COMPARING ALTERNATIVE INSTITUTIONAL PATHS TO PATENT REFORM

Liza Vertinsky[*]

ABSTRACT

In light of the significant cost of legal change in an economic climate that can little afford wasted expense, it has become imperative to reexamine costs associated with alternative avenues for achieving legal reform. This is particularly true in areas such as patent law, which involve complex and interrelated bodies of statutory law, common law, and agency regulations that are closely intertwined with private market practices, leaving open multiple options for change through processes with divergent characteristics and costs. Change in the law does not happen instantaneously or in a vacuum, yet the costs and consequences of transition are frequently neglected in considerations of legal change. Despite vigorous and prolonged debate over the content of patent reform, for example, Congress and commentators alike have failed to address the transition costs associated with legislating change or to explore institutional choice for changing the law as a way of managing these costs. Bridging a gap in the literature on legal change and, more specifically, patent law change, I propose an approach which characterizes and compares alternative mechanisms for patent law change in terms of selected characteristics likely to influence transition costs. While recognizing that there are a variety of characteristics that may play an important role, I focus on variance, specificity, speed, and participation—dimensions of the legal process that are likely both to differ across alternative institutional processes and to have a significant impact on transition costs. This approach provides a systematic way of examining the cost consequences of institutional choice in enacting law change. Examples are drawn from the current patent reform bill to illustrate how careful institutional choice might result in lower transition costs and to suggest when judicial decision-making or private market

---

* Liza Vertinsky, Ph.D., J.D., Assistant Professor, Emory University School of Law. Special thanks to the participants of the Emory Law School Manuscript Workshop, the Michigan State University Law School Workshop for Junior Scholars in IP (in particular Margret Chon and Robert Bone), the Stanford IP Scholars Conference, and the Case Western School of Law Colloquium for their comments and insights.

norms and standards might become more attractive mechanisms than legislation for bringing about patent law change. I also suggest, however, that the current political climate, characterized by high expectations of strong leadership and broad economic change, may alter and even reduce some of the comparative costs of legislating change. If Congress is serious about reforming patent law in order to reap economic gain, it should not ignore its own opportunities for cost savings through careful process design.

INTRODUCTION

If we believe the popular press, the U.S. patent system is in a state of crisis that threatens U.S. innovation and undermines U.S. competitiveness.[1] In response to the perceived crisis, Congress has proposed sweeping legislative change to U.S. patent law, and Congressional debate over how to change the patent system is now stretching into its fifth year.[2] Scholars,

1. *See* Eric Reguly, *Patent Protection a Threat to Innovation*, GLOBE & MAIL (Toronto), Jan. 5, 2006, at B2; Editorial, *U.S. Patent System Has Run Aground*, BOSTON HERALD, July 24, 2005, at 26.

2. The 2007 version of the Patent Reform Act was passed by the House of Representatives and placed on the Senate Legislative Calendar in January 2008. A revised Patent Reform Act of 2008, S. 3600, 110th Cong. (2008), was introduced in the Senate in September 2008, and a revised Patent Reform Act of 2009, S. 515, 111th Cong. (2009); S. 610 111th Cong. (2009); H.R. 1260, 111th

commentators, and policymakers are quick to suggest reforms for every aspect of the patent system and to offer critiques of the proposed legislation.[3] Yet despite vigorous and prolonged debate over the content of patent reform, Congress and commentators alike have failed to address the transition costs associated with legislating change or to explore institutional choice as a means of reducing the negative consequences of transition.[4] In light of potentially significant costs arising from legal change in an economic climate that can little afford extra expense, it has become imperative to compare alternative processes for bringing about patent reform in terms of their respective costs. Congress must critically reexamine its plan to legislate patent reform in light of the transition costs associated with alternative institutional paths for achieving reform.[5]

In this Article, I question how alternative processes for patent law change, specifically procedural and structural differences between legislation, judicial rulemaking, and agency rulemaking and adjudication, are likely to impact the cost and outcome of proposed changes to the law.[6] I suggest an approach for incorporating the cost of change into decisions about how to implement patent reform based on identifying characteristics that distinguish alternative institutional processes in ways that are likely to have significant implications for transition costs. This approach provides a starting point and catalyst for further research on the cost of change in patent law, recognizing that a project of this scope requires a detailed study not only of the comparative institutional design and mechanics of implementing a change in legal regime, but also (and perhaps more importantly) a study of how markets adjust to patent law change. The central contributions of this Article are to focus attention on this neglected aspect of patent law change and to suggest how the relative costs of alternative

---

Cong. (2009), which closely resembles the 2007 Act, is now under consideration.

3. *See* WENDY H. SCHACHT & JOHN R. THOMAS, CONG. RESEARCH SERV., CRS REPORT FOR CONGRESS: PATENT REFORM IN THE 111TH CONGRESS: INNOVATION ISSUES (2009), *available at* http://assets.opencrs.com/rpts/R40481_20090409.pdf; *see also* Thomas F. Cotter, *Patent Holdup, Patent Remedies, and Antitrust Responses*, 34 J. CORP. L. 1151 (2009); Kali Murray & Dmitriy Vinarov, *Rethinking Patent Fraud Enforcement in a Reform Era*, 13 MARQ. INTELL. PROP. L. REV. 263, 281–83 (2009); Matthew Sag & Kurt Rohde, *Patent Reform and Differential Impact*, 8 MINN. J. L. SCI. & TECH. 1 (2007).

4. While the term "legal process" may bring to mind the legal process school and their focus on constitutive rules governing how laws are made, "process" in this Article refers instead to the structural features of alternative institutional mechanisms for moving from one legal regime to another, such as the length of the process, the number of procedural steps and decision-makers involved in making and implementing a rule change, and the potential for appeal or reversal once the change has been made.

5. Although I do not discuss it explicitly, an important part of the calculus of transition costs is to determine if the cost of change is worth the benefit from the move to the new legal regime.

6. Private markets offer an alternative mechanism for change in the law, and to the extent that markets can be expected to bring about change in the law in the desired direction, this mechanism should be compared along with the public rulemaking processes. In this Article, market adjustment is indirectly incorporated through a consideration of how much alternative public rulemaking processes allow for market response.

institutional processes for change can be more fully incorporated into decisions about patent law change. I conclude that without further attention to the consequences of transitioning from one legal regime to another, Congress may miss opportunities for reducing some of the substantial costs inherent in legal change, and I use this Article to suggest a research agenda for further developing a policymaking calculus to reflect comparative institutional costs in bringing about patent law change.

Part I builds on existing literature exploring legal change to identify when and why alternative processes for moving from one legal regime to another might have a substantive impact on the cost and outcome of law change. Scholars have suggested multiple ways in which the path of legal change influences the outcome, including theories of path dependence, lock-in effects, structural rigidities, and feedback effects. This literature identifies characteristics of the process of change that influence outcome and suggests that different characteristics of the legal process may have varying significance depending on the nature and context of the law change. But it leaves unanswered practical questions about how differences between alternative institutional processes should inform decisions concerning the implementation of legal change and about the types of change for which institutional choice is likely to matter. While suggesting characteristics of rule changes that are likely to influence technology markets and innovation, the existing literature on patent reform has paid little attention to the transition costs that reform might entail or the implications of the institutional process for change on those costs. Patent reform scholarship focuses primarily on a comparison of alternative patent laws in light of expected impact on patent quality, constraints on the perceived misuse of patent "monopolies," and the prevalence and cost of patent litigation.

I seek to bridge this gap in the literature by introducing an approach for characterizing and comparing alternative patent lawmaking processes in terms of impact on the transition path and cost of moving from one legal regime to another. This approach draws from the existing scholarship on legal change and patent reform to identify four variables that capture what I argue are important determinants of the differences in transition costs associated with alternative processes of patent law change. The approach is meant to provide a platform for further exploration of the mechanics of patent law change and the consequences of differences in the mechanics of change for the cost of change. The analysis highlights the need for a deeper understanding of how individuals and organizations respond to changes in patent law—including both market adjustments and responses by nonmarket institutions—and the costs associated with these adjustments. While the focus here is on economic costs of transition, there may also be important noneconomic costs associated with transition, such as implications for fairness in allocating the costs of change and psychological costs associated with feelings of instability and movement from the

status quo. While not the focus of this Article, these consequences can and should be accommodated as part of a more fully developed study of the cost of law change.

Under my formulation of the approach, legal processes for law change are characterized by four dimensions: (a) variance—the scope for deviating from existing laws and the limitations on doing so; (b) speed—the speed with which laws can be changed and implemented and the speed with which they are understood and adopted by those impacted by the law; (c) specificity—the extent to which the law change is limited to or contingent on specific facts and circumstances; and (d) participation—the extent to which the lawmaking process reflects and takes into account the interests of different constituencies and the type of information that informs the lawmaking process.[7] Differences in the levels of each characteristic (for example, lower or higher speed, lesser or greater specificity and variance, and broader or narrower participation) are compared in terms of resulting differences in the nature and magnitude of the transition costs associated with legal change. Transition costs are construed broadly to include both public and private costs associated with a change in legal regime, including the costs resulting from uncertainty, public and private learning and other adjustment costs, efficiency costs arising from distortions in resource allocation during the adjustment period, structural and administrative costs incurred by institutions, other social costs incurred from making and enforcing the new laws, and error costs associated with the divergence of the actual from the anticipated new rule. The analysis suggests when and how alternative processes for patent law change—compared in terms of these four dimensions—might produce relatively lower or higher transition costs or yield benefits unavailable through other processes.

Part II applies this approach to compare legislation, judicial decision-making, and agency rulemaking and adjudication as competing processes for bringing about some of the changes included in the proposed Patent Reform Act, including changes to the calculation of patent damages, changes in the scope for third-party participation in challenging patent validity, and harmonization with international patent laws. The analysis highlights features of judicial decision-making that may make it a relatively attractive process for making many of the proposed changes to patent law when viewed solely in terms of transition costs. Courts have the ability to introduce targeted, incremental change; they can respond to changing market conditions; their decisions must be justified in terms of the balance of interests that patent law is designed to support; the process of judicial change is shielded, to some degree, from interest group pressure and con-

7. This variable serves in part as a proxy for the fairness of the process, the degree to which the process is based on full information, and the degree to which those impacted by the rule change are likely to know about and have their interests reflected in the process.

flicting agendas for change; and courts are limited in their ability to deviate too widely or unpredictably from existing norms in the absence of new circumstances. However, these characteristics may not be conducive to lower transition costs where significant shifts in public policy, institutional infrastructure, or broad patterns of resource allocation are required. The analysis therefore also suggests areas in which legislation or expanded agency rulemaking—or both—may be the least costly mechanisms for accomplishing a desired law change.

Although the focus in this Article is on public institutions for law change, markets provide an important alternative mechanism for certain types of changes. While I incorporate the relative costs of market adjustment as an alternative to public lawmaking indirectly through a recognition that the different public processes of rule change allow for different private market roles,[8] an interesting and important expansion of the analysis would be to explicitly include private markets as a fourth mechanism for changing the law. This requires a deeper understanding of the ways in which different markets develop their own informal rules and practices and the costs of such market adjustments.

In presenting the analysis of comparative institutional costs of change, I recognize that the approach adopted is based on normative assumptions about the behavior of courts, agencies, and legislators, and I leave for a subsequent article the study of whether the Federal Circuit and Supreme Court, Congress (particularly the committee and subcommittees charged with managing the patent reform legislation), and the U.S. Patent and Trademark Office (PTO) function in accordance with the normal guiding principles for judicial, legislative, and agency decision-making in the context of patent law. The approach proposed in this Article can accommodate the divergence of lawmakers from normative models of lawmaking, but with potentially different conclusions about the relative merits of alternative processes for law change. In addition, while the analytical approach suggests avenues for empirical measurement of the social welfare impact of institutional choice in the patent law context, further work is needed to quantify comparative transition costs and consequences.

The Article concludes with a warning that the failure by Congress to consider the importance of the process of legal change in evaluating reform proposals could limit the performance gains that it seeks through legislation. In line with the emphasis on the context in which legal rules are changed as a determinant of outcome, I consider how the current political climate, characterized by high expectations of strong leadership and

8. For example, in some cases a choice may be made to limit public institutional intervention or to rely on court decision-making (driven by private litigants' decisions to address issues of patent law) as a way of deferring to markets for needed change, with corresponding consequences for transition costs.

broad economic change in response to economic crisis, may alter and even reduce some of the comparative costs of legislating change, agency rule-making and adjudication, or both.

I. IMPACT OF PROCESS ON THE COST OF PATENT LAW CHANGE

> *The substance of the law at any given time pretty nearly corresponds, so far as it goes, with what is then understood to be convenient; but its form and machinery, and the degree to which it is able to work out desired results, depend very much upon its past.*[9]

A. When and Why Legal Process Matters

Scholars have focused predominantly on modifying the content of the law to address shortcomings with existing legal frameworks, often completely neglecting the costs and complexity inherent in change itself[10] and ignoring the efficiency implications of alternative institutional mechanisms for legal change.[11] This neglect of legal process is particularly pronounced in patent law literature despite the sensitivity of markets for innovation to potential and actual law change and the complex interactions between legislators, courts, agencies, and markets.

The analytical approach adopted in this Article builds on five approaches to legal change found in the existing literature, using these approaches to inform the selection of variables used to measure the cost of change: (1) path dependence (how the outcome depends on the characteristics of the path followed); (2) equilibrium theory (systemic effects of change and measures of disruption and stability); (3) decision-making under imperfect information and uncertainty; (4) behavioral responses to change; and (5) efforts at categorizing transition, transaction costs, or both. The approach also builds on existing work by patent scholars on the

9. OLIVER WENDELL HOLMES, JR., *Early Forms of Liability*, *in* THE COMMON LAW 1, 1–2 (Dover Publ'ns, Inc. 1991) (1881).

10. One of the exceptions is work done on identifying and measuring access to justice, where effort has been directed at trying to identify and quantify the costs involved in the path to justice. *See, e.g.*, Martin Gramatikov, *A Framework for Measuring the Costs of Paths to Justice*, 2 J. JURISPRUDENCE 111 (2009).

11. *But see* Michael P. Van Alstine, *The Costs of Legal Change*, 49 UCLA L. REV. 789 (2002) (providing a categorization of transition costs and suggesting the need to incorporate these costs into any calculus of the benefits of rule change, focusing on: (a) costs associated with the process of learning the law; (b) uncertainty costs, including negative costs associated with loss of accumulated experience with a given legal regime, positive costs associated with contending with new legal norms and with new conflicts over institutional allocations of authority, and opportunity costs associated with deterring desirable activities; (c) private adjustment costs; (d) error costs arising from mistakes or inaccuracies in the articulation or application of the law; and (e) public transition costs arising from the administration and application of the new law).

political, economic, institutional, and legal underpinnings of patent reform.

The concept of path dependence has figured prominently in the study of legal change.[12] One form of path dependence in particular—susceptibility to lock-in arising from increasing returns to following a path once taken regardless of whether the conditions making this path efficient later change—has been suggested as an important factor to consider when choosing between competing avenues for regulation.[13] Lock-in can arise for a variety of reasons, such as when institutions incur significant sunk costs in adapting to a particular regime, economies-to-scale in decision-making, and network effects.[14] Lock-in effects will be particularly costly where the conditions underlying a particular choice of legal regime are subject to rapid, unpredictable change or where there are other benefits to flexibility or significant costs involved in changing legal regimes in response to changed circumstances. I am interested in identifying when path dependence is likely to occur as a consequence of the institutional process by which a rule is changed (as opposed to the content of the rule) in a way that makes one process more or less costly than another. Factors leading to increased lock-in include the magnitude of the change and the sunk costs associated with adopting a rule, the ability and willingness of decision-makers to depart from existing rules, and the specificity of the process (how narrowly it targets the desired change in behavior).

Equilibrium theory suggests viewing change in terms of disruption of an existing state of equilibrium, with a focus on measuring the extent and cost of disruption and adjustment.[15] This notion of legal change as context-dependent, and as introducing disturbances into an existing system in ways that need to be measured and incorporated into decisions about legal change, supports my focus on the importance of the transition period and costs of moving from one legal regime to another.[16] Speed (the time di-

12. *See* Oona A. Hathaway, *Path Dependence in the Law: The Course and Pattern of Legal Change in a Common Law System*, 86 IOWA L. REV. 601, 604 (2001) (describing three different kinds of path dependence: "increasing returns path dependence" (once a decision is made, deviating is costly), "evolutionary path dependence" (evolution is constrained by history and is characterized by stability punctuated by rapid adjustment), and "sequencing path dependence" (the order in which alternatives are considered affects the outcome) to "explain how the path of the law shapes the law") (emphasis omitted).

13. *See, e.g.*, Clayton P. Gillette, *Lock-In Effects in Law and Norms*, 78 B.U. L. REV. 813 (1998).

14. *See, e.g.*, Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479 (1998); S. J. Liebowitz & Stephen E. Margolis, *Path Dependence, Lock-In, and History*, 11 J.L. ECON. & ORG. 205 (1995).

15. *See* Jill E. Fisch, *Retroactivity and Legal Change: An Equilibrium Approach*, 110 HARV. L. REV. 1055, 1058 (1997) ("Rather than evaluating new legal rules in isolation—in terms of their novelty or foreseeability—equilibrium theory focuses the inquiry on the regulatory structure and seeks to characterize that structure in terms of its stability.").

16. For an example of the conflict in rules arising between the International Trade Commission and Federal Circuit, see Sapna Kumar, *The Other Patent Agency: Congressional Regulation of the*

mension of a disturbance), specificity (the scope of the disturbance), and variance (the magnitude and volatility of the disturbance) address different aspects of the dynamic, systemic effects of change studied by equilibrium theorists. Expanding participation in policymaking to bring about systemic change has been widely examined, and the composition of stakeholders plays a prominent role both in work on policy lock-in and equilibrium shifts.[17]

The effects of uncertainty about future states of the world on current decisions and decision-making costs are critical determinants of the effects of legal change.[18] Uncertainty may arise at early stages of the process of legal change through indeterminacy in the lawmaking process itself.[19] Uncertainty may continue during the ex-post implementation of the law change through questions about the interpretation and application of the laws, variations in enforcement practices, and the potential for future modifications to the law.[20] Agency rulemaking is subject to challenge as beyond agency scope. For example, statutes require judicial interpretation and application, and lower court decisions are subject to reversal on appeal. A change in the law alters the legal, technological, and institutional landscape through iterations of institutional and private actor adjustments,[21] potentially compounding the effects of uncertainty where differences in the speed of acquiring and adjusting to new information across participants in the marketplace are significant.[22] In the context of patent law, differences in responding to a rule change can result in higher transaction costs and foregone transactions based on a failure to agree on the value and enforceability of the patent rights underlying the transactions. More generally, information about the implications of a change in law—who has it, how it is obtained and transferred and at what speed, the cost of obtaining and incorporating it, and the cost of failing to obtain or adjust to it—play important roles in determining the costs incurred by public and

---

ITC, 61 FLA. L. REV. 529 (2009).

17. For a discussion of equilibrium theories applied to understand policy change in environmental law, see PUNCTUATED EQUILIBRIUM AND THE DYNAMICS OF U.S. ENVIRONMENTAL POLICY (Robert Repetto ed., 2006).

18. *See, e.g.*, Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557 (1992) (discussing how uncertainty about the magnitude of risks associated with particular activities and the costs of reducing these risks may lead to the use of standards rather than rules).

19. *See, e.g.*, Morris P. Fiorina, *Legislative Choice of Regulatory Forms: Legal Process or Administrative Process?*, 39 PUB. CHOICE 33 (1982).

20. *See, e.g.*, Van Alstine, *supra* note 11.

21. *See, e.g.*, Peter Grajzl & Valentina Dimitrova-Grajzl, *The Choice in the Lawmaking Process: Legal Transplants vs. Indigenous Law*, 5 REV. L. & ECON. 615 (2009), *available at* http://www.bepress.com/cgi/viewcontent.cgi?article=1402&context=rle (examining features of the lawmaking process used to evaluate when a jurisdiction should develop its laws indigenously rather than transplanting them from other jurisdictions).

22. For example, markets are often the most rapid to respond to change, meaning that processes which favor private market adjustments are more likely to adjust quickly to a new outcome.

private actors.[23] The breadth of the law change and the extent of variation from existing practices (variance), as well as the specificity and transparency of the law change (specificity and participation), and the extent to which it requires further rulemaking in implementation (speed and participation) will be important factors in determining the costs arising from uncertainty and imperfect information accompanying law change.[24]

Behavioral theories focus on how the individuals and entities affected respond and adjust to a change in the law, including learning costs, individual and institutional rigidities and thresholds for change, and norm change.[25] The literature on decision-making under uncertainty explores how individuals handle risk and uncertainty, including problems caused by "behaviorism" (the ways in which human beings deviate from perfect rationality), media impact,[26] and challenges to efficient coordination, as well as potential effects on incentives.[27] The importance of expectations in driving investment behavior (including investment in innovation) and the potential for feedback effects that exacerbate initial change—well documented in the economics literature—emphasize the important role of behavioral variables in determining potential costs of patent law change.[28] The study of social norms adds to the understanding of how groups react and adapt to legal change.[29] While the variance, specificity, and speed of a

23. *See, e.g.*, Fiorina, *supra* note 19; Mathew D. McCubbins & Talbot Page, *The Congressional Foundations of Agency Performance*, 51 PUB. CHOICE 173 (1986). Interesting empirical questions include whether and how insurance costs respond to alternative mechanisms for rule change.

24. Institutional competencies will determine the likelihood of error in making and enforcing laws, and differences in competencies may suggest different approaches to changing the law. *See, e.g.*, Gillian K. Hadfield, *Judicial Competence and the Interpretation of Incomplete Contracts*, 23 J. LEGAL STUD. 159 (1994). Legal design may itself reflect the deliberate use of uncertainty. *See, e.g.*, Gillian K. Hadfield, *Weighing the Value of Vagueness: An Economic Perspective on Precision in the Law*, 82 CAL. L. REV. 541 (1994) (offering a framework for thinking about the role played by uncertainty in legal design).

25. *See, e.g.*, Robert E. Scott, *The Limits of Behavioral Theories of Law and Social Norms*, 86 VA. L. REV. 1603 (2000).

26. *See* Lisa A. Dolak & Blaine T. Bettinger, *The United States Patent System in the Media Mirror*, 58 SYRACUSE L. REV. 459, 461 n.4 (2008) (examining the public and political impacts of negative media on patent reform, including negative imagery provided by headlines such as *Supreme Court Tackles US Patent Pandemic* and *U.S. Patent System Has Run Aground* and the role of the press in selecting, framing, and emphasizing certain aspects of patent markets); *see also* Robert A. Armitage, *The Conundrum Confronting Congress: The Patent System Must Be Left Untouched While Being Radically Reformed*, 5 J. MARSHALL REV. INTELL. PROP. L. 268, 270–71 (2006).

27. *See* F. Scott Kieff, *Coordination, Property, and Intellectual Property: An Unconventional Approach to Anticompetitive Effects and Downstream Access*, 56 EMORY L.J. 327, 381–84 (2006); *see also* OLIVER E. WILLIAMSON, MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS (1975) (discussing transaction costs and behaviorism).

28. *See* R. Polk Wagner, *Understanding Patent-Quality Mechanisms*, 157 U. PA. L. REV. 2135, 2145 (2009).

29. *See, e.g.*, Robert C. Ellickson, *The Evolution of Social Norms: A Perspective from the Legal Academy*, *in* SOCIAL NORMS 35 (Michael Hechter & Karl-Dieter Opp eds., 2001). For a law and economics perspective, see Kaplow, *supra* note 18; Steven Shavell, *Liability for Harm Versus Regulation of Safety*, 13 J. LEGAL STUD. 357 (1984); Steven Shavell, *Strict Liability Versus Negligence*, 9 J. LEGAL STUD. 1 (1980).

legal process implicate aspects of these theories of behavioral cost and response, "participation" is used in this Article to capture some of the divergent behavioral costs of process, albeit in a blunt way.

The literature on patent law reform, while it has not addressed the cost of change, does provide insights into political, economic, and institutional factors influencing the divergent costs of alternative processes for accomplishing change.[30] Proposals for reform legislation are strongly influenced by public policy concerns about the performance of the U.S. economy, with a historical reliance on patent policy change to address concerns about U.S. performance.[31] The tie between the patent system and concerns about innovation and competitiveness persists despite a lack of empirical evidence supporting the causal link between patent rights, investment in research and development, and changes in U.S. productivity.[32] This intertwining of patent law and political agendas complicates decision-making about patent law, resulting in a patent law system that is influenced by broad political and economic trends and shifting public views about how patents impact markets.[33] A failure to definitively pin down the relationship between patents and innovation has left policymakers searching for guidance as to how changes in patent law will impact innovation,[34] leaving few informed limits on the public policy pendulum and increasing susceptibility to special interest group pressures.[35] This political economy context suggests the importance of critically examining the potential cost of proposed reforms in light of the scope and breadth of change (variance and specificity) and the nature of participation in the process.

In the absence of a clear understanding on how patents influence innovation and related challenges in assessing regulatory impact, some scholars suggest favoring private market adjustment over public sector interven-

30. For work that is shifting attention to the institutional context of patent law, see, for example, Stuart Minor Benjamin & Arti K. Rai, *Who's Afraid of the APA? What the Patent System Can Learn from Administrative Law*, 95 GEO. L.J. 269 (2007); Jonathan S. Masur, *Process as Purpose: Administrative Procedure, Costly Screens, and Examination at the Patent Office* (U. Chi. John M. Olin Program in L. & Econ., Working Paper No. 393, 2008), *available at* http://www.law.uchicago.edu/files/files/393.pdf.

31. *See, e.g.*, Bronwyn H. Hall et al., *Prospects for Improving U.S. Patent Quality via Postgrant Opposition*, *in* 4 INNOVATION POLICY AND THE ECONOMY 115, 121 (Adam B. Jaffe et al. eds., 2004) ("The U.S. patent system . . . is very much a political creation. Its development and frequent alterations at the hands of the U.S. Congress reflect changes in the balance of political power . . . ."); *see also* 153 CONG. REC. S4678 (daily ed. Apr. 18, 2007) (statement of Sen. Leahy) (supporting the Patent Reform Act of 2007).

32. *See, e.g.*, Josh Lerner, *Patent Protection and Innovation Over 150 Years* (Nat'l Bureau of Econ. Res., Working Paper No. 8977, 2002), *available at* http://nber.org/papers/w8977.pdf.

33. *See* Armitage, *supra* note 26; Mark D. Janis, *Patent Abolitionism*, 17 BERKELEY TECH. L.J. 899 (2002).

34. *See* F. M. Scherer, *The Political Economy of Patent Policy Reform in the United States*, 7 J. TELECOMM. & HIGH TECH. L. 167 (2009).

35. *Id.*

tion.[36] Other scholars have provided alternative explanations of the role of patents in the economy in efforts to clarify the link between patents and innovation.[37] The challenge of identifying changes to the law that will lead to improved outcomes and the danger of unanticipated costs makes a consideration of the cost of legal change even more important. Specificity and variance become important where the effects of a patent law change on innovation are poorly understood because both serve to limit the magnitude of the change and provide opportunities for incremental learning. More generally, the uncertain relationship between patent law and innovation makes the incorporation of a broad variety of costs of legal change into decision-making about patent reform critical. Moreover, once the costs of legal change are incorporated into the analysis, the status quo may become more attractive.

In the context of patent reform, the focus of patent scholars and commentators alike is often centered on the monopoly costs imposed on technology markets by poor quality or overly broad patents and the need for intervention to curtail monopoly power.[38] Concerns about patent monopolies have been fed by influential models of patent problems in the context of cumulative innovation, complex products incorporating multiple inventions, and the activities of patent owners that focus primarily on exercising patent rights rather than making products. Models of patent hold up,[39] royalty stacking,[40] and patent thickets[41] have served as focal points for

36. This divergence of views was evident in the dissenting opinions of the recent Supreme Court decision in *Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 548 U.S. 124 (2006).

37. Theories that focus on the ability of private parties to contract with each other—including a transaction costs approach emphasizing the role of patents in reducing information and related transaction costs and theories of coordination emphasizing the role that patents play in facilitating coordination among market players to accomplish efficient activities—have gained prominence as alternative explanations for the importance of patent laws, with implications for patent reform. *See, e.g.*, Paul J. Heald, *Transaction Costs and Patent Reform*, 23 SANTA CLARA COMPUTER & HIGH TECH. L.J. 447 (2006–2007); Kieff, *supra* note 27. Other theories are based on the role of patents in addressing problems of incomplete contracting, relationship-specific investments, signaling firm quality, performing an accounting function in joint production, and creating liquidity in technology markets, and more generally on the benefits from clear definition and protection of property rights.

38. Patent law is premised on the existence of an economic system in which the private incentives to invent and disclose inventions conferred by property right protection are balanced against the gain from public dissemination and use of the inventions. *See* RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 1–13 (1972) (discussing the importance of legal protection of property rights to create incentives for efficient resource use); Andrew Beckerman-Rodau, *The Supreme Court Engages in Judicial Activism in Interpreting the Patent Law in* eBay, Inc. v. MercExchange, L.L.C., 10 TUL. J. TECH. & INTELL. PROP. 165, 167 (2007). *But see* James Bessen & Michael J. Meurer, *Lessons for Patent Policy from Empirical Research on Patent Litigation*, 9 LEWIS & CLARK L. REV. 1, 2–8 (2005) (explaining that 180,000 patents were granted in 2000 but only about 3,000 were involved in litigation, and 10% of patents account for 80–90% of economic returns on patents); Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 1041 (1997) (finding that "[m]ost patents do not confer market power").

39. Models of patent holdup illustrate problems that arise when a patent covers one component or feature of a complex product, including the ability of the patent owner to extract too much value for its patent rights by threatening to seek an injunction preventing the sale of the whole product.

40. Models of royalty stacking examine situations in which excessive royalty charges arise where

broad concerns about the abuse of monopoly power and have driven calls for patent reform.[42] The results have included a legislative focus on issues of patent quality—with a view toward narrowing patent rights—and a curtailment of litigation. These patent models highlight the dynamic nature of the innovation process and some scholars have pointed to the importance of incorporating private market adjustment.[43] However, more needs to be done to examine the systemic interaction of private norms and behavior with public rules and enforcement during the transition from one rule to another and to incorporate the cost of the transition into evaluations of reform proposals. Specificity and alternative forms of participation can allow for more or less opportunity for market-driven change, as well as limit or expand the ability of markets to adapt efficiently to rule change.

A final facet of patent law change upon which this Article draws is the intersection of the organization, methodology, and production of science with patent law.[44] Scholars are quick to point to the need of the law to accommodate a shifting scientific and technological landscape, but are less forthcoming with ideas about how the patent system should adjust and respond to changes, not only in science, but also in the institutions that generate and disseminate scientific knowledge.[45] These institutional needs should be considered when evaluating alternative processes for legal change. The complexity and rapid change of technology markets impose timing problems—laws need to be able to adapt to the pace and nature of technological change. Legal boundaries often need to be established before

---

multiple patents cover a single product.

41. Related concerns about "patent thickets" arise from anti-commons problems in patent ownership—a situation of over-ownership in which a particular area of technology is blanketed by multiple patents owned by multiple parties who block each other and prevent effective use of the technology.

42. *See* Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991 (2007).

43. *See, e.g.*, Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CAL. L. REV. 1293 (1996). Critics of the proposed reforms and of the underlying models of patent "problems" have approached the issues from both theoretical and empirical angles. Some argue that the political and public debate over patent reform is based to a large extent on misleading information about the scope and nature of the problems facing patent markets. *See, e.g.*, Jonathan Barnett, *Property as Process: How Innovation Markets Select Innovation Regimes*, 119 YALE L.J. 384 (2009) (exploring whether markets can adjust to levels of "property" protection to improve efficiency); Einer Elhauge, *Do Patent Holdup and Royalty Stacking Lead to Systematically Excessive Royalties?*, 4 J. COMPETITION LAW & ECON. 535 (2008); Aaron Homer, Comment, *Whatever It Is . . . You Can Get It on eBay . . . Unless You Want an Injunction—How the Supreme Court and Patent Reform are Shifting Licensing Negotiations from the Conference Room to the Courtroom*, 49 S. TEX. L. REV. 235 (2007).

44. *See* Rochelle Dreyfuss, *Pathological Patenting: The PTO as Cause or Cure*, 104 MICH. L. REV. 1559, 1561 (2006) (arguing that the problems with the patent system raise "questions about institutional competence to grapple with the changing face of science," and pointing to the importance of institutional shifts in the organization, methodology, and production of science in understanding change in patenting and effects of patent law).

45. *But see* Peter Lee, *The Evolution of Intellectual Infrastructure*, 83 WASH. L. REV. 39, 40 (2008) (proposing a case-specific social feedback mechanism for liberalizing access to patented infrastructure).

the nature of the underlying technology is fully understood. There are also industry differences in regulatory needs and benefits. It is critical to have lawmaking processes that can both adapt quickly and flexibly to the evolving needs of technology markets and to alter laws within the uniform patent system in a way that accommodates industry differences. The specificity of the legal process will matter in allowing for responses to particular technological features or needs, and the nature of participation in the process will determine how and to what extent patent law change reflects technology change.

Although traditionally reluctant to delve into the administrative law aspects of the patent system, patent scholars have recently started to address the institutional context of patent law change by examining where in the patent system to best focus the reform efforts.[46] This Article adds to that developing literature, but focuses specifically on the period and consequences of the transition process; it seeks to map the insights from that literature into the characterization of the alternative institutional processes for change.

B. Analytical Approach to Comparing Processes for Law Change

The analytical approach introduced in this Article relies on four variables to characterize key institutional differences that will impact the cost and outcome of the transition from one legal regime to another: (1) va-

---

46. *See* Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495 (2001). *But see* Mark Lemley, Doug Lichtman & Bhaven Sampat, *What to Do About Bad Patents?* 28 REG. 10 (2005–2006) (suggesting a two-tiered patent system that allows applicants to pay more for a higher level of scrutiny that accords their patent with a higher presumption of validity).

In a widely cited study of the patent system, Jaffe and Lerner point to the confluence of two administrative changes to the patent system to support their view that the U.S. has swung the pendulum too far in the direction of strengthening and expanding patent rights, creating thickets of strong patents of questionable validity that hamper innovation. *See generally* ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT (2004); *see also* Dreyfuss, *supra* note 44; Michael S. Mireles, Jr., *The United States Patent Reform Quagmire: A Balanced Proposal*, 6 MINN. J. L. SCI. & TECH. 709 (2005). For recent work focusing on administrative law and institutional analysis, see, e.g., Masur, *supra* note 30; Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035 (2003); Arti K. Rai, *Facts, Law and Policy: An Allocation-of-Powers Approach to Patent System Reform* (U. Pa. Inst. L. & Econ. Research Paper No. 02-20; U. Pa. L. School Pub. L. Research Paper No. 11, Oct. 2002), *available at* http://ssrn.com/abstract=335122 (arguing for vesting greater fact-finding expertise at the administrative and trial court levels, with a more appropriate role of appellate review informed by generalist input and guided by patent policy). *See also* Kali N. Murray, *The Cooperation of Many Minds: Domestic Patent Reform in a Heterogeneous Regime*, 48 IDEA 289 (2008) (arguing that patent law should be seen as a heterogeneous regime that attempts to structure patent law through the competitive roles played by diverse agencies); Jonathan M. Barnett, *Sharing in the Shadow of Property: Rational Cooperation in Innovation Markets* (USC Ctr. in L. Econ. & Org. Research Paper No. C08-22, Oct. 2008), *available at* http://law.bepress.com/cgi/viewcontent.cgi?article=1094&context=usclwps; Steven J. Rizzi, *Courts, Not Congress, Shaped Patent Law in 2007*, LAW360, Jan. 3, 2008, http://www.law360.com/articles/43056.

riance—the scope of deviation from existing laws and the restrictions on doing so; (2) speed—the speed with which laws can be changed and implemented and the speed with which the laws are promulgated, understood, and adopted; (3) specificity—the extent to which the law change is limited to or contingent on facts and circumstances and the types of information which can or must inform the decision; and (4) participation—the extent to which the lawmaking process reflects and takes into account the interests of and information about constituencies with divergent interests, including the extent to which change is a top-down or bottom-up process, susceptibility to capture by special interest groups, room for multi-institutional response, and the breadth of the information that informs the process.[47] These variables are selected based on what the literature suggests are relevant factors in determining the consequences of a law change, including: the ability to capture broad differences between institutional mechanisms for changing the law; the expected correlation with circumstances where the process of change is likely to have significant consequences; and the potential for quantification—the extent to which the variable can be incorporated into decision-making in a manageable way and also be used for empirical study.[48] These variables are of particular relevance in the patent law context because they capture what the literature suggests are important determinants of investment decisions relating to research, development, and adoption of technology. These decisions often require relationship-specific investments and entail sunk costs based on expectations about future market conditions, including predictability, transparency, and stability. Each of these factors is impacted in turn by the variance, specificity, speed, and participation in the process of law change.

Legislating, judicial decision-making, and agency rulemaking are characterized and compared along these four dimensions to determine the

47. These dimensions, and their relationship to technology markets, reflect the criteria suggested by studies such as the National Academy of Sciences (NAS) Report, as well as the objectives proclaimed by policymakers. In their response to the proposed patent reforms, the Bush administration emphasized that:

> A robust intellectual property system is built upon and relies on fundamentals of predictability, clarity, timeliness, and fairness. Downstream litigation costs can be minimized through patent clarity – offered through such early elucidation mechanisms as applicant quality submissions and post-grant procedures. Flexibility in assessing damages ensures that results can be tailored, avoiding a "one-size-fits-all" approach that pleases no one.

Letter from Nathaniel F. Wienecke, Assistant Secretary for Legislative and Intergovernmental Affairs, U.S. Department of Commerce, to Senator Patrick J. Leahy, Chairman of the Committee on the Judiciary (Feb. 4, 2008), *available at* http://www.ogc.doc.gov/ogc/legreg/letters/110/S1145020408.pdf.

48. Although there is room for debate over the selection and characterization of these variables, the main point is that the impact of legal process needs to be incorporated into the decision-making calculus in some way that meaningfully captures institutional differences and their impact on the transition from one legal regime to another, requiring some degree of simplification and assumptions about the process of legal change.

impact of the transition path on the cost, duration, and consequences of the legal change—the "transition costs." Transition costs are construed broadly to include both public and private costs associated with a change in legal regime, including the costs resulting from uncertainty, public and private learning and other adjustment costs, efficiency costs arising from distortions in resource allocation during the adjustment period, structural and administrative costs incurred by institutions, other social costs incurred from making and enforcing the new laws, and error costs associated with the divergence of the actual from the anticipated new rule.

Although not expressly addressed by the Supreme Court or the parties to the case, transition costs such as increased transaction costs—expenses incurred in finding licensing partners and negotiating licenses and costs associated with increased risk of litigation—and foregone transactions arising from a lack of clarity in the respective contractual rights and options for licensors and licensees were emphasized as likely and harmful consequences of the recent *MedImmune* decision.[49] In *MedImmune*, the Supreme Court altered the Federal Circuit's rule governing the ability of a licensee to bring a declaratory judgment action challenging patent validity.[50] Other consequences of this reversal of the Federal Circuit's approach included error and coordination costs arising from an imperfect and varied understanding of and adjustment to new rules, private administrative and structural costs incurred in reevaluating and revising intellectual property licensing strategies to adjust to new rules (for example, revising and renegotiating licenses and reevaluating patent licensing strategies and licensing programs), and public administrative costs associated with litigation related to disagreement about the many questions (such as ability to contract around the rule) left open by the Supreme Court decision.[51] Concrete instances of administrative and structural transition costs include the need to hire and train additional PTO personnel, to educate existing personnel and the public if expanded third-party opposition proceedings are introduced, and to develop (and, most likely, to test through appeal) the expanded jury guidelines and instructions to implement proposed changes to the way in which patent damages are calculated.

---

49. MedImmune, Inc. v. Genentech, Inc., 549 U.S. 118 (2007).

50. *Id*. *See also* Brief of Amicus Curiae Licensing Executives Society (U.S.A. & Canada), Inc. in Support of Neither Party at 16, MedImmune, Inc. v. Genentech, Inc., 549 U.S. 118 (2007) (No. 05-608).

51. *See, e.g.*, Mark P. Kesslen & Matthew J. Atlas, *The Impact of* MedImmune v. Genentech *on the Future of Intellectual Property Agreements*, FOCUS ON N.J. CHAPTER (Ass'n of Corporate Counsel, Washington, D.C.), Apr. 5, 2007, at 1, *available at* http://news.acca.com/accnj/issues/2007-04-05/index.html; Thomas Joseph, *Some Implications of the* MedImmune *and* Avocent *Decisions on Declaratory Judgment Actions in Patent Cases*, PIPLA NEWS (Pittsburgh Intellectual Property Law Association, Pittsburgh, Pa.) Feb. 2009, at 1, *available at* http://www.piplaonline.org/files/february%202009.pdf.

The importance of differences in the four characteristics across alternative processes will vary with the context of legal change, meaning that a particular process may lead to lower transition costs for some types and circumstances of legal change but not others. The suggested approach provides a way of identifying when alternatives to legislation may reduce the costs or improve the consequences of transition. This approach is complementary to work done on institutional choice and optimal rule design, focusing specifically on aspects of institutional structure that result in divergent effects on the cost and outcome of the transition rather than on institutional choice in the design and content of the new law.[52] Following a deeper examination of the four variables and their implications for transition costs in the context of patent law change, Part II provides examples of how this approach informs institutional choice in implementing some of the proposed measures in the current Patent Reform Act.

1. Variance

The "variance" of the lawmaking process refers to the scope of divergence from existing laws and the requirements and constraints imposed on such divergence. Constraints may be externally imposed by constitutional limits on the scope of decision-making or may result from internal features or principles of the lawmaking process, such as the principles of stare decisis or the high structural costs of administrative change. In addition to deviation from existing laws, variance also encompasses the extent to which law change in one area can deviate from existing laws in other areas of law or decision-making. Legislation has the highest variance in this regard, particularly in areas governed primarily by statute, such as patent law.

Variance may also arise in divergence across jurisdictions, allowing for experimentation and comparison of alternative law change and providing information that may be useful in evaluating alternative laws. Some have bemoaned the establishment of a specialized court of appeals for patent cases—the Federal Circuit—as reducing the benefits of experimentation that courts offer. However, predictable results reduce the uncertainty

52. *See, e.g.*, Joan MacLeod Heminway, *Rock, Paper, Scissors: Choosing the Right Vehicle for Federal Corporate Governance Initiatives* (U. Tenn. C. L. Working Paper, 2004), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=590461. Heminway provides an analytical approach to institutional choice based on four elements that a "rule proponent" should consider when deciding whether a particular rule should be enacted by the SEC, Congress, or the courts. The four elements of the decision-making model are: (a) power, authority, and jurisdiction; (b) competence (structural and substantive); (c) impartiality (influence and bias); and (d) transition legal costs. *Id.* While Heminway focuses on the decision-making aspects of alternative institutions, the focus of the framework in this Article is on aspects of institutional structure that relate specifically and directly to the dynamic aspects and costs associated with the transition path and cost of legal change.

in the nature and application of new law.[53] The use of pilot projects such as the Peer Reviewed Prior Art Project at the PTO offers an example of experimentation to test the benefits and flaws of proposed changes to the role of third parties in the patent application process.[54]

Variance also includes the volatility of laws (how often laws can change) which will depend in part on the ability to modify or overrule the existing law, the reversibility of the law, and the cost required to change it. Although judicial decision-making is often seen as having the lowest variance due to restrictions on the scope for departure from prior law, the recent increase in Supreme Court decisions in the area of patent law—many of them reversing the Federal Circuit—is an example of an increase in the volatility of judicial rule change.[55]

The variance of a rule change is generally a significant determinant of transition costs, with higher variance generally leading to higher transition costs. Scholars extol the importance of stability, predictability, and reliability in the law.[56] This view is echoed by policymakers and commentators on patent reform, suggesting that a premium should be placed on lawmaking mechanisms that promote stability and predictability and generate clear, stable legal norms. "Not unlike the function of rules of grammar, a settled legal regime provides a framework for efficient communication between transactors."[57] Extending this analogy, processes for legal change will differ in the "language" used to communicate the change and the extent to which the existing language is modified or rendered such that further interpretation is needed. These differences will have implications for comparative variance and, therefore, for comparative costs. High variance will often be associated with lower predictability and higher uncertainty about the nature and effect of the new legal regime, leading to higher adjustment costs by both public and private actors. These costs include: (1) learning costs—loss of accumulated learning about the old rule and costs incurred in learning about the new rule; (2) transaction costs; (3) administrative costs—for example, changing legal forms and changing procedures to comply with new rules; and (4) other costs associated with uncertainty—for example delays in transacting while the uncertainty is resolved. Restrictions which limit the basis for law change, such as precluding

53. *See, e.g.*, Craig Allen Nard & John F. Duffy, *Rethinking Patent Law's Uniformity Principle*, 101 NW. U. L. REV. 1619, 1623–24 (2007).

54. *See* Peer Reviewed Prior Art Pilot, http://www.uspto.gov/web/patents/peerpriorartpilot/ (last visited Feb. 15, 2010).

55. *See* Caroline A. Crenshaw, *Patents and Patients: Who is the Tragedy of the Anticommons Impacting and Who Is Bearing the Cost of High-priced Biotechnological Research?*, 9 MINN. J. L. SCI. & TECH. 913, 923 n.49 (2008) (citing BRIAN T. YEH, CONG. RESEARCH SERV., AN OVERVIEW OF RECENT U.S. SUPREME COURT JURISPRUDENCE IN PATENT LAW 1 (2007)).

56. *See, e.g.*, Frank H. Easterbrook, *Stability and Reliability in Judicial Decisions*, 73 CORNELL L. REV. 422 (1988).

57. *See* Van Alstine, *supra* note 11, at 814.

courts from decision-making where there is clear statutory guidance or a requirement to give reasoned support to any change, will increase the predictability of the law change. Limits on the magnitude of the change will also increase predictability and reduce uncertainty, insuring that any change will occur gradually. Many of the changes included in the proposed reform legislation threaten to have widespread, unpredictable, and unanticipated effects that evolve over time.[58] The costs of high variance and low predictability are particularly high when long term sunk costs are required based on expectations of future payoffs that fluctuate with the rule change. This proposition is an argument against allowing high variance in laws relating to patent damages. Higher uncertainty and lower predictability will generally increase transition costs, particularly if the uncertainty is directed towards future payoffs, with negative efficiency effects on technology markets. Higher variance may also impact the cost of lawmaking and the cost of enforcing the law through administrative and learning costs and the expenses incurred in required change of procedures.

However, higher variance is not always associated with higher transition costs. Higher variance may avoid the need for incremental changes by facilitating a substantial shift from a lesser to a more efficient market equilibrium. Indeed, high variance is required to achieve those reforms which require a paradigm shift—such as the shifts in U.S. patent law required to achieve harmonization with international norms. High variance may also minimize the negative effects of lock-in—situations in which institutions do not adjust even when the conditions which make a legal rule efficient change—and the tendency to slip back to prior legal norms which are inherent in the legal system.[59] High variance may be particularly desirable where the variance is unlikely to generate uncertainty or where uncertainty is unlikely to impede decision-making, and where incremental change involves needless structural costs and delays.

2. Speed

The "speed" of the lawmaking process refers to how quickly new laws can be approved and implemented and how fast the law change is communicated to and adopted by those affected by the law. The speed of the lawmaking process will impact the magnitude and the duration of the uncertainty associated with law change. It will also impact the learning and negotiation costs and other expenses involved in adjusting business and

58. For example, it can be argued that the landscape governing basic research and development is still adjusting to the changes introduced by the Bayh-Dole Act, and that the Federal Circuit's role in shaping patent law remains in flux. *See* Bayh-Dole Act, 35 U.S.C. §§ 200–12 (2006).

59. *See* Easterbrook, *supra* note 56, at 423–24 (suggesting why judicial decision-making based on precedent may not promote stability).

investment strategies. Where a change in patent law will impact the expected value of patent rights, but the timing and nature of the rule change is uncertain and the duration of the uncertainty is prolonged, private actors will delay investment and licensing decisions and will have more difficulty in closing transactions due to the uncertain value of the assets involved. The speed with which the law change is adopted should be distinguished from when the law becomes effective, since in some (but not all) cases a period of transition is beneficial to reduce transaction costs as long as the nature and scope of the new rule is understood ahead of time. The visibility and transparency of the process can play an important role in determining the speed at which a new law is adopted, particularly where public perceptions and expectations are important in determining the market impact of the law change.

Where the legal process has differential effects on market participants, the variation in adjustment to the new law can have potentially costly effects. Moreover, where interactions between lawmakers are important, and in the absence of coordination between lawmakers, the relative speed with which changes are made by alternative processes can be critical in facilitating or preventing coordination and avoiding conflicting actions. The PTO, courts, market participants, and legislators are all taking actions that alter the patent system, and the relative speed with which these different players act can result in unintended outcomes. Courts have already responded to some of the concerns raised by Congress in its patent reform bill. For example, judicial decisions making it harder to obtain injunctions, to overcome a challenge of obviousness in patentability determinations, and to recover for willful infringement have altered the patent law landscape that the reform bill was designed to address and raised the question of whether some of the proposed reforms are still necessary or desirable.[60]

The relationship between the speed of law change and its cost may vary. For instance, the longer the period of debate over the content and timing of law change, the longer the period of uncertainty about what the change will be; however, the opportunity to prepare for a change in law will be greater. There is generally a cost associated with moving too rapidly, accelerating adjustments from one regime to another. Even basic costs

60. The *eBay* decision limited the opportunity to obtain preliminary and permanent injunctive relief by patent holders who are not also producing products and services covered by their patents. eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 392–94 (2006). The *Labcorp* case raised the issue of scope of patentable subject matter. *See* Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc., 548 U.S. 124, 134–38 (2006) (Breyer, J., dissenting). The *KSR* case focused on the applicable standard for obviousness, highlighting uncertainty over what is patentable and what is not. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 417–18 (2007). The Federal Circuit subsequently overruled its own precedent and increased the standard for proving willful infringement. *See In re* Seagate Tech., LLC, 497 F.3d 1360, 1371 (Fed. Cir. 2007).

such as revamping rules and regulations online and in print will be more expensive if accelerated. There are also costs attendant to change that drag out over time. Where slow speed is accompanied by predictability of outcome, the result could be either lower or higher transition costs. To the extent that slow speed is accompanied by uncertainty about the law change, however, it may dampen investment incentives and impede business transactions and will generally result in higher transition costs—particularly higher transaction costs. Differential speed in adjusting to legal change will increase coordination costs, not only between parties who can influence the legal regime, but also between parties engaged in transactions that will be affected by the legal regime change.

3. Specificity

The "specificity" of the legal process refers to the breadth of the law change and the degree to which it is contingent upon or limited to particular facts and circumstances. The specificity of a lawmaking process will determine the reach of the law within the marketplace, whether changes are incremental or take the form of discrete jumps, and the precision with which the law is directed at the specific behavior motivating the law change. Where a change in patent law is directed at solving a market problem—such as addressing unfair use of patent rights that covers standards in standard-setting organizations—tying the change in rules to the specific market circumstances that result in undesirable behavior allows for new responses to different market situations. Specificity relates not only to the narrowness or breadth and level of detail of the resulting law, but also to the type of information and agendas that can factor into the law change. Higher specificity may allow for more incremental change and more flexibility to address changing market needs. However, highly specific laws may also have limiting effects on market adjustment and may require additional law changes to accomplish intended goals. Higher specificity may also limit the type and number of agendas that are included in the decision to change the law. Understanding patent policy as innovation policy and as intertwined with trade policy suggests the potential benefit of incorporating economic and trade agendas into decisions about patent law change.

Incremental changes to the law will be useful where lawmakers have limited information about the effects of the law change and where adjustment costs increase with the magnitude and speed of the law change. The cost of making and implementing laws and a lack of sufficient information about what the law change should be may dictate lower specificity. Limiting the effects of the law change to specific facts and circumstances will be beneficial where market conditions, practices, and needs are changing rapidly. For example, determination of damages in patent law should be tailored to market and technology circumstances such that they reflect the

characteristics of the markets and technologies at issue and allow room for private market responses. For some types of law changes, broader laws will allow for flexibility, whereas in other cases, more specific law changes will preserve flexibility. Flexibility in application of the new law will allow parties to adjust to the same law in different ways. Higher specificity will generally reduce learning costs, decrease public and private adjustment costs, and minimize the scope of structural changes required. Higher specificity may increase transition costs where the change in legal regime is sweeping and where there are benefits to a faster, more discrete shift from one legal regime to another.

4. Participation

"Participation" in the legal process refers to the different interests and information which inform or are reflected by the lawmaking process, as well as perceptions about how varying interests are reflected and implicated in the law change. At the most basic level, participation in law change refers to who can initiate, participate in, or influence the lawmaking process, and what interests and information inform the process. Participation might occur through a process that is representative of a broad selection of market participants, one that requires a balancing of divergent interests, or one that provides opportunities for participation by those impacted by the laws and by those not directly impacted, but nonetheless interested. Participation may occur in a variety of ways: a bottom-up approach to change, such as a market driven change; a top-down approach, such as narrowly focused legislation; or through some combination of the two. In the context of patent law, the stage of the patent process at which the change is targeted—a change directed at rules for licensing patents versus rules for initially awarding a patent, influenced by institutional choice for how patent law is changed—will have implications for participation.

Alternative mechanisms for changing the law will draw upon different decision-makers, interest groups, and agendas for change, and will have consequences for the cost and outcome of the legal change. The nature of participation will impact the perceived and actual fairness of the process and outcome. As markets evolve and laws change, there will inevitably be winners and losers. A robust lawmaking mechanism is one that is not overly responsive to either the winners or the losers, but rather one that can focus on protecting a broad measure of social welfare. Moreover, a robust lawmaking process needs to be perceived as a fair one, and the fairness of the system will be judged in part by the ways in which it accounts for diverse interests. A process that provides for fair and balanced participation should lower transition costs in most cases, particularly once

enforcement costs and the need for future modification to remedy imbalances are taken into account.

Different degrees of heterogeneity and volatility of preferences may dictate preferred forms of lawmaking.[61] Whereas courts and agencies have a more particularized and narrow group of participants and more restricted agendas, the legislative process draws upon a broader and more heterogeneous group of participants, either directly or indirectly, through lobbying and voter interests. Broader participation can be helpful in some contexts, such as rule changes that must integrate a range of interests and tradeoffs as part of a broader agenda in the context of international negotiations relating to intellectual property. On the other hand, processes which require broad participation, particularly with heterogeneous preferences, may lead to lawmaking with features of more questionable value, such as an increase in vagueness. For example, legislators may find that precisely drawn statutes are more likely to concentrate interests, and if the likelihood of passing legislation diminishes as the parties opposed to the legislation become more concentrated, legislators will introduce vagueness to diffuse opposition.[62] Vague statutes may facilitate blame-shifting,[63] and more transparent laws may raise the cost of securing agreement among those involved in lawmaking because greater precision sharpens value conflicts.[64] Concerns about regulatory capture of decision-making by special interest groups may similarly dictate preferred processes for rule change. The role of special interest groups, lobbying, and regulatory capture can be important in the legislative context, but are perhaps more of a concern in the context of agency rulemaking, which operates within a narrower political context involving close proximity between the regulator and the regulated. While courts also have a more restricted framework for participation, they are less likely to be the subject of regulatory capture. Higher probability of regulatory capture leads to higher transition costs.

Participation also encompasses the ways in which issues driving or shaping law change are presented and the information that is taken into account when selecting among alternatives. Media plays an important role in this broader view of participation. Media coverage of the patent system has an important influence over how the public and policymakers respond to proposed changes in the patent system, a role that is even more pro-

61. *See* Grajzl & Dimitrova-Grajzl, *supra* note 21, at 5. The authors analyze the comparison of adopting foreign laws versus indigenous laws, emphasizing the features of law reform which include the sequential nature of lawmaking, the presence of uncertainty, considerations over ex-ante promulgation and ex-post adjustment costs, and the role of political context.

62. *See, e.g.*, William N. Eskridge, Jr., *Politics without Romance: Implications of Public Choice Theory for Statutory Interpretation*, 74 VA. L. REV. 275, 288 (1988).

63. *See* Hadfield, *Weighing the Value of Vagueness: An Economic Perspective on Precision in the Law*, *supra* note 24, at 550.

64. *See* Colin S. Diver, *The Optimal Precision of Administrative Rules*, 93 YALE L.J. 65, 73 (1983).

nounced in patent law than in other areas due to the technical and esoteric nature of patent law.[65] Popular media provides (or even constructs) the frame of reference within which the public understands and debates the issues surrounding the patent system.[66] Moreover, policymakers must appear responsive to issues identified by the media as being critical to public welfare, allowing media to play a role in setting the agenda—particularly in the political realm. Different forms of lawmaking will garner different kinds of media coverage and attention. To the extent that a process of change encourages accurate and broad diffusion of information and a belief in the fairness and effectiveness of the results, it will lower transition costs and improve transition outcome.

Given the long-term nature of decisions to invest in innovation and to adopt and use new technologies, combined with the sensitivity of those decisions to expectations about the functioning of the patent system, the perceived fairness and effectiveness of proposed reforms can have a potentially significant impact on innovation. This potential impact advocates for a process of patent law change that appears to be—and indeed is—an informed, transparent, and balanced process that incorporates concerns about transaction and coordination costs, as well as the appropriate balance of rights between technology owners and users.

C. Characterizing the Primary Mechanisms for Patent Law Change

While the U.S. Constitution expressly gives Congress the power to make the laws,[67] in reality, change in patent law also occurs through judicial and agency decision-making and, indirectly, through private market trends and informal rule and norm development. The key institutional players are federal courts—primarily the Federal Circuit and Supreme Court—the PTO (and to a far lesser extent the International Trade Commission), and Congress (influenced, of course, by the current presidential administration).[68] The following table illustrates a rough categorization of these three alternative mechanisms for patent law change.

---

65. A good example of the role that popular media can play in stirring up public concern over the patent system is the media coverage of "patent trolls" and the notion that the patent system is in a state of crisis. *See, e.g.*, Raymond P. Niro, *Who is Really Undermining the Patent System—"Patent Trolls" or Congress?*, 6 J. MARSHALL REV. INTELL. PROP. L. 185, 185–87 (2007).

66. *See* Dolak & Bettinger, *supra* note 26, at 461–62.

67. "All legislative Powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives." U.S. CONST. art. I, §1.

68. Institutions such as state courts, the Federal Trade Commission, the Department of Justice, and the Food and Drug Administration also play roles in regulating and enforcing rules that impact patent law, and increasingly U.S. patent law is also influenced by international actors through the international norms and laws imposed by international treaties such as TRIPS (the Trade Related Intellectual Property Agreement) and other bilateral and multilateral agreements.

Table: Characterization of Alternative Mechanisms for Patent Law Change

	Variance	Speed	Specificity	Participation
Legislation	High	Low	Low	Broad
Judicial Decision-making	Low	High	High	Narrow
Agency Rulemaking & Adjudication	Moderate	Moderate	High/Moderate	Moderate

Private actors play an important role in the evolution of patent law, and the "interaction between legal norms . . . and private norms designed to supplement, implement, and (when allowed) adjust [or circumvent] the positive law" cannot be ignored.[69] In some cases a choice may be made to limit public institutional intervention or to rely on court decision-making (driven by private litigant decisions to address issues of patent law) as a way of deferring to markets for needed change, with corresponding consequences for transition costs. Thus, the role of private markets is taken into account implicitly by considering whether allowing greater market response may save transition costs. An interesting expansion of this analysis would be to explicitly include private markets as a fourth mechanism for changing the law. This would require a deeper understanding of the ways in which different markets could and would develop their own informal rules and practices and the costs of such market adjustments—an important area for future study.

1. Legislating Patent Law Change

The process of legislating change has the broadest variance of any of the institutional choices for patent law change. Congress has the ability, albeit fraught with political constraints, to make high-level changes in the patent system that depart from prior laws. Furthermore, Congress may change patent law without providing reasons or justifications and without anchoring the changes to specific facts or circumstances. Changes are infrequent, the final form of the legislation is sometimes hard to predict,[70] and resulting changes are almost always substantial. Lawmaking is influenced by the complex structure of political decision-making as well as pressures from internal and external voter constituencies, and the process

69. Van Alstine, *supra* note 11, at 837.
70. *See* Easterbrook, *supra* note 56, at 427.

of introducing and passing legislation is fraught with uncertainty, delay, and political compromise. Although the general voting public is unlikely to have strong views about the content of existing laws in what is perceived as a technical and esoteric area of law and one not tightly drawn around partisan lines, the role of special voter interest groups in driving patent law change cannot be ignored. Indeed, the role of industry groups in influencing and even drafting intellectual property legislation has been noted, and a lack of general familiarity with the specialized issues raised by patent law may intensify the room for capture by special interest groups.[71] Once the legislation is passed, courts have the opportunity to weigh in on the interpretation of the legislation, leaving open the potential for a divergence of views, further interest group pressures, and a new round of legislation.[72] The result is a legal process that is volatile and uncertain and which has the capacity to introduce significant shifts in the current patent system.

While the variance may be high, the speed is low, as evidenced by the long, drawn-out debate over patent reform legislation. After several years of draft proposals and discussions, the Patent Reform Act of 2005[73] was introduced by Congressman Lamar Smith as "the most comprehensive change to U.S. patent law since Congress passed the 1952 Patent Act."[74] This bill was followed by the less ambitious Patents Depend on Quality Act of 2006[75] and the more ambitious Patent Reform Act of 2006,[76] before re-emerging in 2007 in a form closely resembling the 2005 bill. The Patent Reform Act of 2007 was passed by the House of Representatives in September of 2007 but was not passed by the Senate.[77] Instead, the Senate version of the bill was placed on the Senate calendar for 2008 and then removed with the expectation of revisiting the bill in 2009.[78] Legislating is slow both at the stage of proposed law change and at later stages of finalizing and enacting the law. To the extent that the laws are vague or ambiguous, additional time is needed to clarify what the laws mean and to

71. *See* Robert P. Merges, *One Hundred Years of Solicitude: Intellectual Property Law, 1900–2000*, 88 CAL L. REV. 2187, 2200 (2000); Robert P. Merges, *Intellectual Property Rights and the New Institutional Economics*, 53 VAND. L. REV. 1857, 1875 (2000); *see generally* Barnett, *supra* note 43.

72. As Easterbrook comments, "[t]reatments that portray the Court and Congress as partners in a dialogue, producing a form of 'constitutional common law' or 'statutory common law,' disregard the nature of Congress as a divided and discontinuous institution, in which a single house, sometimes a single member, can block action." Easterbrook, *supra* note 56, at 428 n.20 (citations omitted).

73. Patent Reform Act of 2005, H.R. 2795, 109th Cong. (2005).

74. *See* Dennis Crouch, *Patent Reform: Patent Act of 2005*, Patently-O, www.patentlyo.com (June 9, 2005 10:55, CST).

75. Patents Depend on Quality Act of 2006, H.R. 5096, 109th Cong. (2006).

76. Patent Reform Act of 2006, S. 3818, 109th Cong. (2006).

77. Patent Reform Act of 2007, H.R. 1908, 110th Cong. (2007); Patent Reform Act of 2007, S. 1145, 110th Cong. (2007).

78. S. REP. NO. 110-259, at 1 (2008).

whom they apply, further extending the lawmaking process. Low speed can have mixed effects on transition costs. Where the change is anticipated and does not create uncertainty, a slow pace can sometimes minimize transition costs by allowing different paces of adjustment to the new regime; but where there is uncertainty—particularly where the uncertainty relates to the scope and enforceability of patent rights—slow speed will be costly.

Specificity is also low. Legislation is a blunt instrument for responding to changing market conditions, taking the form of blanket changes to the patent statute, such as a change in the formula used to calculate patent damages and a change in how priority of ownership is determined. Legislators are not anchored to specific facts or situations, and laws are generally not contingent upon or limited to market circumstances. Low specificity limits the responsiveness of patent law to industry differences and has the potential for creating laws that extend beyond the intended audience and intended behavior, with potential negative impact on the breadth as well as the depth of the transition costs. For example, concerns about abusive litigation practices and excessive patent damages arising from patent hold-up behavior are addressed through changes in how all patent damages are calculated and in the standard for establishing willful infringement and inequitable conduct for all litigants, rather than through more targeted responses. The reduced flexibility of the patent system may be exacerbated where the proposed legislation has the effect of limiting the scope for lawmaking by the courts or limiting private market response, or both. Such legislation raises concerns that Congress will supplant the self-correcting forces of the patent system and intervene in a manner that is more likely to have unintended, negative market consequences.[79]

There may be some important countervailing benefits from low specificity, however. Low specificity enables high-level, broad, and uniform changes to the patent system. The uniformity of the patent system has been defended against critics arguing for a more differentiated set of patent rules. This defense is based in part on the argument that the uniform system avoids the cost and complexity that a more tailored system would require, while providing markets with the flexibility to make specific adjustments dictated by specific market needs.

Legislation offers the most inclusive and broadly targeted level of participation in shaping patent law change, at least in theory. Where voters are educated about the laws being proposed and their likely effects, the lawmaking process is transparent, and Congress is responsive to the general interests and views of the voting public, legislation should produce

79. *See* Claude Barfield & John E. Calfee, *Congress's Patent Mistakes*, WALL ST. J., Oct. 29, 2007, at A18 ("Congress should not overlook the surprising ability of self-correcting forces in the patent system and elsewhere to adapt to change in ways less susceptible to the unintended, negative consequences of the blunt-force—and heavily lobbied—legislative process.").

legal change that has broad public support, engenders widespread expectations of positive economic consequences, is perceived as legitimate and fair, and serves the public interest. The legislative process includes the opportunity to integrate related but distinct agenda items into the process of lawmaking, such as patent and trade-related changes. This ability to integrate patent law issues with related bodies of law and policy becomes increasingly important in the face of a drive for international harmonization of laws impacting business and trade. Determining how best to adjust to the needs and demands of other countries in a global marketplace requires a level of policymaking and change that is arguably best handled by lawmakers who are able to make the tradeoffs necessary to reach international agreement on multiple fronts and with multiple agendas. How far the "internationalization" of patent law will extend and how this will impact the optimal balance of Congress, courts, and the PTO as agents of legal change remains to be seen. But, for the moment, viewed in terms of transition costs, the ability to consider and balance multiple agendas when shaping legal change that has international dimensions cannot be ignored.

Legislation will diverge from the ideal scenarios discussed above where there is little public understanding and attention to the issues, there is a lack of transparency in setting the agenda for patent law change, there are significant political interests among internal constituencies that play into this agenda, and voting influence is concentrated in special interest groups—all features that seem particularly prominent in changes to patent law. Indeed, the divergent interests of strong industry lobby groups are one explanation for why reform bills continue to stall despite bipartisan support. The proposed legislation includes some provisions that are clear reflections of special interests, but in other cases the influence is less visible and direct.[80] Some argue that the proposed legislation has created dividing lines between industries, with many in the tech industries interested in patent reforms and many in the life sciences industries concerned about the impact on patent strength.[81] More generally, the proposed patent reform legislation has been criticized as failing to strike the appropriate balance between those seeking to enforce valid patents and those seeking to challenge questionable ones.[82] Some have raised concerns that Congress, driven in part by the role of special interests in setting and modifying the patent reform agenda, has focused on the wrong agenda for

80. *See, e.g.*, Jacqueline Bell, *Patent Reform Could Protect DataTreasury Defendants*, LAW360, Feb. 14, 2008, http://www.law360.com/articles/47104.

81. *See, e.g.*, Armitage, *supra* note 26 (arguing that current pending legislation is unnecessary and ill-advised and will result in misguided policies driven by the debate among competing constituencies); Matthew Sag & Kurt Rohde, *Patent Reform and Differential Impact*, 8 MINN. J. L. SCI. & TECH. 1 (2007) (suggesting that there are too many patent reform proposals and proposing differential impact analysis for prioritizing among proposals).

82. *See* Armitage, *supra* note 26, at 43.

reform—lawsuit abuse allegations. These critics argue that reforms should be refocused on the proposals suggested by the National Academy of Sciences (NAS) and the Federal Trade Commission (FTC), which address the expense, unpredictability, and uncertainty inherent in the U.S. patent system.[83] The media has not helped to balance the debate. They have sensationalized the problems associated with patent reform, and the limitations of the current "evidence" supporting reform have provided a poor basis upon which to make sweeping legislative changes. This reactionary response has supported changes that would curtail patent rights in an effort to spur innovation, despite the lack of a clear understanding about whether and how patents influence innovation.[84]

2. Judicial Decisions and Patent Law Change

> *Stare decisis is usually the wise policy, because in most matters it is more important that the applicable rule of law be settled than that it be settled right.*[85]

Although there is debate about the appropriate role and limits of judicial lawmaking, it is generally accepted that courts play an active and important role in shaping the law.[86] They do so when statutes are vague or require a framework for implementation—which they almost always do—through application of the law to new situations and through judicial review.[87] Legal change by judicial decision-making is characterized by low variance, high specificity, narrow participation, and high speed—at least once the issue reaches the courts.[88] In many cases, this mix of characteristics will minimize transition costs by limiting uncertainty and promoting stability, particularly where the proposed changes influence the scope and

---

83. Armitage argues that the House-passed bill was motivated by concerns about lawsuit abuse, particularly specific contentions about the danger of "patent trolls," unfair leverage for patent owners in asserting their patents, and bias against infringers in litigation proceedings. *See id*.

84. Scherer points to the consistent failure of legislators to pay attention to the mixed empirical evidence linking patenting to expenditures on research and development and productivity trends and the danger of basing broad legislative change on general assumptions about patents and innovation. *See* Scherer, *supra* note 34.

85. Burnet v. Coronado Oil & Gas Co., 285 U.S. 393, 406 (1932) (Brandeis, J., dissenting), *overruled in part by* Helvering v. Bankline Oil Co., 303 U.S. 362, 369 (1938) *and* Helvering v. Mountain Producers Corp., 303 U.S. 376, 383 (1938).

86. *See, e.g.*, Christopher J. Peters, *Adjudication as Representation*, 97 COLUM. L. REV. 312 (1997) (courts as lawmakers); Edward L. Rubin & Malcolm M. Feeley, *Judicial Policy Making and Litigation against the Government*, 5 U. PA. J. CONST. L. 617 (2003) (role of courts in making public policy); Adam N. Steinman, *A Constitution for Judicial Lawmaking*, 65 U. PITT. L. REV. 545 (2004).

87. *See* Steinman, *supra* note 86, at 553.

88. Referring to the "court" here is a simplification left for further study that incorporates the positive characteristics of the institutions shaping patent law, reflecting in particular the interaction and tensions between federal district courts, the Federal Circuit, and the Supreme Court.

enforceability of property rights and where market participants must commit to long-term strategies based on expectations of future gains. It also allows for flexibility where markets are rapidly evolving and changing. These benefits come at a cost, however, since change is limited to incremental, fact-specific changes driven by private litigant decisions.

The nature of judicial decision-making as a process of legal change is shaped by five core principles. First, the principle of stare decisis limits a court's ability to change law that has already been made by a prior court, giving legal decisions prospective legal force and building predictability and stability into the system of common law.[89] Courts build upon existing decisions and are limited in their ability to depart from the decisions of courts with higher jurisdiction—and even those with comparable jurisdiction—in the absence of significant changes in relevant circumstances.[90] Second, judicial power extends only to "cases and controversies" arising under the U.S. Constitution.[91] Courts are constrained to deciding cases that are properly brought before them and must wait for parties to bring the cases before they can initiate their lawmaking process. This means that not only are decisions fact-specific and tied to context, but also that private parties shape the evolution of the law through their activities, litigation, and settlement decisions. Furthermore, courts are limited to decisions that reasonably relate to the issues posed by the case. Additionally, courts are constrained to some degree by their need to provide reasons for their decisions. "A judge who announces a decision must be able to demonstrate that he began from recognized legal principles and reasoned in an intellectually coherent and politically neutral way to his result."[92] Finally, courts are constrained by statutes—particularly in the case of patent law, which is governed by the Patent Act and supporting regulations—and by limits on "judicial activism"—actions taken by judges who "legislate" from the bench by establishing laws that apply broadly to issues not presented in the individual case before them, or by going beyond reasonable interpretations of laws to create their own versions of the law. To the extent that judges are acting more like legislators, the differences between legislation and

89. *Compare* Antonin Scalia, *The Rule of Law as a Law of Rules*, 56 U. CHI. L. REV. 1175 (1989), *with* Christopher J. Peters, *Foolish Consistency: On Equality, Integrity, and Justice in Stare Decisis*, 105 YALE L.J. 2031, 2073–74 (1996).

90. Courts may overrule a prior decision based on judgments "customarily informed by a series of prudential and pragmatic considerations designed to test the consistency of overruling a prior decision with the ideal of the rule of law, and to gauge the respective costs of reaffirming and overruling a prior case." Planned Parenthood v. Casey, 505 U.S. 833, 854–55 (1992). *See* Peters, *supra* note 86, at 361 ("Court decisions thus can serve as rules in much the same way that statutes do, encouraging and discouraging certain kinds of conduct with the promise that such conduct will bear particular legal consequences."); Steinman, *supra* note 86, at 552–53 ("Judicial decisions make prospective law because of the doctrine of stare decisis.").

91. *See* U.S. CONST. art. III, § 2; *see also* United States v. Raines, 362 U.S. 17, 20–21 (1960).

92. ROBERT H. BORK, THE TEMPTING OF AMERICA: THE POLITICAL SEDUCTION OF THE LAW 2 (1990).

judicial lawmaking could narrow. Given the specialized nature of many of the issues included in patent reform, the policy-based role of the courts in shaping innovation policy cannot be neglected. All of these features shape the nature of court decision-making as a process for law change, with important implications for the costs and consequences of transition in the law.

Variance is limited in large part by adherence to the principle of stare decisis and the constraining role of precedent, as well as by the case-based nature of law change. Much has been written about the role that stare decisis plays in the process of legal change.[93] Advantages suggested by legal scholars include increased predictability and stability, increased probability of equitable treatment, and lower cost of judicial decision-making.[94] The benefits of stability of the legal process and the role of common law in supporting stability have been widely discussed, particularly in the context of patent law, where uncertainty, a lack of predictability, and instability are seen as particularly costly given the long term investments and the complex coordination of activities and transactions required between participants in innovation markets. Critics of stare decisis point to problems of lock-in and a lack of flexibility.[95] This concern has shown up in complaints about the dominant role that the Federal Circuit appears to be playing in constraining the flexibility of patent law, both through a relatively formulaic approach to patent law and through expansion of its decision-making into the fact-finding domain of trial courts.[96] Recent pushback from the Supreme Court has been seen by some as a welcome return to a less-formulaic approach to patent law.[97] While low variance will generally result in lower transition costs, where significant legal change is needed or where rigidities create costs, there may be transition costs attached to an approach anchored on past decision-making and a drag of the legal process on the desired result of the transition.

Judicial decision-making is relatively fast in comparison to legislation, although it can sometimes be slower than agency rulemaking. The speed is further limited by the fact that judges must wait for private parties to bring cases and are limited to incremental change, cumulative over time. The speed is in part determined by private actors, since the court's role is

93. *See, e.g.*, William M. Landes & Richard A. Posner, *Legal Precedent: A Theoretical and Empirical Analysis*, 19 J.L. & ECON. 249 (1976).

94. *See* Lawrence E. Blume & Daniel L. Rubinfeld, *The Dynamics of the Legal Process*, 11 J. LEGAL STUD. 405, 409 (1982).

95. *See* Jonathan Masur, *Judicial Deference and the Credibility of Agency Commitments*, 60 VAND. L. REV. 1021, 1026–27 (2007).

96. *See* Rebecca S. Eisenberg, *The Supreme Court and the Federal Circuit: Visitation and Custody of Patent Law*, 106 MICH. L. REV. FIRST IMPRESSIONS 28, 32 (2007), *available at* http://www.michiganlawreview.org/assets/fi/106/eisenberg.pdf.

97. *Id.* at 31.

shaped by private decisions to litigate, making this legal process one that can allow for an expanded market role in shaping patent law change.

Judicial decision-making has high specificity. This high specificity is linked to the case and fact-based nature of judicial lawmaking. Market players determine when and whether to bring suit. Courts are limited in what information they are allowed to consider in making their decisions, and their decisions are limited (to varying degrees) to the facts and circumstances before them. Courts must give reasons for their decisions, and their decisions must reasonably relate to the specific case they are deciding. These features allow for incremental change and the ability to respond narrowly to the facts and circumstances of different cases, leaving room for different decisions in the face of changing technology and market conditions.

High specificity may increase the flexibility of the patent system by providing patent law change that leaves open avenues for adjustment to new circumstances. Laws with high specificity are linked to the facts and circumstances of cases, and where there is limited information about the actual effects of the law change at a broad level, incremental processes for law change allow for the actual cases to dictate the application of the law. For example, courts may reach different decisions about the appropriate patent damages in cases exhibiting inefficient patent holdings than they do in evaluating other cases of infringement by focusing on factors specific to the "bad behavior" of concern. High specificity includes the ability to draw on tools from other areas of law to address problems where appropriate. Patent laws need to be evaluated in the context of impact on patent markets and market players and the ability of markets to create private orderings of actions. Courts can take into account multiple facets of markets through tools drawn from contract law, competition law, and antitrust law. Parties who are impacted by the patent laws can introduce these different elements through their claims. This type of specificity can reduce the breadth of transition costs associated with rule change by allowing targeted rule change, as well as reducing the uncertainty, adjustment, and learning costs of those parties impacted by the rule change through careful tailoring of the law change. Finally, the incremental nature of change can be important where there is uncertainty about how the change in the law will impact behavior, allowing for experimentation and a limitation of error and other transition costs.

High specificity has limitations, however. Courts can only make common law in response to cases that are brought before them, and this could limit or distort the nature of the changes made. The comment that "hard cases make bad law" could have application here, if courts anchor on cases that are not representative of broader market conditions, such as

the salient dispute over the use of blackberry technology and the threat imposed on millions of blackberry users.[98] Courts must also wait for the cases in order to make their law change. The extent to which judges may go beyond the specifics of the case before them ties into the debate over the appropriateness and legitimacy of judicial activism. Specificity can also be problematic where patent law change has broader consequences that are neglected in the decision-maker calculus. For example, the Federal Circuit has been criticized for focusing narrowly on formulaic approaches to patent law and neglecting the broader concerns of innovation policy, despite the fundamental role that patent policy plays in shaping innovation policy.

Participation can have implications for the perceived and actual legitimacy of the law. Concerns have been raised about the appropriate role of courts as lawmakers in light of constitutional and democratic limits. A "counter-majoritarian" concern about the legitimacy of judicial review where unelected judges use their power to nullify the actions of elected executives or legislators provides one example.[99] While this concern rests on assumptions about whether voters can effectively constrain the government to act in the expressed interest of the majority and the extent to which voters are informed about legislation,[100] perception of legitimacy must be considered when comparing alternative processes of legal change, and a decrease in legitimacy could result in higher transition costs. As suggested later in this Article, changes in the perceived legitimacy of different rulemakers can play a role in determining the consequences of rule change. For example, if the Obama administration is perceived as "getting economic policy right," then proposed changes to patent law might have a positive effect on decisions to innovate based on public beliefs about future economic activity.

Judicial decisions involve participation by private parties and respect for private party contracts. The role of private actors in structuring their own deals is missing from the legislative agenda and the agency system. Some theories of law suggest that the private participants involved in lawmaking play a central role in legal change. As discussed earlier, the evolution of common law is driven in part by the role of private party litigants and courts' adherence to precedent,[101] with the potential for creating effi-

98. *See, e.g.*, NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282 (Fed. Cir. 2005).

99. ALEXANDER M. BICKEL, THE LEAST DANGEROUS BRANCH: THE SUPREME COURT AT THE BAR OF POLITICS 16–23 (1962).

100. *See generally* Ilya Somin, *Political Ignorance and the Countermajoritarian Difficulty: A New Perspective on the Central Obsession of Constitutional Theory*, 89 IOWA L. REV. 1287 (2004) (arguing that if voters are not voting based on knowledge of legislation, the limits on government power imposed by judicial review could actually strengthen majoritarian democracy by decreasing the number of issues they need to consider and thus decreasing their knowledge burden).

101. *See, e.g.*, Vincy Fon, Francesco Parisi & Ben Depoorter, *Litigation, Judicial Path-Dependence, and Legal Change*, 20 EUR. J. L. & ECON. 1 (2005), *available at*

cient rules because of the role of evolutionary selection of cases and the cumulative impact on precedent[102] and related market pressures for case law to evolve efficiently.[103] Private parties have been responsible for pushing forward legal change in areas relating to the availability of injunctions (impacting patent enforcement), concerns about patent scope and validity (impacting standards of non-obviousness and patentable subject matter), and the ability to challenge patent validity (impacting rules regarding licensee challenges to the validity of licensed patents) through litigation based at least in part on a balancing of the costs and benefits of legal change.[104]

The judicial process also has the potential to consider interaction of laws in one area on the actions and laws in other areas of law or behavior. Courts make decisions using bodies of law that are interrelated. The bodies of law sometimes come into conflict and are mediated through court tools such as preemption doctrines. Ideally, courts make decisions taking into account an ecosystem of different market variables, including contract laws, antitrust laws, intellectual property laws, and related laws of unfair competition and fair business dealing. They have limited ability to select and frame the issues that are raised—for example, some issues are most appropriately dealt with as matters of unfair competition or breach of contract. Private litigants can also select the forum in which to consider many of their issues. Courts are thus, at least theoretically, best able to serve as lawmakers for patent markets, operating with the tools of different bodies of law to refine decisions in response to market changes and to minimize the transition costs of effecting legal change.

3. The PTO and Patent Law Change

Agencies operate in a middle ground between courts and Congress, the boundaries of their ability to change the rules drawn by their scope of delegated authority, the details of the statutes they are required to enforce, the public comment and rulemaking procedure, and the potential for judicial review.[105] Consistent with this middle ground, decision-making by

---

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=339460 (explaining the roles that litigation and case selection play in the evolution of legal rules, focusing on the effect of judicial path dependence on liability rules and remedies). *See generally* Paul H. Rubin, *Common Law and Statute Law*, 11 J. LEGAL STUD. 205 (1982); Paul H. Rubin, Christopher Curran & John F. Curran, *Litigation versus Legislation: Forum Shopping by Rent-Seekers*, 107 PUB. CHOICE 295 (2004).

102. *See* Isaac Ehrlich & Richard A. Posner, *An Economic Analysis of Legal Rulemaking*, 3 J. LEGAL STUD. 257, 258 (1974); Richard A. Posner, *What Do Judges and Justices Maximize? (The Same Thing Everybody Else Does)*, 3 SUP. CT. ECON. REV. 1 (1993).

103. *See generally* Paul H. Rubin, *Why is the Common Law Efficient?*, 6 J. LEGAL STUD. 51 (1977).

104. *See supra* note 58 and accompanying text.

105. Historically, agencies were established as boards of experts who would make public policy in complex areas of science, economics, or social policy independent of (but accountable to) the legisla-

agencies can be loosely characterized as having moderate variance, speed, specificity, and participation relative to the judicial and legislative processes for change.

Unlike many other agencies, the PTO does not have substantive rulemaking authority.[106] Its mandate is confined to procedures for implementing the patent statute, including administering the patent laws as they relate to the examination, processing, granting, and issuing of patents, and related duties such as publication and recording of assignments. While it is limited primarily to making rules on procedural matters, in practice many of its regulations and decisions have substantive, rule-like impact. Procedural rules and the implementation of existing substantive rules can both have substantive effects, and the PTO's authority to evaluate and award patents effectively results in PTO influence over laws governing patentability. Moreover, the line between procedural and substantive rulemaking can be blurry, as illustrated by the debate in response to the PTO's recent proposed rulemaking concerning the filing of continuation and continuation-in-part applications.[107] The PTO has the ability to make decisions that exhibit high variance within certain limited (procedural) areas, although this variance is dampened by a proliferation of administrative guidelines and the need to account internally to applicants and to judges about decisions made. High variance also exists within more specific realms of decision-making, such as the individual decisions about patentability.

The speed with which an agency can make rule changes is variable, depending in part on whether the agency needs further resources or approval from Congress, and on the public response to its proposed rule changes. Where structural change is required to implement the rules, the nature and expense of the change will also influence the speed of change. For simple, uncontroversial changes within an agency's mandate and budget—and with limited structural changes required—the speed of change can be rapid, limited only by the notice and comment rulemaking requirements. While some scholars have argued that these procedural require-

---

ture, and delegation to agencies is still generally justified in terms of superior expertise, flexibility, and political accountability. *See* David J. Barron & Elena Kagan, *Chevron's Nondelegation Doctrine*, 2001 SUP. CT. REV. 201, 203, 223–25 (2001). Their actions are proscribed by the delegation of power and the statutory framework within which they make their decisions. But within these limits, they can promulgate their own rules and regulations, subject to a public notice and comment rulemaking procedure.

106. *See* Merck & Co. v. Kessler, 80 F.3d 1543, 1549–50 (Fed. Cir. 1996).

107. *See* Changes to Practice for Continued Examination Filings, Patent Applications Containing Patentably Indistinct Claims, and Examination of Claims in Patent Applications, 72 Fed. Reg. 46,716 (Aug. 21, 2007) (to be codified at 37 C.F.R. pt. 1). As an example of these limits on variance, the recent proposed laws on continuation applications resulted in an outcry from private parties that the PTO had overstepped its legal bounds in lawmaking by seeking to make substantive changes in patent law. The PTO's attorney argued that the laws were not substantive because patent applications were not retroactive and did not involve the transfer of policy rights. *See, e.g.*, Ron Zapata, *After Packed Hearing, Judge Ponders PTO Rules*, LAW360, Feb. 8, 2008, http://www.law360.com/articles/46625.

ments have hindered agency decision-making, others suggest that agencies can and do issue rules relatively quickly in many cases.[108] Since the agency does not need to wait for private parties to bring a case in order to address rule change, it can act more quickly than a court in some cases, and the process of change may be similar to that of court decision-making. In the face of public challenges to the rulemaking, the pace of change will be slower than court decision-making, but it is still likely to exceed the speed of legislation. For changes requiring resources and structural change or requiring an expansion of its delegated power, the speed can be more akin to (and indeed may require) legislation. The relative speed of agency rulemaking has made it a favorable candidate for implementing deferred examination, a practice in which patent applications do not receive substantive examinations unless an applicant submits an express request for one, as a way of dealing with the current backlog of patent applications waiting to be processed.[109]

Agency decision-making can in many cases be the most specific form of lawmaking in terms of ability to target rulemaking to a particular and relatively detailed issue.[110] But it is also disentangled from the facts and circumstances of specific cases, making it less specific in this sense than judicial decision-making. Agencies can and do implement policy changes in response to new information, changing circumstances, and shifting preferences. This type of flexibility is particularly useful where the effects of policy choice or underlying preferences are uncertain and variable and decision-makers' incentives are likely to track social incentives. In contrast, Congress has institutional features that are not well-suited to an "experimental, adaptive, trial-and-error approach to policymaking," whereas agencies can engage in such flexible practices.[111] Some scholars have argued that courts are similarly limited in their ability and competence to engage in adaptive, policy-based decision-making because they lack the agency's "presumed investigative resources, analytic competence, and technical literacy [but their] view [of] social policy issues [is filtered] through the refracting prism of judicial review."[112] Where specificity is

108. *See* Jason Webb Yackee & Susan Webb Yackee, *Administrative Procedures and Bureaucratic Performance: Is Federal Rule-making "Ossified"?*, 20 J. PUB. ADMIN. RES. & THEORY (forthcoming 2010), *available at* http://jpart.oxfordjournals.org/cgi/reprint/mup011v1.

109. *See* Liza Porteus Viana, *US Debates Patent Exam Deferrals; Patent Reform Bill Expected This Year*, INTELLECTUAL PROPERTY WATCH, Feb. 13, 2009, http://www.ip-watch.org/weblog/2009/02/13/us-debates-patent-exam-deferrals-patent-reform-bill-expected-this-year.

110. *See, e.g.*, Freeman United Coal Mining Co. v. Fed. Mine Safety & Health Review Comm'n, 108 F.3d 358 (D.C. Cir. 1997).

111. Matthew C. Stephenson, *Public Regulation of Private Enforcement: The Case for Expanding the Role of Administrative Agencies*, 91 VA. L. REV. 93, 140 (2005).

112. *See* Diver, *supra* note 64, at 108. *See also* Jerry L. Mashaw, *Administrative Due Process as Social-Cost Accounting*, 9 HOFSTRA L. REV. 1423, 1435–36 (1981); Jerry L. Mashaw, *How Much of What Quality? A Comment on Conscientious Procedural Design*, 65 CORNELL L. REV. 823 (1980) (noting the relationship between the closeness of a case and its cost); Jerry L. Mashaw, *The Supreme*

important, but flexibility to deviate from past practices is also important, agency rulemaking offers an alternative to judicial decision-making.[113]

When considering the process of rule change, questions have been raised as to whether it is efficient to devote more resources to decision-making upstream (at the agency level) versus downstream (at the court level).[114] This will depend in part on the likelihood of future changes and on the comparative structural costs involved in adjusting to new rules. Once in place, changes at the administrative level are in some cases the most enduring. The agency sets up procedures and systems that implement policies at the microlevel; these changes often stay in place even if the original policies' goals change. When considering agency lawmaking as a process for change, the potentially more enduring effects of administrative law changes need to be considered. Courts can occupy a middle ground by having decisions that are persistent over time, but which do not entail such a level of sunk costs.

PTO rulemaking offers the potential for moderate participation, although in practice agencies tend to work most closely with, and be most directly influenced by, the constituency they regulate. The PTO may be no exception. While delegation to agencies is often perceived as desirable because the agency has superior information about the issue, and because the agency can alter its policy more easily as information and circumstances change, the flip side of this specialization and expertise is a concern about tunnel vision and regulatory capture—concerns not unique to agencies, but often more pronounced in the agency context.[115] Through participation rights, the public and interest groups can contribute information to the rulemaking process, and the nature and quality of this information can be an important determinant of the quality of the ultimate rulemaking.

Reconsideration of participation in PTO decision-making has been the subject of proposed reforms. There are very limited opportunities for third-party participation in the patent application and appeals process, and this limited participation has become the subject of the proposed patent reforms.[116] The current PTO patent application process involves a dialogue

---

Court's Due Process Calculus for Administrative Adjudication in Mathews v. Eldridge*: Three Factors in Search of a Theory of Value*, 44 U. CHI. L. REV. 28 (1976).

113. *See, e.g.*, Hathaway, *supra* note 12, at 605 (discussing how "path dependence theory raises once again the question of when the doctrine of stare decisis should govern—when, that is, the deleterious consequences of the path dependence that stare decisis engenders might justify modifying or relaxing this central tenet of our legal system").

114. *Compare* Lemley, *Rational Ignorance at the Patent Office*, *supra* note 46, *with* John R. Thomas, *The Responsibility of the Rulemaker: Comparative Approaches to Patent Administration Reform*, 17 BERKELEY TECH. L.J. 727 (2002).

115. *See* Stephenson, *supra* note 111, at 110–11, 111 n.53 (2005) (discussing concerns with regulatory capture—that is, the tendency of agencies "to underenforce certain statutory requirements because of political pressure, lobbying by regulated entities, or the laziness or self-interest of the regulators themselves") (footnotes omitted).

116. *See* Thomas, *supra* note 114.

between patent examiner and patent applicant and an exchange of information between them, with judicial doctrines such as inequitable conduct governing the implications of this "conversation" for patent validity down the road. Many patent applicants are repeat players—even when patent applications are denied, the subject matter often resurfaces in new and modified ways, or follow-on subject matter forms the basis for a new application. Scholars suggest that the PTO too readily approves patents and has a "pro-patent" bias,[117] although many practitioners disagree and complain about perceived arbitrariness or unfairness in patent rejections and the costs imposed by variable PTO outcomes that persist until later challenged in court.[118] This is, of course, a costly and risky undertaking.

4. Limitations: Normative Analysis of Institutional Processes

The analytical approach introduced above is based on normative assumptions about the institutional structure and process for law change. It is important to recognize that the lawmaking process is also shaped by the characteristics and idiosyncrasies of the lawmakers and through the imperfections in the information on which they base their decisions. There is extensive literature characterizing the different ways in which decisionmakers may depart from the normative boundaries of neutral decisionmaking processes. Lawmakers are often limited both by the resources and information available to design and implement laws and by a divergence of their own private preferences from social preferences. These limitations need to be factored in when evaluating alternative lawmaking processes.

Within the approach that I have proposed, areas of divergence from normative assumptions can be reflected to some degree in variations on the dimensions of the legal process. For example, divergence driven by collective action problems and special interests will depend on the participation in legal change, and the influence of unrelated agendas (such as tying patent reform to trade deals) will depend on the specificity and variance of the legal process. There are a variety of ways to factor limited rationality and divergence of public and private interests into a normative framework without disturbing the results of the normative model. Theories of error correction and bounded rationality suggest that laws will evolve toward efficient outcomes despite the divergence of private and social preferences through informal mechanisms by which social costs are communicated to lawmakers in ways that create costs for them.[119] Similarly, institutional design can and should be designed with the objective of addressing and

117. Jeanne C. Fromer, *Patent Disclosure*, 94 IOWA L. REV. 539, 579 n.178 (2009).

118. *See, e.g.*, E. Robert Yoches & Terry S. Callaghan, *The Next Battle: New Forms of Software Prior Art*, 2 U. BALT. INTELL. PROP. L.J. 115, 155 (1994).

119. *See* Diver, *supra* note 64, at 98–99.

managing the divergence of private and socially desirable outcomes. Recognizing that the cost of legal change impacts the lawmakers as well as those affected by the law change, the extent to which the costs associated with different rule choices are external or internal to the entity selecting the laws needs to be considered, but can be included in the decision-making framework.[120]

While the proposed analytical approach can handle departure from normative assumptions, however, the evaluation of alternative legal processes and their relative merits may change. Thus, it is important to keep in mind that the application of the approach is based on normative assumptions about the behavior of courts, agencies, and legislators, and leaves for further discussion the performance of the Federal Circuit, the PTO, and the legislative committees who have spearheaded patent reform.

II. ILLUSTRATIONS FROM PATENT REFORM

> *If one does not know whether a system "as a whole" (in contrast to certain features of it) is good or bad, the safest "policy conclusion" is to "muddle through"—either with it, if one has long lived with it, or without it, if one has lived without it.*[121]

The proposed Patent Reform Act makes a number of key changes to the Patent Act designed to impact patent quality and litigation costs and achieve greater harmonization with international patent laws. The analytical approach introduced in Part I of this Article is applied to examples drawn from the Senate version of the Patent Reform Bill[122] to suggest how the characteristics of the legal process should inform institutional choice for making the proposed reforms by incorporating differences across institutional processes in the transition costs associated with reform.

A. Paradigm Shifts and the Legislative Mechanism

Patent reform proposals include adjusting U.S. patent law to bring it more in line with that of other major market countries.[123] Proposals for

120. *Id.* at 76–77, 102–04 (suggesting that if the burden inflicted by sub-optimally precise laws, the cost of law enforcement, the level of lawmaking effort, and accountability for the law are external rather than internal, lawmakers will have less incentive to correct the precision of the laws).

121. STUDY OF THE SUBCOMM. ON PATENTS, TRADEMARKS, & COPYRIGHTS OF THE S. COMM. ON THE JUDICIARY, 85TH CONG., AN ECONOMIC REVIEW OF THE PATENT SYSTEM 80 (Comm. Print 1958).

122. Patent Reform Act of 2007, S. 1145, 110th Cong. (2007).

123. *See* COMM. ON INTELL. PROP. RIGHTS IN THE KNOWLEDGE-BASED ECON., BD. ON SCI., TECH., & ECON. POLICY, POLICY & GLOBAL AFFAIRS DIV. OF THE NAT'L RES. COUNCIL, A PATENT SYSTEM FOR THE 21ST CENTURY 5, 8 (2004) [hereinafter NAS REPORT]; *but see* John F. Duffy, *Har-*

harmonization include changing the way that U.S. law determines priority of ownership for patent applications, altering the grace period provided under U.S. law for filing a patent application after publication (or requiring other countries to provide such a grace period), and altering the exceptions provided under U.S. law to the rule that a patent application must be published after eighteen months. The interest in harmonization has been driven by concerns about the complexity and cost of doing business in a global marketplace, as well as questions about the relative effectiveness and efficiency of certain U.S. rules (such as the first-to-invent approach) as compared to international norms. Indeed, the NAS report suggested going even further towards realigning U.S. patent law with international patent law concepts by removing what it argues are the highly subjective elements from U.S. patent law "and the expense, unpredictability, and uncertainty that those elements inject into the patent system."[124]

The idea of harmonizing international patent laws is not new to the international trade agenda of U.S. policymakers, where the U.S. has been a key player in the passage of an agreement requiring participating countries to adopt a minimum level of patent protection. But the notion that the U.S. should reform its own patent laws based on considerations of global norms and the complexity and cost of doing business in global markets is new, requiring a paradigm shift from internally focused to more globally focused patent reform. Moreover, principles of harmonization require not only a shift in policy approach, but also a shift in certain fundamental patent practices, such as ways of determining patent ownership. Where legal change requires a clear and significant system-wide paradigm shift, particularly a shift that conveys a message to the marketplace, legislation is usually the best, if not the only, mechanism for accomplishing this change. This is illustrated below in the context of the Senate bill proposal to change priority of ownership.

The Senate bill includes a proposal to shift from a first-to-invent to a first-to-file system for awarding patents.[125] The U.S. awards ownership of a patent to the first person or people to make the invention (first-to-invent) rather than, as in most other major market countries, the first person or entity to file a patent application covering the invention (first-to-file).[126]

---

mony and Diversity in Global Patent Law, 17 BERKELEY TECH. L.J. 685 (2002) (suggesting the potential benefits to innovation from diversity among national patent laws).

124. Robert A. Armitage, Commentary, *Now that the Courts Have Beaten Congress to the Punch, Why is Congress Still Punching the Patent System?*, 106 MICH. L. REV. FIRST IMPRESSIONS 43, 44 (2007) (emphasis omitted). *See also* NAS REPORT, *supra* note 123, at 2.

125. Patent Reform Act of 2006, S. 3818, 109th Cong. (2006). See the Congressional Research Service's Summary of the Bill for a summary of the proposed revisions. S. 3818, THE LIBRARY OF CONGRESS: THOMAS, http://thomas.loc.gov (select "Bills, Resolutions" then 109th Congress, search Patent Reform Act of 2006, select CRS Summary) (referred to Senate Committee; read twice and referred to the Committee on the Judiciary).

126. *See* 35 U.S.C. § 101 (2000).

Disputes regarding priority between two inventors claiming ownership of the same invention are governed by a complex interference proceeding. In this case, where the rule change and desired outcome are clear, time may be needed to adapt to the new regime, and where broader political agendas are implicated but the role of special interest groups is constrained or counterbalanced, legislation may be the lowest-cost process for accomplishing the change. The characteristics of legislation—high variance, low specificity, and broad participation—will lead to lower transition costs than alternative processes for rule change (to the extent they are available). The proposed law change is relatively clear, taking the form of a change from one method of determining priority of ownership to another, and has international examples to use as guidelines. It involves a system-wide shift to accommodate the change and conveys a message about the intent to harmonize U.S. patent laws with those abroad. Since the rule change is relatively clear and easy to understand, the higher learning costs and public and private adjustment costs typically associated with a high-variance process are likely to be less significant. Lower specificity will lower transition costs since the application of this law change is not dependent upon specific market conditions (except to the extent it reflects international legal norms) and has broad applicability to inventions—the benefits associated with incremental, fact-specific change are missing here and the rule change should be implemented uniformly and without too much in the way of case-by-case analysis. In the absence of uncertainty about the rule change, and where the change requires structural adjustment and shifts in patent filing strategies, lower speed will reduce transition costs. Finally, the changes involve coordination with multiple players and agendas, suggesting the benefits of broader participation.

In addition to having the characteristics required to accomplish this paradigm change most efficiently, legislation differs from other forms of rulemaking in the message that a "reform" act sends to the public. Characterizing legal change as "patent reform" has an impact on behavior and expectations about the patent system and technology markets that is independent of and broader than the actual changes proposed, making legislation a blunt but potentially powerful instrument for change. Although this impact can be negative—for example, where the message of "reform" creates the feeling that the patent system is broken and that the U.S. is losing its competitive edge—it can also be positive, such as where it leads to beliefs that after the legislation is implemented the patent system and technology markets will have improved performance. Positive effects on expectations could lead to an upward shift in activity and investment, leading to a more active technology market and a more robust patent system. In the context of harmonization, the message that the U.S. is streamlining its patent system and reducing global transaction costs could send a posi-

tive message to decision-makers both within the U.S. and those abroad interested in investing in U.S. markets.

Generalizing from this example, where the law change takes the form of a paradigm shift with general applicability and clear guidelines as to how the rules need to change and with connections to a broader political and economic message and agenda, transition costs will be lower for a process that has high variance (rather than gradual adjustment), low specificity (applying to all inventions, independent of context), broad participation (including coordination with other policy agendas), and low speed. This favors legislation as the process for law change. High variance will be a particularly desirable feature where there are strong benefits to making a substantial shift from one equilibrium point to another, particularly where the system has inherent tendencies to revert to the old equilibrium if change is attempted on an incremental, gradual basis and is to be uniformly applied at a system-wide level.

B. Stability, Predictability, and Incrementalism: The Judicial Mechanism

Applying the framework to normative theories of the judiciary, judicial decision-making offers low variance, high specificity, relatively high speed, and targeted participation. The stability and reliability of the common law, the efficiency effects of allowing change in the law to be driven by market participants, and the flexibilities associated with incremental change all serve to minimize transition costs relating to private party negotiation and adjustment to rule change. Also, where there are questions about the potential negative impact of proposed reforms, there may be advantages to laws that are more limited or which leave more discretion to individual decision-makers on a case by case basis.[127] These features of the judicial process are particularly important when considering the proposed reform of patent damages and suggested codifications to judicial doctrines relating to willful infringement and inequitable conduct.

The "reform" of patent damages has been driven largely by concerns about the high cost of litigation and overcompensation of patent holders.[128] Indeed, alleged abuses of the patent system by owners of patents who are not also producers and owners of patents to components or incremental improvements exerting leverage to extract large royalties have been cited as key driving factors in support of patent reform. Modification of the

---

127. *See, e.g.*, Peter Grajzl & Peter Murrell, *Allocating Lawmaking Powers: Self-Regulation vs. Government Regulation*, 35 J. COMPAR. ECON. 520 (2007).

128. *See* WENDY H. SCHACHT & JOHN R. THOMAS, CONG. RES. SERV., CRS REPORT FOR CONGRESS: PATENT REFORM IN THE 111TH CONGRESS: INNOVATION ISSUES, at 6 (2009), *available at* http://assets.opencrs.com/rpts/R40481_20090409.pdf; William C. Rooklidge, *Reform of the Patent Laws: Forging Legislation Addressing Disparate Interests*, 88 J. PAT. & TRADEMARK OFF. SOC'Y 9, 9–10 (2006).

rules for determining patent damages has played a key role in patent reform debates, and continued disagreement about proposed changes to patent damages has contributed to the continuing failure of the Senate to pass a reform bill.[129] Judicial discretion and the ability to engage in fact-specific reasoning play central roles in the determination of patent damages, both directly through the application of reasonable royalty and lost profit determinations and indirectly through findings of willful infringement and inequitable conduct. Both the calculation of damages and the use of subjective concepts that involve ascertaining the state of mind of the patent applicant or infringer have come under attack and are the subject of proposed reforms. The Senate bill proposes modifications to the patent damages provision to codify how judges and juries should determine reasonable royalty damages.

Patent damages are calculated based upon lost profits or reasonable royalties designed to reflect what the infringer would have paid in a hypothetical licensing negotiation at the time of infringement.[130] Under the current law, courts have the discretion to award reasonable royalty damages based on a range of factors relevant to the infringed patent's market value.[131] The proposed revision, in its current form, provides for reasonable royalties calculated on (a) the entire market value of an invention, if the patented invention's contribution over the prior art is the predominant basis for the market demand of the infringing good; (b) an established royalty based on marketplace licensing if sufficient prior licensing indicating general marketplace recognition of value exists; or (c) in the absence of the other conditions, on the proportional contribution of a patented component to the complete product or process.[132] Among other things, judges and juries must conduct an analysis to ensure that a reasonable royalty is applied only to that economic value properly attributable to the patentee's specific contribution over the prior art. The apportionment criteria is designed to address concerns about excessive patent damages, particularly where patents cover one component of a larger product or reflect a small improvement over an existing technology. As added measures to reduce the cost of litigation, the Senate bill also includes provisions revising determinations of willfulness and venue and jurisdiction requirements to restrict forum shopping.[133]

---

129. *See* Carlos M. Gutierrez, *Get Moving on Patent Reform Measure Stalled in Senate*, SAN JOSE MERCURY NEWS, May 11, 2008.

130. *See* 60 AM. JUR. 2d *Patents* § 958 (2009); David L. Applegate, *Quantum of Proof: Entire Market Value, Apportionment, and Use Damages*, *in* PATENT LITIGATION 2009, at 214–216 (PLI PATS., COPYRIGHTS, TRADEMARKS, & LITERARY PROP. COURSE, HANDBOOK SERIES NO. 19028, 2009), WL 983 PLI/Pat 199.

131. *See* Georgia-Pacific Corp. v. U.S. Plywood Corp, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970).

132. *See* Patent Reform Act of 2007, S. 1145, 110th Cong. (2007).

133. *Id.*

Critics of the change to the damages provision, which include both the PTO and the Obama administration, argue that the proposed law reduces the court's discretion to consider broader economic aspects of infringement.[134] They note that the formulaic approach proposed removes necessary flexibility to respond to economic factors relevant to determining economic value, is cumbersome, complex, and introduces ambiguity, and in some cases could make it more cost-effective to infringe than to license new technologies. There is also concern over whether judges and juries should be charged with the complex task of establishing an invention's specific contribution over prior art.

Damage awards are central in determining the cost of infringement as well as the expected returns from licensing and sale of patented inventions. Damage decisions are by their nature fact-specific and dependent on a variety of complex and changing circumstances and incentive effects, and stability and predictability in calculating damages is essential to reducing transaction cost and coordination barriers. Abrupt or significant changes in the calculation of damages will disrupt existing and future contracting and coordination efforts by market players. Broad or formulaic changes in the calculation of damages will lead to error, uncertainty, and unresponsiveness to market change. As with other types of pricing, determinations of the cost of infringement need to be responsive to market factors and the specific nature of the transactions at issue. Uncertainty about damage calculations can lead to challenges in negotiating contracts as well as an increase in infringement and related disputes, and errors in determining damages can lead to inefficient investment and technology use decisions. In light of these features of patent damages, the transition costs for changing damage calculations will be lowest where the process has low variance and where change is predictable and incremental and can respond to specific facts and circumstances. This makes judicial decision-making, which is characterized by low variance (stability and predictability) and high specificity (fact-specific determinations and discretion in applying rules to facts), the most efficient avenue for introducing change in patent damages. The view that changes in damage determinations should be left to the courts is shared by both the Obama administration and the PTO. These parties argue for preserving judicial discretion in calculating damages, suggesting that judicial discretion in calculating damages can best promote certainty and accuracy in determining patent damages[135] and that the calcu-

134. *See* Applegate, *supra* note 130, at 210 n.5; *see also* John W. Schlicher, *Patent Damages, the Patent Reform Act, and Better Alternatives for the Courts and Congress*, 91 J. PAT. & TRADEMARK OFF. SOC'Y 19 (2009).

135. *See* Letter from Nathaniel F. Wienecke to Senator Patrick J. Leahy, *supra* note 47.

> Innovation can and will be encouraged in all industries by giving Federal judges the flexibility to apply appropriate economic principles to the facts of each case, consistent with the business model or technology. To further ensure fairness in determining damages, judges

lation of damages should turn on the facts of each particular case, as determined by courts.[136]

Proposals directed at codifying determinations of willful infringement and findings of inequitable conduct—both of which impact the "price" of infringement—also threaten to produce high transition costs. U.S. patent law jurisprudence includes certain concepts which involve the assessment of a party's state of mind as a basis for determining patent rights and the cost of infringing, including the determination of whether someone "willfully" infringed a patent and should be penalized with triple damages, whether a patent applicant failed to include the applicant's "best mode" for implementing an invention and should therefore face patent invalidation, and whether an inventor engaged in "inequitable conduct" by "intentionally" failing to disclose all prior art during the application process and should therefore face patent invalidation.[137] One of the recommendations proposed by the NAS was to remove these discretionary principles, which are perceived as contributing to the high cost and uncertainty of litigation.[138] Rather than remove them, the Senate bill proposes to codify them—for example, the Senate bill codifies the judicial doctrine that enhanced damage awards are limited to willful infringement and requires a showing that the infringer intentionally copied the patented invention and had sufficiently specific notice of the infringement, and also provides a good-faith-belief-of-non-infringement defense.[139] The Senate bill also proposes to codify the inequitable conduct doctrine, specifying criteria for a finding of inequitable conduct and modifying the remedies that the court may consider upon a finding of inequitable conduct.[140]

While supporters applaud the higher standard for showing willfulness, concerns have been raised that these changes go too far in curtailing will-

---

should be given the explicit statutory authority and responsibility to identify all those factors the jury should consider in assessing damages and develop a sufficient evidentiary basis in the court record.

Id.

136. *See Patent Reform: The Future of American Innovation*: *Hearing Before the S. Comm. on the Judiciary*, 109th Cong. 4–5 (2007) (statement of Hon. Jon W. Dudas, Under Sec'y of Com., Intell. Prop. & Dir., U.S. Pat. & Trademark Off.), *available at* http://judiciary.senate.gov/hearings/testimony.cfm?id=2803&wit_id=6506.

137. *See* NAS REPORT, *supra* note 123, at 7.

138. *Id.*

139. This proposal was first proposed before recent changes made by the Federal Circuit to the willfulness standard—changes that have made it harder for plaintiffs to prove willfulness and which may well remove the need for this proposal. *See In re* Seagate Tech., LLC, 497 F.3d 1360 (Fed. Cir. 2007).

140. Patent Reform Act of 2007, H.R. 1908, S. 1145, 110th Cong. § 298 (2007). The doctrine of inequitable conduct is a judicially created defense to patent infringement based on PTO requirements which holds that any patent secured by omitting or misrepresenting critical information or secured through fraud is unenforceable. Inequitable conduct regarding any part of a patent can render the entire patent unenforceable. The Senate bill seeks to codify the doctrine and to modify the remedies that a court may use upon a finding of inequitable conduct. *See* Christopher A. Cotropia, *Modernizing Patent Law's Inequitable Conduct Doctrine*, 24 BERKELEY TECH. L.J. 723, 733–37 (2009).

fulness, turning the decision to infringe into a normal "cost of doing business" rather than acting as a deterrent to infringement and an inducement to seek a license to use patented technology.[141] Similarly, codifying the doctrine of inequitable conduct could lead to incentive problems among patent applicants and potential infringers. Legal doctrines such as the doctrine of inequitable conduct provide for a response to industry and technology differences through the ability of courts to take into account specific facts and information about the parties to a dispute and the incentives informing their conduct. Codifying the determinations reduces the flexibility of the law to respond to different circumstances. For reasons similar to those for damage determinations, changing the determination of willfulness should be left to judicial decision-making, allowing judges to alter the doctrine or its application over time. Changes have in fact already been made to the standard for willfulness by recent court decisions, leaving open the possibility that delayed legislation will overregulate an area of law that has already been adjusted by faster-moving judicial decision-making.

Generalizing from these examples, judicial decision-making will be most efficient and least costly where stability and predictability of outcome are important; there are benefits to incremental, fact-specific determinations, such as where the rules relate to specific, individual actions or incentives or determinations of the "price" of infringement; the flexibility to respond to changing market circumstances is important; and there are advantages to relatively fast decision-making. More generally, once the potential costs associated with making these types of legal changes to the "price" of infringement and the consequences of acquiring and disclosing information and taking other actions relevant to determinations of inequitable conduct and willfulness, are taken into account, the benefits of any change at all become less clear. A process which allows for incremental change provides an opportunity for reassessment and flexibility for private sector adjustments that avoid the need for further change. Judicial decision-making has the advantage of allowing incremental change, so that if the costs appear to dominate the benefits, the pace of change can be slowed and the rule change reconsidered.

C. Experimentation and Specificity: Agency Mechanism

The involvement of the public in examining patent applications and challenging patent validity has been seen as an avenue for addressing concerns with patent quality. A number of patent reform proposals from commentators, scholars, and policymakers alike have focused on ways of

141. *See Patent Reform: The Future of American Innovation*, *supra* note 136.

including public knowledge and enforcement efforts in improving patent quality. Proposals for reform to improve patent quality through expanding the resources available to the PTO and improving the information used to evaluate patent applications and patents have included imposing stronger search and disclosure requirements on patent applicants, expanding the opportunities for third-party submission of relevant prior art, and expanding third-party opportunities to oppose patents both prior to and after issuance.[142]

Under the current system, originally introduced with the goal of providing a low-cost alternative to litigation, third-party participation in the patent application and review process is relatively limited, and avenues for challenging patent validity are even more limited and costly.[143] Third parties cannot provide input directly to patent examiners during the patent examination process without the permission of the patent applicant, although they can provide prior art to patent examiners within a two-month window after a patent application is published, and the primary administration procedure for challenging patent validity is a fairly restrictive reexamination procedure. Currently there is an "ex parte" reexamination system which limits third-party participation primarily to submitting prior art and an "inter partes" reexamination procedure that allows third parties to submit briefs and participate in appeals, but with strict estoppel from pursuing future civil action. The proposed reform replaces the inter partes reexamination process with a postgrant review proceeding under which any person may request the PTO to cancel as unpatentable any claim of a patent within twelve months after issue or reissue when the petitioner establishes a substantial reason to believe that the continued existence of the challenged claim causes or is likely to cause the petitioner significant economic harm, or when petitioner receives notice from the patent holder alleging infringement by the petitioner.[144] This significantly broadens the grounds and expands the time for challenging a patent. Critics of the proposal argue that the changes will significantly reduce the strength and certainty of patent rights.[145]

Where, as here, specificity is important but the ability to deviate from past practice is also important, where the specificity relates to targeted behavior but not the specific facts and circumstances relating to the beha-

142. *See, e.g.*, Bronwyn H. Hall, Stuart J. H. Graham, Dietmar Harhoff, & David C. Mowery, *Prospects for Improving U.S. Patent Quality via Postgrant Opposition*, *in* 4 INNOVATION POLICY AND THE ECONOMY (Adam B. Jaffe, Josh Lerner, & Scott Stern eds., 2004).

143. ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT 153–55 (2004).

144. Patent Reform Act of 2007, H.R. 1908, S. 1145, 110th Cong. § 322 (2007).

145. *Oppose New Post-Grant Review Provision Which Allows Limitless Administrative Patent Challenges*, BIOTECHNOLOGY INDUSTRY ORGANIZATION, http://www.bio.org/ip/domestic/postgrant.pdf (last visited Feb. 15, 2010).

vior, and where adaptive, policy-based considerations need to drive the process and market forces are unlikely to facilitate the change, agency rulemaking may offer the most efficient avenue for legal change when judged in terms of transition costs. Expanding the mandate of the PTO to include decision-making over third-party opposition and reexamination procedures and allowing the PTO to develop its own rules governing this area provide the most efficient mechanisms for making the change.

The same reasoning applies to rule changes targeted at imposing additional information requirements on patent applicants. In an effort to improve the quality of patent applications and to shift the requirements for patent quality in part onto patent applicants, the proposals also include additional information requirements for those seeking patents. Currently, prior art searching is primarily left to the patent examiner, not the applicant.[146] The patent applicant must submit prior art that the applicant is aware of, but there is no mandatory search requirement. As part of the Senate proposal, patent applicants would be required to submit prior art searches and an analysis of the prior arts' relevance to patentability as part of the patent application process. In this case, the costs and benefits of the proposed change are not clear, providing a case for incremental change to determine whether the benefits exceed the costs.[147] The required changes are specific to particular procedures but general with respect to the facts and circumstances of individual applicants, and the change requires a break from prior requirements for patent applicants. Participation should include input from those who will bear the cost of the change— primarily patent applicants. In light of these features, agency rulemaking—a process that has moderate variance, specificity with respect to certain aspects but not others, and participation by those who will bear most of the cost of the change—will minimize transition costs. Speed is unlikely to be a significant factor.

In addition, agency rulemaking allows for alternative approaches to and experiments with rule change that can be particularly useful in the context of public involvement in the patent process. The PTO has emphasized its commitment to focusing the patent examination process through measures designed to improve the information and reduce the cost of obtaining such information used to determine patentability. Efforts have included a pilot project done in collaboration with a university partner to allow technical experts in computer technology to submit relevant references about a patent application to a patent examiner before the patent is examined based on voluntary participation by the patent applicant. The

146. *See* Matt Browning, *Now You See Them, Now You Don't: The PTO's Rules on Claims and Continuations*, 23 BERKELEY TECH. L.J. 247, 248–49 (2008).

147. Liza Vertinsky, *Reconsidering Patent Licensing in the Aftermath of* MedImmune, 45 HOUS. L. REV. 1609, 1624–25 (2009).

idea is to connect the PTO with an open network of scientific experts online starting with this limited pilot project.[148]

More generally, agency rulemaking offers a process of law change that has relatively high variance, but can engage in the change at a varying level of specificity, limiting the impact of the variance. It offers a process that is subject to public participation and discussion at a variety of levels, including discussions of the rule change and ways of harnessing public input in the process of rule experimentation and change. The speed of the process can in many cases be relatively fast, although sometimes limited by the need to obtain legislative support.

CONCLUSION: TAKING TRANSITION COSTS SERIOUSLY WHEN CONTEMPLATING CHANGE

Interest in changing the patent system is not new. Initiatives to reform the patent system have occurred periodically in response to swings in perceived and actual U.S. productivity and competitiveness.[149] Although there have been a number of amendments and codifications to the patent system in its more than 200-year-old history, including many since 1952 when the basic structure of the current Patent Act was adopted, none in modern times have attempted the sweeping foundational changes that Congress is now considering.[150] The calls for reform are based on concerns about proliferation of poor-quality patents, the high cost and abuse of the litigation process, disconnect with international patent norms, and resulting harm to the competitiveness of U.S. technology markets. Despite the announced concern with market efficiency and competitiveness,[151] however, Congress has not paid sufficient attention to the complex structure of markets for innovation and the potential effects of transition on those markets.[152] Legislation has instead been narrowly focused on strategies for

148. *See Community Patent Review*, PEER TO PATENT, http://www.peertopatent.org (last visited Feb. 15, 2010).

149. *See* Scherer, *supra* note 34, at 17–18, 21, 30 (examples include the passage of the Bayh-Dole Act and the Stevenson-Wydler Act in 1980 to stimulate the commercialization of industrial innovations, the creation in 1982 of a new Court of Appeals for the Federal Circuit with exclusive jurisdiction over patent appeals, and the passage of the Hatch-Waxman Act in 1984 to reform certain aspects of patenting in the pharmaceutical industry).

150. Act of July 19, 1952, Pub. L. No. 82-593, 66 Stat. 792 (codified as amended in scattered sections of 35 U.S.C.).

151. Support for the proposed patent reform legislation is justified in terms of general concerns that the U.S. patent system is hindering U.S. competitiveness and innovation. *See* S. REP. NO. 111-18, at 3 (2009) ("If the United States is to maintain its competitive edge in the global economy, it needs a system that will support and reward all innovators with high quality patents.").

152. The fact that there is widespread agreement on the patent system "problems" that need to be solved (poor patent quality, costly and abusive litigation, harmonization with international norms), but continued disagreement about the specific nature and contents of the provisions to address them, could be caused in part by the failure of those debating the reforms to consider—let alone pin down—the complex interaction between the patent system, innovation, and market performance.

achieving a patent system "that will improve patent quality and limit unnecessary and counterproductive litigation costs" as a way of improving economic performance, ignoring the broader cost and performance implications of legal change in a marketplace sensitive to changes in stability and increases in risk and uncertainty.[153]

The mantra of the Obama administration is "change," with the hope and expectation that change will be for the better. This includes renewed interest in legal reform in many areas perceived as critical to economic recovery, including patent reform. Ironically, despite the push for change in many areas of the law, little attention has been focused on opportunities for gain through a change in the process of how the law is changed. In light of the significant cost of transition in an economic climate that can little afford extra expense, it has become imperative to reexamine the case for legislation as the primary avenue for achieving legal reform. This is particularly true in areas such as patent law, which involve complex interrelated structures of regulation intertwined with institutional and private market structure and decision-making, providing alternative processes for change with divergent characteristics and costs.

This Article makes the case that the institutional process by which laws are changed has significant market impact, and that proposals for patent reform must be considered not only in terms of content, but also in terms of the cost and other consequences of institutional choice in bringing about the proposed reforms. Transition costs critical to patent law include transaction and coordination costs that might impede investment in and use of inventions, the negative effects of risk and uncertainty on decisions to innovate, and public and private administrative and structural costs involved in adjusting to new rules. To augment the literature on patent reform, I have provided an analytical approach to compare how procedural and structural differences between legislation, judicial rulemaking, and agency rulemaking and adjudication are likely to impact transition costs involved in patent law change. Drawing from the existing literature on legal change and patent reform, I have identified variables likely to be important determinants of the cost of transition and characterized and compared alternative mechanisms for patent law change in terms of these selected characteristics. While recognizing that there are a variety of variables that may influence the cost of patent law change, I focus on variance, specificity, speed, and participation, dimensions of the legal process that are both likely to differ across alternative institutional processes and have a significant impact on transition costs. My approach is designed to highlight the importance of examining the cost consequences of institutional choice in enacting law change and to suggest when and

153. S. REP. NO. 111-18, at 3 (2009).

how alternative processes for legal change, compared in terms of variables such as these, might produce relatively lower or higher transition costs when seeking to change patent law. Future avenues of research include investigating whether additional variables should be added—or the existing variables modified—to capture the transition costs associated with alternative processes of law change.

I conclude that for many of the proposed reforms, judicial decision-making has characteristics which may minimize the transition costs and other negative consequences associated with moving from the old to the new legal rule. Although legislating change may be the only cost-effective mechanism where a paradigm shift is required and coordination with broader political agendas is important, and agency rulemaking can provide an efficient process for legal change where adaptive, procedural change is important and departure from prior practices is required, for many of the proposed patent reforms—particularly those which are likely to increase risk and uncertainty and alter the boundaries of patent rights—the courts seem to have characteristics which confer advantages in minimizing the costs related solely to the transition.[154] An important future step in expanding the cost-of-change analysis will be to examine the scope for private market adjustment as an alternative to institutional rule change and to compare the costs of a purely private market response, where it is feasible.

It is important to remember that the costs associated with alternative legal processes are not static, however, and alternative mechanisms may become comparatively more or less-efficient mechanisms for legal change in response to shifting economic, political, and institutional circumstances. The current change in the presidential administration, for example, coming at a time of economic crisis requiring unprecedented government intervention, may well have created conditions for legal change that lower the comparative cost of legislating change. To the extent that the Obama administration is seen as an effective agent of political and economic change, positive expectations about the consequences of legislation, accompanied by beliefs that any change will be better than the status quo, may result in comparatively lower transition costs and positive transition benefits from legislation as the mechanism for change. In addition, there may be opportunities for higher speed in passing legislation and more transparent decision-making during periods of perceived crisis, and the effects of uncertainty on investment usually associated with change may be lower, since many investment decisions and transactions may already be on hold. Finally, in a time of rapid change in other areas of law and economic activity,

154. The analysis is largely a normative one, leaving potential deviations of the Federal Circuit, Congress, and the PTO from normative models of decision-making for further study.

there may be a premium on being able to coordinate with other bodies of law and decisions. The broader variance and participation that the legislative process of change offers allows for the integration of multiple agendas and the flexibility to depart from the status quo. Depending on beliefs about the current economic and political climate for change, there may be a greater case now for legislating reform than there has been in the past. Whether this is indeed the case should be consciously explored as part of the policymaking calculus, however, in an effort to finally take seriously the transition costs of legal change.