create an arbitration mechanism to oversee disputes between merging parties and divestiture buyers. For instance, the remedies in the Comcast/NBCU transaction were designed to address a number of concerns, including the DOJ's view that the deal could harm "nascent" competition from online providers of programming content.[211] To address such concerns, the consent decree included a number of behavioral remedies that were intended to prevent the combined Comcast/NBCU entity from foreclosing those competitors from valuable content.[212] The consent decree also created a compliance inspection process, which created a number of routes for the DOJ to have access to information regarding the merged entity's behavior under the consent decree.[213] Finally, the Comcast/NBCU consent decree included an arbitration system, whereby content providers could dispute the merged entity's practices.[214] Arbitration was to be held under the auspices of the American Arbitration Association, but the dispute resolution system maintained the DOJ's involvement by requiring an online content provider to receive approval from the Antitrust Division prior to commencing arbitration and by requiring the Antitrust Division's consultation on the arbitrators selected to hear resolve the dispute.[215] The dispute resolution process was also designed to be a real time intervention—the arbitration had to be initiated shortly after the dispute arose, a tight timeframe was imposed on the arbitration proceeding, and the parties were required to continue performing while the dispute was being resolved.[216]

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203. *Id.* at 13–15.
204. *Id.* at 11.
205. *Id.* at 12–13.
206. *Id.* at 20.
207. Final Judgment at 20, United States v. Anheuser-Busch InBev SA/NV et al., (D.D.C. 2013) (No. 13-127 (RWR)).
208. *Id.* at 23–24.
209. *Id.* at 16.
210. *Id.* at 17–18.
211. Complaint at 3, 21, United States v. Comcast Corp., (D.D.C. Jan. 18, 2011) (No. 1-11-CV-00106).
212. Final Judgment at 19–24, United States et al. v. Comcast et al., (D.D.C. 2013) (No. 1:11-cv-00106).
213. *Id.* at 30.
214. *Id.* at 24–30.
215. *Id.* at 25.
216. *Id.* at 28–29.

Finally, the agencies may introduce incentive mechanisms that replicate a ratcheting effect. The most dramatic example is the FTC's occasional use of "crown jewel" provisions in consent decrees.[217] In those decrees, an initial divestiture package is identified, but if the parties do not sell those assets to an approved buyer within a certain time frame, the size of the divestiture package automatically increases so that the merged entity must now divest some of its "crown jewels."[218] This option creates powerful incentives for merging parties to comply with their divestiture obligations in the consent decree. A less dramatic but more common tool both agencies use is a provision in a consent decree that allows a trustee to take over a divestiture sale if the merging parties are not progressing according to a pre-determined timeline.[219]

In summary, recent developments in merger remedies adds a new dimension upon which remedies might be categorized. Remedies are not just structural or behavioral, corresponding roughly with horizontal and vertical theories of harm, but also discrete or generative, depending upon a remedy's level of uncertainty. This dimension cuts across the traditional dichotomy between structural vs. behavioral relief in mergers. Goals in behavioral relief can be particularly open ended because the remedy regulates some aspect of the parties' ongoing conduct. But goal revision can also occur in structural relief—such as with respect to the identity of the divestiture buyer, what transition services will be provided along with the divestiture, and whether the divestiture is proceeding according to the timeline.

D. Summary and Diagnosis

Recent developments in how merger investigations are conducted and in how remedies are designed exhibit elements of an experimentalist approach to market intervention. Enforcement agencies are recreating institutions so as to manage uncertainty by directing information flows into an iterative learning system and by creating greater ex post flexibility through unique remedy structures. This combination produces a pragmatic system of intervention in the M&A market.

However, although key aspects of contemporary merger control exemplify an experimentalist approach, critical parts of the regulatory apparatus are not yet fully articulated according to experimentalism's pragmatic logic. The transition to experimentalism is underway but not complete. This leads to an institutional infrastructure not fully effective in supporting the collaborative innovation at the heart of the merger review process.

There are two problems. First, information exchange between the merging parties and the enforcement agency in an investigation is asymmetrical. The developments discussed above take important steps toward establishing a reciprocal learning system, but all too often information is flowing from the merging parties to the agency and not vice versa. Without a bilateral exchange of information, the opportunity for joint learning is undermined, and the likelihood that the experimentalist approach will become dysfunctional increases.

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217. *See Frequently Asked Questions About Merger Consent Provisions*, FED. TRADE COMM'N, http://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/mergers/merger-faq (last visited Sept. 9, 2015) (discussing the FTC's policy with respect to crown jewel provisions). Note that DOJ has not adopted similar policy. *See* Buffier et al., *supra* note 96, § 4.53.

218. *Frequently Asked Questions About Merger Consent Provisions*, *supra* note 217.

219. *Id.*; U.S. DEP'T OF JUST., *supra* note 11.

Second, and relatedly, the system as a whole lacks a potent ratchet that forces both sides to continue investing in the joint learning process. While it may be in the parties' interests to open communication channels with the reviewing agency because they are desperate to close the deal, it is not necessarily in the agency's interest to reciprocate. While resource constraints and the risk of losing in litigation are real and often predispose agencies to settlement, the HSR process never requires the agencies to provide information with respect to what it is learning from third parties or the conclusions it is reaching in return. Discovery is not available to the merging parties until an agency decides to challenge a transaction and litigation commences.[220] In a rough sense, an agency's choice to issue a Second Request in a matter where the parties have made voluntary submissions or made a presentation to staff during the initial 30-day waiting period does send a simple message: the information and advocacy provided so far has been unconvincing. There are certainly times when staff can be relatively open with respect to their concerns, although this may more often happen when they are looking for items to include in a closing memo than in the hard cases. In short, further steps are necessary to make the HSR process a bilateral learning process, not just a unilateral information transfer mechanism.

IV. TOWARDS RESTRUCTURING INNOVATION PROCESSES IN MERGER REVIEW

In Part III, I argued that current developments in the U.S. merger review regime approximate experimentalist institutional design in certain respects. Viewed through the experimentalist lens, both the investigatory process and the design of merger remedies can be understood as attempts to manage uncertainty through collaborative institutional structures. In this Part, I explore the implications of the positive theory outlined in Part III. I focus upon two issues. First, I argue that introducing an experimentalist framework allows us to reframe the current debate regarding the U.S. merger review process, which is somewhat stalemated. Second, I examine a series of possible prescriptions for completing the nascent transformation toward a more robust experimentalist system of merger review.

A. Reframing the Debate in Merger Review Policy

Over the past decade, an intramural debate largely between agency attorneys and the private defense bar has developed over whether uncertainty built into the HSR Act's process creates a systemic bias against either the merging parties or the enforcement agency. The presumption behind the debate is that the uncertainty inherent in predicting proposed mergers' effects creates an asymmetry of bargaining power between enforcement agencies and merging parties. The question is who enjoys the outsized leverage.

One side argues that merger control's uncertainty leads agencies to under-enforce the Clayton Act. From the enforcement agencies' perspective, the uncertainty inherent in predicting a merger's competitive effects raises the risk of reputationally harmful litigation failures. Opportunity costs are also involved: agency resources are limited; so, focusing incorrectly on one proposed transaction may be diverting attention from deals actually warranting scrutiny. Those costs, coupled with the design of the HSR regime, arguably lead agencies to under-enforce routinely.[221] Frankel argues that the following

220. *See generally* Lisl Dunlop & Heather Lamberg Kafele, *Message in a Bottle: Defense Perspectives from the* Ardagh/St. Gobain *Case*, 14 THRESHOLD 4 (2014) (discussing the discovery process in antitrust cases).

221. *See* Lawrence M. Frankel, *The Flawed Institutional Design of U.S. Merger Review: Stacking the Deck Against Enforcement*, 2008 UTAH L. REV. 159, 159–60 (2008) (arguing that the institutional design of merger review leads to under-enforcement of anticompetitive mergers).

characteristics of merger review are particularly problematic: first, only determinations of anticompetitive effects are subject to judicial review—in other words, there is no institutional check policing agencies' decisions not to challenge a deal; and second, agencies bear the burden of persuasion in merger litigation, which means that uncertainties are resolved in the merging parties' favor.[222]

Others, however, argue that the HSR Act's process systematically prejudices the merging parties. For merging parties, uncertainty poses closing risks, which often compound as an investigation lingers on. Relatedly, the inability to accurately predict enforcement agencies' analyses of a proposed transaction may chill M&A behavior altogether as parties choose to forego a deal entirely rather than rolling the dice. Sims and McFalls argue that agencies use those costs to extract unnecessary concessions from merging parties, who are vulnerable to overreaching because they need to close the transaction.[223] Ginsburg and Wright make a similar point, arguing that U.S. enforcement agencies have a "culture of consent," which leads them to take advantage of merging parties' vulnerability to delay in order to seek "abusive" settlements that serve agencies' bureaucratic interests rather than consumer welfare.[224]

The debate over asymmetric bargaining power in merger control is important, but making further progress on this line of questioning is difficult. First, it is hard to test either side's claims with rigor. Conducting empirical research that could subject the arguments to further scrutiny is challenging given the agencies' and merging parties' expectations of confidentiality. Second, and more importantly, arguments that systemic bias exists have yet to address how transaction characteristics affect the alleged bias problem. That is, by focusing upon the provocative systemic bias claim, the debate often assumes that uncertainty is constant across deals. However, for the reasons discussed above, some proposed transactions will pose deep and fundamental uncertainties for the enforcement agencies and merging parties, while others will present decision landscapes comparatively easier to navigate. Arguments that overlook this nuance risk producing policy prescriptions too generalized to accurately steer decision making in an important subset of transactions.

This Article responds to that second issue by exploring how the decision making process' response to uncertainty idiosyncratic to a transaction can be improved. The goal is not to entirely supplant the debate over systemic bias, but rather to begin providing a fuller picture upon which that debate may fruitfully proceed. Approaching merger review as an innovation problem may allow us to further fine-tune antitrust institutions so that they may respond with greater accuracy and alacrity to varying levels of uncertainty on a case-by-case basis. And as that portion of the equation becomes clearer, answers to questions of systemic bias may be come clearer.

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222. *Id.* at 173–81.

223. *See* Joe Sims & Michael McFalls, *Negotiated Merger Remedies: How Well Do They Solve Competition Problems?*, 69 GEO. WASH. L. REV. 932, 947 (2001) (discussing the costs the merger review process imposes upon merging parties); *see generally* Joe Sims & Deborah P. Herman, *The Effect of Twenty Years of Hart-Scott-Rodino on Merger Practice: A Case Study in the Law of Unintended Consequences Applied to Antitrust Legislation*, 65 ANTITRUST L.J. 865 (1996) (discussing the costs the merger review process imposes upon merging parties).

224. Ginsburg & Wright, *supra* note 127. Ginsburg and Wright provide a summary of U.S. and non-U.S. antitrust enforcement decisions, including a number of merger matters that they view as abusive. *Id.* at Appendix.

B. Steps Toward a More Experimentalist Regime in Merger Review

If U.S. merger review is moving towards a more experimentalist regime, the transformation is not complete. In this Section, I explore a number of issues to be addressed if that process of institutional change is to continue. I do so by introducing possible policy recommendations for furthering experimentalist merger review's development. These prescriptions fall into two categories—those that improve the incentives to participate in cooperative learning during a merger investigation and those which increase ex post flexibility via changes to how consent decrees are structured. The former may improve the fidelity of merger review decision making, while the latter may relieve pressure for that decision making to achieve perfection by providing a mechanism by which incorrect decisions of a certain magnitude can self-correct. These recommendations do not promise to magically make the ex ante prediction of competitive effects easier. But they may nevertheless improve the ability of parties who are considering a transaction to assess antitrust risk in the following way: a fully developed experimentalist approach allows them to trust that decisions will be made based on a highly educated understanding of the relevant markets, and therefore merging parties can more readily invest in information gathering early in the deal process because they know it will eventually pay off with an antitrust risk assessment that more closely matches the agency's final decision in the end.

1. Investing in Predictability by Enforcing Information Exchange

Optimizing the HSR learning system involves increasing the quantity and quality of the contact points between merging parties and the enforcement agency. This in turn, accurately calibrates the incentives to engage with those contact points wholeheartedly. This may be accomplished through the adoption of the following default rules, which the parties and the agency can alter by mutual agreement.

a. Front-loading Bilateral Information Exchange

Without increasing information flows between the merging parties and the enforcement agency in the early stages of an investigation, the other reforms I explore below would be meaningless. Early stage information flows can be improved through two interrelated steps. First, the flow of information from merging parties to the enforcement agency should be smoothed through early and regular rolling productions and dual tracked depositions. Second, a communication channel from the enforcement agency to the merging parties should be opened in the form of regular "state of play" meetings to take a cue from the EU's process.

With respect to the flow of information from the merging parties to the enforcement agency, the default rule in the event that a Second Request is issued should be that the parties shall comply with the Request on a rolling basis. Documents should be produced as they become available. Depositions of company executives should occur on a parallel track. This would ensure a continuous stream of information flowing from the parties to the agency, rather than the more punctuated, two-step framework under the formal HSR process.

If parties cannot have full discovery before litigation commences, then the question is whether there are second-best options for making information exchange a two-way street. One such option is the "state of play" meeting. This default would require the agency to provide the merging parties with an overview of its position—or the "state of play" of its investigation, including its emerging views of key elements under the Merger Guidelines,

such as relevant market definition, theories of harm, likelihood of entry, etc.—at an early point in the process, akin to practice in the EU. Additional "state of play" meetings would be required whenever the agency sought to extend the amount of time available to investigate. This default would provide a feedback mechanism for the parties, who invariably will have to present to the agency substantive arguments prior to the issuance of a Second Request and will continue making those substantive arguments, typically to more senior agency officials as the investigation progresses. The default timing would be to hold the "state of play" meeting contemporaneous to the issuance of a Second Request if the parties pulled and refiled their HSR notification and provided a voluntary submission, or contemporaneous to the completion of the first production round, if no pull and refile and voluntary submission occurred. This requires the agency to provide information early in the process, while also creating an incentive for parties to be forthcoming.

Putting these two steps together would create the preconditions for collaborative learning. Feedback from the enforcement agency would inform the merging parties' search for relevant documents, data, and witnesses. Information produced to the agency should then be more responsive to the agency's analysis. A virtuous cycle is then possible with the parties and agency progressively learning through the iterative exchange of information.

b. Lowering the "Substantial Compliance" Hurdle

Two potential problems arise from the proposal above to increase the information exchange in the early stages of an investigation. First, without material incentives, there may be little reason for merging parties or agencies to participate in a front-loaded process with fidelity. The incentives to shirk are obvious: it is in the merging parties' interest to backload the most relevant (i.e., potentially damaging) information, and it is in the enforcement agency's interest to withhold the real substance of its ongoing analysis from the parties. Second, on the other hand, if front-loading information exchange simply means more information faster, then there is a risk that the "filter failure" problem will occur only sooner.

A carrot and stick mechanism comes in the form of lowering and, if possible, modulating the requirement that merging parties must "substantially comply" with a Second Request. Under current practice, substantial compliance is effectively full compliance.[225] The instances in which an enforcement agency has taken merging parties to court to enforce the obligation to substantially comply with the terms of a Second Request are so few that they can be counted on one hand.[226] In such an environment, there is only a weak incentive for the enforcement agency to engage in a front-loaded learning process. Likewise, merging parties are not strongly incentivized to front-load the most relevant information, as they will have to provide all of the information initially requested in any event.

Lowering the requirements for substantial compliance is one, admittedly blunt, means for prodding enforcement agencies and merging parties to front-load information sharing. Allowing parties to substantially comply sooner is a strong incentive for the obvious reason

225. *See* FTC Statement of Basis and Purpose, 43 Fed. Reg. 33, 508 (July 31, 1978) ("[A]nything less than a complete response [to a Second Request] potentially is not substantial compliance.").

226. FTC v. McCormick, CIV. A. No. 88-1128, 1988 WL 43791 (D.D.C. 1988) (relating to McCormick's failure to provide information requested by the FTC pursuant to section 7A(e)(1) of the Clayton Act); FTC v. Blockbuster, Inc., Civil No. 1:05CV00463 (D.D.C. 2005), https://www.ftc.gov/sites/default/files/documents/cases/2005/03/050311orderblockbuster.pdf.

that the potential to reduce the length of an investigation reduces closing risk. A lower substantial compliance hurdle also increases the risk for the enforcement agency that it may not get as much relevant information as it would like before the investigation closes, which creates an incentive for the agency to give the merging parties specific guidance regarding the information it is seeking.

Of course, at the beginning of an investigation, it will be difficult for the agencies to define the most relevant information with specificity. The agency and merging parties will have to begin with a tentative list of priorities, established initially on the basis of prior experience and the information shared in the early stage of the investigation. Those priorities may be revised as the iterative exchange of information envisioned above unfolds, which will naturally lead to debate between the merging parties and the enforcement agencies. Crucially, however, that debate will focus on the substance of the agency's analysis and the responsiveness of information to that analysis, rather than through the rough proxies used currently—such as loose concepts of overly "burdensome" production requirements. That shift to substance would also eliminate the horse trading that occurs currently when negotiating the scope of the Second Request in conjunction with a timing agreement.

c. Create a Potent Ratchet Effect

The prescriptions so far have generally had the effect of temporally smoothing information flows between merging parties and the enforcement agency. But an experimentalist regime also needs more powerful incentives spurring coordination between the merging parties and the enforcement agency. Such incentives can be achieved in two ways: changing judicial oversight from a distant, hands-off check on settlement abuse to a more involved, real time overseer of the information exchange regime, and by creating a potent ratchet effect by allowing merging parties to "litigate the fix."

As noted above, shifting the question of whether substantial compliance has been achieved from one of process into one of substance may lead to more frequent and intractable disputes between the merging parties and the enforcement agency. If the private ordering of collaborative innovation is any indication, then we should expect disputes to occur with some regularity. Contracts governing collaborative innovation also suggest a solution to the problem. Dispute resolution in collaboration agreements is often anchored through an escalation process capped with a committee required to make decisions by consensus—the "contract referee" mechanism mentioned above—and, ultimately, an arbitration procedure.[227] Escalation creates incentives for accurate information exchange because lower level staff must justify to their superiors, who are time constrained, the reasons for the dispute.[228] These dispute resolution mechanisms also allow for real time intervention in the relationship, which is critical for righting a collaborative learning process that, if poorly maintained, can tend towards entropy.[229]

There is, of course, an appeals process in place at both U.S. enforcement agencies,[230] but that procedure suffers from obvious deficiencies. First, in current practice, disputes

227. *See* Matthew C. Jennejohn, *Contract Adjudication in a Collaborative Economy*, 5 VA. L. & BUS. REV. 173, 231 (2010) (discussing dispute resolution procedures in agreements governing interfirm collaboration).

228. *See* Gilson et al., *Contracting for Innovation, supra* note 65, at 481 (discussing how dispute escalation disciplines the information sharing process).

229. *See* Jennejohn, *supra* note 227, at 223–31 (discussing how real-time dispute resolution responds to coordination problems arising inter-firm collaboration).

230. *See* DEP'T OF JUST. ANTITRUST DIVISION, SECOND REQUEST INTERNAL APPEAL PROCEDURE (June

over compliance and the substantive antitrust analysis typically arise late in the game, in which case it is too late for effective intervention in the learning process. Furthermore, unlike escalation processes in private sector collaborations, the current escalation process at the agencies is one-sided—if there is a dispute during the course of an investigation, merging parties may escalate to the agency's own front office. Experience teaches that often the front office will back up its staff in a dispute over compliance.

There is also an opportunity for judicial intervention, either through compliance litigation or, for example, when a DOJ consent decree is approved under the Tunney Act. Under the current regime, the former is late in the process and has been all but non-existent in practice. And the latter only requires the DOJ[231] to provide a limited explanation of its analysis of a proposed transaction and the settlement achieved by the parties, a notice and comment period to the public, and judicial review of the substance of the settlement achieved.[232] It is not a direct mechanism for intervening in the negotiations around the settlement itself.

What is necessary then is a real time dispute resolution procedure capped by a disinterested tribunal. If, for example, either side was insufficiently forthcoming with respect to the various contact points discussed above, the aggrieved party could escalate the dispute to the third party tribunal, which could resolve the impasse. In that respect, an analogy can be found not only in the escalation mechanisms frequently employed in private sector collaboration agreements but also the appointment of special masters or other discovery referees in the context of litigation.

Relatedly, the agencies need a prod, like the time constraints motivating the merging parties, to participate in information exchange with fidelity. Such an incentive can be found in what is referred to as "litigating the fix." Occasionally, parties will voluntarily restructure their transactions prior to, or in the midst of, a merger investigation in order to preempt an agency challenge. The question then, if the agency does not agree that the fix fully addresses the potential anticompetitive effects and therefore still chooses to seek a preliminary injunction in federal court, is whether the parties should litigate the transaction as originally proposed or the restructured deal (i.e., the "fix").

Although commentary has been critical[233] and the agencies often argue against it,[234] courts are often receptive to litigating the fix, rather than the original transaction.[235] The

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2001), http://www.justice.gov/atr/public/8430.htm (describing the appeal procedure at both agencies).

231. For ease of explication, I focus solely on the DOJ's settlement process here, rather than also discussing the details of the FTC process.

232. *See* Lawrence M. Frankel, *Rethinking the Tunney Act: A Model for Judicial Review of Antitrust Consent Decrees*, 75 ANTITRUST L.J. 549, 549 (2008) (discussing all aspects of a court's approach under the Tunney Act); Joseph G. Krauss et al., *The Tunney Act: A House Still Standing*, ANTITRUST SOURCE (June 2007), http://www.americanbar.org/content/dam/aba/publishing/antitrust_source/Jun07_Krauss6_20f.authcheckdam.pdf (discussing how little the Tunney Act has changed despite opposition).

233. *See, e.g.*, Thomas J. Horton, *Fixing Merger Litigation "Fixes": Reforming the Litigation of Proposed Merger Remedies Under Section 7 of the Clayton Act*, 55 S.D. L. REV. 165, 167–68 (2010) (criticizing the courts for overstepping statutory and constitutional boundaries); D. Bruce Hoffman, *Remedial Self-Help in Merger Litigation After* Arch Coal, 19 ANTITRUST 2, 32 (2005) (criticizing court's decision to actively adjudicate these types of cases).

234. *Id.*

235. *See generally* FTC v. CCC Holdings, Inc., 605 F. Supp. 2d 26 (D.D.C. 2009) (litigation brought following FTC agency action); United States v. Dairy Farmers of Am., Inc., No. Civ. 3-206KSF, 2004 WL 2186215 (E.D. Ky. 2004), *rev'd*, 426 F.3d 850 (6th Cir. 2005); FTC v. Arch Coal, Inc., 329 F. Supp. 2d 109 (D.D.C. 2004); FTC v. Libbey, Inc., 211 F. Supp. 2d 34 (D.D.C. 2002); United States v. Franklin Elec. Co., 130 F. Supp. 2d 1025 (2000).

courts will usually admit evidence of a proposed restructuring if the following conditions are met: (1) the restructured deal must be a good faith effort to address potential anticompetitive effects; (2) the fix must be reasonably certain to occur; and (3) the fix must be disclosed to the agency within a reasonable timeframe.[236] The more difficult question is which side, the agency or the merging parties, bears the burden of proof with respect to the adequacy of the restructuring, with some courts placing the burden on the defendants and some placing the burden on the agency.[237]

Litigating the fix provides a strong incentive for the agencies to coordinate with the merging parties. Litigating the fix prods agencies to participate in information sharing because if they unreasonably reject an adequate remedy package and take the matter to court, the federal judge can independently assess the fix and vindicate the restructuring. Therefore, calls for its elimination or for shifting the burden of proving the efficacy of a restructured deal to defendants should be rejected.

2. Managing Ambiguity Through Contingent Relief

The prescriptions above are focused upon improving the analysis of competitive effects during the course of an investigation. But, as we saw in Part III, experimentalist principles apply to not only the investigatory process but also to the design of merger remedies. The application of experimentalism to consent decrees was described as a means for achieving greater ex post flexibility.

As the ABI/Modelo example illustrated, consent decrees can incorporate experimentalist elements even though the remedy is essentially structural by nature. But if there is a likely criticism of an experimentalist approach to consent decree design, it is that experimentalist systems in consent decrees enmesh the enforcement agencies in ongoing market regulation like a behavioral remedy. That is, the strength of the experimentalist approach—its collaborative nature—is also its weakness in that it requires a resource constrained agency to remain invested in actively policing the market.

One possible response to that important issue is what Justin Pidot has referred to as "contingent regulation."[238] Pidot describes contingent regulation as a framework that "creates an initial legal rule, identifies foreseeable events that might undermine the efficacy of that rule, and creates a plan as to how that legal rule should change in response."[239] In the language of private contract, it would be an option, whereby certain rights are triggered upon the occurrence of a particular event. The advantage of contingent regulation is that it is "an *ex ante* approach to uncertainty"—i.e., it does not require significant ongoing monitoring by the regulatory agency.[240]

A form of contingent regulation is employed in many contemporary consent decrees. For example, as discussed above, the FTC has included "crown jewel" divestiture obligations in consent decrees.[241] The agencies should expand the scope of those

236. Darren S. Tucker, *The Elephant in the Room: Litigating the Fix After Arch Coal and Dairy Farmers*, ANTITRUST SOURCE (Jan. 2006), http://www.americanbar.org/content/dam/aba/publishing/antitrust_source/Jan06_FullSource 1_27.authcheckdam.pdf.

237. *Compare* FTC v. Arch Coal, Inc., 329 F. Supp. 2d 109, 116 (D.D.C. 2004) (placing the burden on the government) *with* United States v. Franklin Elec. Co., Inc., 130 F. Supp. 2d 1025, 1033 (W.D. Wis. 2000) (placing the burden on the merging parties).

238. Pidot, *supra* note 101.

239. *Id.*

240. *Id.*

241. *See Frequently Asked Questions About Merger Consent Order Provisions*, FED. TRADE COMM'N,

contingent remedies, which are currently used primarily to incentivize compliance with the terms of a divestiture order, to also address the occurrence of post-consummation anticompetitive effects. That is, both structural and behavioral remedies could be designed in tiers with more substantial remedial requirements coming into effect if the merger harms competition in certain pre-determined respects. That is, if certain events occurred, then an additional round of divestitures, licensing arrangements, or behavioral remedies would be triggered. In order for this approach to economize monitoring costs, those pre-determined triggers would have to be readily verifiable, such as a price increase to certain customers within a given timeframe. Low cost verification of course reduces the ability to narrowly tailor the contingent remedy; so, this approach is perhaps best understood as a method for preventing particularly egregious harm to competition.

V. CONCLUSION

Questions of institutional design are one of the new intellectual frontiers in antitrust policy. In this Article, I have illustrated how institutional design intersects in overlooked ways with one of the most pressing competition policy problems we face in the United States: the requirement for the agencies and market participants alike to make decisions under uncertainty. My argument is that the profound uncertainty encountered when analyzing high innovation markets, such as those found in many contemporary technology industries, has led the federal antitrust agencies and merging parties to begin migrating to a new institutional form. Also found in other domains, this new form—experimentalism—incorporates an entrepreneurial mode of decision making, providing a framework of routines for exploring uncertainty with other related constituencies. Key aspects of the U.S. merger regime appear to approximate aspects of this experimentalist system, from the recent revisions to the Horizontal Merger Guidelines to changes in the agencies' conduct of merger investigations to the common structure of antitrust provisions in modern merger agreements to the novel designs of current consent decrees. But the transformation is not complete, and so I closed this Article with a discrete set of policy recommendations on how we might further optimize the regime in transition.

This study also has potential implications for the broader question of how other antitrust institutions, not just merger review can be optimally designed. Antitrust scholarship has primarily focused upon substantive rules, instead of explicit institutional design questions, for decades.[242] That is beginning to change, but the intersection between uncertainty and institutional design has not been explored—rather, the design issues frequently discussed in the literature are framed as interoperability problems between the various institutions involved in the antitrust enterprise.[243] In short, that literature addresses important issues regarding how we can improve our antitrust institutions, but conspicuously absent is any discussion of innovation's implications for design.

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http://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/mergers/merger-faq (last visited Oct. 29, 2015) (explaining "crown jewel" provisions).

242. *See* D. Daniel Sokol, *Antitrust, Institutions, and Merger Control*, 17 GEO. MASON L. REV. 1055, 1056–67 (2010) (outlining the scholarly history, focused primarily upon substantive analysis of caselaw); Daniel A. Crane, *A Neo-Chicago Perspective on Antitrust Institutions*, 78 ANTITRUST L.J. 43, 45 (2012).

243. *See, e.g.*, DANIEL A. CRANE, THE INSTITUTIONAL STRUCTURE OF ANTITRUST ENFORCEMENT xii–xiii (Oxford U. Press, 2011) (discussing antitrust institutions and the interplay between design and structure); HOVENKAMP, *supra* note 3, at 31 (discussing the limits of antitrust institutions); Sokol, *supra* note 242, at 160 (discussing the different substantive standards of the United States' two antitrust agencies); Crane, *supra* note 242, at 50 (discussing the interplay of all antitrust institutions).